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AN EXPERIMENTAL ANALYSIS OF THE EFFECTS OF
VARIANCE IN INFLUENCE, LEVEL OF INFLUENCE AND
ATTITUDE CHANGE ON STRESS

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AN EXPERIMENTAL ANALYSIS OF THE EFFECTS OF
VARIANCE IN INFLUENCE, LEVEL OF INFLUENCE AND
ATTITUDE CHANGE ON STRESS

By
Mary Williams Woelfel

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This study investigates whether stress varies positively with level of influence and variance in influence, and attitude change. The basic paradigm of consistency theory suggests that inconsistent cognitions create a generalized state of discomfort on stress away from which people want to move. Borrowing from Mettlin and Woelfel (1974) who incorporate several studies that investigate different combinations of inconsistent cognitions and stress into one multi-dimensional, balance-oriented model of interpersonal influence and stress, this thesis investigates their model in the context of a communication small-group network within the confines of a laboratory setting.

Background variables and an initial attitude position were measured in a pre-test questionnaire. Undergraduate subjects (39) reported their stress scores on ratio-scaled questionnaire items administered at three points in time and three observers based their stress scores for each subject on the same ratio-scaled questionnaire items.

None of the hypotheses were confirmed. An alternate contagion model was presented involving the regression of self-reported stress on the level of stress of each

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confederate as perceived by the subject. These two variables accounted for 68% of self-reported stress.

To Margaret O'Brien Williams
and Guilford W. Williams,
Joseph Karl Woelfel and
Margaret Johanna Woelfel

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CHAPTER I

STRESS AND ATTITUDE THEORY

1.1 Introduction

Stress serves as a central concept or underlying motivational factor (either implicitly or explicitly) in several cognitive consistency theories. Dissonance theory (Festinger, 1957, p. 2-3), for example, argues that inconsistent relations among cognitions produce an unpleasant state which results in behavior designed to achieve consistency. Balance theory, on the other hand (Heider, 1958, p. 201), argues that states of imbalance among cognitive elements will produce tension if a balanced state cannot be achieved. The tension or stress seems to come into existence when efforts to resolve the imbalance are thwarted. Balance theory (Heider, 1958, p. 180) may also be interpreted to argue that unbalanced situations produce discomfort that is relieved only when change toward a balanced state can be achieved. The presence of stress when inconsistent or cognitive imbalance is introduced would lend support to the underlying stress mechanism suggested by dissonance theory and would further lend support for the interpretation that unbalanced situations produce discomfort that is relieved only when change toward a balanced state is achieved. If,

however, inconsistency does not produce stress, then the posited relationship has no basis; that is, the mechanism through which the inconsistency is reduced would have to be reevaluated.

1.11 Previous Research. Although stress is a central concept in consistency theory, an exact determination of when the stress actually occurs is not presented. In addition, consistency theories do not agree on the exact cognitions that are psychologically inconsistent, on the time (pre-decision, post-decision) the inconsistency occurs, and what the resolutions of these conflicts might be. In spite of these differences, the basic paradigm of many consistency theories is reported to be this: some inconsistent experiences cause some generalized discomfort or stressful condition away from which individuals tend to move (Singer, 1966, p. 57; Shaw and Costanzo, 1970, p. 188).

Although there has been a large volume of dissonance and balance-related research, there has been little research bearing directly on whether discomfort or stress actually takes place as a result of discrepant cognitive elements. In most studies, the dissonance, imbalance, etc. is experimentally created and attempts to resolve these imbalances are studied, but the actual stressful state itself is only assumed to exist (Singer, 1966, p. 57). There are, however, some studies from which some general hypotheses might be derived to which this work is related. These studies

investigate the association between discrepant cognitions and discomfort: A study by Jordan (1953) found balanced situations to be rated as more pleasant than unbalanced situations. While this study was the first study to investigate whether states of imbalance were unpleasant or discomforting, it did not place the individual in the unpleasant situation. Respondents were simply presented with balanced and unbalanced situations and asked to identify them as pleasant or unpleasant. Even though balanced states were identified as being pleasant and unbalanced states as unpleasant, it might be the case that the state would be identified differently if the individual were actually placed in the situation.

Mechanic (1962) presents a case study about graduate students preparing for prelims and the performance expectations for those students by peers, teachers and family. He found the magnitude of stress (measured by student's self-rating of anxiety, student's ratings of each other's levels of anxiety, and the researcher's observations of students during interviews concerning examinations) to be dependent upon the imbalance between the level of performance demanded and patterns available to cope with the level of performance expected.

Jackson (1962) investigated the relationship between stress and inconsistent expectations resulting from an individual occupying different status ranks on the status

dimensions of education, occupation, race and ethnic group. He found a positive relationship between stress and inconsistent status ranking.

Kahn, Wolfe, Quinn and Snoek (1964) found a relationship between stress and role conflict that is caused by discrepant expectations of individuals occupying conflicting roles.

A recent investigation by Mettlin and Woelfel (1975) of the association between stress and inconsistent cognitive elements incorporates the hypotheses in the above three studies and attempts to measure more directly the variables involved. Mettlin and Woelfel note that the Jackson and Kahn, et al. studies focus on the conflicting aspects of influences and that Mechanic focuses on the level of performance expected. This observation, coupled with the observation that the Jackson and Kahn studies are based on the assumption that the state of minimal conflict is least stressful, resulted in the development of a balanced-oriented, multidimensional model of stress and interpersonal influence. Mettlin and Woelfel refer to conflicting aspects of influence as discrepancy among influences and refer to level of expectations of others as level of influence. Mettlin and Woelfel's model, then, involves this hypothesized relationship: stress is a positive, linear, additive function of level of influence and variance in influence.

Mettlin and Woelfel attempt to take direct measures of variance in influence and level of influence. In measuring the conflicting aspects of influence, the Jackson and Kahn, et al. studies assume that those persons occupying different statuses or roles received different expectations. Mettlin and Woelfel measure these different expectations directly.

Their results show stress to be positively related to the discrepancy in occupational influence ($r = .24$, $\beta = .16$) and stress to be positively related to the discrepancy in educational influence ($r = .31$, $\beta = .31$). Level of educational expectations is negatively related to stress ($-.15$) and level of occupational expectations is negatively related to stress ($-.16$). The statistical significance is not reported. The sample involved 58 high school students and over 750 of their significant others.

The Mettlin and Woelfel findings are based on a survey design in a field setting and involve a single point in time correlation. This provides information on the relationship of variables but does not provide information on the direction of the relationship or whether the variables are spuriously related. Other possible interpretations, therefore, are not ruled out.

To summarize, stress is a central concept in several consistency theories. The basic paradigm suggests that inconsistent cognitions create a generalized state of discomfort or stress away from which people want to move. Mettlin

and Woelfel attempt to incorporate several studies that investigate different combinations of inconsistent cognitions and stress into one multidimensional, balance-oriented model of interpersonal influence and stress. They find a positive relationship between stress and variance in influence and a negative relationship between stress and level of influence.

1.2 Purpose of this Study

The purpose of this study is to investigate whether stress varies positively with level of influence and variance in influence; i.e., if stress is associated with inconsistent cognitive experiences. It attempts to do this by investigating these relationships in the context of a communication network within the confines of a laboratory setting. By examining these variables in an experimental setting, it is possible to control for the effects of extraneous variables and to vary the values of the independent variables in a systematic way. The hypotheses of this thesis, then, follow:

1.3 Hypotheses

- H₁ Stress is positively related to the discrepancy between the individual's view and the average of the views proposed by others to that individual; that is, stress is positively related to level of influence.
- H₂ Stress is positively related to the variance among influence sources to which an individual is exposed; i.e., stress is positively related to variance in influence.

In addition to the above two hypotheses, a third hypothesis is investigated here. First, even though it is the case that consistency theories are in general similar, there are some important points of difference. For example, dissonance theory, as already mentioned, seems to imply that inconsistency causes stress which motivates change toward consistency. Changing one's views in the direction of a counter or inconsistent view may be seen as one way to achieve consistency. In this case, an inconsistent experience causes discomfort which motivates a person to change views in the direction of the inconsistent message. Balance theory, on the other hand, might be interpreted to suggest that a person may experience stress when efforts to resolve the imbalance fail; for example, when attitude change does not occur. In this case, inconsistent experiences cause forces toward a consistent or balanced state, which, if not achieved, causes stress.

Since there appears to be conflicting views for the exact time stress occurs, attitude change and stress will be treated heretofore as a correlational relationship. The third hypothesis, then is

H₃ Stress is related to the amount of attitude change.

1.4 Definition of Stress

Stress has many meanings to many people, some of which overlap. Some use a response-based definition of stress,

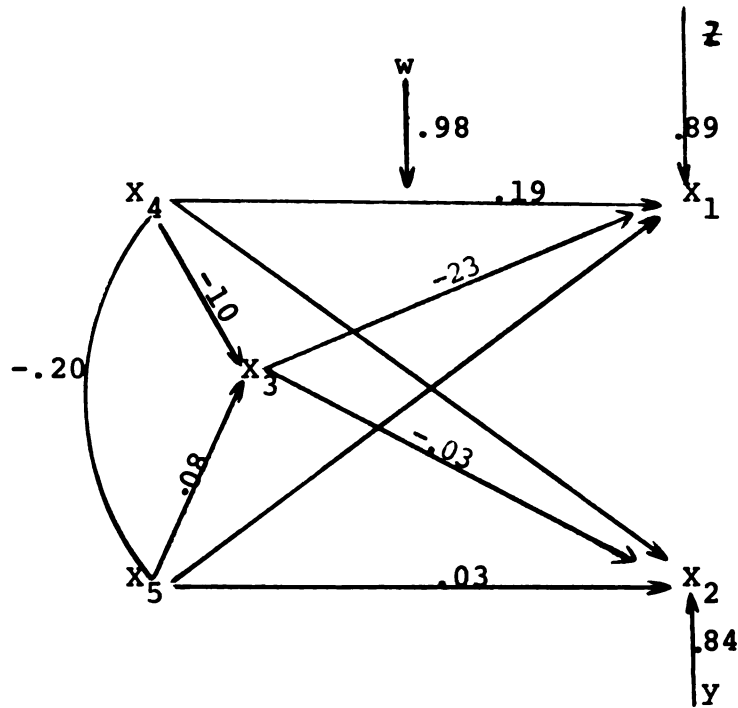
some use a stimulus-based definition of stress while still others use an organism-environment transaction definition of stress (for detailed review of these different definitions of stress see McGrath, 1970). The introduction of the concept stress into the life sciences is largely attributed to the work of the endocrinologist, H. Selye (Apply and Trumbull, 1967). Selye's definition of stress is essentially a response definition. Since he finds ample and solid evidence for the occurrence of stress following any noxious stimuli or any emotion (Selye, 1956) using a response definition of stress, a response definition will be pursued here. Selye, however, measures stress in terms of physical and chemical body changes. For Selye, "crossing a busy intersection, exposure to a draft or even sheer joy are enough to activate the body's stress mechanisms to some extent" (Selye, 1956, p. vii). Since any emotion produces the same physiological response, it is suggested here that the presence of these chemical and physical body changes can be evidenced by the expression of any emotion. Stress here, then, refers to a state which may be evidenced by the observation of any emotion, such as anxiety, agitation, surprise, fear, delight, etc. It is not a state of relaxation. Stress here is used to mean social psychological stress. It is essentially a state of emotional arousal.

1.5 Path-Analytic Representation of Hypotheses

The specific hypotheses are represented in Figure 1 where the arrows indicate the direction of the relationship. Figure 1 is not a complete model. It simply represents a pictorial graph of the substantive hypotheses this thesis is concerned with. The model will be made more complicated later by the inclusion of several control variables. The rationalization for the inclusion of these control variables will be discussed in the Methods Section. It is hypothesized that level of influence (X4) and variance in influence (X5) are positively related to level of stress (measured in two ways) (X1, X2). As suggested earlier, however, it is not clear whether inconsistent experiences cause stress which motivate a person to change or whether inconsistencies create forces toward consistency which, if thwarted, cause stress. In other words, a possible interpretation of Heider's model might suggest that stress results from a failure to resolve the unbalanced situation. Following from this position, it might be suggested that attitude change is stress reducing. In any event, it might be hypothesized that attitude change is positively or negatively related to stress. For convenience, the path-analytic framework adopted here will indicate a relationship from attitude change to stress with the realization that the relationship may be from stress to attitude change. The sign of the relationship should be detected by the path analyses, which

Model 1

An Illustrative Path Model: Hypotheses with Exogenous Variables Removed (N=38)



- X_1 = Stress Observed
- X_2 = Self-reported Stress at Time 2
- X_3 = Attitude Change
- X_4 = Level of Influence
- X_5 = Variance in Influence

Figure 1. Path diagram representing the dependency of stress (measured in two ways) on variance in influence and attitude change.

would then lend support to one or the other direction.

1.6 Summary

In this thesis, an experimental lab procedure is suggested to study whether stress varies with level of influence, variance in influence and attitude change. In the next session, a description of the actual design and the methods and procedures used will be presented.

CHAPTER II

METHOD

2.1 Overview

In general, subjects were randomly assigned to three-person groups and treated to varying levels of the independent experimental variables, variance in influence sources and level of influence, to see if individual stress varied in the manner hypothesized. Each group met in a small group experimental lab for a five-minute discussion. Two members of the three-person group were confederates so that the treatment could be varied systematically. Three persons seated behind a one-way mirror recorded the stress level of the subject (see Section 2.4 for training of coders and the Results Section for reliability of this measure). In addition, each individual recorded his/her level of stress during and after the experiment on a questionnaire administered immediately after the five-minute discussion.

2.2 Experimental Design

The purpose of the design is to see if stress varies positively with increasing levels of influence and variance in influence. Since level of influence is dependent upon the subject's pre-existing attitude, random assignment to

levels of this variable is not possible. Subjects were, however, randomly assigned to combinations of confederate's positions; that is, subjects were randomly assigned to conditions within a 4 x 2 design (Table 1). Hence the confederate's position is the manipulated variable.

Table 1. Experimental Design: Number of Subjects Per Condition

Confederate B's position	Confederate A's position	
	Strongly opposed	Strongly in favor
Strongly opposed	5	5
Opposed	5	5
Favor	5	5
Strongly in favor	5	4

2.21 Design Considerations. In carrying out the design it was necessary to choose an attitude to be discussed by the three-person group. There were several requirements in this selection. First, since the level of influence was dependent on the position of the subject, it was desirable to have an attitude that was fairly well distributed to insure variation in this variable. Secondly, it was desirable to have an attitude that subjects would be able to converse on for five minutes. Thirdly, we wanted an attitude that subjects, experimenters and confederates would be interested in and concerned about. The women's movement was suggested and agreed upon as a topic that met these criteria.

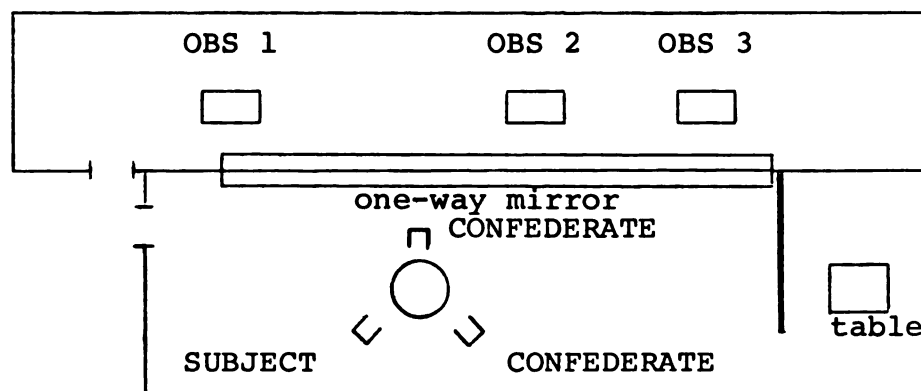
Further, it was desirable to create a design that would maximize the chances for variance in the independent variables while at the same time taking into consideration the fact that the anticipated total sample size was only 40. Allowing 5 cases per cell, a 2 x 4 design was created (Table 1). The positions of the confederates in the 2 x 4 design that would maximize the variance in the independent variables were found to be strongly in favor and strongly opposed for one confederate and strongly in favor, in favor, opposed and strongly opposed for the other.

2.22 Manipulation. The variable manipulated in this study was confederate's position. Three third-year white male undergraduates working for independent study hours served as confederates.¹ Each was randomly assigned to a 2 x 4 design (Table 1). They were unaware of the hypotheses. Each confederate learned a set of arguments for each position. The training procedures of the confederates can be found in Appendix H.

2.23 Pretest. A premeasurement questionnaire (Appendix A) was administered to approximately 60 students in a Communication 205 Persuasion class for the purpose of seeing how the attitude under consideration was distributed. The likelihood of having all conditions filled depended upon the distribution of the attitude. The attitude was found to be distributed in this way: six subjects were strongly in favor, twenty were in favor, seven were neutral, four were

opposed, and two were strongly opposed.² The following variables measured in the pretest were analyzed in this thesis: sex, grade point average, number of credit hours, level of health, and subject's level of stress (time 1 pretest measure).³ Following the administration of the pre-measurement questionnaire, students were invited by the instructor to participate in a communication experiment for class credit. Of the 60 students who filled out the questionnaire, 39 volunteered to participate in the experiment. No mention was made that the communication experiment was related to the questionnaire just filled out.

2.24 Facilities and Apparatus. The experiment was conducted in the MSU Department of Sociology's small group laboratory. The room was an appropriate size for a three-person discussion group. Three comfortable chairs and a coffee table were used. A two-way mirror with nylon see-through curtains covered the wall facing the subject. A room divider was used to hide a listening device for observers seated behind the two-way mirror. The discussion room looked like this:



2.25 Experimental Procedure. Each subject was telephoned prior to the scheduled session and reminded of the time and place of the experiment (Appendix B). The receptionist⁴ introduced himself as each subject entered and requested that each subject (and confederate) fill out a card with his/her name and position toward the women's movement. The subjects were told that the cards and pencils were located in the adjoining room. After the three-person group was assembled in the adjoining room, the receptionist led them to the experimental room (for instructions to receptionist, see Appendix C). Before each session, the three-person discussion group was read the set of instructions⁵ and cover story (Appendix D). In brief, they were told that the experiment involved an attempt to identify the underlying dimensions of communications and they were asked to talk about the women's movement for five minutes. Following the discussion each volunteer was asked to complete a questionnaire and was interviewed.

2.26 Posttest. Immediately following the three-person interaction, subjects were requested to fill out two questionnaires. The first of the two post-discussion questionnaires measured the subject's self-reported level of stress during the experiment and the level of stress they perceived each confederate as exhibiting. It also served as a validity check on the independent experimental variables in the sense that they were asked to identify the

positions of the other two participants in the experiment. A number of questions concerning reaction to the experiment were also included (see Appendix E). The second post-discussion questionnaire measured the volunteer's self-reported level of stress after the experiment and included various attitude position measures from the pretest questionnaire (see Appendix F). The subjects were interviewed and debriefed (Appendix G) by the experimenter following completion of the questionnaires.

2.27 Ethical Considerations. There are three ethical considerations. The subjects were misinformed about the nature of the study, they were not told about the confederates, and they were not told about the observers. It was necessary to use the above deception for the following reasons. First, it is unlikely that subjects would act spontaneously if they knew the true purpose of the experiment, if they knew the other two discussants were confederates, and if they knew about the observers. Second, it was necessary to use confederates in order to systematically vary the independent variables. Third, it seemed necessary to use hidden observers to record the dependent measure stress. All subjects were debriefed immediately following completion of the post-discussion questionnaire (Appendix G). Following the debriefing, subjects were asked (1) if they had any questions, (2) if they could think of any way in which the experiment could be improved, (3) if they felt in any way uncomfortable

about any aspect of the experiment, particularly the use of the observers, and (4) what their feelings were about the confederates. It seemed that no one left the debriefing with any uncomfortable feelings about the experiment.

2.28 Subjects. The subjects were 39 undergraduate volunteers from a Communication 205 Persuasion class. They were given credit in this class for their participation. Each subject filled out one 45-minute, pretest, in-class questionnaire; participated in a five-minute, three-person discussion group; and filled out two post-discussion questionnaires. The first post-discussion questionnaire took approximately 10 minutes to complete and the second about 15-20 minutes. Each subject was interviewed and debriefed by the experimenter.

2.3 Creation of Independent Experimental Variables

2.31 Level of Influence is represented by the absolute value of the discrepancy between the attitude held by the individual and the average of the attitudes held by the confederates. The discrepancy in views between the individual and others was arranged using one subject and two confederates (see Appendix H). First, both subject's and confederate's positions were measured on five point scales. The formula for level of influence is

$$\text{Level of Influence} = \left| \frac{C1 + C2}{2} - A \right|$$

where C1 = Confederate 1's position

C2 = Confederate 2's position

A = The volunteer's attitude position.

This variable is determined immediately before the experiment. This variable was coded and analyzed in two ways. The regression analysis reported here uses the above measure. The results of the above measure were also dichotomized to yield low and high level of influence. High level of influence is represented by a level of influence greater than 1-1/2 units. Low level of influence is represented by values less than and including 1-1/2 units. These figures are reported in Tables 4 and 5.

2.32 Variance in Influence is the absolute value of difference between the two confederate's positions. The regression analysis reported here uses this value. In addition, these values were dichotomized to yield low and high variance in influence. A difference of more than two units represents the high discrepancy condition; a difference of two units or less represents the low-discrepancy condition. These figures are also reported in tables 4 and 5.

2.4 Measurement of Other Variables

2.41 The third variable, attitude change, is measured by subtracting an individual's attitude measured immediately before the experiment from the attitude measured immediately

after the experiment. Attitude toward the women's movement was measured using the following scale: strongly in favor, in favor, neutral, opposed, strongly opposed.

2.42 The dependent variable, stress, was measured in two ways: First, three observers, seated behind a one-way mirror, recorded the volunteer's average anxiety level during a five-minute discussion (which took place in a small experimental lab) between the volunteer and two confederates. The method of scoring is based on this item: "If zero (0) represents no emotion and 100 represents the amount of emotion exhibited in an average interaction, how much emotion is being exhibited by the subject?" (cf. Hamblin, 1974) (for coder training, see Section 2.4). In addition to this observational measure, a self-reported measure of stress was taken at three points in time. The first self-reported measure was taken during the pretest. The second was taken in the second post-discussion questionnaire. The stress item on each of the questionnaires was worded in the same way as the item used by the observers in scoring the subject.

For the background variables, volunteers were asked to indicate their grade-point average, sex and number of credit hours on the pretest questionnaire. In addition, level of health was measured on the pretest questionnaire using the following item: "If zero (0) represents the absence of health (death) and 100 represents the amount of health you feel on an average day, how healthy do you feel

now? Remember, if you feel less healthy than average, write a number less than 100. If you feel healthier than average, write a number larger than 100. You can write any number you want" (cf. Hamblin, 1974).

2.5 Coder Training

The three observers were selected out of 15 students who volunteered for the pilot study. They were selected on the basis of their availability to meet at pre-specified times. The observers were two female and one male upper-level undergraduates. In the pilot study, they performed as observers for class credit. In the experiment, one performed as an observer for class credit and two performed as volunteers. The same observers were used in the pilot study and experiment. The coders met for four 1-hour sessions, one 90-minute session, and they met briefly again for 45 minutes before the trial experiment began for training purposes. The coders again met for a 1-hour review following the pilot study and before the actual experiment.

The first three training sessions were run by a doctoral student in the Department of Communication. Before the first training session, the observers were told that they were to judge the emotional level of a number of subjects in an experimental setting. On a number of occasions, the trainer stressed the importance of the judgments they were to make: they were told that the measure of anxiety was the dependent variable of the study, and without it, the study

would be meaningless.

The following is a description of the training sessions which took place over a two-week period.

Training Session One (1 hour): In this session, the trainer explained the measurement system that was to be used. The coders were told to consider 100 units as the amount of emotion was considered zero units. To illustrate how the measuring system was to be applied, the coders were told that if an interaction was twice as emotional as an average interaction, it was to be scored twice as high, or 200 units; if the interaction was half as emotional, it was to be scored half as high, or 50 units. Likewise, if the interaction was three times as emotional, it would be scored three times as high, or 300 units.

The subjects were to discuss their position on the women's movement. The coders were told they were to judge each subject on the over-all level of emotion exhibited during the five-minute interaction with two confederates. The coders were not told the hypotheses. One coder by accident, however, did know about the attitude change hypothesis.

Different non-verbal and verbal cues for measuring emotion were then discussed and a list of possible cues was constructed.

Several people then role played different positions of the women's movement having the observers focus on one of us. After each coder recorded his/her score, the cues

used to determine the score were discussed in an attempt to reach a consensus as to which score was most appropriate.

Training Session Two (1 hour): The scoring procedures and the verbal and non-verbal measures of emotion used at the previous training session were reviewed. During this session, five different positions were role played by various faculty and graduate students in the Department of Communication. The coders focused on one person at a time and after each coder recorded his/her score, the basis for that score was discussed.

Training Session Three (1 hour): Again the measurement system and the verbal and non-verbal measures of emotion so far used were reviewed. Five positions were again role played by different members of the Department of Communication with the coders focusing on one person in arriving at a score. These scores were then discussed in an effort to arrive at a consensus.

Training Session Four (90 minutes): For this meeting, the coders met to discuss which of the two available labs would be used for the experiment. One of the labs was ruled out because it was considered too large and too cold a setting. In addition the one-way mirror was too large and therefore might evoke suspicion.

Training Session Five (90 minutes): The coders met in the small group lab. The measurement system was again reviewed and the verbal and non-verbal measures of stress discussed.

The coders and experimenter each role-played positions and discussed the scores in an attempt to arrive at a consensus. In general, the verbal and non-verbal measures of stress included fast or loud talking, twitching, darting eyes, a lot of body movement, biting fingernails, playing with pen, book, hair, etc., leaning forward to hear or say something, frequent hand gestures, eye contact avoidance, giggling, verbal non-fluencies and errors of speaking.

Training Session Six (45 minutes): The coders met with the experimenter for a brief review. There was one last review session the beginning of the week of the actual experiment.

FOOTNOTES

- ¹The three confederates were upper-level communication majors.
 - ²Seven people changed attitude positions from the pretest to immediately before the experiment. Two males changed their position from opposed to strongly opposed, moving both of them from a low level of influence, high-variability condition to a high level of influence, high-variability condition.
 - ³Other variables measured in the pretest but not included in this analysis include age, socioeconomic status, nervousness, hours spent talking about the women's movement, and perception of the media's attitude toward the women's movement.
 - ⁴An upper-level undergraduate enrolled in Communication 205 served as receptionist. He did not know the hypotheses.
 - ⁵An undergraduate audiology major enrolled in Communication 205 read the set of instructions. She did know the hypotheses.
- .

CHAPTER III

RESULTS

This chapter will present information on the effectiveness of the manipulation, the reliability of measures and the effects of the independent variables.

3.1 Effectiveness of Manipulation

Two items on the post-discussion questionnaire served as checks on the manipulation of the confederates' positions. Subjects were asked to identify the positions of the other two discussants. All but four of the subjects were able to correctly identify these positions. Each of the four subjects misidentified only one of the two confederates' positions by one scale unit on the Likert attitude scale.

3.2 Reliability Estimates

Two procedures were used to estimate the reliability of the coders. These include an intercoder reliability correlation and Cronbach's reliability coefficient (α) (Bohrnstedt, 1969), an overall measure of internal consistency. Cronbach's alpha yields a value of 1 if the items are perfectly related and a value of zero if the items are totally unrelated. It measures the extent to which the items are parallel in the sense of being related to the same underlying true score.

The correlation between Observer 1 and Observer 2 is .54. Cronbach's reliability coefficient is .70. The third observer's scores were dropped from the analysis because, due to a death in her family, she was unable to score 15 of the participants.

3.3 Analytical Procedures

The means, standard deviations and ranges of each variable in the hypotheses and of the exogenous variables are presented in Table 2. The mean self-reported level of stress from the premeasurement questionnaire at time 1 (X6) is 113.1; during the experiment at time 2 (X2) is 109.5; and after the experiment at time 3 (X13) is 115.6. The mean stress level of one confederate as perceived by the participants (X11) is 112.0, which is slightly higher than the mean stress level of the other confederate (X12), which is 107.3. The mean grade point (X7) is 2.9, and the mean number of credit hours (X8) is 15.

The most important finding in this table appears to be the mean absolute value of attitude change (.10), indicating that very little change was detected by the measurement scale used. In fact, only 4 volunteers changed position. Since so little variance was measured in attitude change (either because no attitude change did occur or because the measurement scale used was too crude to measure any change), all statistics involving the relationship of attitude change with any other variable must be taken as unreliable. It may

Table 2. Means, Standard Deviations, and Maximum and Minimum Values for Each Variable (N = 38)

Variable		Mean	Standard Deviation	Max.	Min.
X ₆	Self-reported stress at time 1 (Pretest)	113.1	55.7	342	17
X ₂	Self-reported stress at time 2 (during experiment)	109.5	40.4	285	78
X ₁₃	Self-reported stress at time 3 (after experiment)	115.6	40.2	300	40
X ₁	Stress Observed	122.4	9.8	162	105
X ₁₁	Stress of Confederate 1*	112.0	42.3	285	50
X ₁₂	Stress of Confederate 2*	107.3	34.9	265	50
X ₇	Grade Point Average	2.9	.5	3.7	1.8
X ₈	Credit Hours	15.4	2.6	23	10
X ₉	Sex--Female = 1 Male = 2	1.4	.5	22 females 16 males	
X ₁₀	Health	177.8	218.0	1000	50
X ₃	Attitude Change	.1	.3	1	0
X ₄	Level of Influence	1.5	.8	2	0
X ₅	Variance in Influence	2.0	1.7	4	0

* These variables refer to the amount of emotion exhibited by the confederates as perceived by the subject.

be the case that attitudes toward the women's movement are too important and massive to change much in a five-minute interaction. Perhaps a more potent force to change, or more time, is necessary for attitude change to occur. Since it

is hard to produce much change in such an important attitude, a more precise measuring scale may be needed for the small change that may have occurred.

Table 3 presents the mean stress observed scores by level of variance in influence and level of influence. There appears to be a slight increase in mean observed scores (mean difference is 6.1) for those persons in the high level of influence condition, and no difference (mean difference is .6) between those persons in the high and low variance in influence condition. The statistical significance of these findings will be discussed in terms of the regression analysis.

Table 3. Mean Observed Stress Scores by Level of Variance in Influence and Level of Influence (N = 38)

Level of Influence	<u>Level of Variance in Influence</u>					
	<u>Low</u>			<u>High</u>		
	Mean	N	Standard Deviation	Mean	N	Standard Deviation
Low	120.7	10	6.9	119.9	14	8.9
High	125.4	10	9.4	127.4	4	18.4

Table 4 presents self-reported stress scores by level of variance in influence and level of influence. There appears to be no difference between those persons in the high and low variance in influence and level of influence condition (mean differences are .33 and 3 respectively).

Table 4. Mean Self-reported Stress Scores by Low and High Variance in Influence and Level of Influence (N = 28)

Level of Influence	<u>Level of Variance in Influence</u>					
	Low			High		
	Mean	N	Standard Deviation	Mean	N	Standard Deviation
Low	108.3	10	28.9	107.7	14	62.4
High	112.0	10	10.9	110.0	4	17.8

Table 5 presents the zero-order correlation coefficients for the variables investigated in this thesis. For the first hypothesis, which is stress is positively related to level of influence; the correlation using the self-reported measure of stress is .15, and the correlation using the stress observed score is .24. Squaring these correlations indicates that virtually no variance in the dependent variable stress (measured in two ways) is explained. The correlations for the second hypothesis, which is stress (measured in two ways) is positively related to variance in influence, are both negative. The correlation between the self-reported measure of stress and variance in influence is $-.01$, and the correlation between mean observed stress and variance in influence is $-.19$. Again, the squared correlations indicate essentially no variance explained in the dependent variable stress. Since only four persons changed views and since virtually no variance was explained, the direction of the relationship between stress and attitude change will not be

Table 5. Correlation Matrix for Variables in the Hypotheses Plus the Exogenous Variables
(N = 38)

	X ₆	X ₂	X ₁₃	X ₁	X ₁₁	X ₁₂	X ₇	X ₈	X ₉	X ₁₀	X ₃	X ₄	X ₅
X ₆ Self-reported stress at time 1 (Pretest)	1												
X ₂ Self-reported stress at time 2 (during experiment)	.16	1											
X ₁₃ Self-reported stress at time 3 (after experiment)	.35	.21	1										
X ₁ Mean Stress Observed	.18	-.03	.13	1									
X ₁₁ Stress of Confederate 1	.04	.81	.11	-.01	1								
X ₁₂ Stress of Confederate 2	.19	.61	.09	-.18	.59	1							
X ₇ Grade Point Average	-.32	.18	-.16	.08	.20	.10	1						
X ₈ Credit Hours	-.29	-.24	.10	-.25	-.15	.05	-.09	1					
X ₉ Sex	-.32	.06	-.35	-.07	.17	.03	-.19	.00	1				
X ₁₀ Health	.63	.07	-.36	-.01	-.03	.06	-.29	-.26	-.04	1			
X ₃ Attitude Change	.16	-.03	-.19	-.23	-.10	-.06	-.03	-.13	-.12	.23	1		
X ₄ Level of Influence	.35	.15	.38	.24	.20	.22	-.16	.24	-.13	-.10	-.12	1	
X ₅ Variance in Influence	-.09	-.01	-.16	-.19	.19	.13	.44	.05	.03	.00	.10	-.20	1

discussed. Further investigation of the zero-order correlation matrix shows two unexpected high correlations. A high correlation is shown to exist between self-reported stress and the subject's perceived stress level of the confederates. The correlation between self-reported stress and perceived stress level of confederate 1 is .81 and the correlation between self-reported stress and perceived stress level of confederate 2 is .61. The correlation table, however, is representative only of zero-order relations. The following path model (Figure 2) shows more explicitly the theory suggested. The diagram represents the hypothesized dependence of stress (measured in two ways) on variance in influence, level of influence, sex, health, credit hours, grade point average, attitude change and stress at time 1 (measured during pretest); the dependence of attitude change on variance in influence and level of influence; and the dependence of self-reported stress at time 1 on grade point average, credit hours, sex and health.

3.31 Path Model Tested. The results of the first regression analysis (self-reported stress regressed on level of influence, variance in influence, attitude change, stress at time 1, grade point average, credit hours, sex and health) yield an R^2 of .18, which is not significantly different from zero. This indicates that most or all of the variance in the dependent variable is accounted for by variables not included in the equation. None of the paths is significant.

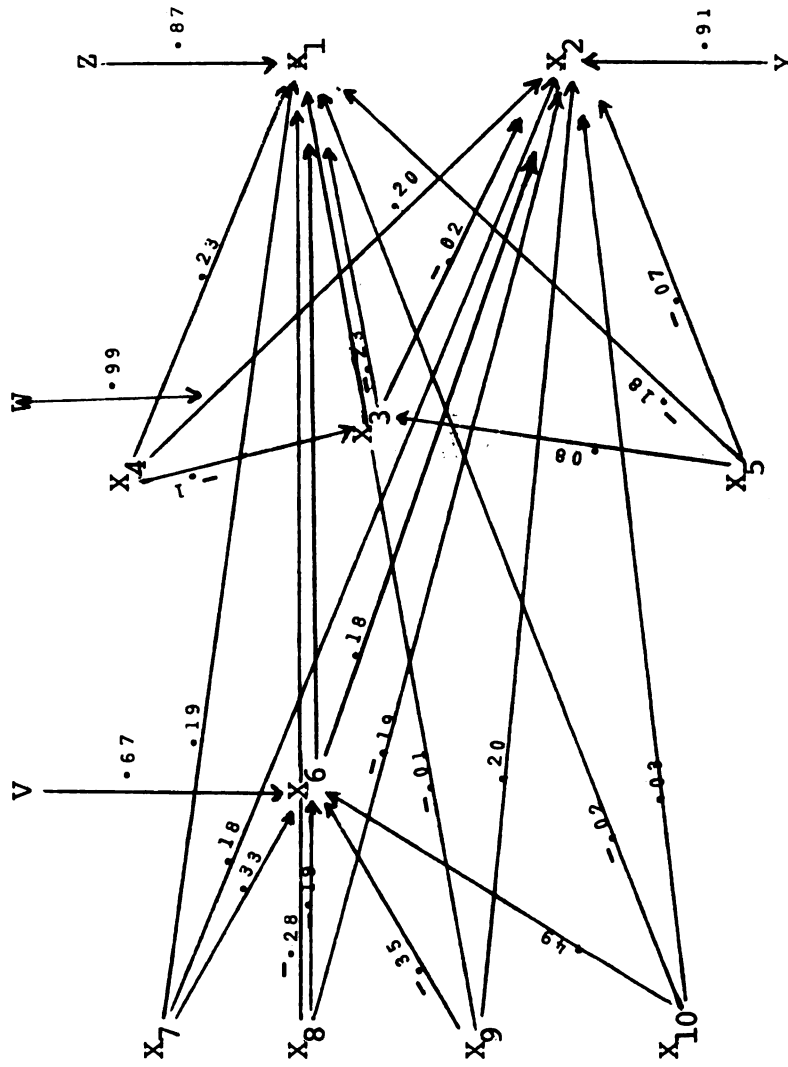


Figure 2. Model 2. Path diagram representing the dependence of stress on variance in influence, level of influence, sex, health, credit hours, grade point average; the dependence of attitude change on variance in influence, level of influence; and the dependence of stress at time 1 on health, sex, credit hours and grade point average.

- X₁ Mean Stress Observed
- X₂ Self-reported stress at time 2
- X₃ Attitude Change
- X₄ Level of Influence
- X₅ Variance in Influence
- X₆ Self-reported stress at time 1
- X₇ Grade Point Average
- X₈ Credit Hours
- X₉ Sex
- X₁₀ Health

The R^2 , .25, for the second regression equation (mean stress observed regressed on level of influence, variance in influence, attitude change, stress at time 1, grade point average, credit hours, sex and health) is also not significant. Several paths in this equation are significant although the amount of variance explained by any one of them is negligible (Table 6) (Cohen and Cohen, 1975, p. 108-109).

The results of the third regression equation indicate the R^2 to be .02 and not significant. The paths for change observed regressed on level of influence and variance in influence are $-.10$ and $.08$ respectively. None of these paths is significant. The one significant regression equation in this model involves stress at time 1. The predictor variables of sex, credit hours, grade point average and health together account for 55 percent of the variance in stress at time 1. However, the variance in the health measure makes the statistical significance test unreliable.

The data do not support the hypotheses. No significant portion of variance is explained in stress (measured in both ways) by level of influence, variance in influence and attitude change. The unique contribution of level of influence on self-reported stress is $.04$; the unique contribution of variance of influence on self-reported stress is $.05$. The unique contribution of variance in influence on mean stress observed is zero and the unique contribution of variance in influence on mean stress observed is $.03$. The

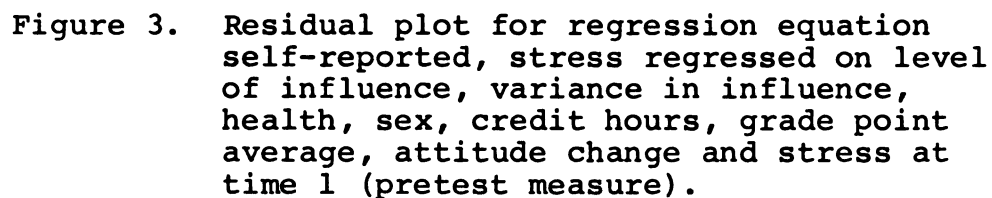
Table 6. Path Coefficients and Multiple Correlations for Equations in Original Model of Hypotheses and Exogenous Variables (Model 2) (N = 38)

Independent Variables		Dependent Variables			
		X ₆	X ₃	X ₁	X ₂ Stress Self- reported
		Observed			
X ₇	Grade Point Average	-.26*		.19	.32
X ₈	Credit Hours	-.19		-.28**	-.19
X ₉	Sex	-.35*		-.01**	.20
X ₁₀	Health	.49**		-.02**	.03
X ₆	Self-reported stress at time 1 (Pretest)			.11*	.18
X ₄	Level of Influence		-.10	.23*	.20
X ₅	Variance in Influence		.08	-.18*	-.07
X ₃	Attitude Change			-.23**	-.02
Residual Paths		.67	.99	.87	.91
Multiple R		.74**	.14	.50	.42

*
p ≤ .05
**p ≤ .01

unique contribution of attitude change on self-reported stress is .05 and on mean stress observed is 0.0.

By inspection, the residuals for each regression equation appear to be randomly distributed (see Figures 3, 4, 5 and 6). Haitovsky's test (Rockwell, 1975) was used to determine the severity of multicollinearity among the



Model II Residual Plot

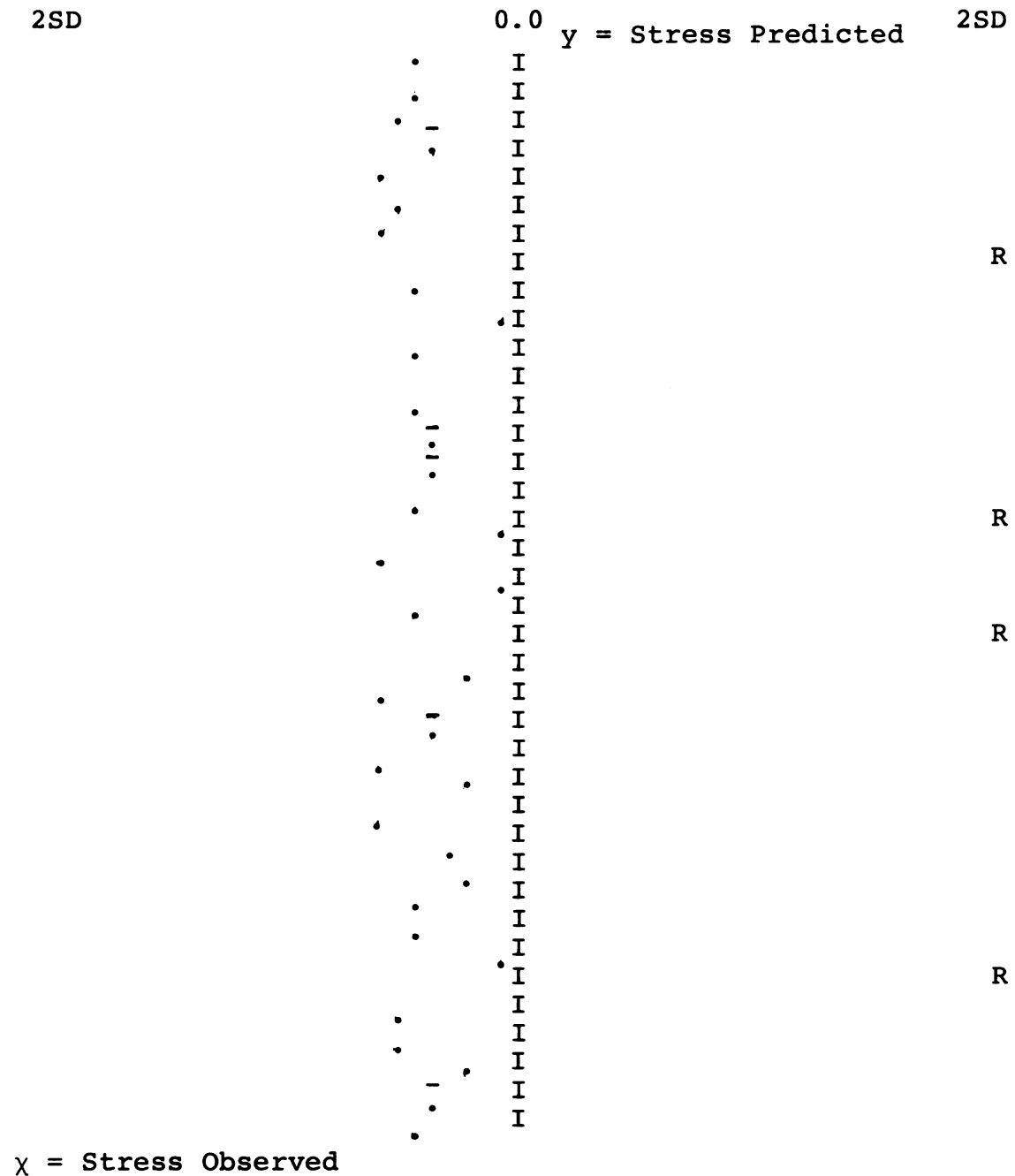


Figure 5. Residual plot for regression equation for attitude change regressed on level of influence and variance in influence.

Model II Residual Plot

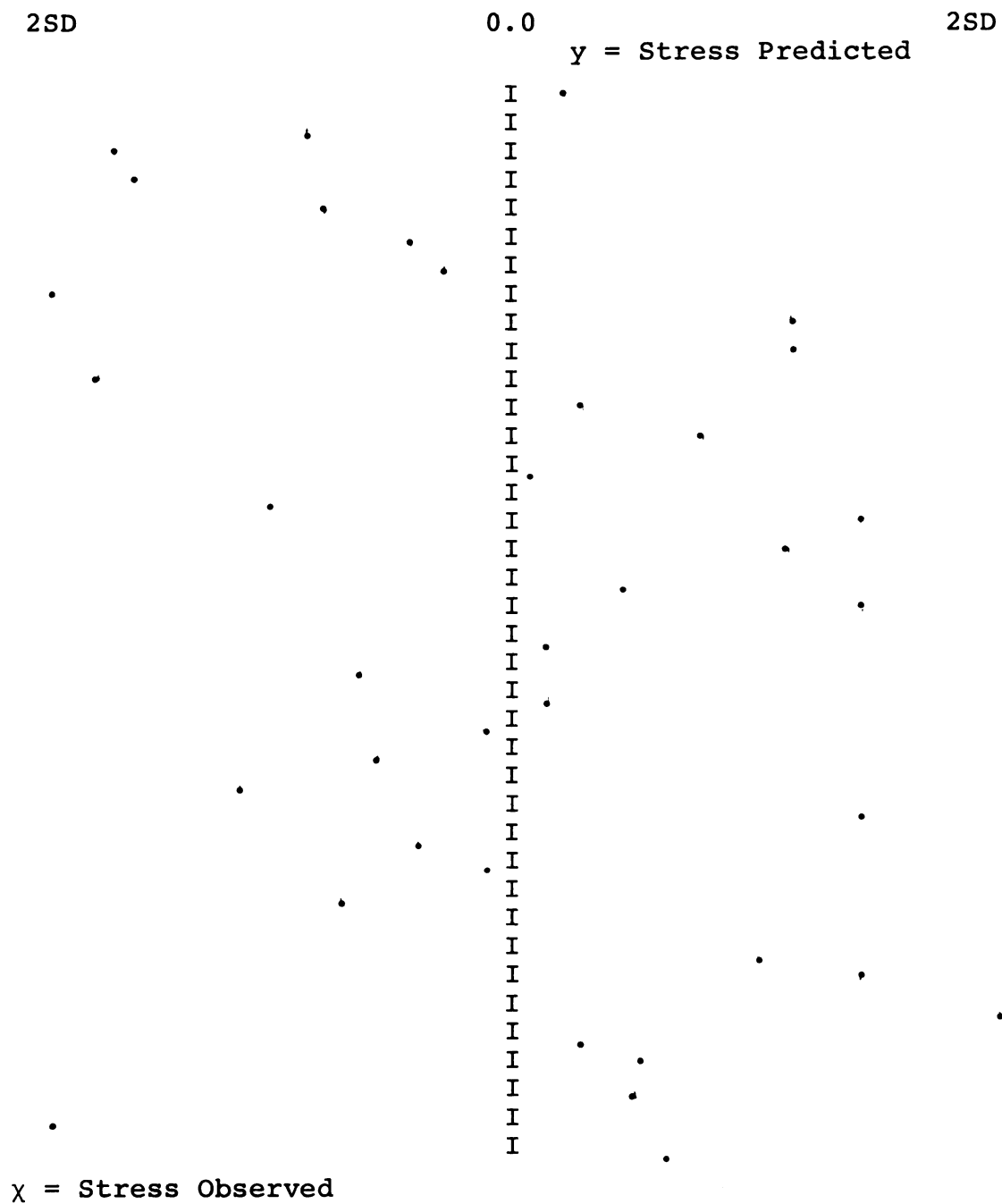


Figure 6. Residual plot for regression equation self-reported stress at time 1 regressed on credit hours, grade point average, health and sex.

exogenous variables and among the residuals. The larger the magnitude of the determinant, the lower the interdependence among the variables. The determinant of the residual correlation matrix, .771, is significant at the .001 level (see Table 7); and the determinant of the exogenous variable correlation matrix, .998, is significant at the .001 level (see Table 8). It appears, therefore, that interdependence among the variables is not a problem.

Table 7. Correlation Matrix of Residual Terms with Haitovsky's Test of the Determinant (N = 38)

	v^a	w^b	y^c	z^d
V	1	.23	.43	.24
W	.23	1	.26	-.22
Y	.43	.26	1	-.12
Z	.24	-.22	-.12	1
Determinant = .771 significant at .001 level				

a = Residual for equation stress at time 1 regressed on sex, grade point average, credit hours and health.

b = Residual for equation attitude change regressed on level of influence and variance in influence.

c = Residual for equation self-reported stress regressed on attitude change, level of influence, variance in influence, stress at time 1, sex, grade point average, credit hours and health.

d = Residual for equation mean stress observed regressed on attitude change, level of influence, variance in influence, stress at time 1, sex, grade point average, credit hours and health.

Table 8. Correlation Matrix of Exogenous Variables with Haitovsky's Test of the Determinant (N = 38)

Exogenous Variables		X ₄	X ₅	X ₇	X ₈	X ₉	X ₁₀
X ₄	Level of Influence	1	-.21	-.16	.24	-.13	-.10
X ₅	Variance in Influence	-.21	1	.44	.05	-.03	.00
X ₇	Grade Point Average	-.16	.44	1	-.09	-.19	-.29
X ₈	Credit Hours	.24	.05	-.09	1	.00	-.26
X ₉	Sex	-.13	-.03	-.19	.00	1	-.04
X ₁₀	Health	-.10	.00	-.29	-.26	-.04	1
Determinant = .998 significant at .001 level							

While we know that the equations produced for the above model are the best-fitting linear equations for the data, the coefficients of alienation (Table 6) show that none of the structural equations fit the data very well. Most of the variance is explained by elements not in the model. Model 2, then, fails to fit the data.

3.32 Alternative Model. Analysis of the zero-order correlation matrix suggests a plausible alternative interpretation of the data and is presented in Model 3 (Figure 7). In this model, the dependent variable, self-reported stress, is regressed on the stress level of confederate 1 and confederate 2 (as perceived by the subject). The path coefficients are .68 and .21 respectively. Fifty-one

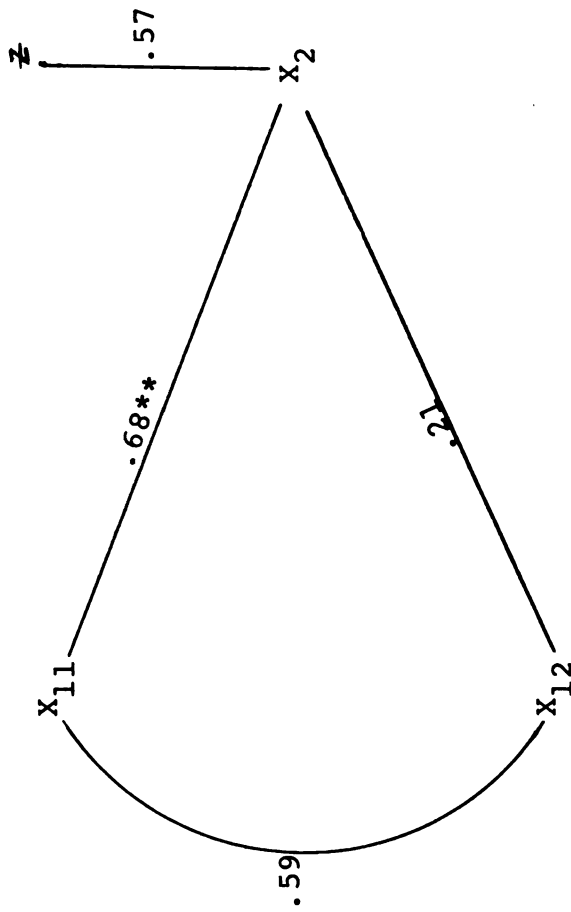


Figure 7. Model 3. Path diagram representing the dependence of self-reported stress on stress level of confederate 1 and stress level of confederate 2 as perceived by the subject.

X_2 = Self-reported stress

X_{11} = Stress level of confederate 1 as perceived by subject

X_{12} = Stress level of confederate 2 as perceived by subject

Multiple $R = .82^*$
 $R^2 = .68$

 *significant at
 .001 level

percent of the variance in self-reported stress is explained by the level of stress exhibited by each of the two confederates. The amount of explained variance shared by the two confederates is .17. The total amount of variance explained is 68 percent. All of the above coefficients are significant at the .001 level. Much of the variance in stress then seems to be explained by the stress level of the confederates as perceived the by subject.

CHAPTER IV

CONCLUSIONS

The findings and problems of this research are summarized and discussed here. In addition, suggestions for future research are offered.

4.1 Summary of Findings

Mettlin and Woelfel (1975) report a positive relationship between stress and variance in educational and occupational influence. The total amount of variance in stress accounted for by variance in educational influence and occupational influence is .12. The statistical significance is not reported. The experimental results reported here on tests of this hypothesis do not support their findings. These results indicate a unique contribution of variance in influence on stress of less than .05. However, Mettlin and Woelfel considered occupational and educational influences from significant others, while this study considered variance in influence on the women's movement from two strangers. It is possible that variance in influence may have to be mediated through significant others in order to significantly affect the subject in terms of changing attitudes and/or level of anxiety experienced. Also, the attitude, women's movement, may not have

been as important to the participants as the study originally anticipated.

For the second hypothesis, Mettlin and Woelfel report a negative relationship between stress and level of educational and occupational influence. However, in their study the unique contribution of level of occupational influence is 0.0, and the unique contribution of level of educational influence is .03. The experimental results reported here on tests of this hypothesis indicate the unique contribution of level of influence on stress to be less than .05. Neither study, therefore, lends support to the hypothesis that stress is positively related to level of influence.

The third hypothesis suggested is that stress is positively related to attitude change. As already mentioned, the amount of attitude change observed was too small to reliably test this hypothesis.

On the basis of some high correlations observed in the correlation matrix, an alternative model was constructed involving the regression of self-reported stress on the level of stress of each confederate as perceived by the subject. These two variables (perceived level of emotion of each confederate) account for a substantial amount of variance in self-reported stress. In fact, these two variables account for 68 percent of the variance in self-reported stress.

4.2 Discussion

An alternative model that might explain these experimental results is a contagion model. People may evaluate their own feelings by comparing themselves to others around them. This explanation of these results is consistent with the findings of Schachter and Singer (1962). Schachter and Singer found that people who are in a state of physiological arousal and are presented with an appropriate cognition for that state will use that cognition for describing their own state. It may have been the case that subjects were in an elevated state of physiological arousal simply because of participating in an experiment but identified that state only if presented with an appropriate cognition for it (the emotional level they perceived the confederates as exhibiting); or it may have been the case that subjects were responding to the demand characteristics of the study; that is, the subjects may have said they were stressed whether they were or not. Too, subjects may have developed a state of physiological arousal during the experiment when confronted with one or two confederates who they perceived as exhibiting emotion and identified their own state accordingly. It may be, too, that those subjects who reported higher levels of stress were presented with the appropriate cognition not during the experiment but later in the questionnaire item itself. For Schachter and Singer, both physiological arousal and an appropriate cognition have to be present before an emotion will

be identified. It is, of course, not possible to know the direction of causation in this exploratory model. It may be that subjects who reported higher stress levels picked up stress cues more readily than those subjects who reported lower stress levels.

4.3 External Validity Regarding Attitudinal Objects.

Each individual has a number of attitudes that are more or less important and each individual has a number of significant others who provide information for each of those attitudes. Level of influence is the sum of the differences between the individual's attitude and the average of the information provided to the individual by the significant others for each attitude. Variance in influence is the sum of the variances for each attitude. It is hypothesized that to the extent to which level of influence and variance in influence increases, stress increases. This experiment, however, operationalized these two theoretical variables by using only one attitude, the women's movement. It is not possible, then, to generalize these results across all possible values of level of influence and variance in influence.

4.4 Future Research

In this study it seems that the experimental manipulation created variation in another variable, emotion of confederates. In creating variation in level of influence and variance in influence, via the position of the confederates,

variation was created in the social expectation perceived by the subjects, who responded accordingly. These results indicate that any future research should control for the emotional level of the confederates. Although the emotional level of the confederates was measured in this study, it was measured indirectly, that is, via the subject's perception of the emotional level of the confederates. In addition, it was not included in the original model. A more direct measure of emotional level of the confederates should be included in the model.

In addition to controlling for the emotional level of the confederate, the issues discussed by the confederates in defense of each position should be more standardized. Although the initial statements were standardized, the confederates, in responding to the subject, chose any one of a number of arguments from a list of possible alternatives (Appendix H), which covered a wide range of topics on the women's movement. The discussion should have been confined to one topic so better standardization could have been possible. Further, as already mentioned, an attitude more important to the participants might be investigated.

Another item to be considered is the level of measurement used to measure attitude change. It might be the case that given an important attitude such as that toward the women's movement the amount of attitude change possible during a short interaction might be too small to be measured on

a category scale, particularly one with so few categories.

Another problem involves the training of the coders. The set of intercoder reliability correlations during the pilot study was .98, .91 and .93. The set of intercoder reliability correlations during the actual experiment was .76, .55 and .54. The training sessions were held immediately before the pilot study, which preceded the actual experiment by two months. Although a review was held immediately before the actual experiment, it was not as intensive as the training session held before the trial experiment. The length of time and number of sessions should have been as intensive for the actual experiment.

Also, the use of three-person groups in addition to the use of only one attitude limits the range of variation in the independent variable so the possibility of high or low threshold effects cannot be ruled out; that is, stress may be produced at more extreme values. However, because of ethical considerations only very small levels of stressor conditions can be produced.

4.5 Summary

A review of balance-type formulations indicated that most theories predict or assume an exposure to discrepant expectations gives rise to psychological stress which results in motivation to reduce stress through attitude change or other mechanisms. An experiment was devised in which subjects were exposed to varying levels of discrepant expectations.

The resulting stress levels, attitude changes and other related variables were measured. No support was found for the hypothesis that discrepant expectations yield increased levels of stress. Self-reported stress seemed better accounted for by a contagion model in which increased levels of stress in the subjects follow increases in stress levels of others with whom they interact. Several potential inadequacies in the experimental design were discussed but in general, should these findings be supported in future work, the notion that stress flows from discrepant expectations should be reexamined.

APPENDIX A
PRETEST QUESTIONNAIRE

APPENDIX A
PRETEST QUESTIONNAIRE

Variable Col.

ID#	1-4	1) ID# _____	2) NAME _____
Group#	5		
Wave#	6	3) Date _____	4) Telephone _____
Card#	7-8		
Age	9-10	5) Age _____	6) Sex _____
Sex	11		
Fatoc	12-13	7) Father's Occupation (what he does, not where he works) _____	
Motoc	14-15	8) Mother's Occupation (what she does, not where she works) _____	
GPA	16-18	9) Grade Point Average _____	
Height (inches)	19-21	10) Height _____ (11) Weight _____	
Weight (pounds)	22-24	12) How many credit hours are you carrying? _____	
Credit hours	25-26	13) If <u>Zero (0)</u> represents the <u>absence of health (death)</u> and <u>100</u> represents the <u>amount of health you feel on an average day</u> , how <u>healthy</u> do you feel now? Remember, if you feel <u>less healthy than average</u> , write a number <u>less than 100</u> . If you feel <u>healthier than average</u> , write a number <u>larger than 100</u> . You can write <u>any number you want</u> .	
Health	27-30		
Energy	31-34	14) If <u>Zero (0)</u> represents the <u>absence of energy</u> and <u>100</u> represents the <u>amount of energy you feel on an average day</u> , how much <u>energy</u> do you feel right now? Remember, if you feel <u>less energy than average</u> , write a number <u>less than 100</u> . If you feel <u>more energy than average</u> , write a number <u>larger than 100</u> .	
Emotion	35-38	15) If <u>Zero (0)</u> represents the <u>total absence of emotion (sleep)</u> and <u>100</u> represents the <u>amount of emotion you feel on an average day</u> , how much <u>emotion (any emotion--fear, anxiety, anger, happiness, etc.)</u> do you feel right now? Remember, if you feel <u>less emotion than average</u> , write a number <u>less than 100</u> . If you feel <u>more emotion than average</u> , write a number <u>larger than 100</u> .	

Variable Col.

- | | | |
|------------------|-------|---|
| Nervous-
ness | 39-42 | 16) If <u>Zero (0)</u> represents the <u>total absence of nervousness</u> and <u>100</u> represents the <u>amount of nervousness you feel on an average day</u> , how <u>nervous</u> do you feel right now? <u>Remember</u> , if you feel <u>less nervous than average</u> , write a number <u>less than 100</u> . If you feel <u>more nervous than average</u> , write a number <u>larger than 100</u> . |
| Time wm | 43-45 | 17) How many <u>hours a week</u> (on the average) do you spend <u>talking about</u> the women's movement?
_____ hours |
| Favor F | 46-49 | 18) If <u>Zero (0)</u> represents <u>complete indifference</u> and <u>100</u> represents an <u>average amount</u> , how much do most of your friends favor the women's movement? (If your friends are mainly <u>opposed</u> to the women's movement, write a <u>minus (-)</u> in front of your answer). |
| Media | 50-51 | 19) How many <u>hours per week</u> (on the average) do you spend <u>reading about</u> or <u>watching media about</u> the women's movement?
_____ hours |
| Favor M | 52-55 | 20) If <u>Zero (0)</u> represents <u>complete indifference</u> and <u>100</u> represents an <u>average amount</u> , how much does the media you read or watch favor the women's movement? (If the media you read or watch are mainly <u>opposed</u> to the women's movement, write a <u>minus (-)</u> in front of your answer. |
| Position | 56 | 21) What is your position toward the women's movement? (Circle one)

Strongly in favor
Favor
Neutral
Oppose
Strongly oppose |
| Posi- | 57-60 | 22) If <u>Zero (0)</u> represents <u>complete indifference</u> and <u>100</u> represents an <u>average amount</u> , how much do you favor the women's movement? (If you are <u>opposed</u> to the women's movement, write a <u>minus (-)</u> in front of your answer. |

APPENDIX B
TELEPHONE PROTOCOL

APPENDIX B

TELEPHONE PROTOCOL

Hi! My name is _____. I'm just calling to remind you about the experiment on communication patterns you volunteered to participate in. The experiment will begin at ____ (time) on ____ (date) at 300 Berkey Hall.

It is extremely important that you show up exactly on time because otherwise not only is a lot of our time wasted but in addition you would be wasting the time of two other volunteers like yourself. We do recognize, however, that sometimes things come up such that you absolutely cannot make it. In this case, let us know as soon as possible by calling either 355-0149 and 351-7289 and asking for Mary Woelfel.

The experiment will involve a five-minute interaction with two other volunteers from another class, the filling out of two questionnaires and an interview. It should take approximately 45 minutes of your time.

APPENDIX C
INTRODUCTIONS TO RECEPTIONIST

APPENDIX C

INSTRUCTIONS TO RECEPTIONIST

Be in the waiting room ten minutes before the first volunteer arrives. Pick up the time schedule for the next day's session. When a volunteer or confederate arrives, say to him/her: "Hi! I'm _____". Are you here for the communication experiment? May I have your name(s) please. We would like each of you to write your name and position towards the women's movement on a sheet of paper. There are papers and pencils in this room (open door). Would you fill out this information in here and bring it with you when I take you to the discussion room. Just indicate whether you are strongly in favor, in favor, neutral, opposed or strongly opposed to the women's movement."

If the confederates are not there when the volunteer arrives, don't wait. When the confederate(s) arrive, say the same thing. The confederates should never be treated differently than the volunteers. When all three are together, ask them to follow you to the experimental lab. Say: "Would you follow me please." Walk directly ahead and say nothing else. When you get to the lab, say: "Would you sit down please." They say, "This is Marcie. She will read the set of instructions to you." (Leave)

General

Be pleasant but not self-disclosing. It is ok to smile but don't laugh or engage in any conversation. Avoid communicating frustration, irritation or any emotion at all to subjects and confederates. Make no friendly gestures or eye-to-eye contact with subjects or confederates. Do not deviate from the text.

APPENDIX D

**INSTRUCTIONS TO BE READ TO DISCUSSANTS
(COVER STORY)**

APPENDIX D

INSTRUCTIONS TO BE READ TO DISCUSSANTS

The receptionist will bring three subjects to you (two of these three subjects will be confederates). Once they sit down, ask for the slips of paper with their position: "May I have the paper that has your position, please. Thank you." Then read the following instructions:

"The purpose of this experiment is to try to identify the underlying dimensions of communication. The notion that communication breaks down or can be explained by a relatively small set of factors has been suggested by several investigators. This experiment is an attempt to determine the extent to which intercommunication among members of a small group can be accounted for by a small set of underlying dimensions.

"We would like you to discuss the women's movement for five minutes. (Pause). We would like each of you to state your position before you begin (pause) starting with Participant A, then Participant B and then Participant C. (Pause). Please restate your position several times during the discussion. (Pause). We will let you know when five minutes is over. After the discussion we would like to see each of you alone. At that time one of you may be asked to participate in the next group discussion.

"I'm going to close this door when I leave so you're not distracted. (Pause). Before I leave, may I have your positions: Participant A what is your position toward the women's movement? (Pause). Participant B, what is your position? Participant C what is your position? Participant A, would you mind beginning the discussion by addressing the question: "Who should be responsible for the socialization of children"?

After five minutes, open the door and say:

"Would you please follow me. We would like you to fill out these two questionnaires. When you're done, open your door and someone will come to interview you. Fill out the shortest questionnaire first. It is the one on top."

Take the first person to the first room, the second to the second room and the third to the third room. If anyone has a question, say the experiment has to be as standard as possible and for that reason you would appreciate their asking questions only to the interviewer following completion of the questionnaires. Be sure to treat the subjects and confederates

the same. Avoid communicating frustration, irritation or any emotion at all to subjects and confederates. Make no friendly gestures or eye-to-eye contact with subjects or confederates. Do not deviate from the text.

APPENDIX E

FIRST POST-DISCUSSION QUESTIONNAIRE

APPENSIX E

POST-DISCUSSION QUESTIONNAIRE

Name _____ Time _____

1) In your own words, please describe briefly the main concern of the study.

2) In this study what do you think the investigators were trying to find out?

3) What was one other participant's position during the discussion? (circle one)
Strongly in favor Favor Neutral Opposed Strongly opposed

4) What was the other participant's position during the discussion? (circle one)
Strongly in favor Favor Neutral Opposed Strongly opposed

5) What was your position before the discussion? (circle one)
Strongly in favor Favor Neutral Opposed Strongly opposed

6) What was your position after the discussion? (circle one)
Strongly in favor Favor Neutral Opposed Strongly opposed

7) What was your position during the discussion? (circle one)
Strongly in favor Favor Neutral Opposed Strongly opposed

8) If Zero (0) represents the total absence of emotion (sleep) and 100 represents the amount of emotion you feel on an average day, how much emotion (any emotion--fear, anxiety, anger, happiness, etc.) did you feel during the discussion? Remember, if you felt less emotion than average write a number less than 100. If you felt more emotion than average, write a number larger than 100.

9) If Zero (0) represents the total absence of emotion (sleep) and 100 represents the amount of emotion shown by people in an average interaction, how much emotion do you think was shown by one of the participants during the discussion? Remember, if that one participant showed less emotion than people usually do in an average discussion, write a number less than 100. If the participant showed more emotion than people usually do in an average discussion, write a number more than 100.

10) If Zero (0) represents the total absence of emotion (sleep) and 100 represents the amount of emotion shown by people in an average interaction, how much emotion do you think was shown by the other participant during the discussion? Remember, if the other participant showed less emotion than people usually do in an average discussion, write a number less than 100. If the other participant showed more emotion than people usually do in an average discussion, write a number larger than 100.

11) If Zero (0) represents no pressure to change and 100 represents the average amount of pressure to change in any interaction, write a number that tells how much pressure to change was exerted on you by the other two subjects. Remember, if you felt less pressure to change, write a number less than 100. If you felt more pressure to change than in an average interaction, write a number greater than 100.

12) If Zero (0) represents no pressure to change and 100 represents the average amount of pressure to change in any interaction, write a number that tells how much pressure to change you exerted on the other subjects. Remember, if you exerted less pressure to change than average, write a number less than 100. If you exerted more pressure to change than in an average interaction, write a number greater than 100.

13) If Zero (0) represents no feelings of threat in an interaction and 100 represents the amount of threat you feel in an average interaction, how much threat do you feel in interactions with the opposite sex? Remember, if you feel less threatened than average in interactions with the opposite sex, write a number less than 100. If you feel more threatened than usual write a number larger than 100.

14) Do you think you were deceived in any way during this experiment? If yes, please explain.

15) Can you suggest any way in which this experiment could be improved?

Information about the nature and purpose of this study will be given to you as soon as all the data is gathered and analyzed. If you prefer to have additional information on this experiment right now, I would be happy to discuss the experiment with you at this time. If you find you have questions about the experiment before you hear from us, please call me at 351-7289.

Thank you very much for participating in this study.

Sincerely yours,

Mary Lou Woelfel

APPENDIX F

SECOND POST-DISCUSSION QUESTIONNAIRE

APPENDIX F

SECOND POST-DISCUSSION QUESTIONNAIRE

Variable Col.

ID#	1-4	1) ID# _____	2) NAME _____
Group#	5	3) Date _____	4) Time _____
Wave#	6	5) If <u>Zero (0)</u> represents the <u>absence of health</u> (death) and <u>100</u> represents the <u>amount of health you feel on an average day</u> , how <u>healthy do you feel now?</u> Remember, if you <u>feel less healthy than average</u> , write a <u>number larger than 100</u> . If you <u>feel healthier than average</u> , write a <u>number larger than 100</u> . You can write any number you want.	
Card#	7-8		
Health	27-30		
Energy	31-34	6) If <u>Zero (0)</u> represents the <u>absence of energy</u> and <u>100</u> represents the <u>amount of energy you feel on an average day</u> , how <u>much energy do you feel right now?</u> Remember, if you <u>feel less energy than average</u> , write a <u>number less than 100</u> . If you <u>feel more energy than average</u> , write a <u>number larger than 100</u> .	
Emotion	35-38	7) If <u>Zero (0)</u> represents the <u>total absence of emotion</u> (sleep) and <u>100</u> represents the <u>amount of emotion you feel on an average day</u> , how <u>much emotion</u> (any emotion--fear, anxiety, anger, happiness, etc.) <u>do you feel right now?</u> Remember, if you <u>feel less emotion than average</u> , write a <u>number less than 100</u> . If you <u>feel more emotion than average</u> , write a <u>number larger than 100</u> .	
Nervous- ness	39-42	8) If <u>Zero (0)</u> represents the <u>total absence of nervousness</u> and <u>100</u> represents the <u>amount of nervousness you feel on an average day</u> , how <u>nervous do you feel right now?</u> Remember, if you <u>feel less nervous than average</u> , write a <u>number less than 100</u> . If you <u>feel more nervous than average</u> , write a <u>number larger than 100</u> .	

APPENDIX G

POST-DISCUSSION QUESTIONS AND DEBRIEFING

APPENDIX G

POST-DISCUSSION QUESTIONS AND DEBRIEFING

- 1) Were the instructions clear? Was the purpose of the experiment clear? Should more time have been spent elaborating on the instructions?
- 2) People respond in different ways in experiments. What do you think was expected of you during the discussion?
- 3) Did you find anything about the experiment to be confusing?
- 4) What kinds of different information do you think we could have gotten from this experiment? What else may have been involved in addition to what we mentioned in our instructions?
- 5) If suspicious: What was it that made you suspicious? How do you think we could improve the experiment so other people will not be suspicious? How do you think your suspicion effected your behavior during the discussion?
- 6) Do you think people would act differently if they were told beforehand they were being observed?
- 7) Do you have any suggestions for ways to improve the study? What do you think were the major weaknesses in the study?

Several studies have found that stress is related to certain types of disease such as heart disease, certain types of cancer, alcoholism, and mental illness. We are interested in looking at social-psychological factors that might have some effect or contribute in some way to a person's level of anxiety, or in other words, stress. It has been suggested that some communication networks people are embedded in might be more anxiety producing than others; that is, certain environments might be more conducive to disease. In this experiment we wanted to find out whether different communication networks effect a person's level of anxiety. We wanted to know whether variation in the amount of change advocated and variation in the variability of positions advocated effected a person's level of anxiety. To create these different communication networks, it was necessary sometimes to have students advocate a position not necessarily held. For example, in order to find out whether stress varied in terms of the amount of change advocated, it was necessary to have a person in a group where the members agreed with his or her position (no change advocated) and another person in a group where the members disagreed with his/her position (change

advocated). Thus, we asked some volunteer students to advocate a position they did not necessarily hold. The true view of the other two students in your group was in favor of the women's movement. In addition, to see if the anxiety level did change for different conditions, it was necessary to measure your level of anxiety during the discussion. This was done by (1) having you report the level of anxiety you felt during the experiment and (2) having three observers attempt to measure your level of anxiety during the interaction. They did this by using a measurement scale similar to the one on the questionnaire you filled out.

Following the debriefing, the volunteers were asked if they felt in any way uncomfortable about the use of the observers and the use of the confederates. They were asked not to reveal anything about the experiment to other volunteers. They were told that the data would be useless and would result in a colossal waste of time for all those involved in the experiment.

Each volunteer was asked if she/he had any questions and told that if they had questions in the future about the experiment, they could reach me at 351-7289.

APPENDIX H
CONFEDERATE TRAINING

APPENDIX H
CONFEDERATE TRAINING

CONFEDERATES

The trial experiment will take place Thursday, February 27, from 1 to 3. It will begin at 1:10. The subjects should arrive at 20-minute intervals. For this trial experiment we will have five subjects. We will have around 40 subjects for the actual experiment.

When you arrive you will be treated just like any other volunteer. Someone will lead you (with the other subjects) to the lab. room, briefly explain what is to be done, tell you where to begin and when to end. You will each be taken to a different room after the discussion. Once the subject is in a room following the discussion, you should go back to the waiting room (after being informed by Marcie that it is ok to do so). Always take your coat, books, etc. with you just like any other subject.

Wednesday night you will be assigned, at random, the order of the roles you will play on Thursday.

Whenever a subject is around, you should not acknowledge one another; that is, no smiling, eye contact, or familiarity gestures--just play the role of a subject.

APPENDIX H

3 credits independent study

(1) Meet 1:30 to 3:00 every Thursday to work out argument and to practice positions with each other and with volunteers.

(2) Read

- (1) Woman's Estate, Juliet Mitchell
- (2) The Female Eunich, Germaine Greer
- (3) Feminism: The Essential Historical Writings,
Miriam Schneir
- (4) Ms. Magazine (liberal view)
- (5) MOM "Mother's on the Move" handouts.

(3) Write up list of arguments for each position on the women's movement: Strongly in favor, in favor, neutral, opposed and strongly opposed. Write up list of statements to indicate what your position is; such as I am strongly in support (opposed) to the women's movement.

(4) Write up critique of experiment from confederate's point of view.

(5) Participate in 15 hours (possibly a few more) in actual experimental setting.

(6) Set up experiment room.

(7) Assist in coding data after initial questionnaire administration and help establishing position of each confederate for each trial. Write up position each confederate will be assuming for each trial.

(8) Read the Social Psychology of Psychological Research, Arthur Miller

- (1) Ethics in Experimentation pp. 1- 75
- (2) Risk of Harm in Research 75-154
- (3) Deception and Debriefing 155-224

(9) Work out mechanics of setting; that is, work out situation where you and the subject will enter into experimental situation without subject suspecting your position.

APPENDIX H

In the strongly opposed and strongly in favor positions, use two of the following statements:

Strongly Opposed

I am very much opposed to women's lib.
I am a strong opposite to women's lib.
I am strongly opposed to women's lib.
I think it is totally destructive.
I am extremely opposed.
It is extremely important that men oppose the women's movement.

Strongly in Favor

I am very much in favor of the women's movement.
I am a strong supporter of women's movement.
I am strongly in favor of the women's movement.
I think it is absolutely needed.
I am extremely in favor.
It is extremely important that men support the women's movement.

In the opposed and favor positions, use two of the following statements:

Opposed

I oppose the women's lib. movement but I don't feel all that strong about it.
I generally oppose the women's lib. movement but I don't get involved.
I oppose the women's movement but I haven't given it all that much thought.
I think everyone should oppose it but I wouldn't go overboard.
I'm negative toward the women's movement.
I think the women's lib movement is bad.

Favor

I favor the women's movement but I don't feel all that strong about it.
I generally favor the women's movement but I don't really get involved.
I favor the women's movement but I haven't given it all that much thought.
I'm positive toward the women's movement.
I think the women's movement is good.

APPENDIX H

Stay as close to word-
ing as possible

These are the arguments I would like you to use. Essentially, these arguments break down along these lines: Production (structure of economy) and socialization of children. If more arguments than these are needed, here are a few more which break down along these lines: abortion and birth control and sexual freedom.

STRONGLY IN FAVOR ARGUMENTS

Economic

To have a just society, all people have to be treated equally, especially in the economic sphere. Right now women are not equally represented in the job market. I think there should be a moratorium on the hiring of men until women, blacks and minority members are represented in proportion to their numbers in the population. Women should be encourage to leave their homes to pursue a career. The nature of the entire economic system has to be changed. Women should be encouraged to get out of the house and the state should provide free day care. Benefits to men: do not have to have responsibility of being the only wage earner.

Socialization

Child care should be collectivized. Women don't need to be home caring for children. Staying home with children is highly correlated with depression and low self-esteem. It is bad for children to be around a person who is depressed and who has low self-esteem. It makes them neurotic. Children would be far better off in a good community day care. Any socialization of children should involve both parents. The entire family structure should be changed.

IN FAVOR ARGUMENTS

Economic

If women want to pursue a career, they should be given equal pay and equal opportunity but they should not be forced or encouraged to leave their homes if they are happier there.

Socialization

If a woman decides to pursue a career she should be provided with good quality day care. If she decides to pursue

a career part-time or take off a few years to take care of her children in their early informative years, she should not be penalized for it. Raising children within a family structure is very important to society and very healthy for children. Women should be openly welcomed back into the job market if that is what they choose to do.

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