

ASCHIAN REPLICATION AND EXTENSION

By

JOSEPH ANTHONY CAMMALLERI

Bachelor of Science

Manhattan College

New York, New York

1956

Submitted to the Faculty of the Graduate College  
of the Oklahoma State University  
in partial fulfillment of the requirements  
for the degree of  
MASTER OF SCIENCE  
May, 1966

NOV 8 1966

ASCHIAN REPLICATION AND EXTENSION

Thesis Approved:

*Nicholas P. Pollis*

Thesis Adviser

*William H. Rambo*

*JH Boyce*

Dean of the Graduate College

621483

## PREFACE

Much contemporary research in Social Psychology involves the investigation of the variables influencing "conformity", exemplified by the work of Sherif (1936). Included in this area are researches into the area of "compliance" as typified by the studies of Asch (1951, 1956). There is no differentiation in the meaning of these terms in the research literature, and one of the objectives of this study was to illustrate the differences between conformity and compliance as related to interpersonal behavior.

The purpose of this study was to replicate and extend the work of Asch (1951, 1956) by initially using an experimental group setting with a unanimous majority of eight confederates versus a naive minority of one critical subject in a perceptual discrimination task involving the commission of deliberately erroneous judgments by the majority, with the prediction that the critical subjects will commit significantly more errors than a control group. This was the replication portion of the study. Asch (1951, 1956) has already reported that the naive minority of one (Alones) do commit significantly more errors than does a control group.

Subsequently, this study extended the work of Asch by introducing naive partners into the experimental setting whereby in one situation the partners were previously unfamiliar with each other (Togetherness), and in the other situation they were acknowledged

friends. The prediction was that significantly less errors would be committed by the Friends than by the Togetherness subjects, who in turn, should commit significantly less errors than the alone subjects.

Before conducting such a study it is imperative that the experimenter be familiar with all the variables that influence conforming behavior. The selection of competent confederates is critical, as the quality of their performances may strongly influence the data (Leik, 1965). Since human subjects must be used, concern must lie with their comfort, consideration, and dignity. Finally, a well planned and carefully screened list of naive subjects must be constructed for selection of critical subjects. The screening aspect concerns the elimination of subjects who might introduce a biasing variable into the experiment, e.g. race, sex, age, and/or social affiliations.

Indebtedness is acknowledged to Drs. Robert W. Scofield, William W. Rambo, Larry T. Brown, and David E. Bee for their valuable guidance and assistance. A particular debt is owed to Dr. Nicholas P. Pollis, without whose insight, vision and encouragement this study could not have been accomplished. Appreciation of Miss Helen Donart's library assistance is also acknowledged.

The author also wishes to thank the undergraduate women of Oklahoma State University for their cooperation and sincerity which were vital components in the success of this research. Specific thanks go to Misses Pat Appleby, Jane Barnard, Linda Culton, Margie Drumm, Gail Greer, Rheba Hawkins, Megan Howell, Jan Hunt, Kay Morgan, Frances Leivo, Shawn Murray, Sue Oldenstadt, Pat Sampson, Linda Shellack, and Marilyn Weed. Also, thanks are due to Mrs. Wanda Hartman, Mrs. Phyllis Holmberg, and my wife, Barbara Mae Cammalleri, for their cooperation and assistance.

## TABLE OF CONTENTS

Chapter	Page
I. THE PROBLEM.....	1
Statement of the Problem.....	2
Limitations of the Study.....	3
Clarification of Terms.....	3
II. REVIEW OF THE LITERATURE.....	5
Historical Background.....	6
Compliance and Conformity Compared.....	7
Variables Influencing Conforming Behavior.....	9
Stimulus Variables.....	9
Group Variables.....	10
Personality Variables.....	13
Situational and Cultural Variables.....	15
Predictions of the Study.....	18
III. METHOD AND PROCEDURE.....	20
General Description.....	20
Selection of Subjects.....	25
The Experimental Setting.....	28
The Materials.....	30
Role of the Experimenter.....	31
IV. RESULTS OF THE EXPERIMENT.....	33
Quantitative Findings.....	33
Statistical Analysis of the Data.....	35
Discussion of Data.....	36
Qualitative Findings.....	36
Post-Trial Questionnaires.....	40
Distribution of Errors.....	40
Comparison with Asch.....	44
V. INTERPRETATION OF RESULTS.....	46
Summary and Conclusions.....	46
Implications of the Study.....	48
Suggestions for Future Study.....	54
BIBLIOGRAPHY.....	56
APPENDIX.....	61

## LIST OF TABLES

Table	Page
I. Majority Responses to Standard and Comparison Lines on Successive Trials.....	24
II. Estimates of Experimental and Control Groups.....	34
III. Distributions of Critical Errors in Experimental and Control Groups.....	37
IV. Frequency of Errors on Successive Trials.....	41
V. Comparison of Errors: Togetherness Vs. Friends as a Measure of Inter-Partner Dependency.....	45

## LIST OF FIGURES

Figure	Page
1. Physical Setting of the Experiment.....	21
2. A Sample Comparison of Aschian Lines.....	22
3. Frequency of Errors Compared: Asch 1951 Vs. Present Study.....	42
4. The Effect of the Size of the Group on the Conforming Behavior of an Individual.....	44

## CHAPTER I

### THE PROBLEM

Much recent research in the investigation of variables influencing conforming behavior in group contexts utilize the Aschian technique whereby naive subjects are required to make verbal judgments concerning the relative lengths of lines in a group context. The crucial aspect of the experiment lies in the manipulation of awareness of the true nature of the experiment by the experimenter. Specifically, the other members of the group are in fact confederates of the experimenter who have been previously instructed by him to lie deliberately on certain trials in order to produce pressures on the naive subjects to yield in their judgments by moving toward the majority judgment. In his original study Asch (1951) tested the responses of a single naive subject versus a unanimous majority, and later he introduced a partner into the situation who had been previously instructed to agree with every judgment of the naive subject. He later replicated this work (Asch, 1956) with a more elaborate design and obtained results similar to those of the original study, namely, that most naive subjects successfully resist yielding to the pressures of the majority. In the single naive versus the majority an error rate of 35% was recorded. Introducing an informed partner aided in the naive subjects' attempts to resist the pressures of the majority, as errors were re-

duced to 13%. These figures contrast with a 7.4% error rate for a control group. Others have performed research in this area using similar designs such as the Crutchfield apparatus, to test the responses of children versus adults, male versus female, etc., in attempts to measure yielding to majority pressures in the framework of a judgmental task.

### Statement of the Problem

The problem that has been specifically investigated in this study involves an extension of Asch's 1951 study. Two different partner situations were contrived, the first in which one partner was previously unknown to the other critical subject and, unlike Asch's situation, was unaware of the true nature of events. In the other partner situation, the pair of naive subjects were specifically selected on the basis of their being prior friends. The assumption underlying this design was that the presence of a partner constitutes a reinforcing stimulus that helps to stabilize and structure the perceptual frame of reference of the organism. The presence of a partner who is also a friend should provide even more reinforcement for the organism in terms of the previously existing positive relationship between the two subjects.

The primary purpose of this study, therefore, was to determine empirically whether the presence of a partner who was a friend would significantly reduce yielding by the critical subjects to the pressures of the majority, as contrasted with yielding by partners in the same experimental setting that were not previously acquainted.



### Limitations of the Study

This study, of necessity, required the use of human subjects, and as Fisher (1936) and others have noted, the needs and welfare of these people must be given primary consideration. This places a great burden on the experimenter, primarily in his selection of a population from which he must extract his sample of subjects. It would be more desirable perhaps, not only from a statistical viewpoint, to select appropriate samples from the world at large than from such a restricted population as an undergraduate student body. However, sampling from such a population may be justified with regard to the limitations of the predictions. In addition, a review of the literature suggests that comparable results are obtained in a study of this nature when utilizing varied subject sources.

### Clarification of Terms

The control group, as specified herein, identifies those subjects who give verbal responses of judgment in the absence of group pressures. The experimental situation whereby a single naive subject makes verbal judgments in the company of the eight confederates of the experimenter is hereafter identified as the Alone situation. The introduction of a naive partner who has no previous acquaintance with the other naive subject will be referred to as the Togetherness Dyad. Finally, the setting wherein two naive friends are subjected to the pressures of the majority is identified as the Friends Dyad.

"Critical" subjects are naive subjects, and "critical trials" are those in which evaluations for errors take place, while any response of

a critical subject that is in agreement with the erroneous expressed judgment of the majority constitutes one error.

## CHAPTER II

### REVIEW OF THE LITERATURE

Historically, social psychologists have attempted to analyze the variables that influence the social nature of man. Our contemporary advantage consists of infinitely more precise tools for empirical research. Indeed, it is the utilization of scientific control and randomization to eliminate systematic errors that enables modern social psychologists to perform empirical studies in attempts to determine objectively the influence of these social variables.

Many current social psychologists conduct research according to the pragmatic notion that data are secured in order to better the life of man. As noted by Allport (1954):

Social psychologists regard their discipline as an attempt to understand and explain how the thought, feeling and behavior of individuals are influenced by the actual, imagined or implied presence of other human beings.

These thoughts have been referents for this study.

Essentially, studies in conformity and compliance deal with the manipulation of various independent variables such as awareness, task difficulty, etc., in order to measure the effect that they produce in the dependent variable-human responses.

### Historical Background

The ancient philosophers posed a question: "How can the individual be both a cause and a consequence of society?". More recently, Comte (1839) created a hierarchy of disciplines in an attempt to answer this query. Following Comte other social psychologists of the nineteenth century developed the notions of pleasure-pain, egoism, sympathy, gregariousness, imitation, and suggestion in attempts to select and develop one simple and sovereign formula that seemed to hold the key to social behavior.

Ross, in 1908, centered upon the concepts of imitation and suggestion in attempting to explain the antecedents of conforming behavior. He was followed by McDougall (1908) who posited the instinct concept of gregariousness. The heuristic value of some of these outmoded notions has been considerable for their contemporary counterparts are studies in conformity, compliance, propaganda and other areas. The French author Tarde (1903) fostered his concept that "... imitation (is) the key to the social mystery...(and) society is imitation."

Other scientists such as Durkheim, Baldwin, Mead and James were interested in the concept of imitation as a process of adjustment in social life. More recently, the notion of identification has been used in psychoanalytic explanations of child socialization. Cultural anthropology has also utilized imitation as a variable in the development and possession of culture.

Finally, we note the use of suggestion in abnormal psychology, especially in connection with hypnotism and the control of the "automatic unconscious self." In particular, the work of Binet was an im-

portant turning point for social psychology. He invented experimental methods to deal with group behavior, and noted that effects of prestige influenced the behavior of children, since the leaders of experimental groups of children proved to be less suggestible than the followers.

As Allport (1954) states:

Owing largely to Binet's efforts, suggestion became a standard problem for academic psychology as well as for clinical...one favorite problem had to do with the conditions of suggestibility. Who is suggestible? Women more than...children more than adults...? No woman is uniformly more suggestible than a man. Indeed, in areas where she is well informed, she is probably less suggestible than her husband...

Crutchfield (1955) and others, attempting to clarify these matters have noted that suggestion effects occur especially when the individual is confronted by a critical situation where he cannot readily make a decision, i. e., when his mental organization is unstructured. This brings us to the more recent works of Sherif, Asch, and others in the areas of conformity and compliance.

#### Compliance and Conformity Compared

This study is concerned with public independence and lack of independence in the face of arbitrary opposition of other people. Some researchers in their analysis of these situations would relegate this class of behavior to the realm of conformity. This would be an inappropriate categorization. The variables studied here are more correctly included under the label of compliance, for there is a considerable difference between these concepts. This difference is also implied by Asch (1956):

While the fact of social influence is beyond doubt, we are only on the threshold of understanding the responsible processes. The task of inquiry in this region is to explore the ways in which group actions become forces in the psychological field of persons and to describe the forces within persons that co-operate with or resist those induced by the group environment. In the early stages of investigation the solution to these questions appeared obvious. The far-reaching compliance of persons with group demands was referred to a psychological tendency to 'uncritical acceptance' of group ideas and evaluations. General observation and controlled studies seemed to support the conclusion that the fundamental social-psychological process was that of conformity. But the notion of conformity is essentially a restatement, in the guise of an explanation, of the observable events and adds little to our understanding of them.

This author believes that insufficient attention has been devoted to a clarification of the difference between conformity and compliance. From the standpoint being developed here, there has been a lack of differentiation in the literature as almost all authors utilize the term conformity when investigating variables influencing compliance. More understanding of the phenomena contributing to the cause of compliance and conformity may be obtained through a differentiation of these terms. Thus, conformity shall be herein defined as the external responses of the organism that are consonant with social norms and customs as perceived, accepted and internalized by that organism. Here, one freely accepts the norms that have been established through group interaction. Remove the conformer from the social setting, confront him with a stimulus discrimination task, and his behavior will remain invariable with regard to the norms. Essentially, the person responds in accordance with his perception of the situation.

This is to be contrasted with compliance which externally appears identical to conformity. Here, one responds in a conforming manner but

without the inner conviction present in conformity regarding the validity of the norm related with the response. Remove the person from the social context and he will change his response in accordance with his actual perception of the situation. Consequently, it is compliance and its effect on behavior which we are discussing here, and to avoid confusion, the term compliance will be used in this study when discussing the findings of other authors relative to this study.

### Variables Influencing Conforming Behavior

Contemporary research and studies into the areas of conformity and compliance center around the manipulation of four basic types of variables: stimulus variables; group variables; personality variables; cultural or situation variables (Kendler 1963).

#### Stimulus Variables

A subject's resistance to majority opinion depends upon the size of the discrepancy between the correct stimulus and the "wrong" stimulus (Asch, 1951, 1956; Khan, 1965). It is noted that more errors are committed in trial four than in any other trial (Asch 1955, 1956). It will come as no surprise then, to disclose that trial four is the most difficult trial with the difference between the significant lines only one-fourth inch. With such a slight discrepancy the stimuli are perceived as ambiguous and social pressure is most successful in producing compliant responses.

Several studies (Deutsch and Gerard, 1955; Goldman, Haberlein and Feder, 1965) have utilized the recall of stimuli in making judgments

and report that greater compliance results if the subjects do not have the stimuli immediately available.

Zolman, Wold, and Fisher (1960) reported that size of the discrepancy and compliance in a continuous social interaction are related in a decreasing monotonic function. London and Lim (1964) found that compliance increases directly with task difficulty, while Vaughan and Mangan (1963) discovered that group pressure is resisted more when highly valued materials are used.

Finally, several other studies (Oliver, 1964; Iscoe and Williams, 1963; Blake, Helson and Mouton, 1957) have shown that there is significant individual consistency in the amount of compliance in tasks having different contents. The first two studies also indicated that the patterning of critical trials within the context of non-critical trials is significantly important in eliciting compliance.

Other reports by Seaborne, (1962) and Wiener, Morton and Carpenter (1957) indicate that there is no evidence for a relationship between stimulus ambiguity and compliance.

#### Group Variables

Within this category several factors such as size, cohesion, status and unanimity are pertinent. Lott and Lott (1965) wrote a survey of the literature relevant to group cohesion and compliance, and showed that most studies have found a direct relationship between cohesion and compliance. Moran (1965) found that group differences in levels of cohesion and motivation were unrelated to compliance due to social



pressure in a judgmental perceptual situation, thus "failing to support Festinger's cohesion theory." Feldman and Goldfried (1962) suggested that the validity or non-validity of the majority response had a significant effect on compliance, while other studies found that prior experience aids resistance to compliance and that group size is related to compliance in a curvilinear (inverted u) relationship (Rosenberg, 1961; Mausner, 1957; Asch, 1951).

In a finding contrary to a logical, hypothetical notion, Linde and Patterson (1954) found that disabled men yield less to able-bodied men confederates than they do to disabled male confederates. Reitan and Shaw (1964) reported that a subject's membership in many groups was unrelated to compliance in social influence situations. They mention the unreliability of the measure of group membership as a bias. Harper and Tuddenham (1964) found that yielding to group pressures is unaffected by the emotional composition of the group being rated as attractive or unattractive and that the probability of complying with an erroneous majority is a directly positively accelerated function of group consensus. Also, anxiety level, educational level, and occupational level of the father were found to be positively significantly related to compliance. Edmonds (1964) found that logical training, age, church attendance, sex and certainty of judgment were not significantly related to compliance.

Luchins and Luchins (1961) reported that authority was more effective than the majority in influencing compliance. "Authority" consisted of the experimenter uttering statements aloud after each presentation. This is similar to a finding by Van Kravelin (1959) that 50%

of his female subjects changed estimates of line judgments after hearing others estimate them.

The hypothesis that a high reward would lead to less yielding was rejected in a study by Gorfein, Kindrick, Leland, McAvoy and Barrows (1960). They utilized the Aschian situation and 40 subjects to manipulate a condition of non-reward versus a condition of high reward. Garia (1964) compared direct verbal appeals to comply or remain independent with indirect appeals on 'light' and 'serious' offenses disguised as essays. Her data indicated that more subjects were swayed toward yielding on 'light' offenses, and the disguised appeals were more effective in obtaining compliance.

Kassarjian and Kassarjian (1962); Whittaker, Rosenav, Farnsworth and Gross (1957); and Asch (1956, 1951) found that the minority member was predominantly accurate but still had a deflection of considerable estimates due to majority pressures, and that while there was much individual variability in resistance to compliance the action of the majority controlled the level and quality of errors. Also, public announcement of errors increased the errors of the minority, and minority individuals were remarkably consistent in independence, yielding, or intermediateness in yielding to the pressures of the majority.

Other recent studies concerned with group variables indicate that the more a person likes the members of a group, or the more he thinks they like him, the more he will yield (Jackson and Saltzstein, 1958); that public revelation of judgment in a group context results in more compliance than private judgment (Deutsch and Gerard, 1955), and that people in a cooperative-group setting will comply more than will people

in a competitive-group setting (Smith, 1965).

Finally, Asch (1951) and Wolf and Zolman (1959) reported that the presence of a partner significantly reduced the percentage of error responses made by the minority in a group context, while Willis (1963) found that the presence of a partner had no effect on the extent of dependence on the partner's judgment. Gorfain (1964) reported that the presence of a partner produced greater compliance. The results of this last study were not statistically significant however.

#### Personality Variables

In this category are found all of the factors affecting compliance that arise from internal and personal factors of the individual. Several studies have indicated that compliance constitutes a generalized trait that generalizes in a trans-situational aspect (Vaughan, 1964; Linton, 1955), and that compliance is variable and distributed normally, population-wise. Crowne and Liverant (1963) used the Rotterian concept of expectancy and applied it to personal commitment in an Aschian situation. The results depict the complier as one who has a low expectation of success in evaluation situations, and less confidence, which leads to avoidant behavior to resolve the ensuing conflict. In effect, the defensive process increases as personal commitment increases.

A very recent study by Goldman, Haberlein and Feder (1965) compared the behavior of resisters to conformers in Aschian situations. Using a recall measure, they found that controls recalled more material than resisters or conformers, while conformers recall more than resist-

ors. French, Morrison and Levinger (1960) reported that punishment forces and resistance forces are independent determinants of compliance to coercive power and that the more successful an individual's past experience in groups, the more favorable is his subjective likelihood of an estimate of subsequent success in group action. Also, the more ambiguous the information, the less confident of success is the individual. MacBride and Tuddenham (1965) also report that changes in yielding reflect changes in confidence, and that the manipulation of self-confidence altered susceptibility to group pressure, but did not obscure initial differences.

Back and Davis (1965) utilized Aschian lines with a Crutchfield apparatus (lights) to test the significance of compliance in consistency across three different situations. They found a small but consistent trend for subjects who complied in situation one, to comply also to situations two and three. Sistrunk and McDavid (1965) used a modified Crutchfield apparatus with a unanimous majority versus an individual in a judgmental task. The data indicate that dispositional achievement needs are related to task difficulty, whereas dispositional affiliation needs should be unrelated to task difficulty.

In a very interesting study, Bogdonoff, et al. (1965) used physiological measures to examine CNS arousal of an individual who was subjected to group pressure to deny clearly perceived stimuli. They found an increased level of arousal, which also tended to remain at a high level if the individual continued to resist group pressure. However, the arousal level was not as high for yielders as it was for resisters.

Rosenberg (1963) found that increasing self-error and decreasing partner error were related to compliance. He had predicted that the perceived self-error would be greater, but the data showed perceived partner error to be consistently greater.

Two studies (Gerard, 1964; Kidd and Campbell, 1955) report that continued adamance in resisting compliance occurs only with public confrontation, while Breger (1963) found that compliance is inversely related to direct hostility expression and directly related to covert hostility expressions on two disparate measures in a modified Aschian situation, utilizing the TAT and a situation. Finally, Milgram (1965, 1964) found that togetherness effects of a given social field will cause an individual to resist compliance more. In these studies, the subjects were instructed to administer electric shocks to stooges.

#### Situational and Cultural Variables

There are a great many studies in this category that examine sex differences in conforming behavior with the almost unanimous finding that females conform and comply more than males because of learned cultural influences. Hollander and Gordin (1965) were the last of a long list of researchers to report this finding. Barry, Bacon and Child (1957) did a survey of certain aspects of socialization in 110 cultures and reported that there are no sex differences in conforming behavior in infancy, but conforming behavior in girls becomes relatively greater than that exhibited by boys as they mature.

Patel and Gordon (1960) found that young girls are more suggestible than young boys, and their results are related to similar previous

experiments in this area. Tuddenham (1961) tested college students and children. All showed more significant yielding than did controls. The sex difference was analyzed to be the most significant factor, while the variable of age was a slightly less important factor. He found that women and girls yielded significantly more than did men and boys.

Reitan and Shaw (1964) did a study on sex-composition and reported that sex differences and sex-composition are related to compliance. The data indicated that females complied more than males and that both males and females complied more in a mixed-sex group than in a same-sex group.

Whittaker (1965) investigated the effect of sex differences on susceptibility to interpersonal persuasive influences using the auto-kinetic design. His data indicate that differences may be generally observed in response to any persuasive influence regardless of the media involved, due to cultural influences. Also, he reported that the male influence source has greater persuasion and females do comply more than males. McDavid and Sistrunk (1964) confirmed that task difficulty or ambiguity is a crucial limiting factor for behavior of a compliant nature. They suggested that stereotypes in conjunction with associated feminine conventional behavior may lead to considerable difficulty in studying differential tendencies toward conformity in women.

Hollander and Gordon (1965) used a Crutchfield apparatus to manipulate the variable of prior reinforcement. They found that compliant behavior in both men and women is positively directly related to the amount of prior reinforcement. Endler (1965) conducted the

only recent study that could find no sex differences in relation to amount of compliance. He did report that verbal reinforcement for agreeing with a contrived majority does influence compliance, while reinforcement for disagreeing with the majority produces the opposite effect.

Oliver (1964) investigated the effects of manipulation of neutral and critical trials in an Aschian situation with a factorial design. She predicted that the variations in the number of neutral trials would have differential effects upon frequency of occurrence of compliant responses. The data supported her prediction in that compliant responses diminished significantly with an increase in neutral trials, and critical trials increased compliant responses more than alternations of critical and neutral trials. She concluded that this meets reinforcement theory predictions.

Two studies, (Mausner and Bloch, 1957; Nickols, 1965) examined the question of whether variables influencing conforming behavior combined additively or multiplicatively. The former study indicated an additive relation, while the latter study indicated a possible multiplicative relationship. In addition, Nickols' data show that "environmental pressures are stronger than individual personal pressures but that the latter are important and cannot be ignored".

A highly relevant study conducted by Leik (1965) should be related before leaving this area. He performed a series of experiments to study the effects of non-content aspects of stooge behavior on naive subjects' perception and rating of performance. The data clearly showed that variations in dress and apparent confidence of stooges

altered the naive subjects' perceptions of their performance on individual tasks. This raises a very serious question that has much implication for research in the areas of social psychology, for almost all studies herein utilize human subjects and stooges. Specifically, one may question whether careless use of stooges might seriously contaminate data, particularly when the experimenter has assumed an irrelevant aspect concerning the stooge and his behavior. This author strove to avoid this pitfall in this study by carefully monitoring his confederates' performances.

In summary, we note that many independent variables such as awareness, age, sex, social class, education, presence of a partner, ambiguity of stimuli, size of the unanimous majority, the veritcal frame of reference and other personality factors of the organism, the role of the experimenter, behavior of confederates, prior reinforcement of the critical subjects, and spacing of the critical trials influence conforming behavior. Consequently, the author's experimental design included controls for all of these variables except the presence of a partner and awareness of the true purpose of the experiment which were the manipulable variables basic to his predictions.

#### Predictions of the Study

Asch (1951) included the presence of an informed partner who was actually a confederate, and who was instructed to respond correctly on every trial. This reduced yielding of the naive subject to 13%. This may be interpreted as an indication that the mere presence of a partner constitutes a reinforcing stimulus in the perceptual field of



the organism which functions to structure and stabilize his frame of reference and thus enables him to give estimates that conform more closely to his previously established veritcal judgmental framework. Thus, the presence of a partner reinforces the conformity of the naive subject to his personal norms relative to judgment in this task.

This relates directly to the Togetherness Dyad and the Friends Dyad whereby it is predicted that the Togetherness subjects will commit significantly fewer errors than the Alones due to an increment in perceptual structuring of the organism due to the reinforcing stimulus of presence of a partner, and further predicted that the Friends subjects will commit significantly fewer errors than the Togetherness subjects as a consequence of a greater relative increment in perceptual structuring by the presence of a partner who is also a friend. Also, consistent with Asch's previous findings, it is predicted that the Alones will commit significantly more errors than will the control group due to the reduction in the Alones' perceptual stability caused by the negative reinforcement applied by the unanimous majority.

Subsequent to the collection of the data, a one-tailed "Student's" t test will be applied to determine statistical significance of the data relative to the predictions. Use of a one-tailed test is necessitated by the nature of the predictions.

## CHAPTER III

### METHOD AND PROCEDURE

#### General Description

A group of nine to ten young white female undergraduate students were gathered in a basement classroom of the Psychology Building to take part in "a simple fifteen minute visual discrimination experiment". They were instructed to match the length of a given line - the standard line - with one of three other lines of varying length. One of the three comparison lines was equal in length to the standard line; the other two comparison lines differed from the standard line and from each other. The entire task consisted of 12 such comparisons. The subjects announced their judgments verbally in the order they were seated, "so as to allow the experimenter to record their responses properly". The comparison lines were numbered 1, 2 and 3 from left to right in order to permit the subjects to state their judgments by calling out the appropriate number.

The most crucial aspect of the experiment was the manipulation of awareness of the true nature of the experiment, for unknown to the critical subjects, prior to each trial, eight of the group had been instructed by the experimenter to respond on selected trials with wrong and unanimous judgments. Moreover, one of these confederates would occupy the first seat on the left facing the cards and would, on each

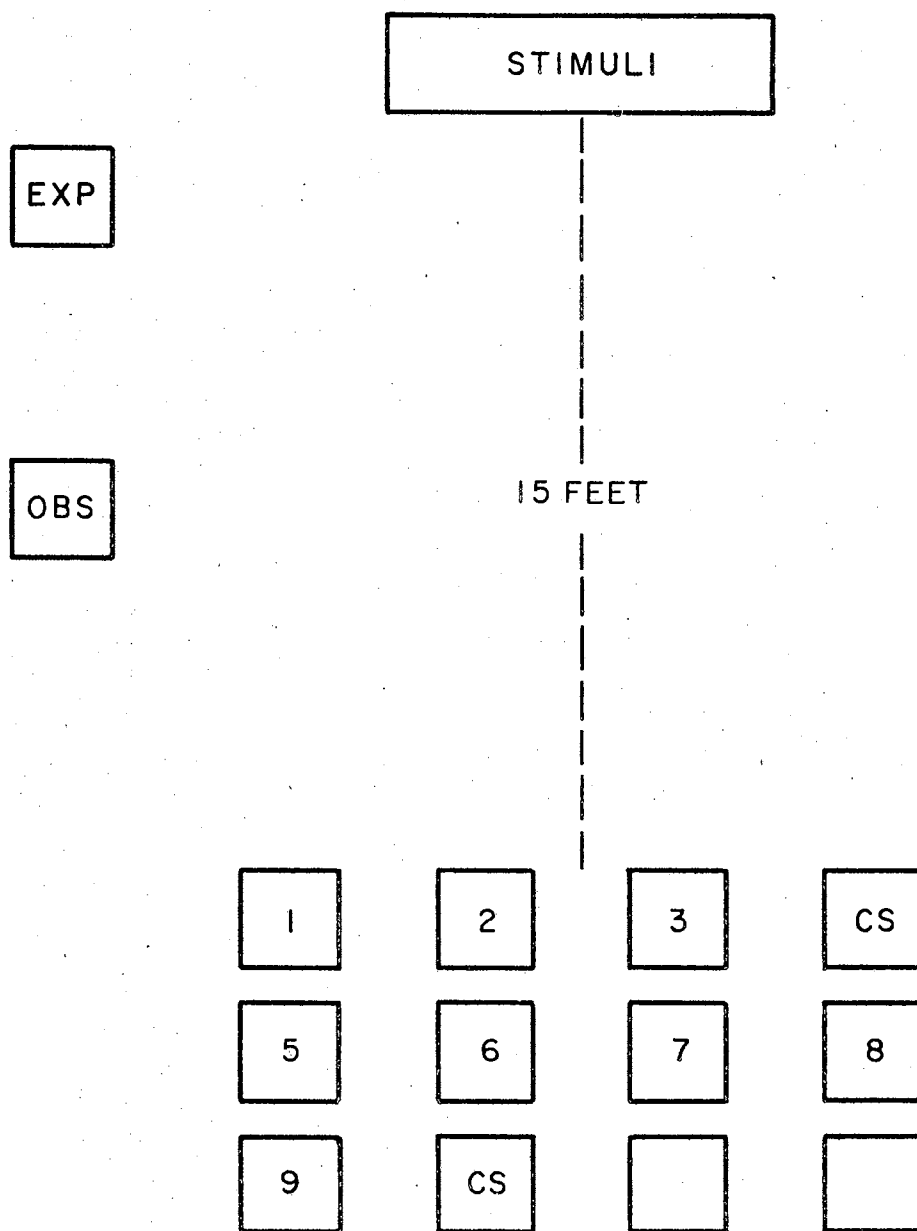


Figure 1. The Experimental Setting

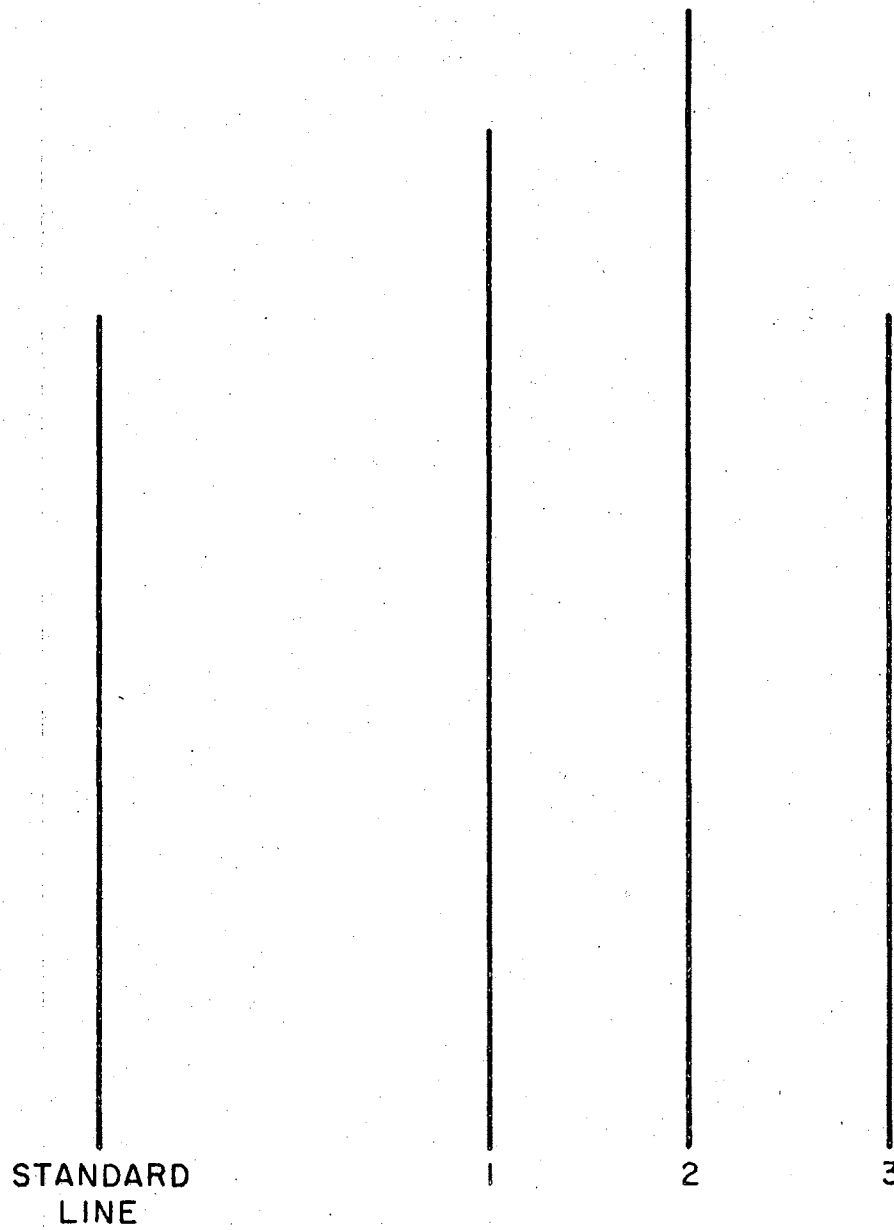


Figure 2. A Sample Comparison of Aschian Lines

presentation of card pairs, respond first. This confederate had memorized the sequence of numbers so as to preserve the naturalness and spontaneity necessary for the experimental setting. As a precaution, the experimenter would call "Ready?", and the first confederate's name, so as to alert the entire majority that a specific trial was a critical one. ("Ready" was called on all trials). The other confederates were instructed to always respond with the same number as the first confederate, so it was unnecessary for them to memorize the sequence. In addition, the first confederate was instructed to pick either of the obviously wrong choices in the event she suffered a memory lapse on a critical trial. This occurred twice during the experiment.

One or two critical subjects were introduced into this group according to the desired experimental situation, whether Alone, Togetherness Dyad, or Friends Dyad. All of these critical subjects heard the majority respond unanimously from time to time with estimates that clearly contradicted their own observations, and which departed from the true value by amounts ranging from one-fourth to one and three fourths inches. Clear distinguishability of the line differences is shown by the low error score of the control subjects, who judged correctly at a level of 94.4%.

To sum up, the essential nature of the research was one in which an experimental procedure was used to introduce dissonance between an entire group and one or two persons, while performing visual judgments. There were three experimental settings: the Alone subject versus the unanimous majority; the Togetherness Dyad versus the unanimous majority and the Friends Dyad versus the unanimous majority.

TABLE I  
 MAJORITY RESPONSES TO STANDARD AND COMPARISON  
 LINES ON SUCCESSIVE TRIALS

TRIALS	LENGTH OF STANDARD LINE (in inches)	LENGTH OF COMPARISON LINES (in inches)			MAJORITY ERROR (in inches)
		1	2	3	
1*	7.5	5	5.75	7.5	0
2*	5	6.5	7	5	0
3	8	8	<u>7</u>	6	1
4	3.5	<u>3.75</u>	5	3.5	0.25
5*	9	7		11	0
6	6.5	6.5	5.25	<u>7.5</u>	1
7	5.5	<u>4.5</u>	5.5	4	1
8*	1.75	2.75	3.25	1.75	0
9	2.5	4	2.5	<u>3.37</u>	0.87
10	8.5	8.5	<u>10.25</u>	11	1.75
11*	1	3	1	2.25	0
12	4.5	4.5	3.5	<u>5.5</u>	1

\*These designate "neutral trials", i.e., trials to which the majority responded correctly. All other trials were "critical", i.e., the majority responded incorrectly. Underlined figures designate the incorrect majority responses. (From Asch, 1952).

### Selection of Subjects

The initial group of confederates consisted of female undergraduate students who were selected from lists of volunteers by the author. The nature of the experiment was explained to them as well as the roles they were to play. A training session was conducted, during which the confederates were cautioned to announce their judgments clearly and firmly with no hesitation or undue haste. They were never to take issue with critical subjects and to be polite but firmly non-committal toward any questions posed by the critical subjects during the experiment. They were to look straight ahead, being careful never to feign surprise, smile, giggle, or laugh, or carry on conversations. They were particularly cautioned to not discuss the experiment outside of the experimental setting.

No histrionic talents were necessary or even desirable, and elaboration was discouraged. One brief explanatory session followed by a single rehearsal was sufficient to acquaint the group to the task. It was advisable to have occasional critiques however, for the purpose of correcting certain errors, such as responding too quickly, or in a low voice, or bored manner.

The critical subjects were drawn from the same population as the confederates, specifically, from lists of volunteers obtained from introductory psychology sections. The author personally appeared before as many of the sections as possible to solicit cooperation of the students. A prepared form requesting name, age, telephone number, residence, time available, and membership in various campus social organi-

zations was passed out. An additional entry was included on some forms for the name of "Your best friend on the campus." The author would explain that he was conducting some brief tests in perception and that he needed the cooperation and assistance of the students in order to complete the experiment. Extra credit was promised as a reward for participation. The author was careful to state that "from eight to ten other women of your age would be present for each trial", and that only one student from each section would be present for a given trial. They were briefed to bring glasses if normally worn.

The author requested that knowledge of age was important due to "physiological differences in eyesight due to aging", necessitating the construction of homogeneous age groups in order to exclude bias from the data. The author then thanked the class and left. The form was collected from the instructor after class and the subjects screened for biasing characteristics such as race, physical deformities, etc.

The critical subjects were then contacted by telephone and scheduled for a particular time and date, being particularly cautioned to be exactly on time. This prevented accidental intrusions and allowed the author to schedule up to four trials per evening. Subjects were selected on the basis of availability, age, and social group and/or residence. The familiarity variable was strictly controlled, particularly with regard to the Togetherness Dyad where it was critically important that the two partners had no previous acquaintance.

The selection of the Friends Dyad was more complex. Ideally, a sociogram should be used to select these subjects; the author substituted for this a plan of selection. At the time of scheduling a



critical subject, the author would mention that he "needed one more subject to complete the group", and since Miss \_\_\_ was listed as a friend, could she possibly accompany the subject and participate in the test? It was casually explained that experience had shown that subjects were more likely not to forget their appointment if a friend accompanied them and even better, provide company for those "dark walks across the campus" to the experimental site. The subjects were invariably convinced. As a check, however, the identity of the partner was obtained prior to the actual trial, and if another name, other than the one requested at the time of scheduling was given, then that person was thanked for her trouble and asked to wait in a small room off to the side, as "we do have enough people for this trial". The setting would then be re-classified as an Alone situation.

Post-experimental questionnaires were used to insure that critical subjects had no prior knowledge of the true nature of the experiment; that Togetherness partners were not previously acquainted; and that friends were indeed friends. It was very critical to the success of this research that the critical subjects be affirmed as proper critical subjects in that the Friends were actually friends, and the Togetherness subjects not be previously familiar. The use of an observer, who sat outside the experimental setting, and whose presence was explained to the subjects as a "person who will insure that no mistakes are made when we record your estimates", aided in the recording of the emotional reactions of the critical subjects. The observer also served as a check on possible falsification of answers on the questionnaires.

### The Experimental Setting

When the critical subjects arrived, they found the group standing inside the room, or waiting together outside the building, obviously awaiting the start of the experiment. The author would bid them enter and would seat them "according to a pre-arranged chart so that your responses may be recorded properly". This insured that the critical subjects would always be seated in the appropriate positions without arousing their suspicions. In an attempt to control for the affects of status, the room was kept as cold as possible (by turning off the heat), to encourage the subjects to not remove their coats. This prevented the subjects from discerning the quality of clothing worn by the others, which is usually a clue as to relative status of a person on the part of college coeds. Since conversation was almost nil, and the subjects were together for such a brief time, it is felt that the effects of status were held to a minimum.

The author opened the proceedings by thanking all of the subjects for their participation and promising to take "only fifteen minutes of your time". The first pair of cards were then displayed and the following instructions were read:

You are about take a test that is related to current tests being conducted by NASA in the Project Gemini space program. We are attempting to determine the suitability of women as astronauts, and the test that all of you will take here is part of a projected examination for potential female space program participants. Specifically, this is a task requiring the discrimination of lengths of lines. You see the pair of white cards in front. On the left is a single line and on the right three numbered lines, numbered 1, 2, and 3. One of these three is equal in length to the line on the card on the left. State your judgment by calling out

the number of the appropriate matching line. There will be 12 such comparisons. Please be as accurate as possible. You may take as much time as you need. I shall call upon each of you in turn to announce your judgment which the observer and I shall record on written forms. Suppose we start at my right and proceed to the left, starting with the front row.

The reading of the instructions conveyed the impression that all of the subjects were equally new to the situation. To strengthen the effect, several confederates would ask questions intended "to clarify" the instructions. The experimenter would carefully answer these, and prior to the actual start of trials, would insure that the critical subjects could actually differentiate the lines and read the numbers by asking them and randomly selected confederates: "Can you see that the lines are unequal and can you read the numbers?". This was to insure that poor eyesight was not a biasing variable. When all this was accomplished, the first trial was begun. Each session required approximately 20 minutes.

Members of the majority served as an intact group for as long as possible. Confederates were replaced at times by those who had previously served as critical subjects. The varying composition of the majority had no discernible effect on the outcome which was consistent with the findings of Asch (1951, 1956).

The majority consisted of eight persons. Occasionally, it was necessary to conduct a trial with six or seven confederates. Again, no discernible effect could be determined, and this is consistent with findings from previous research in this area (Asch, 1951, 1956). Both the majority and the critical subjects were asked to keep the nature of the experiment in confidence at the end of each session,

and this was achieved. No critical subject was allowed to leave until the purpose of the experiment and some of the implications had been explained to her.

The critical subjects were all female, white undergraduate students currently attending Oklahoma State University, enrolled in a course in introductory psychology, and ranging in age from 17 to 24 years of age. The total number of critical subjects utilized was 120. Since critical subjects and confederates were drawn from the same population, what in effect was investigated was the influence of a group of peers on a minority of one, or of two.

Unlike Asch and others, who did not control for degree of familiarity with the majority, the experimenter chose critical subjects on the basis of non-social affiliations with confederates. No significant difference between Asch's findings and those of this study can be traced to lack of, or control for familiarity.

#### The Materials

The lengths to be compared appeared as black vertical lines on white cards that were placed on the ledge of the blackboard in the front of the room. The cards remained in position until all had announced their estimates. Subsequently, the next pair were then placed on top, and this process was repeated until all 12 pairs had been presented.

The lines were vertical black stripes,  $3/8$  inches wide, drawn with a nylon felt-tip pen and a straight-edge ruler on white drawing boards which had been divided into cards which were  $17\frac{1}{2}$  by 6 inches.

One card carried the standard line; the other card carried the three comparison lines. All lines started at the same level, their lower ends being  $2\frac{1}{2}$  inches from the lower edge of the cards. The standard line appeared in the center of the card, while the comparison lines were separated by a distance of  $1\frac{3}{4}$  inches. The comparison lines were numbered 1, 2, and 3 from left to right, drawn freestyle with a nylon tip pen. These numbers were  $\frac{3}{4}$  inches long and were placed directly underneath the lines and  $\frac{1}{2}$  inch from their lower end. The standard and the comparison card were always separated by 40 inches. A distance of 15 feet was always kept between the cards and the first row.

#### Role of the Experimenter

In effect, the experimenter constituted a third force in the experimental setting. As Asch (1956) wrote:

Although he was above the clash of battle, he lent weight to the conflict. We know that subjects at times scrutinized him in order to obtain an inkling of his reactions. It is justifiable to say that the experimenter set the tone for the formal character of the session...

The experimenter had to act as impartial chairman throughout the trials. He read the instructions in a matter of fact manner, presented the cards and recorded responses without any show of surprise. He was able to refrain from continuously looking at the critical subjects through the employment of an observer. Often, the critical subjects would cast pleading looks in his direction in obvious quest of reinforcement, only to receive an impassive and business-like impression of the experimenter who appeared to be cognizant of the disagreement,

but was not concerned about it. The experimenter's presence and example discouraged conversations that might have occurred under less formal circumstances. As much as possible, he was a "constant factor".

## CHAPTER IV

### RESULTS OF THE EXPERIMENT

The specific predictions that the Friends Dyad would resist yielding to the pressures of the majority significantly more than would the Togetherness Dyad and that the Togetherness Dyad would resist yielding significantly more than the Alones were confirmed by the data. In addition, the replication portion of the experiment produced data that are very similar to results of previous studies. As we shall show later, all errors were a function of the majority condition.

#### Quantitative Findings

The number of errors committed by the critical subjects during critical trials was the criterion measure of the majority effect exerted in the various situations. Thus, it is noted (Table II) that the control group of 40 subjects committed a total of 20 errors out of 280 critical responses (only responses during critical trials were tabulated) for an error rate of 5.6%. In contrast, the Alone group of 40 subjects made 98 errors of a total of 280 critical responses for an error rate of 35%. There is a significant decrease in error rate as we progress to the Togetherness Dyad group of subjects. Here, the error responses for 40 subjects of a total of 280 critical responses was 59, for an error rate of 21.1%. Finally, examination of the Friends Dyad group of criti-

TABLE II

ESTIMATE OF EXPERIMENTAL AND CONTROL GROUPS COMPARED WITH ASCH 1951

EXPERIMENT	N	TOTAL NUMBER OF ESTIMATES	CORRECT ESTIMATES		PRO-MAJORITY	
			F	PERCENT	F	PERCENT
CONTROL	40	280	260	94.6	20	5.6
ALONE	40	280	182	65.0	98	35.0
TOGETHERNESS DYAD	40	280	221	79.9	59	21.1
FRIENDS DYAD	40	280	250	89.6	30	10.4
<u>ASCH 1951</u>						
CONTROL	25	175	162	92.6	13	7.4
ALONE	31	217	145	66.8	72	33.2
ALONE PLUS PARTNER	18	126	110	87.0	16	13.0



cal subjects reveals such a significant reduction of errors, that the figures are only slightly higher than for the control group. The 40 subjects in this category committed only 30 errors out of a possible 280 responses.

### Statistical Analysis of the Data

The planned experimental design of this study was based on the assumption that the variables under investigation are normally distributed as was suggested by several articles mentioned in the survey of the literature. Therefore the statistical planning portion involved a decision to apply a one-tailed "Student's"  $t$  test of significance to the data. Subsequently, as a validating procedure, Bartlett's test for homogeneity of variance was applied to all the sample data since the respective sample variances appeared to be slightly heterogeneous. The assumption for equality of variances was accepted at the .01 level. This validated the subsequent application of the  $t$  criterion to the data "since Bartlett's test has been shown to be quite sensitive to non-normality." (Ostle, 1963).

Consequently, all the predictions were confirmed in that the Friends Dyad committed significantly less errors than the Togetherness Dyad ( $t=3.04$ ,  $p<.005$ ) while the Togetherness Dyad committed significantly less errors than the Alones ( $t=2.94$ ,  $p<.005$ ) and the control group committed significantly less errors than the Alones ( $t=6.30$ ,  $p<.0005$ ).

### Discussion of Data

Inspection of the data (Table II) reveals that the majority of the critical subjects' responses were resistant to the majority pressures. Even the Alone group which was the most susceptible, resisted compliance at a 65% rate. Examination of the Togetherness and Friends data reveals even more resistance, with rates of 79.9% and 89.6%, respectively. Note that 33 subjects out of a total of 120 resisted compliance completely, i.e., made 0 errors. Also note that the number of completely successful resisters increases as a function of situation, with most of these subjects (20) derived from the Friends Dyad (Table III).

Nonetheless, despite the majority of correct responses, there is still a marked movement toward the norm established by the confederates which indicates that their influence was felt. Even the most independent critical subject felt the impact of the majority pressure as was indicated by their emotional responses.

### Qualitative Findings

Several independent subjects replied to the judgments of the majority in an almost defiant manner, all the while exhibiting manifest signs of anxiety such as nervous movement, intense concentration, flushed faces and biting fingernails. There follows some typical oral statements of critical subjects who made 0 errors:

At first I thought it was kind of simple--and boring. Then, the third time around, I noticed that the others had called a different number from the one I judged to be the correct one. At first I thought I must have been crazy or something; then I decided that they were the crazy ones....

TABLE III  
DISTRIBUTIONS OF CRITICAL ERRORS IN  
EXPERIMENTAL AND CONTROL GROUPS

NUMBER OF ERRORS	CONTROL	ALONE	TOGETHERNESS CYAD	FRIENDS DYAD	ASCH CONTROL 1951	ASCH ALONE 1951
0	20	5	8	20	14	6
1	20	6	15	12	9	7
2	0	10	11	7	2	6
3	0	6	2	0	0	4
4	0	6	4	1	0	4
5	0	5	0	0	0	1
6	0	1	0	0	0	1
7	0	1	0	0	0	2
N	40	40	40	40	25	31
$\bar{X}$	0.50	2.45	1.48	0.75	0.52	2.32
SD	0.50	2.05	1.18	0.90	0.71	2.02

I must be crazy or something...I'm sorry, but that's the way I saw it. I know so many others can't be wrong...

I really thought they were right, but I didn't want it to look like I was conforming...

I decided that the others were just going along with the first girl because she seemed to be calling the tune, and I was \_\_\_\_\_ if I were going to conform just because they were afraid to be different...

I knew something was wrong. I thought at first it was the angle from which I was viewing the cards, but I decided that I couldn't answer any other way because that was the way I actually saw it. Yes, disagreeing with the others really upset me...

About half way through, I began to suspect that something was funny! It seemed strange that nobody else ever disagreed with anyone but me. This made me angry and I was determined not to let it sway me...

I could see that they were all wrong and I was all right...

The following are some oral statements by subjects who committed moderate numbers of errors:

I guess I called that number because I was afraid of going against the crowd, you might say. After the first few times, I got my courage back and actually called them as I saw them...

Well, at first I thought this thing was a bit ridiculous. But, when that third pair of cards was put up, and I saw one thing and the girls who went before me said something else, it sort of upset me and I figured I'd better go along. But, after a few more times, I could see that they were wrong and I was right...

Yes, you might say I went along a few times because I was afraid to go against the others, but most of the time I decided to stick up for myself...

Finally, here are some oral remarks of critical subjects who resisted few times or never:

I thought it was because of my poor eyesight. I can't see without my glasses...yes, I can see that; it's num-

ber three. (Told she answered number one during the trial)...Oh, I can't believe that!...

(Very low voice)... Yes, I can see it's number three now, but I really thought it was the first time I saw it but it didn't occur to me until after I'd said it was number one!...

I guess I was just afraid to go against the rest. I knew that the numbers I was calling out at times were not correct ones...(This subject had become so emotionally overwrought that she had turned white and was trembling violently.)

Now that's the way I really saw it! (Told about the true purpose of the experiment, her face reddens, she stammers)...Oh that's awful! There must be something wrong with me. Why did I go along with that?...

...Why are all these people against me?...

To sum up, there were varying magnitudes of error responses. Some subjects (one-fourth) completely resisted pressures; however, no critical subject was completely unaffected by the experience. The postulate of increasing dependence upon the judgment of others in increasingly ambiguous stimulus conditions is illustrated sharply by the data totals of trial number four (Table IV): more errors were committed on this trial than any other trial; indeed, there were double the number of errors over the next highest trial total (73 vs. 31). Note also, (Figure 4) that the number of errors tends to taper off as the trials proceed toward termination. This is indicative of some growing resistance to yielding which was borne out in the interviews.

### Post-Trial Questionnaire

As previously stated, critical subjects were given post-experimental questionnaires for self-reporting purposes. These were screened for any informative remarks such as prior awareness, valuable introspective statements, etc., in an attempt to aid reliability and validity of the data. Perhaps more revealing if not more informative in the collection of crucial data was the post-trial interview, during which the critical subjects were again shown the critical card pairs on which errors had been committed, with the subjects once again requested to give judgment. Almost invariably this was a period of acute embarrassment and confession for the critical subject. Once she had admitted her compliance, the true nature of the experiment was revealed along with the experimenter's interpretation of the situation. No critical subject was allowed to leave the setting without being briefed on the true nature of the experiment and given a reading reference concerning the work of Asch.

### Distribution of Errors

Several other observations are worthy of note. For instance, an examination of Table III will reveal that in the distribution of errors of individual subjects, a few individuals made a large number of errors, most individuals made moderate numbers of errors, and that a good number committed few or no errors. This indicates a roughly normal distribution.

In addition, this study showed some evidence for the effect on an Alone subject's tendency to comply as a result of the manipulation

TABLE IV  
FREQUENCY OF ERRORS ON SUCCESSIVE CRITICAL TRIALS

CRITICAL TRIALS	3	4	6	7	9	10	12
CONTROL	4	12	2	2	0	0	0
ALONE	10	22	16	10	12	16	12
TOGETHERNESS DYAD	11	24	8	4	2	4	6
FRIENDS DYAD	6	15	3	1	1	4	0
TOTALS	31	73	29	17	15	24	18
ASCH ALONE 1951	9	16	9	13	3	12	10
ASCH CONTROL 1951	1	10	1	1	0	0	0

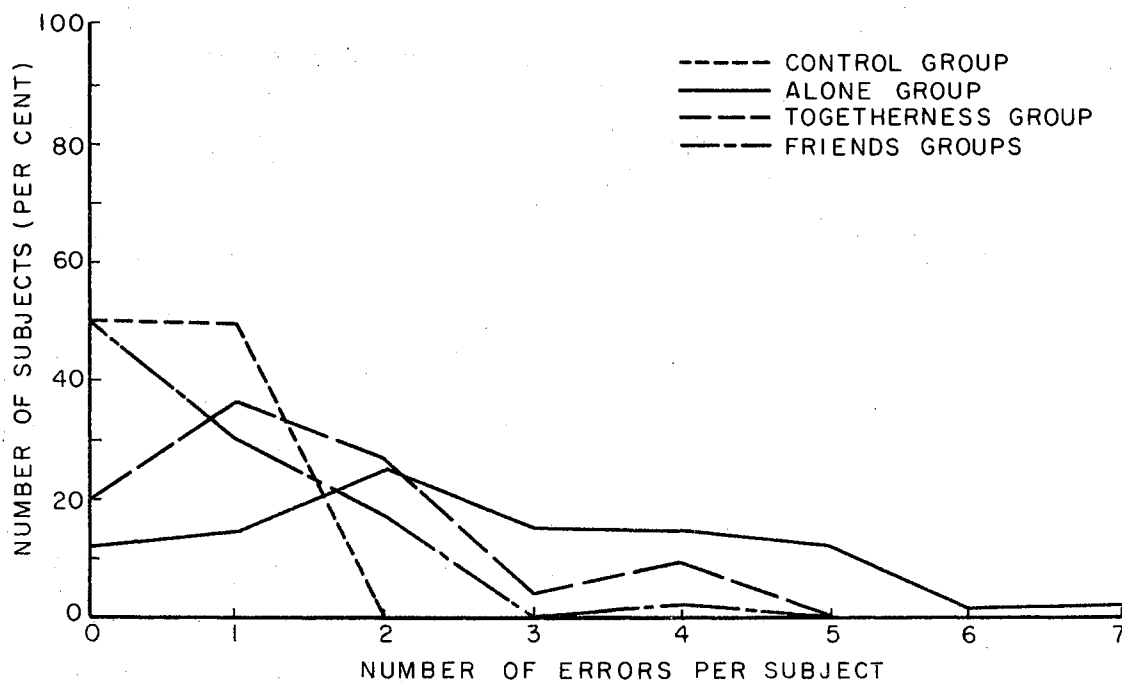
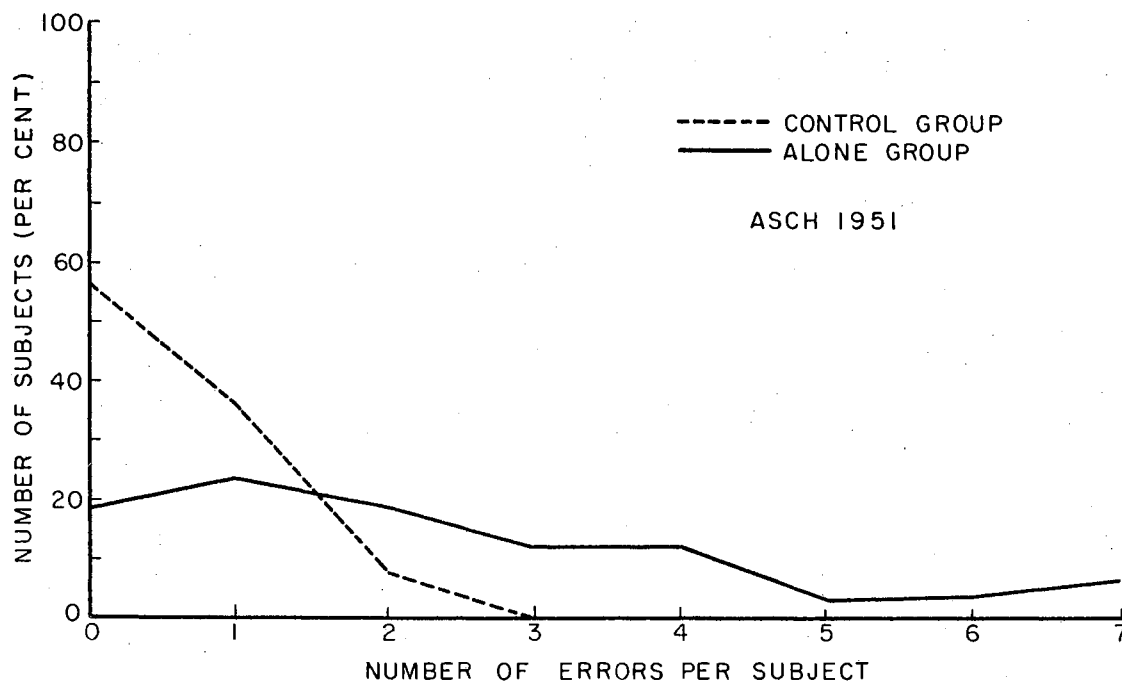


Figure 3. Frequency of Errors compared: Asch 1951 Versus Present Study



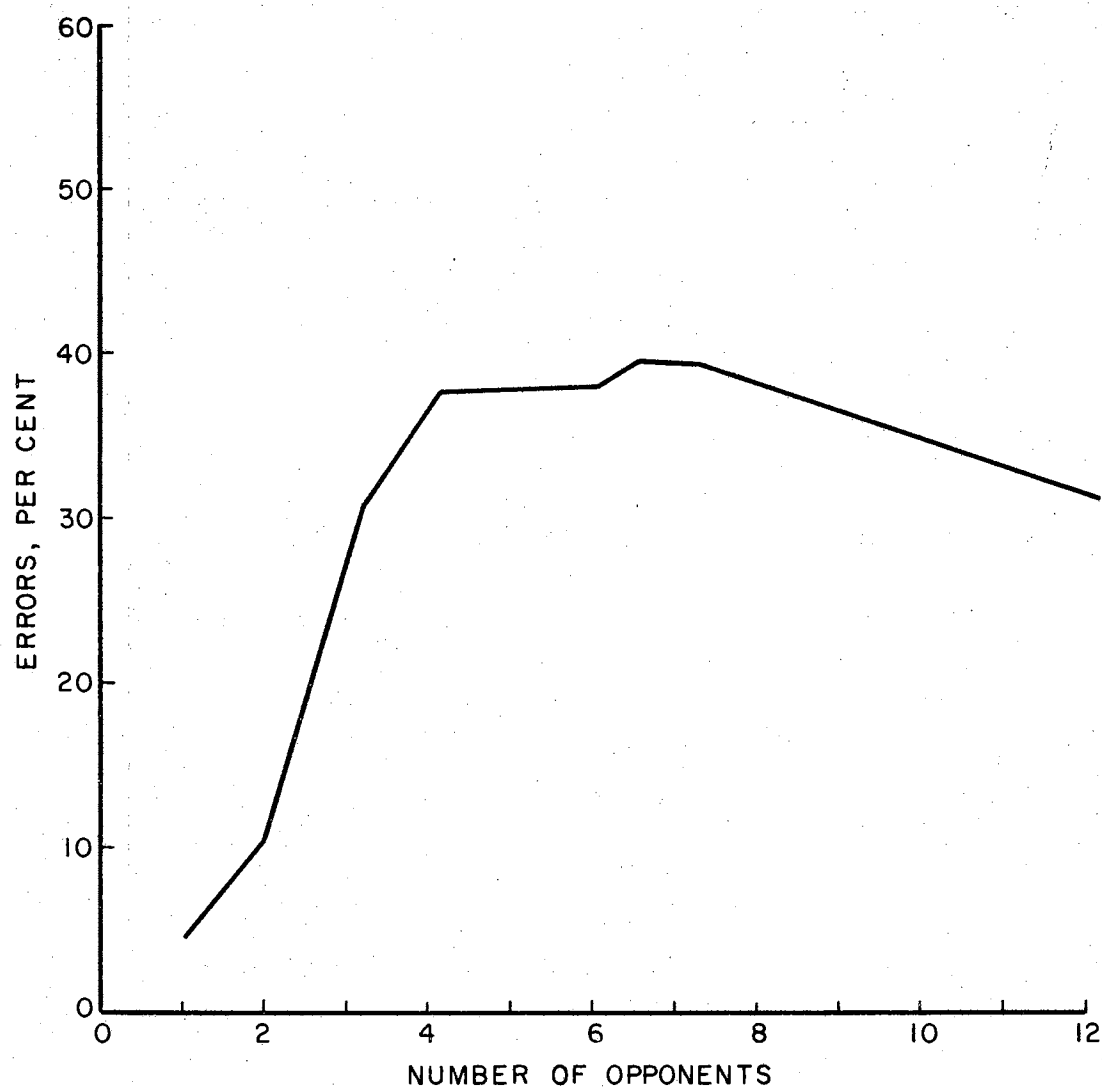


Figure 4. The Effect of the Size of the Group on the Conforming Behavior of an Individual

of the size of the unanimous majority. The writer decided to utilize eight confederates on the basis of Asch's findings (Figure 4) and phenomena observed during the several practice trials conducted before the actual experimental trials were undertaken for this study.

Finally, inspection of Table V reveals that the critical subject who was last to give estimates was significantly influenced by her relationship with her partner. It is to be noted that the Togetherness partner who gave estimates last committed 16 more errors than the corresponding Friends partner. Also, some evidence for a reciprocal dependency function is illustrated by the error scores of the first partner to give estimates, in that the Togetherness partners in this position committed 13 more errors than did the corresponding Friends partners. This finding is consistent with the concept that the presence of a friend in this situation constitutes a reinforcing stimulus which functions as positive contributor to the subject's maintenance of a veritcal frame of reference which enables him to make judgments that conform more closely to his previously established personal perceptual framework.

#### Comparison with Asch

The replication portion of the experiment produced data that are very similar to Asch's data from his pioneering researches into this area. This consistency of results would tend to further validate this particular experimental design.

TABLE V  
COMPARISON OF ERRORS: TOGETHERNESS VS. FRIENDS AS  
A MEASURE OF INTER-PARTNER DEPENDENCY

POSITION EXPERIMENT TRIAL #	TOGETHERNESS DYAD		FRIENDS DYAD	
	4	10	4	10
NUMBERS OF ERRORS/TRIAL				
1	0	1	2	0
2	2	0	1	0
3	2	0	1	1
4	1	0	1	0
5	3	0	0	0
6	4	2	2	2
7	2	1	0	1
8	0	1	3	3
9	0	2	1	0
10	2	1	0	0
11	2	3	1	0
12	1	1	0	0
13	3	4	0	1
14	1	2	1	0
15	4	2	2	0
16	0	0	1	1
17	1	2	1	0
18	2	2	0	1
19	1	1	1	1
20	1	2	1	0
TOTAL ERRORS	32	27	19	11

## CHAPTER V

### INTERPRETATION OF RESULTS

#### Summary and Conclusions

All the critical subjects who responded compliantly, i.e. erroneously, admitted their erroneous choice upon questioning. Subsequently, it may be concluded that all errors were a function of the majority pressures, the stimulus conditions, and personality factors of the subjects. This is illustrated by comparison of data with the control group, the contribution of ambiguity, and the personal comments of the subjects, respectively. As an additional substantiation, note that there were but four errors of judgment by critical subjects out of 800 neutral trial responses during actual experimental trials, i.e., the critical subject chose the wrong line when the majority was right.

To summarize then, this study utilized an experimental setting to explore the effects of majority pressures on several types of minorities. The minorities consisted of the Alone, or minority of one versus a unanimous majority; the Togetherness Dyad, or two previously unfamiliar subjects versus the unanimous majority; and the Friends Dyad, or two subjects who are prior friends versus the unanimous majority. The majority consisted of eight confederates of the experimenter, who were instructed to purposely produce disagreement between the critical subjects and themselves concerning a clear and simple issue of fact involv-

ing a public judgment of a comparison of lengths of lines. All the subjects were white, undergraduate females between the ages of 17 and 24.

The majority contradictions caused a considerable deflection of estimates by the critical subjects toward the majority norm. This may be verified by contrasting the error scores for the control group with any of the experimental groups. Simultaneously, however, the majority of responses (two-thirds or more) were preponderantly accurate, testifying to the influence of a veritcal judgmental framework within an already established perceptual frame of reference.

Individual differences as related to resistance were marked. They ranged from complete independence to complete compliance. The majority effect was a function of the public character of the proceedings, the stimulus conditions, the majority position, and personal factors.

Quantitative measurement was obtained through collection of error responses. It was predicted that the presence of a partner who is also a friend would substantially reduce compliant responses as contrasted with the presence of a partner previously unknown. Statistical analysis confirmed the significant difference as hypothesized.

Qualitative results concerning the effects produced in the experimental setting were provided by use of questionnaires and post-trial interviews. These indicated that the subjects endeavored to resolve their conflict as Asch relates:

...by means of various hypotheses which they were compelled to surrender as the contradictions continued. The contradictions frequently produced concern, doubt of one's accuracy, and temptation to join the majority. As the opposition persisted the reactions became increasingly self-centered. Sub-

jects expressed fear of conspicuousness, of public exposure of personal defects, of group disapproval; they felt the loneliness of the situation.

When questioned, the subjects who were previous friends admitted that having the friend as a partner was a considerable comfort. Many of these stated their uncertainty of predicted behavior as Alones or in the Togetherness Dyad. The togetherness subjects also expressed appreciation of the partner, but were of necessity not as aware of their presence as the friends were of each other. The support is definitely reflected in the error scores.

Finally, the interviews indicated that the subjects offered varied reasons for their behavior such as basic confidence, embarrassment, fear and unawareness.

#### Implications of the Study

One of the obvious concepts is that almost all human beings experience and behave in a social context. Man exists primarily within groups, for in society, we become dependent upon others for understanding, feeling, and the extension of the sense of reality. In addition, the group setting is a requirement for the development of self. However, these relations place a particular demand upon the participants in social action. If our dependence and trust are to have a solid ground, if we are to reach valid consensus, each must contribute from his understanding and feeling. Often, this condition is not fulfilled as illustrated by the example of the tale of the emperor's new clothes, a situation of baseless consensus produced by the failure of each to make his proper contribution.

In social learning, one learns what is acceptable behavior and what is not through a reinforcement process. He learns conforming behavior. His reference group builds socially approved forms of behavior, i.e., norms, into him by rewarding him when his behavior conforms to their standards or punishing him when it does not. Generally, the group persuades the individual to adopt its standard of behavior. Or from the viewpoint of the individual, he is brought around to conform to group pressures.

The subject of conformity is currently of popular interest in the everyday world, particularly amongst certain college groups. Protestations of being likened to an IBM punch card and of being "just another number" resound loudly across the land. The author respectfully submits that misunderstanding of individual contribution, welfare of the group, and a basic and decisive lack of understanding concerning the difference in meaning and implication between the concepts of conformity and compliance have greatly contributed to the unrest.

A significant characteristic separating conformity and compliance is the function of contribution. Conformity involves a reciprocal contribution between the individual and the group due to the internalization of norms. The individual thus accepts his obligation to the group and the group reinforces the individual for conforming to its norms. On the other hand, compliance involves merely the surrender of the individual to a group in which he is not a member, of his right to dissent without any reciprocal reinforcement of a positive nature by the group for the welfare of the individual.

Conformity, compliance, resistance, and conversion share basic psychological processes in common, based on the fact that an individual requires a stable framework, including salient and firm reference points, in order to orient himself and to regulate his interactions with others. This framework consists of external and internal anchorages "...available to the individual whether he is aware of them or not." (Asch, 1952) With an acceptable framework he can resist giving or accepting information that is inconsistent with that framework, or that requires him to relinquish it. In the absence of a stable frame of reference, the individual will actively seek to establish one through his own strivings by utilizing any meaningful information that is relevant to the context of interaction. Manipulators, by controlling the amount and kind of information available for a frame of reference, can lead individuals to embrace conforming attitudes which are entirely foreign to earlier pre-dispositions.

Conversion can be produced by demonstrating the inadequacy of a presently accepted frame of reference, and then introducing another which is more satisfactory. Shifts in attitudes, opinions, understandings and convictions can be wrought without the awareness of the person, under optimal conditions. Techniques of persuasion and other forms of exerting influence are based on the subtle use of strategies and tactics that are conducive to conversion.

This study has shown that the mere presence of a dissenting voice greatly aids resistance of a person to compliance with an overwhelming majority. Perhaps this is one reason why tyrannical forms of government cannot tolerate the least amount of opposition, for a little dis-



sension serves to arouse much opposition. This lends great insight for military prisoners of war, particularly concerning interrogation and "brainwashing" activities directed against captives by captors. One in this predicament must avail himself of a friend, to help stabilize a perceptual frame of reference that the captors cannot readily restructure. A friend in this situation will be anyone who agrees to a sharing of obligation in making a personal stand against a unanimous majority who are attempting to distort one's judgment of reality. In other words, compose a reference group in order to structure one's perceptual framework. For who is immune to thoughts of self-doubt under trying circumstances? The following description by the famous and respected astronomer Tycho Brahe, of his discovery in 1572 of a new star, as quoted from Asch (1952), is a case in point:

Last year (1572), in the month of November, on the eleventh day of that month, in the evening, after sunset, when, according to my habit, I was contemplating the stars in a clear sky, I noticed that a new and unusual star, surpassing the other stars in brilliance, was shining almost directly above my head; and since I had, almost from boyhood, known all the stars of the heavens perfectly (there is no great difficulty in attaining that knowledge), it was quite evident to me that there had never before been any star in that place in the sky, even the smallest, to say nothing of a star so conspicuously bright as this one. I was so astonished at this sight that I was not ashamed to doubt the trustworthiness of my own eyes. But when I observed that others, too, on having the place pointed out to them, could see that there was really a star there, I had no further doubts.

There exists the problem of defining the validity of consensus. What is it that gives consensus its validity, or better still, what makes it "true"? Our Aschian group deliberately distorted reality in an attempt to sway others into an acceptance of the group's norm. No

conformity was produced in this situation, merely compliance, for once the social pressure was removed, the subjects readily admitted to the "actual truth" of which in reality constituted the correct choice. But will compliance evolve into conformity over a period of time if enough pressure is applied? And if this occurred, would truth be absolute or relative in regard to consensual validation? These are questions for one to ponder well.

Regarding perception itself, it is realized that we are not acquiring an exact knowledge of the nature of the physical world through the use of our sense organs. For example, we know that color is not a physical phenomenon; it is a psychological one. Yet, we can all agree on what constitutes "redness" through a consensual validation and this is essentially the method people employ in acceptance of what constitutes environmental reality. In common parlance, we all agree--and that's it! Exactly where does one apply the label of "truth", here?

Essentially, there are two conceptions of validation in the conventional sense, we agree because someone else has responded and it seems to work, or is reinforcing. This formulation reduces cognitive conditions to a minimum, in that an individual need not know why imitating the acts of others (or doing the opposite) works. Contrast this with the other conception of validation whereby it is assumed that there is a structural notion of agreement. The agreement of others is not needed herein, to establish or strengthen the grounds of one's beliefs. For example, I see the sun rise. The difference between the two conceptions of agreement may be illustrated by referring to an important problem of scientific methodology whereby it is often stated that the

criterion of objectivity for scientific datum is agreement amongst observers. If several observers independently reach the same conclusion, it can claim to be established. (Relate this to Tycho Brahe).

Here is the last quotation from Asch (1952):

The statement that agreement among observers is the criterion of objectivity contains a crude ambiguity. A scientific principle is not valid because it is generally believed. Discovery often has its start in the questioning by a single individual of a generally accepted view; shall we say that at the moment of discovery it lacks validity and that it gains in truth with the number of adherents? It is of course equally correct to say that general agreement can lull us into a sense of complacency and prevent our seeing problems. To avoid these difficulties, it has become usual to introduce the qualification that the observers who agree must be competent. The qualification suffices to show what is at issue concerns more than sheer agreement. Agreement cannot have validity if it is merely a pooling of unreliable and untrustworthy processes of individuals. The value and dignity of agreement rests on the value and dignity of individual observes and thinkers....

The perception of another cannot establish a certainty I already possess. Consensus is valid only to the extent to which each individual asserts his own relation to facts and retains his individuality; there can be no genuine agreement about facts or principles unless each adheres to the testimony of his experience and steadfastly maintains his hold on reality...Only if this condition is fulfilled does agreement make its contribution. In this sense it follows that truth does not belong to groups or societies. The group and its consensus are not a criterion of truth; rather they must themselves submit to the requirements of validity.

The author concurs with the aim of the quotation, but submits that we must still ask the question as to who will determine what constitutes validation in a group context, those who compose the group, or others from outside the group? Many wars have been fought over this question, and the question still is basically unanswered. Asch has paraphrased

William James' famous remark that an idea works not because it is true, but is true because it works.

To conclude this portion of the study let it be noted that the author has manipulated the variable of partner presence in order to illustrate the antithetical relationship of conformity and compliance. The presence of a friend reinforced the conforming responses of the individual with regard to his own beliefs as related to his perceptual process. Absence of reinforcement tended to increase compliant responses of the individual in that his external responses were not consistent with his perception and his internalized norms relating to the relationships of the judged stimuli. These factors illustrate that motivation can be intra-individually and inter-individually related.

#### Suggestions for Future Study

It is suggested that the extension portion of this study be replicated in order to further validate the data. Subsequently, a further extension may be performed on the Friends Dyad. Specifically, the variables of inter-personal relationship and internal factors may be investigated. Dyadic relationships such as husband-wife, brother-sister, father-son, etc. may be subjected to the majority pressures in attempts to derive fruitful insights.

On the applied level, this experimental methodology could be profitably employed by the armed forces as a potent example of the effect of persuasion as related to the special training all military personnel receive regarding proper conduct in the event of capture and subsequent exposure to "brainwashing" techniques and resistance to same.

Since experience and prior awareness seem to be key variables in relation to compliance in this type of situation, recognition of the particular situation with periodic reinforcement, might maintain a higher level of conscious motivation in regard to potential behavior in a prisoner of war status. A very potent and graphic illustration of the effects of group pressure would be supplied to military personnel through utilization of a motion picture film, or by the actual observation of an Aschian situation, either by actual participation, or through indirect observation by one-way mirror, etc. It is believed that great benefit would be gained from this experience.

## BIBLIOGRAPHY

- Allport, G. W. "The Historical Background of Modern Social Psychology." Handbook of Social Psychology. Ed. G. Lindzey. Cambridge: Addison-Wesley, 1954, Chapter I.
- Asch, S. E. "Effects of Group Pressure Upon the Modification and Distortion of Judgment". Groups, Leadership and Men. Ed. H. Guetzkow. Pittsburgh: Carnegie Press, 1951.
- Asch, S. E. Social Psychology. New York: Prentice-Hall, 1952.
- Asch, S. E. "Studies of Independence and Conformity. A Minority of One Against a Unanimous Majority." Psychological Monographs. Vol. 70. 1956, No. 9.
- Back, K. W. and Davis, K. E. "Some Personal and Situational Factors Relevant to the Consistency and Predictions of Conforming Behavior". Sociometry. Vol. 28. 1965, 227-240.
- Barry, H., Bacon, M. and Child, I. "A Cross-Cultural Survey of Some Sex Differences in Socialization." J. of Abnormal and Social Psychology. Vol. 55. 1957, 327-332.
- Berg, I., and Bass, B. Conformity and Deviation. New York: Harper and Brothers, 1961.
- Blake, R., Helson, H. and Mouton, J. "The Generality of Conformity Behavior as a Function of Factual Anchorage, Difficulty of Task, and Amount of Social Pressure." J. of Personality. Vol. 25. 1957, 294-305.
- Blake, R. and Mouton, J. "Conformity, Resistance and Conversion." Conformity and Deviation. Ed. I. Berg and B. Bass. Pittsburgh: Carnegie Press, 1961.
- Bogdonoff, M. D. et al. "The Modifying Effect of Conforming Behavior Upon Lipid Response Accompanying CNS Arousal." Clinical Research. Vol. 9. 1961, 135.
- Breger, L. "Conformity as a Function of the Ability to Express Hostility." J. of Personality. Vol. 31. 1963, 247-257.
- Crowne, D. and Liverant, S. "Conformity Under Varying Conditions of Personal Commitment." J. of Abnormal and Social Psychology. Vol. 66. 1963, 547-555.

- Crutchfield, R. S. "Conformity and Character." American Psychologist. Vol. 10, 1955, 191-198.
- Deutsch, M. and Derard, B. "A Study of Normative and Informative Social Influences upon Individual Judgment." J. of Abnormal and Social Psychology. Vol. 50. 1955, 255-260.
- Edmonds, V. H. "Logical Errors as a Function of Group Consensus: An Experimental Study of the Effect of Erroneous Group Consensus Upon Logical Judgments of Graduate Students." Social Forces. Vol. 43. 1964, 33-38.
- Endler, N. S. "The Effects of Verbal Reinforcement on Conformity and Deviant Behavior." J. of Social Psychology. Vol. 66. 1965, 147-154.
- Feldman, M. and Goldfried, M. "Validity of Group Judgment as a Factor Affecting Independent and Conforming Behavior." J. of Social Psychology. Vol. 62. 1962. 289-294.
- Fisher, R. A. Statistical Methods for Research Workers. Edinburgh: Oliver and Boyd, 1936.
- French, Morrison and Levinger. "Coercive Power and Forces Affecting Conformity." J. of Abnormal and Social Psychology. Vol. 59. 1960. 93-101.
- Garai, J. E. "Support of Judgmental Independence or Conformity in Situations of Exposure to Strong Group Pressure." Psychology. Vol. 1. 1964, 21-25.
- Gerard, H. B. "Some Factors Affecting an Individual's Estimate of His Probable Success in a Group Situation." J. of Abnormal and Social Psychology. Vol. 52. 1956, 235-239.
- Gerard, H. B. "Conformity and Commitment to the Group." J. of Abnormal and Social Psychology. Vol. 68. 1964, 209-211.
- Goldberg, Solomon and Lubin. "Influence as a Function of Perceived Judgment Error." Human Relations. Vol. 11. 1958, 275-281.
- Goldman, Haberlein and Feder. "Conformity and Resistance to Group Pressure." Sociometry. Vol. 28. 1965, 220-226.
- Gorfein, D. S. "The Effects of a Non-Unanimous Majority on Attitude Change." J. of Social Psychology. Vol. 63. 1964, 333-338.
- Gorfein, D. S. et al. "Cognitive Dissonance and Yielding Behavior." J. of Psychology. 1960. 205-208.
- Hardy, K. R. "Determinants of Conformity and Attitude Change." Doctoral Dissertation. 1954, University of Michigan, Ann Arbor.

- Harper, F. and Tuddenham, R. "The Sociometric Composition of the Group as a Determinant of Yielding to a Distorted Norm." J. of Psychology. Vol. 58. 1964, 307-311.
- Hollander, E., Julian, J. and Gordon, A. "Conformity Process and Prior Group Support." J. of Personality and Social Psychology. Vol. 2. 1965, 852-858.
- Iscoe, I. and Williams, M. "Experimental Variables Affecting the Conformity Behavior of Children." J. of Personality. Vol. 31. 1963, 234-246.
- Jackson, J. and Saltzstein, H. "The Effect of Person-Group Relationship on Conformity Processes." J. of Abnormal and Social Psychology. Vol. 57. 1958, 17-24.
- Kassarjian and Kassarjian. "Conformity of Judgment in a Group Situation." Psychological Reports. 1962, 491-494.
- Kendler, H. H. Basic Psychology. New York: Appleton-Century-Crofts, 1963.
- Khan, T. A. "Experimental Study of Group Influence Upon Individual Judgment." J. of Psychology. Lahore. Vol. 2. 1965, 133-144.
- Kidd, J. and Campbell, D. "Conformity to Groups as a Function of Group Success." J. of Abnormal and Social Psychology. Vol. 51. 1955, 390-393.
- Leik, R. K. "'Irrelevant' Aspects of Stooze Behavior: Implications for Leadership Studies and Experimental Methodology." Sociometry. Vol. 28. 1965, 259-271.
- Linde, T. and Patterson, C. "Influence of Orthopedic Disability on Conforming Behavior." J. of Abnormal and Social Psychology. Vol. 68, 1964, 115-118.
- Linton, H. B. "Dependence on External Influence Correlates in Perception, Attitudes and Judgment." J. of Abnormal and Social Psychology. Vol. 51. 1955, 502-507.
- London, P. and Lim, H. "Yielding Reason to Social Pressure: Task Complexity and Expectation in Conformity." J. of Personality. Vol. 32. 1964, 75-89.
- Lott, A. and Lott, B. "Group Cohesiveness as Interpersonal Attraction: A Review of Relationships with Antecedent and Consequent Variables." Psychological Bulletin. Vol. 64. 1965, 259-309.
- Luchins, A. and Luchins, E. "On Conformity with Judgments of a Majority or an Authority." J. of Social Psychology. Vol. 53. 1961, 303-316.



- MacBride, P. and Tuddenham, R. "The Influence of Self-Confidence Upon Resistance of Perceptual Judgments to Group Pressure." J. of Psychology. Vol. 60. 1965, 9-23.
- Mausner, B. and Bloch, B. "A Study of the Additivity of Variables Affecting Social Interaction." J. of Abnormal and Social Psychology. Vol. 54. 1957, 250-256.
- McDavid, J. and Sistrunk, F. "Personality Correlates of Two Kinds of Conforming Behavior." J. of Personality. Vol. 32. 1964, 420-435.
- Mead, G. H. Mind, Self and Society. Chicago: U. of Chicago Press. 1937.
- Milgram, S. "Liberating Effects of Group Pressure." J. of Personality and Social Psychology. Vol. 1. 1965, 127-134.
- Moran, G. "Group Cohesion and Conformity Behavior." Psychological Reports. Vol. 17. 1965, 465-466.
- Nickols, S. A. "A Study of the Additivity of Variables Influencing Conformity." Doctoral Dissertation, University of Florida, 1964.
- Oliver, B. S. "Conforming Behavior: The Differential Effects of Group Agreement and Disagreement." Doctoral Dissertation. Carbondale: University of Southern Illinois, 1963.
- Ostle, B. Statistics in Research. Ames: Iowa State Univ. Press, 1963.
- Patel, A. and Gordon, J. "Some Personal and Situational Determinants of Yielding to Influence." J. of Abnormal and Social Psychology. Vol. 61. 1960, 411-418.
- Reitan, H. and Shaw, M. "Group Membership, Sex-Composition of the Group, and Conformity Behavior." J. of Social Psychology. Vol. 64. 1964, 45-51.
- Rosenberg, L. A. "Group Size, Prior Experience and Conformity." J. of Abnormal and Social Psychology. Vol. 63. 1961, 436-437.
- Seaborne. "Group Influence on the Perception of Ambiguous Stimuli." Confidence in Partner." Human Relations. Vol. 16. 1963, 131-139.
- Secord, P. and Backman, C. Social Psychology. New York: McGraw-Hill, 1964.
- Sherif, M. A. "A Study of Some Social Factors in Perception". Archives of Psychology. Vol. 27. 1935, No. 187.

- Sistrunk, F. and McDavid, J. "Achievement Motivation, Affiliation Motivation, and Task Difficulty as Determinants of Social Conformity." J. of Social Psychology. Vol. 66. 1965, 41-50.
- Smith, S. A. "Conformity in Cooperative and Competitive Groups." J. of Social Psychology. Vol. 65. 1965, 337-350.
- Tuddenham, R. D. "The Influence of a Distorted Group Norm Upon Judgments of Adults and Children." J. of Psychology. Vol. 52. 1961, 231-239.
- Van Kravelin, A. "Stability of Adolescents' Judgments of an Ambiguous Figure After Knowledge of Others' Judgments of same Figures." J. of Genetic Psychology. Vol. 94. 1959. 23-27.
- Vaughan, G. M. "The Trans-Situational Aspect of Conforming Behavior." J. of Personality. Vol. 32. 1964, 335-354.
- Vaughan and Mangan. "Conformity to Group Pressure in Relation to the Value of the Task Material." J. of Abnormal and Social Psychology. Vol. 65. 1963, 179-183.
- Wiener et al. "Some Determinants of Conformity Behavior." J. of Social Psychology. Vol. 45. 1957, 289-292.
- Whittaker, J. O. "Sex Differences and Susceptibility to Interpersonal Persuasion." J. of Social Psychology. Vol. 66. 1965, 91-94.
- Whittaker, J. O. et al. "A Repetition of Asch's 'Effects of Group Pressure Upon the Modification and Distortion of Judgments.'" Perceptual Motor Skills. Vol. 7. 1957, 245.
- Willis, R. H. "Two Dimensions of Conformity-Non Conformity." Sociometry. Vol. 26. 1963, 499-513.
- Wolf, I. and Zolman, J. "Social Influence: Self-Confidence and Prestige Determinants." Psychological Record. Vol. 9. 1959. 71-79.
- Zolman, J., Wolf, I. and Fisher, J. "Distance and Conformity in Continuous Social Influence Interactions." J. of Social Psychology. 1960, 251-257.

# APPENDIX A

## EXPERIMENTAL TRIAL SCORING SHEET

CRITICAL TRIALS		COMMENTS
AGREE	DISAGREE	
3		
4		
5		
6		
7		
8		
9		
10		
12		

TYPE: (CHECK)

CONTROL

ALONE

TOGETHERNESS DYAD

FRIENDS DYAD

DATE:

NUMBER:

## APPENDIX B

### POST-TRIAL QUESTIONNAIRE

DATE

Please Answer the Following Truthfully and to the Best of Your Knowledge. All information Will be Held in Confidence. Do Not place your name on this form. Thank you for your cooperation. Please do not discuss this experiment with anyone else, as it will bias the results if these persons are potential subjects.

1. DID YOU KNOW THE TRUE PURPOSE OF THIS EXPERIMENT BEFOREHAND?
2. DID YOU KNOW ANY OF THE OTHER MEMBERS OF THE GROUP BEFORE THE EXPERIMENT? IF SO, WHO, AND HOW WELL?
3. PLEASE STATE YOUR REACTIONS TO THE EXPERIMENT AND TELL WHY YOU DID OR DID NOT AGREE WITH THE GROUP WHEN THEY WERE LIEING.
4. IF YOU BROUGHT A FRIEND, WAS SHE AN AID AND COMFORT TO YOU IN RESISTING THE PRESSURES OF THE MAJORITY?
5. IF YOU DID NOT BRING A FRIEND, AND YOU REALIZED THAT SOMEONE ELSE WAS AGREEING WITH YOU ON THE "LIE" TRIALS, WAS THIS A COMFORT TO YOU? DID YOU KNOW THIS PERSON BEFORE THE EXPERIMENT? HOW WELL?
6. IF YOU DID HAVE A PARTNER OF SOME TYPE: HOW DO YOU THINK YOU WOULD HAVE FARED HAD YOU BEEN ALONE?

APPENDIX C

VOLUNTEER FORM

NAME	PHONE	WHEN TO CALL	SORORITY HOUSE OR DORMITORY (AND FLOOR#)	WHEN CAN'T COME	NAME OF BEST FRIEND ON CAMPUS

INSTRUCTOR:

SECTION:

## VITA

Joseph Anthony Cammalleri

Candidate for the Degree of

Master of Science

Thesis: ASCHIAN REPLICATION AND EXTENSION

Major Field: Psychology

### Biographical:

Personal Data: Born in the Borough of the Bronx, New York, New York, February 2, 1935, the son of Leo and Angela Marie Cammalleri.

Education: Attended Public School 72, Bronx; graduated from Mt. St. Michael's Academy, June, 1952; received the Bachelor of Science degree from Manhattan College, New York, New York, with a major in Psychology in June, 1956. Completed requirements for the Master of Science degree in May, 1966.

Professional Experience: Entered the United States Air Force in 1956 and is now a Captain with the aeronautical rating of Senior Navigator-Electronic Warfare Officer; is a member of Psi Chi, the National Honor Society in Psychology. Was a graduate teaching assistant at Oklahoma State University, from September, 1965 to January, 1966.