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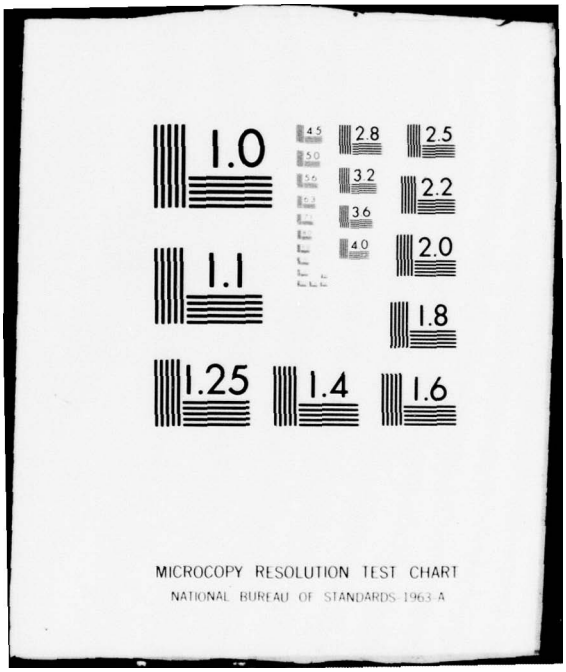
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LEVEL II

AN INVESTIGATION OF THE INTERACTION EFFECTS OF ACUTE SELF-ESTEEM AND PERCEIVED COMPETENCE ON CONFORMITY

By

Thomas Carlyle Moss

Captain, United States Army

A Thesis
Submitted to the Faculty of
Mississippi State University
in Partial Fulfillment of the Requirements
for the Degree of Master of Science
in the Department of Psychology

Mississippi State, Mississippi

December 1978

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On the basis of previous research on comformity it was predicted that subjects who were subjected to acute self-esteem manipulations would conform differentially on a task involving ambiguous judgemental stimuli. Furthermore, the study was intended to provide a demonstration of the interaction effects of acute self-esteem and perceived competence.

Acute self-esteem manipulations (high, low or no) were

varied with perceived competence manipulations (high, low or no) in a 3 X 3 design in a conformity situation. An additional control group was tested under conditions of no social pressure. The results were generally consistent with previous research regarding perceived competence and its mediating role in conformity. The main effect of self-esteem and the interaction of self-esteem and perceived competence did not prove significant. Results were discussed in terms of procedural difficulties and potential sources of experimental error variance. Suggestions were posed in terms of pitfalls to be avoided and procedural modifications for further investigation of the effects of these variables on conformity.

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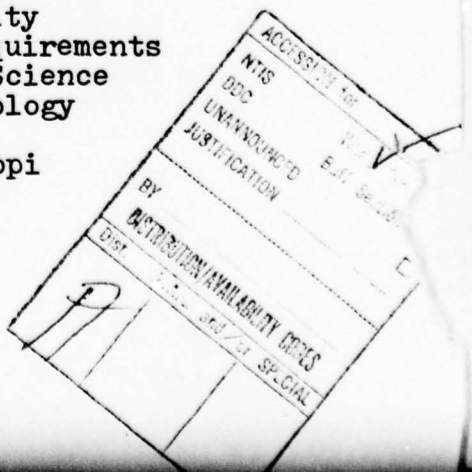

AN INVESTIGATION OF THE INTERACTION EFFECTS OF ACUTE SELF-ESTEEM AND PERCEIVED COMPETENCE ON CONFORMITY

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ABSTRACT

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CHAPTER I

INTRODUCTION

The literature in psychology has been deluged with data relating to conformity. A recent research review revealed that between January 1967 and April 1978 at least 682 articles had been published concerning the topic of conformity. These research findings and those which preceded them have been explained in terms of several major theoretical approaches.

Theories of Conformity

One of the most influential theoretical approaches is that of Leon Festinger. Festinger's theories of Social Comparison Process (1950) and Cognitive Dissonance (1957) have often been cited as providing theoretical frameworks for the processes occurring when people conform. Festinger's theory of Social Comparison Processes posits two concepts which are relevant in influencing conformity in a group situation. These two concepts are group locomotion and social reality. Group locomotion is essentially the force brought about on individuals in the minority by those in the majority in working toward the group's goal or purpose. Social reality, on the

other hand, is a sort of reliance upon others in the group for a point of reference amidst uncertainty and ambiguity. Both of these concepts operate on the individual to influence him toward yielding to the group consensus.

The second of Festinger's theories, sometimes cited as mediating the processes in conformity, is Dissonance Theory (1957). One of the fundamental elements of Dissonance Theory is cognitions which are thoughts or "bits of information" (Kiesler & Kiesler, 1969, p. 97) about an individual and his surroundings. There are three relationships which can exist regarding cognitions: Relationships between cognitions may be consistent, inconsistent or irrelevant. Inconsistent relationships create dissonance, which is an aversive state to the individual. An individual experiencing dissonance is motivated to reduce the dissonance. Dissonance can be reduced in several ways, but there are three general conditions under which reduction of dissonance can occur: (1) the individual can engage in some activity which will reduce the inconsistency, e.g., change his own behavior to be more congruent with publicly stated but previously inconsistent cognition, thereby reducing dissonance; (2) the individual can engage in some form of

cognitive distortion which thereby reduces the dissonance; (3) the individual can seek information which reduces the inconsistency, e.g., if a behavior is inconsistent with a previously held belief, then the individual might seek information supportive of the behavior, thus eventually allowing the belief to be changed and making the previous behavior consistent with a new belief.

Another theoretical approach is that espoused by Kelman (1958). For Kelman there are three factors operating to produce conformity: compliance, identification and internalization. Compliance, to Kelman, seems to operate much like group locomotion in Festinger's Social Comparison Processes for bringing about yielding. Identification and internalization are, however, distinguishable in that the former is the process by which one is publicly induced to conform and the latter is the process by which private acceptance of the influence of others occurs (Kiesler & Kiesler, 1969). Kiesler and Kiesler (1969) conclude that the primary distinction between Kelman's and Festinger's positions is on the point of private acceptance.

Kelley (1952) espoused the third of these theoretical approaches. He distinguishes between

two concepts operating in reference groups which bring about yielding by members. The first of these concepts is the normative function whereby a group member seeks to improve or maintain his position in the group. The point here is that deviation from group norms will not allow the individual to maintain or enhance his position. The second concept is the comparison function. The comparison function is essentially the same as Festinger's social reality concept (Jones & Gerard, 1967). The individual compares his attitudes, beliefs and behaviors to others in the reference group and makes evaluations of himself in terms of his comparisons.

French and Raven (1959) have provided a theory of social power which can be viewed as mediating influences for bringing about yielding by group members. French and Raven delineate five types of power which influence yielding: reward, coercive, referrent, legitimate, and expert. "French and Raven seem to feel that legitimate power, referrent power, and expert power produce private acceptance, but reward and coercive power do not" (Kiesler & Kiesler, 1969, p. 70). Conformity for French and Raven is seen in terms of the power that the group and its members can bring to

bear upon the individual member.

Another theoretical approach is that developed by Deutsch and Gerard (1955). Deutsch and Gerard posit that there are normative and informational social influences which operate on an individual in group situations. They define normative social influence as:

> an influence to conform with the positive expectations of another, and informational social influence may be defined as influence to accept information obtained from another as evidence about reality (Deutsch & Gerard, 1955, p. 629).

For Deutsch and Gerard both of these influences are present and operative in group situations and are difficult to separate experimentally, since even in trivial nominative groups normative influences are functioning. The parallel between these social influences and the factors in Festinger's Social Comparison Process seem obvious.

The purpose of this brief exposition of some of the social psychological theories relevant to conformity study is twofold. The first is to point out what seems to be a commonality between these approaches, and the second is to lay some theoretical foundation or reference upon which this

paper can be put into context.

Considering the issue of commonality between these approaches they may all be subsumed under a general category of attempts to explain the social, interactionist processes that occur in group behavior. Another commonality that seems prevalent in these theories is the interdependence of individuals in group situations. Apart from the myriad of specific situational variables that come into play in any group situation these theories all seem to point out the relevance of the interdependence of people who form a group. For the purposes of this paper a group shall be defined as two or more people who perceive themselves and others to have some common purpose. The group may be little more than an aggregate of people randomly placed together and the purpose may be short term and trivial, but those people would, nevertheless, form a group.

Within this group setting Jones and Gerard (1967) provide two terms they use in context which apply to the socialization process, effect dependence and information dependence. These two concepts also seem to be equally applicable to the processes which generally are operative in examining conformity. Jones and Gerard define

effect dependence as a "dependence on others for their role in the direct mediation of outcomes" and information dependence as "dependence on others for information about the nature of reality and the adequacy of our abilities for dealing with reality" (1967, pp. 117-118). Taking Festinger's theory of Social Comparison Processes, Kelley's dual function of reference groups, French and Raven's social powers, and Deutsch and Gerard's social influences, their dichotomies seem to fit well into Jones and Gerard's effect and information dependence model. Effect dependence and information dependence could also be viewed as relevant processes in Festinger's dissonance theory as modalities for dissonance reduction, and similarly in Kelman's triad of interpersonal influences.

For the purposes of this paper I shall adhere conceptually to the broad interactive position of effect dependence and information dependence as defined by Jones and Gerard as the operative and interdependent intervening variables mediating an individual's yielding behavior, that is, his conformity response.

At this point it seems necessary to provide a working definition of conformity. Kiesler and Kiesler define conformity as "a change in behavior

or belief toward a group as a result of real or imagined group pressure" (1969, p. 2). This definition is too limited because it seems totally related to effect dependence, eliminating the prospect of the individual as an information processer. For the purposes of this work the conformity definition to be used will combine the ideas from Kiesler and Kiesler as cited above with those of Allen (1965). Conformity is defined as a change in behavior or belief which has been influenced or brought about by interaction with a group, the result being to bring about increased congruence between the individual and the group.

Review of Literature

Some of the earliest works in conformity will be mentioned only because of their historical significance and will not be expounded upon because descriptions of these works are frequently cited and can be found in most introductory psychology texts. One of the earliest studies on conformity was that of Sherif (1935) studying the autokinetic effect. A later study conducted by Bovard (1948) displayed the impact of social influence in the autokinetic effect 28 days after interaction with a confederate. Schachter (1951) studied the consequences of deviation from a group standard,

where he attempted to point out the social influences brought to bear on one who does not conform. Probably the single most cited and influential study on conformity is the Solomon Asch (1956) study of line judging with a minority of one. Crutchfield's study (1955) provided a methodological advance in the study of conformity by providing an automated confederate. Deutsch and Gerard (1955) studied conformity in "face to face situations" and "anonymous situations" to study the effects of normative and informational social influences. They suggested that yielding was greater in the face to face condition where presumably normative social influences were greater. Stanley Milgram (1961, 1963, 1965) studied a special type of conformity, the obedience to authority, demonstrating shocking amounts of compliance to an accepted figure of authority. All of these studies are of historical importance because of their findings, and possibly more importantly, because of the other questions they have raised and the further research they have generated.

One salient point that comes out of a great deal of the conformity research is that much of this research has been effective in delineating individual factors which, by themselves, have been

shown to be relevant in various conformity situations. However, some firm relationships have been established which need to be investigated in terms of interaction effects. For example, studies by Krech, Crutchfield and Ballachey (1962) and Crowne and Liverant (1963) have shown that increased task importance for the individual and the group seem to increase conformity. Also, if guilt increases compliance to assist some irrelevant other person (Freedman, Wallington & Bless, 1967), how then does guilt interact with the importance of the task to the individual and the group to effect conformity?

This lack of investigations of interaction effects provides the impetus for this study. In the psychological literature there seem to be some well established relationships regarding how self-esteem affects conformity behavior. Studies have been conducted which indicate that persons with low self-esteem conform more or are more prone to yield to social pressure than those with high self-esteem (Berkowitz & Lundy, 1957; Cohen, 1959; Crawford & Gergen, 1966; Gergen, 1965; Gergen & Bauer, 1967; Hochbaum, 1954; Janis & Field, 1959; League & Jackson, 1964). Gergen and Bauer (1967), studying the interaction effects between task

difficulty and self-esteem, found results contrary to the previous expectations regarding self-esteem and conformity for female subjects. The point of their research was that most prior research had used male subjects predominantly and that the low esteem, high conformity relationship previously found did not necessarily hold for females. Gergen and Bauer, however, overlooked the study reported by League and Jackson (1964), where both male and female subjects were used and which reported that the inverse relationship, e.g., low esteem, high conformity, remained valid. Gergen and Bauer also used only one confederate to provide the source of the social pressure in attempting to induce conformity. League and Jackson, on the other hand, used three confederates to set up the social pressure situation for the actual subject. This seems to be a major shortcoming in Gergen and Bauer's research, since Asch (1952) had established that a majority of three was sufficient to induce conformity, but conformity effects disappeared in Asch's studies when only a dyadic relationship was used. Despite Gergen and Bauer's findings, the relationship between self-esteem and conformity seems fairly well substantiated.

Studies have also been conducted regarding how

one's ability at a given task influences conformity behavior. Studies generally indicated that those with high ability (perceived or actual) tend to conform less than those with low ability (Croner & Willis, 1961; Endler, 1965; Ettinger, Marion, Endler, Geller & Natziuk, 1971; Goldberg & Lubin, 1958; Kidd & Campbell, 1955; Mausner, 1954; Rosenberg, 1961; Wiesenthal, Endler, Coward & Edwards, 1976).

The problem of how a person's ability mediates conformity may be compounded since ability can be of two types. The first is a person's actual ability, that is one's actual, empirically exhibited, performance at a task. The second type of ability is one's perceived competence, that is one's subjective belief of how they might do on a future task, or might have done on a past task in the absence of feedback. Allen (1965), however, reports the findings of Fagen (1963) in which he

> studied the effect on conformity of real task-relevant ability and reports by the experimenter [who provided contrived competence feedback] of the person's ability.... It was found that both real and reported ability affected conformity. That is, when a person actually had high

> ability on the task as well as when the experimenter reported that he had high ability, there was less conformity than when ability was low or reported to be low (p. 165).

It appears that much of the research that has been done regarding perceived competence, as defined above, has actually been on relative competence as defined by Ettinger et al. (1971). Relative competence is an experimentally induced competence based on the individual's perception of task competence discrepancy between the subject and the group with which the subject is interacting. Examples of task ability mediating conformity where task ability is based on relative competence can be found in studies by Ettinger et al. (1971), Hochbaum (1954), Samelson (1957) and Wiesenthal et al. (1976).

A question which arises is, presuming one has no feedback of competency of the group, how does perceived competence, not relative competence, act in mediating conformity? This question takes on particular significance in view of two studies with contradictory findings. League and Jackson (1964) reported that in mean error made prior to subjection to group interaction that high chronic self-esteem

individuals made significantly fewer errors, $t(116) = 5.95$, $p < .001$, than did low chronic self-esteem individuals. Stang (1972) interprets League and Jackson's findings as implying that self-esteem may be seen as "providing a link between ability and conformity" (p. 97).

Stang continues in his study to test three hypotheses:

> (1) that natural ability in a task is negatively correlated with conformity on that task; (2) that task ability is positively correlated with self-esteem; (3) that self-esteem is negatively correlated with conformity, as has been found in many previous studies. (p. 98)

Stang found that there was a significant positive correlation between ability and self-esteem, $r = .33$, $p < .01$; negative correlations between two separate self-esteem measures and conformity; and finally, a lack of correlation, $r = .008$, between conformity and ability. This last finding is particularly important since it is contradictory to what one might expect from League and Jackson's findings. Stang makes the suggestion that it is one's perceived ability rather than actual ability which determines conformity.

Wiesenthal et al. (1976), using a dot estimation task and a spatial judgement task, reported that perceived relative competence could be manipulated so that the reversibility of relative competence could be used as a determinant of conformity. The dot estimation task they used was presented as 22 pairs of 35-mm slides. For each pair, the first slide had a number of randomly displayed dots. The actual number of dots ranged between 7 and 100. The second slide in each pair contained three choices from which the subject could select. One of the three choices contained a range of numbers which corresponded to the correct number of dots on the previous slide. Wiesenthal et al., using this dot estimation task with 45 male and 45 female high school students (grades 9-12), reported significant effects for conformity and perceived relative competence and conformity. Subjects who were given high competence feedback (subjects learned they made eight correct estimations compared to the group's two correct ones) after 11 trials with no social pressure perceived themselves as significantly more competent than those given low competence feedback (subjects learned they had made two correct estimations compared to the group's eight correct

ones). Measures of perceived relative competence, made after a second set of 11 trials with social pressure, were significant, $F(2,84) = 12.93$, $p < .01$. Also, subjects who received high feedback conformed less than subjects who received low feedback, $F(2,84) = 15.75$, $p < .01$. Taking the same subjects into a second task and reversing the competence manipulation had the affect of producing changes in the conformity levels of the subjects, so that those previously conforming less now conformed more and vice versa.

It would appear that Stang was correct that perceived competence and not actual ability (actual ability and conformity were not correlated, $r = .008$ in Stang's study) does mediate conformity. The present study was an effort to determine how one's perceived competence interacts with acute self-esteem and the conformity tendency. On the basis of prior research regarding self-esteem and ability, it was predicted that subjects with experimentally induced low acute self-esteem and low perceived ability would conform more than other subjects. In addition it was expected that conformity would increase as self-esteem and perceived ability decreased. The treatment structure was a 3 X 3 factorial with an additional control group.

CHAPTER II

METHOD

Pilot Studies

Central to the assumptions of any attempt at valid experimentation is the knowledge that the independent variables being manipulated are having their intended effect. In order to substantiate such a claim for this study three pilot studies were independently conducted to determine if the attempt to manipulate the subjects' acute self-esteem was successful and if the subjects' perceived competence at the experimental task was successfully being manipulated.

Self-esteem manipulation pilot studies. All potential subjects for all phases of this experiment were administered the Texas Social Behavior Inventory [(TSBI) (Appendix A) developed by Helmreich et al. (1970)] under the ruse of testing to establish national norms. The TSBI is a 39 item Likert-type scale which assesses an individual's perceived reactions to specific situations. The TSBI was administered to potential subjects in order to provide a basis for the bogus personality feedback which was given to manipulate the subjects' self-esteem. The TSBI was administered to

approximately 370 introductory psychology course students. All students were given credit for experimental participation which was a required part of the introductory psychology course curriculum.

Two pilot studies were conducted to serve as an evaluation of the self-esteem manipulation. For the purposes of the pilot study subjects were selected randomly from a roster of those students who had taken the TSBI. Subjects were contacted by telephone. They were scheduled for an appointment to take part in an experiment and told that they could receive the results of their TSBI scores. Subjects were told that the location of the experiment had not yet been determined, but they should report to Room 209 A in Magruder Hall. Subjects were then told that the TSBI results were also available in Room 209 A, if they would like to pick them up since they were going to be there anyway. Subjects, upon arrival at Room 209 A, were greeted by a female confederate (a graduate student posing as part of the secretarial pool for the psychology department), who gave the subjects their TSBI feedback. For the pilot studies all subjects received bogus feedback of either a positive or negative nature regarding their social

ability (Appendix B).

Two checks on the self-esteem manipulation were employed. The first was a short three item questionnaire (Appendix C) included in the envelope given to the subjects with their bogus feedback. The second check was the Self-Esteem Scale developed by Rosenberg (1965) (Appendix D). The Self-Esteem Scale is a 10 item Guttman scale questionnaire. The Rosenberg Self-Esteem Scale items were randomly embedded with 24 other items into a 34 item questionnaire (Appendix E). The additional 24 questions were exemplary questions from the F-Scale, the Mach Scale, and the Rotters Internal-External Locus of Control Scale (Zimbardo, Ebbesen & Maslach, 1977, p. 46-47).

Two esteem manipulation pilot studies had to be conducted due to an error by the experimenter in the administration of the Rosenberg Self-Esteem Scale during the first pilot study. Subjects were given the option to respond only "true" or "false" to the Self-Esteem Scale, but should have been given the response options of "strongly agree", "agree", "disagree", "strongly disagree". During the second self-esteem manipulation pilot study the error was corrected.

The pilot study proved to be of benefit for

selecting a manipulation check for the actual experiment. The Rosenberg Self-Esteem Scale produced no significant differences (Pilot Study I: $\underline{t}(13) = .35$ NS; Pilot Study II: $\underline{t}(22) = .3$ NS) between high and low esteem feedback subjects, this was true for both pilot studies. The three item questionnaire, however, did show significant differences on all three questions checked independently. Subjects indicated that their TSBI results were more accurate, $\underline{t}(22) = 4.43$, $\underline{p} < .0005$, more in agreement with their own assessment, $\underline{t}(22) = 2.32$, $\underline{p} < .025$, and were more likely to indicate that they would like a more extensive report, $\underline{t}(22) = 2.81$, $\underline{p} < .01$, when they had received positive rather than negative feedback. These findings were consistent with the findings of Freeman (1973) who studied the effects of positive and negative feedback on bogus psychological test results. Freeman reported that subjects who received discrepant negative feedback exhibited more derogation of the interpreter than when they received positive feedback. It seems reasonable to assume that the nature of subject responses to the three questions was in line with this same interpretation. The subjects in the low feedback condition were reducing the dissonance created by the information

which was discrepant with their own self evaluation by derogating the accuracy of the information. It is also interesting to note that 100% of the subjects receiving positive feedback wanted more information about their results, while in the negative feedback group only 50% wanted more information.

As mentioned earlier, the Rosenberg Self-Esteem Scale failed to produce significant differences between positive and negative feedback subjects. Two explanations might be offered for these results. First, the Rosenberg Self-Esteem Scale was developed for use with adolescents and may not be appropriate for college age subjects, although others, e.g., Tippett and Silber (1965), have used the scale with college students. The second possible explanation may be that the Rosenberg Self-Esteem Scale may not be very sensitive to acute self-esteem manipulation, but in fact be a better gauge of chronic self-esteem.

Another explanation must also be given consideration. It may be that the bogus personality feedback manipulated something other than self-esteem. For example, the subjects' mood may have been affected by the personality feedback. This possibility might explain the lack of significant

differences on the Rosenberg Self-Esteem Scale. Unfortunately, it is often the case in social psychological research that the experimental manipulations may be having effects other than, or in addition to those intended.

Although there was no procedure employed for absolute verification or rejection of these alternative explanations, there was ample justification for utilization of the three item questionnaire as a check on the intended manipulation of the subjects' self-esteem. Operationally, the use of bogus personality feedback to manipulate self-esteem is the most "commonly used type of self-esteem manipulation" (Wells & Marwell, 1976, p. 202). Also, based on the consistency of the results obtained in the second pilot study, when compared to the results obtained by Freeman (1973), the three item questionnaire was retained for use in the main experiment.

Perceived ability manipulation pilot study. A final pilot study was conducted to verify the experimental manipulation of the subjects' perceived competence during the conformity situation. Sixteen subjects (eight males and eight females) were contacted by telephone using essentially the same procedure used in the first two pilot studies.

The major difference being that there was no mention of the TSBI. Also, subjects who participated in any previous pilot study were excluded from the selection process. Upon arrival at the experimental laboratory, subjects were given three practice trials in a dot estimation task, 10 trials in a dot estimation task with no social pressure, bogus feedback on their performance and the groups' performance (i.e., high competence: individual eight correct responses--group three correct; or low competence: individual two correct responses--group seven correct), 10 trials with social pressure, and finally a questionnaire (Appendix F) to serve as the perceived competence manipulation check. (See Apparatus and Procedure for detailed explanation of the setting.)

On the ability questionnaire (Appendix F) the first question was designed to probe whether the subject accurately recalled the feedback he was given after the first set of 10 trials. Question four was simply a filler. Questions two, three and five were designed to check on the validity of the competence manipulation. For question two it was predicted that, in the absence of feedback on the second set of 10 trials, the high feedback group would report having correctly estimated a

higher percentage of the dots than in the low feedback group. Such was the case. The high feedback group presumed correctness significantly more than the low feedback group, $t(14) = 2.59$, $p < .025$. On questions three and five it was predicted that subjects would report a self-evaluation of performance which was better for high feedback subjects than for low feedback subjects regarding their performance on the second set of 10 trials. Again the prediction was confirmed, $t(14) = 8.78$, $p < .0005$ and $t(14) = 3.30$, $p < .005$, for questions three and five, respectively.

On the basis of the findings for the perceived competence manipulation pilot study it was determined that subjects' perception of their competency was susceptible to manipulation by this procedure. The same questionnaire was used as a manipulation check for perceived competence in the main experiment.

Apparatus

The apparatus which was used was a modification of the Crutchfield (1955) apparatus. Each subject was seated at a desk during 23 dot estimation task trials. Four subjects were tested during each experimental session. The desks were separated by a partition to insure subjects could

not observe one another. On each desk there was a small box with four red lights and a button below each light with the first three buttons labeled A, B and C. These boxes were connected to a control box operated by the experimenter and not observable to the subjects. The light boxes were wired so that a light came on in the subject's box and the experimenter's box which corresponded to the button the subject pushed. The control box had buttons which allowed the experimenter to relay feedback to the subjects, which the subjects were led to believe were the responses of their fellow subjects.

Judgement tasks consisted of a dot estimation task used by Wiesenthal et al. (Note 1). The dot estimation task utilized 23 35-mm slides projected onto a white wall in front of the subjects. Each slide consisted of a number of randomly displayed dots. After each dot slide was presented, another slide was presented with three response choices labeled A, B and C. Response choices A, B and C each provided the subjects with a range of numbers, one of which included the correct number of dots presented on the previous slide. During three practice trials each slide had from three to eight dots per slide. The subsequent two sets of 10 trials had slides with actual dots ranging in

number between 35 and 78.

The dot estimation task was selected for use in the study because of its difficulty. Wiesenthal et al. (1976) reported that pilot work with the dot estimation task had established the task as being sufficiently difficult, "so that social pressures could be exerted for erroneous choices on critical items". Other research has generally shown that the more ambiguous and/or the more difficult the task the greater the tendency toward conformity (Allen, 1965). The selection of the dot estimation task was based on the assumption that the difficulty and ambiguity of the task would enhance the conformity situation.

Subjects

The subjects for the main experiment included 60 male and 44 female undergraduate students enrolled in introductory psychology courses. The final analysis of the experiment was based upon data obtained from 76 of these subjects. The data from the other 28 subjects were discarded for a variety of reasons. Three subjects' data (two males and one female) were lost due to failure to obtain self-esteem manipulation checks on these subjects. One male subject's data was excluded because he failed to accurately recall his

competency feedback. Four males' data were not obtained because other subjects failed to report for the experimental session. Data from seven subjects (three male and four female) were eliminated due to responses on the post-experimental questionnaire which revealed they "saw through" one aspect or another of the experimental deception. Data from 13 subjects (nine male and four female) were eliminated due to their prior knowledge of the experimental procedure. Two of these subjects (one male and one female) had knowledge of the specific experimental setting; others, however, associated the procedure with that used in the Solomon Asch experiments. Midway through the experiment the experimenter was informed that one of the classes from which subjects were being recruited had heard a lecture on the topic of conformity and specifically the Asch experiments. A more detailed discussion of this problem is addressed in the discussion section.

Design

The experimental design was a 3 X 3 factorial design. The two manipulated independent variables were self-esteem and perceived competence. The nine experimental conditions were low competence-low esteem feedback, low competence-high esteem

feedback, low competence-no esteem feedback, high competence-high esteem feedback, high competence-low esteem feedback, high competence-no esteem feedback, no competence-low esteem feedback, no competence-high esteem feedback and no competence-no esteem feedback. In addition a control group was included with no experimental manipulations or social pressure in the conformity situation. All subjects were randomly assigned to experimental conditions. Subjects were tested in groups of four with each group being homogeneous with regard to sex and experimental condition.

Procedure

The Texas Social Behavior Inventory was administered to approximately 370 students during the first two weeks of classes in the fall semester of 1978. Subjects were told that the test was being administered in an effort to establish national test norms for a test that had already proved to be highly reliable and valid. Subjects were provided with a copy of the TSBI and an envelope in which to place their completed answer sheet for the test. Subjects were also asked to write their name and telephone number on the experimental credit card in the envelope so that they might be notified of their test results

when their responses had been analyzed. Subjects were informed that their responses would be scored by computer and by a member of the staff at the University of Texas counseling center. A copy of the instructional cover letter for the TSBI is in Appendix H. Subjects were also informed that they would be provided with their completed experimental credit slips when they returned to pick up their TSBI results.

After administration of the TSBI subjects were contacted by telephone to schedule appointments for participation in the experiment. When the subjects were contacted by the experimenter they were told:

"Hello, my name is Tom Moss. I am with the Psychology Department, and I obtained your name and telephone number from a roster of students taking General Psychology. I am going to be conducting an experiment (tomorrow or this week, which ever was appropriate) and was wondering if you would be interested in participating."

Subjects who agreed to participate were then told:

"As of right now I'm not sure in which room I will be conducting the experiment, but if you could come by Room 209 A in Magruder Hall there will be someone there who can direct you to where

I will be set up."

The experimenter then made sure the subject knew how to get to this particular room and, when necessary, additional directions were given. Once this was completed the experimenter continued:

"Oh, by the way, do you recall taking some sort of personality test at the beginning of the semester? (Those who did not recall were provided with the minimal additional information necessary to "jog their memory", so that all at least recalled taking some sort of psychological test.) Well, they asked me to help put the word out that the results for some people had arrived and would be available in Room 209 A. So, if you would like, you may check on your results when you come to get directions for how to get to my experiment."

Subjects in the no personality feedback conditions were told upon arrival that results on the TSBI were back only for Dr. Hudson's class and that they would be contacted later when their class's results had arrived. A confederate gave out the bogus personality feedback. A procedure was developed so that, for the main experiment, the confederate would be condition "blind" to the esteem manipulation. This proved to be only partially successful since upon receipt of the

feedback, the responses of subjects frequently revealed the experimental condition of the subjects.

The confederate giving out the bogus personality feedback was one of three female graduate students. The confederate was used to give out the bogus TSBI feedback for two reasons. First, it was hoped that having a different person provide the TSBI feedback would help disassociate the self-esteem manipulation from the conformity task. Second, the use of a confederate at this point afforded the opportunity of keeping the experimenter unaware of the self-esteem feedback condition.

The subjects were given their personality feedback individually and asked to fill out the three item questionnaire provided along with their bogus personality feedback. When more than one subject arrived at the same time, those not receiving feedback were asked to wait in the hallway until the confederate had finished with each subject individually. Once subjects completed the questionnaire they were directed to the location of the conformity experiment. This procedure was employed to minimize contact in order to eliminate the possibility of comparing

information regarding their bogus personality feedback and to reduce the impact of normative social influences. Unfortunately, some subjects did arrive early and the confederate providing the bogus personality feedback had to keep some subjects in the vicinity of that room after they had received their personality feedback. Some subjects arrived at the conformity experiment prior to the completion of the post-experimental debriefing for the preceding group. In those instances the person assisting the experimenter in recording conformity scores went into the hallway to insure that conversations did not include the topic of the personality feedback. These efforts were effective in eliminating the comparison of personality feedback by the subjects. The aforementioned problems, however, did negate any opportunity for discussion of results in terms of limited normative social influences, such as real or perceived expectations of other, and increased informational social influence dependency, such as information about reality from others.

The following is a general description of the sequence of experiences for subjects arriving for the experiment. Once subjects arrived they were asked to come in and be seated at one of the desks.

A brief explanation of the purpose of the experiment was given, i.e., it was presumably a perception experiment with a specific interest in comparing the perceptual ability of individuals to that of groups. Subjects were then asked to go through three practice trials at the dot estimation task to familiarize themselves with the procedure. Ten trials were then conducted with subjects marking their responses on an answer sheet provided (see Appendix I). Subjects were then given high competence, low competence or no competence feedback regarding their own and the group's performance. High competence subjects were told they had gotten eight correct and the group averaged three correct; low competence subjects were told they had gotten two correct and the group averaged seven correct; no competence subjects were given no feedback. The subjects then underwent 10 conformity trials where each subject was led to believe he was the fourth person to respond and had seen the dot estimation choices of the other three subjects before he made his own choice. The presumed responses of the other subjects were given via the control box being operated by the experimenter. A male experimenter and assistant were used for males and a female experimenter and

assistant for the female subjects. Conformity scores were recorded by the assistant whose task it was to record the subjects' responses (see Appendix K, Experimenter's Score Sheet). The experimenters and assistants were always the same people except in the case of the male experimenter's assistant where three different assistants had to be used due to their availability. Subjects were then given a questionnaire to fill out (see Appendices F and G). The questionnaire was designed to act as a check on subjects who might have had prior knowledge about the experiment or were aware of the deception. (Specific procedural detail and verbatim instructions to subjects may be found in Appendix J.) The control group was tested with no feedback given and no lights to establish the social pressure situation.

Once the questionnaires had been completed and collected from all subjects a post-experimental debriefing was conducted (Appendix L). During the debriefing four objectives were accomplished: (1) to determine if any subjects had suspicions regarding the actual nature if the experiment that might not have been detected by the questionnaire; (2) to determine the subjects' feelings regarding the experiment; (3) to inform the subjects of the

actual purpose of the experiment, including the bogus nature of the personality feedback and the competence manipulation; and (4) to provide the subjects with a cover story regarding their participation in the experiment while attempting to recruit their assistance in maintaining the deception with untested subjects.

CHAPTER III

RESULTS

Independent Variable Manipulation Checks

Self-esteem manipulation. A check to verify the manipulation of the self-esteem variable was accomplished by using the questionnaire (Appendix C) which had proven to be sensitive in the pilot studies. It was predicted, in line with the results of the self-esteem manipulation pilot study and the work of Freeman (1973), that subjects who were given positive personality feedback would have higher acute self-esteem than those given negative personality feedback. The differences in self-esteem would be verifiable based upon the subjects' responses to the questionnaire employed. Generally, it was expected that subjects who were given positive personality feedback would: (1) rate the information as more accurate; (2) rate the information as more in accord with their own personal assessment of their personality; (3) desire more information about their test results, as compared to subjects who were given negative personality feedback.

Analysis of the self-esteem manipulation check was accomplished by conducting an independent

t-test (Guilford & Fruchter, 1973) between the scores of positive feedback and negative feedback subjects for questions two and three. The *t*-test was deemed appropriate since all self-esteem scores were obtained independent of and before the competence manipulation and the conformity situation. Question three was analyzed using Fisher's Exact Test (Siegel, 1956). The results of these tests are in Table 1.

Table 1

Self-Esteem Manipulation Means and *t*-Values

Question	Positive Feedback $\bar{X}$	Negative Feedback $\bar{X}$	*t*	*p*
1	1.83	2.70	3.69	<.001
2	1.87	2.61	2.69	<.005
3	1.26	1.52	NA	=.0069

Note. Lower scores indicate agreement for questions one and two, *n*=23, *df*=44. Question 3, 1=yes, 2=no. NA=not applicable.

On the strength of the results obtained from the self-esteem manipulation check it was presumed that the manipulation had been effective.

Perceived competence manipulation. Items two, three and five on the questionnaire (Appendix F)

administered after the conformity trials were used to assess the validity of the perceived competence manipulation. Based on the results of the perceived competence manipulation pilot study three predictions were posited: (1) subjects receiving high competence feedback would judge themselves as correct in a higher percentage than subjects receiving low competence feedback (question two); (2) subjects receiving high competence feedback would judge themselves as having done about the same on the second set of 10 trials, whereas low competence feedback subjects would report having improved some in comparison to the first set of 10 trials (question three); (3) subjects receiving high competence feedback would judge their performance as above average on the second set of 10 trials, whereas low feedback subjects would judge their performance as below average (question five).

A general linear model approach to analysis of variance was employed which permits testing of any hypothesis among the cell means, inclusion of constraints regarding the relationship between the cell means, and provides exact tests of hypothesis for unequal cell frequencies (Speed, Note 2). The results of the analysis of variance on the three competence manipulation check questions are listed

in Table 2.

Table 2

Summary F-Ratios For Competence Manipulation Checks

Question	Sources of Variance A Competence	B Esteem	AB	MS_e
2	8.20***	.86	.56	.44
3	16.33***	.09	1.08	.55
5	2.75*	3.90**	.75	.33

***$p < .01$; **$p < .05$; *$p < .07$.

Note. Main effects $df = 2,66$; interaction $df = 4,66$.

As can be seen from Table 2 the main effect of competence was the only significant effect for questions two and three and differences were in the predicted direction. However, question five produced unexpected results. The main effect of competence only approached the conventional level of significance $p < .07$, and the main effect for esteem was significant $p < .05$. The effects of the esteem and competence manipulations appear to have been additive in affecting responses to question five. Cell means obtained in the analysis of questions two, three and five are listed in Table 3.

Table 3

Cell Means for Competence Manipulation Check

Question 2			
Competence	Esteem		
	Lo	No	Hi
Lo	2.14	2.50	2.4
No	3.12	3.17	3.00
Hi	2.75	3.00	3.29
Control	2.38	2.38	2.38

Question 3			
Competence	Esteem		
	Lo	No	Hi
Lo	2.43	2.25	2.29
No	2.75	3.00	3.25
Hi	3.88	3.56	3.29
Control	2.63	2.63	2.63

Question 5			
Competence	Esteem		
	Lo	No	Hi
Lo	3.14	2.75	3.29
No	2.88	2.50	2.63
Hi	2.75	2.44	3.14
Control	3.13	3.13	3.13

Based on the results obtained from responses to these questions the competence manipulation was judged to be effective.

Conformity Scores

Conformity scores were obtained for each subject during the second set of trials in the dot estimation task. A conformity score represented the number of trials out of 10 on which the subject gave the same response as the presumed other subjects. Conformity scores were initially analyzed using the same analysis of variance approach described for the perceived competence scores. Means, variances and an ANOVA table for this analysis are provided in Appendix M. Examination of condition variances suggested possible nonhomogeneous variances. As a result Bartlett's test for homogeniety of variance (kirk, 1968) was applied to test the assumption of homogeniety. With the largest variance being 15.14 and the smallest .267 the B statistic was calculated to be 119.58 which was significant at $p < .001$. Thus, the assumption of homogeniety of variance was considered untenable.

Based on the finding of heteroscedasticity it was felt that some transformation of the raw conformity score data would be appropriate. A procedure described by Kirk (1968, pp. 66-67) for selecting an appropriate transformation was used. The square-root transformation was selected as

having the greatest potential for reducing the heteroscedasticity. The specific transformation applied was $(X + .5)^{\frac{1}{2}} = X'$. Transformed scores are listed in Appendix M, Table 7.

An analysis of variance was made on the transformed data using the same procedure as described for the perceived competence manipulation check. Three hypotheses were tested in addition to the tests for main effects and interactions. Those hypotheses compared the control condition with all other conditions (C vs All), the control condition with the no esteem-no competence condition (C vs No/No) and the low competence-low esteem condition with the high competence-high esteem condition (Lo/Lo vs Hi/Hi). The results of this analysis of variance and the cell means are provided in Table 4 and Table 5 on the following page.

Since the interaction effect was so small and the pattern of means showed no hint of an interaction, a new analysis of variance model (Kirk, 1968) was applied which did not include an interaction term. This final analysis included the testing of two more hypotheses in addition to those previously tested. The two additional hypotheses compared the low competence-no esteem condition

Table 4

ANOVA Source Table for Transformed Conformity Scores

Source	df	SS	MS	F
A-Competence	2	1.17	.58	2.41*
B-Esteem	2	.49	.25	1.01
AB	4	.29	.07	<1
C vs All	1	.92	.92	3.79*
C vs No/No	1	.21	.21	<1
Lo/Lo vs Hi/Hi	1	.76	.76	3.13*
MS_e	66		.24	

*$p < .10$

Table 5

Cell Means for Transformed Conformity Scores

Competence	Esteem		
	Lo	No	Hi
Lo	2.69	2.35	2.44
No	2.34	2.19	2.06
Hi	2.25	2.21	2.23
Control	1.94	1.94	1.94

with the high competence-no esteem condition (Lo/No vs Hi/No) and the no competence-low esteem condition with the no competence-high esteem condition (No/Lo vs No/Hi). The results of this analysis are in Table 6.

Table 6

ANOVA Source Table for Transformed Conformity Scores

Revised Model

Source	df	SS	MS	F
A-Competence	2	1.17	.58	2.50*
B-Esteem	2	.49	.25	1.07
Control vs All	1	.91	.91	3.88**
Control vs No/No	1	.17	.17	<1
Lo/Lo vs Hi/Hi	1	1.11	1.11	4.75***
Lo/No vs Hi/No	1	.78	.78	3.33*
No/Lo vs No/Hi	1	.39	.39	1.67
MS_e	70		.23	

***$p < .05$ **$p < .06$ *$p < .10$

The square-root transformation proved to be of limited value. A subsequent test for homogeniety of variance still proved to be significant, although there was some reduction in the variance, $F_{max} = 88$, $p < .01$. There was an indication of at least a weak main effect, $F(2,70) = 2.50$, $p < .10$, for

competence. The esteem manipulation was not effective, $F(2,70) = 1.07$, in producing conformity results consistent with the research findings of others. Comparisons involving the control cells yielded essentially the same results after the square-root transformation as before. The comparison involving the low competence-low esteem condition with the high competence-high esteem condition did result in significantly more conformity $F(1,70) = 4.75$, $p < .05$, for the low competence-low esteem condition. The comparison of the low competence-no esteem condition with the high competence-no esteem condition and the comparison of the no-competence-low esteem condition with the no competence-high esteem condition, both yielded results consistent with the main effects.

CHAPTER IV

DISCUSSION

The results of this experiment on face value indicate that there is no interaction between perceived competence and self-esteem influencing conformity, at least for this experimental design. No main effect for esteem was observed which is contrary to the findings of others (e.g., League & Jackson, 1964) mentioned earlier. The main effect for competence only approached significance ($p < .10$). This finding cannot be taken as absolute support either in favor of or in opposition to previous findings, which generally support the idea that those who perceive themselves as less competent at a task conform more than those who perceive themselves as more competent. The validity and interpretation of these results must be viewed rather skeptically and in the context of the following discussion.

Procedural Problems

The primary intent of this investigation had been to investigate the interaction effects of acute self-esteem and perceived competence. It had been intended that the results would have been interpreted in terms of informational social

influences. By reducing the normative social influences, such as the expectations of others, and increasing the informational social influences, such as dependence on others for information about reality, it was thought that this study could have been interpreted in terms of informational social influences. Had the subjects not been able to interact prior to participating in the conformity situation, their responses would have been dependent on information from others in the group. Had the subjects not been able to interact prior to the conformity situation the experimental setting would have been analogous to the "anonymous situation" used by Deutsch and Gerard (1955) where it was presumed that normative social influences were minimally operative. As was mentioned earlier, procedural difficulties which had not been anticipated even after three pilot studies negated the opportunity to examine the results in the context of these theoretical interpretations. Any further investigations attempting to study conformity and the variables of self-esteem and perceived competence must take into account careful procedural strategies which maximize the control of normative and informational social influences if results are to be discussed in these terms.

The procedural faux pas regarding the normative and informational social influences issue would not have been a major shortcoming in this experimental design had other difficulties not also been encountered. One factor which must be considered as potentially the most damaging to the experiment was that halfway through the experiment, the experimenter became aware that some of the subjects had been given a lecture on the topic of conformity. The experimenter must take full responsibility for not having insured that all subjects would be naive to some fundamental procedures in conformity research. Perhaps some additional coordination efforts could have precluded this problem. Nevertheless, an inordinate amount of subject loss was attributable to this issue. Also, the results include data from subjects who were enrolled in the class that received the conformity lecture. These subjects were included in the final analysis because there were no indications on the post-experimental questionnaires that warranted their exclusion. The fact that the post-experimental questionnaire did not reveal other subjects who were aware of the experimental deception does not necessarily preclude them from having been so. This is, of

course, the case in any experiment which uses deception. There is, however, reasonable room for suspicion in this experiment that a disproportionate number of subjects had some opportunity to exhibit the "good subject effect" (Orne, 1962) or the "screw you effect" (Masling in Adair, 1973). That is to say, the data from approximately 57% (43 of 76) of the subjects who had received the conformity lecture must be considered in light of three performance options during the conformity trials. First, they may, in fact, not have made any connection with the information received in their lecture on conformity and the procedure used in this experiment. Second, they may have made the procedural connection and decided to conform in some cases. Third, they may have made the connection and decided not to conform. Whichever the case, there is no empirical basis for substantiating any of these positions, but this entire presentation must be viewed in light of this caveat.

Potential Sources of Experimental Error

As was pointed out earlier the square-root transformation used on the conformity data did provide some reduction in the hetroscedasticity. The subsequent reduction in nonhomogeneous variance

did yield the main effect of competence significant at $p < .10$. Although this is not significant at the conventional levels of significance, it must not be taken as a meaningless occurence. In fact, in view of the aforementioned potential source of error variance, a replication circumventing the deception problem might result in the desired effect. Certainly the research literature fairly well substantiates how perceived competence at a task mediates one's susceptibility to social influence in the form of conformity. The procedure used in this experiment was in many ways similar to that used by Wiesenthal et al. (1976) (the dot estimation stimuli were, indeed, identical), and the results of their research support the findings regarding the conformity and competence issue. It is this investigator's opinion that despite the procedural difficulties and the large amount of error variance (whatever the source(s)), perceived competence at a task is a strong determinant of behavior in conformity situations. This opinion is based on the fact that the main effect of competence was significant at $p < .10$, even though over one half of the subjects may have realized they were participating in a conformity experiment.

Other potential sources of error variance

deserve some mention. Task ambiguity may be considered as one potential source of error. However, Allen (1965), summarizing the work of several researchers, makes the point that there is generally a relationship between stimulus ambiguity and conformity. If anything it was expected that the ambiguity of the task selected would induce conformity as in Wiesenthal et al.'s study. Although the ambiguity issue does not seem to be a likely candidate as the major source of error variance in this experiment, it cannot be totally ignored since Luchins and Luchins (1963) point out there may be situations where ambiguity does not induce conformity. A replication of the present study using an unambiguous stimulus would settle this issue in the context of this procedure only, and would not explain how Wiesenthal et al. were able to use the stimuli to produce the desired effects. This point, if valid, could be resolved by including age as a variable, since Wiesenthal's subjects were high school students and subjects in this experiment were university undergraduates. All in all, it is felt that although the ambiguity issue cannot be ignored, it would not prove to be a major source of variance in this investigation.

The variable of sex was not included for

investigation in this study because it had not been found to be a significant variable in the Wiesenthal study. The previously held belief that females generally conform more than males has been disspelled as being situationally dependent (Sistrunk & McDavid, 1971). Thus, on the strength of these findings, sex was not included as a variable. However, as a matter of curiosity some "data snooping" was conducted, analyzing the data from males and females separately. The analysis was identical to that conducted on the conformity scores (square-root transformation performed and constraints of no interaction and control cells equal). F-ratios (Appendix M) were consistent with those found when males and females were analyzed together, with two interesting exceptions. The comparison (see Appendix M for cell means) of the low competence-no esteem condition with the high competence-no esteem condition proved to be significant $F(1,35) = 4.49$, $p < .05$ for the males and not significant $F(1,29) < 1$ for females. Conversely, the comparison of the no competence-low esteem condition with the no competence-high esteem condition approached significance $F(1,29) = 2.49$, $p < .14$ for females, but did not for males $F(1,35) < 1$. The significance of this

information is that although these hypotheses which were tested may be of little value, they do give an indication of sources of variance which may need to be controlled when studying the relationship between self-esteem and perceived competence in a conformity situation.

Vaughan and Mangan (1963) have demonstrated that conformity may vary as the importance or value of the task to the individual varies. It may be that the two independent variables manipulated in this study also differentially affect subjects dependent upon their sex. Due to the extreme amount of error variance and the lack of empirically demonstrated interaction effects, any further investigation relating to self-esteem and perceived competence in conformity behavior should take into consideration the potential of sex differences regarding the subjects' subjective value of the conformity task and the impact of the esteem manipulation differentially influencing males and females.

Procedural strategies used in this study must also be considered as potential sources of experimental error variance which served to mask the effects of the manipulations. One aspect of the procedure that might fall prey to criticism was the

use of 10 consecutive conformity trials. Although in the Wiesenthal et al. study 11 consecutive conformity trials were used without any apparent difficulty, it must be remembered that his subjects were high school students. It is easily conceivable that the sophistication level of the subjects used for this study was different from that of Wiesenthal's subjects. A procedure which used more trials during the second part of the experiment after the subjects received their competence feedback might have proven beneficial. During these additional trials a mix of conformity trials and trials in which the subjects received correct responses from the automated confederate may have served to make the experiment higher in impact and experimental realism (Carlsmith, Ellsworth & Aronson, 1976). This mix of conformity and correct feedback trials might serve the function of providing the subject with a source of reality checking. That is to say, some subjects may have felt they were in fact guessing on all trials and wondered how the others in the experiment could have been in agreement on all trials; some trials on which the subject had the opportunity to give a correct response might have enhanced the subject's belief that he was able to actually perform the

task, and further establish the others performing the task as credible sources of information.

Another element of the procedure which must be given some consideration regarding the variance problem is the norm extremeness. The ranges given the subjects regarding their performance and the group's performance were similar, but not equal to the ranges used by Wiesenthal et al. The ranges used in Wiesenthal's study were a bit more extreme between the individual and the group's performance on the first set of trials as compared to this study. In the Wiesenthal et al. study the norm range was six, i.e., in the high competence feedback condition the individual was told he had eight correct responses compared to the group's average of two correct responses; the numbers were reversed for the low feedback condition. In this study the norm range was five, i.e., high competence feedback subjects were told they had eight correct responses and the group averaged three correct; the low competence feedback subjects were told they had two correct responses and the group had averaged seven correct. Allen (1965) gives a review of the literature prior to 1965 which discusses how differences in norm range in conformity research can influence the findings one gets. Allen (1965)

summarizing Tuddenham (1961) states:

> Interestingly, variability in the extreme norm condition was much greater than in the moderate norm condition. The moderate norm seemed to affect persons fairly uniformly, causing some movement toward the group for all. In contrast, when the norm was extreme some persons were influenced very little and others considerably more. (p. 162)

It may very well be that for the sample used in this study a reduction in the norm extremeness might have resulted in reduced variability in the conformity scores rendering the results more amenable to confident interpretation.

Earlier, the point was made regarding the possibility of differential impact on the subjects by the independent variable manipulation. Certainly in social psychology experiments it is difficult to scale the association between two or more independent variables. The main effect of self-esteem never approached significance in any of the analyses. This seems odd in light of the fact that bogus personality feedback has often been used as a technique for manipulating acute self-esteem. Two explanations seem to warrant

consideration in light of the lack of impact of the esteem manipulation on the conformity scores. The ineffectiveness of the manipulation is not considered a viable aspect of these explanations, however. The manipulation checks used proved to be significant and the experimenter's observation of the subjects' reactions when they were told about the bogus nature of the personality feedback negate the arguement of an ineffective manipulation. The first possible explanation for no main effects for esteem is that the esteem manipulation was extremely weak in comparison to the competence manipulation. Although this explanation can not be ignored, it is not held by this experimenter. A second alternative regarding the esteem manipulation which seems more viable can be developed in terms of dissonance theory. It may be recalled that a study by Freeman (1973) was cited as providing the major support for the use of the specific esteem manipulation check which was used. Freeman's position was that negative personality feedback created dissonance which could be reduced by derogating the source of the information or, in the case of this study, overtly discounting the credibility of the feedback. If this is a valid assumption, then those subjects who participated

in this study and received negative personality feedback had already had an opportunity to reduce any dissonance caused by the feedback and presumably restore their acute self-esteem to a state roughly similar to that level existing prior to the manipulation attempt. Evidence has already been presented which might tend to discredit this line of reasoning. That evidence being the results of subjects' responses to question five on the perceived competence manipulation check (results indicated a significant main effect for esteem), and the experimenters' observation of subjects' reactions after debriefing. However, the explanation that subjects had the opportunity to reduce dissonance may be interpreted as having allowed some subjects to remain effected by the manipulation and others not, thereby explaining the lack of main effects for the esteem manipulation and the inordinate amount of error variance. Of course this line of reasoning is purely speculative, some minor procedural changes implemented in a replication might easily clear up this issue.

Despite many of the aforementioned problems, the results obtained may be representative of the true state of nature. That is to say, for the experimental design which was used, an individual's

perception of his competence at the task used may, only minimally, influence that person's tendency to conform. Also, the state of one's self-esteem may not have any bearing upon conformity for this task, and perceived competence and self-esteem may, in fact, not interact to influence conformity. The foregoing discussion, of course, would probably not lead one to place a great deal of faith in such an interpretation, but there is the possibility that a replication with subjects unwise to experimental conformity procedure would yield results consistent with those obtained here.

Summary and Implications for Future Research

This study was intended to investigate the interaction effects of acute self-esteem and perceived competence as they affect conformity. The results were generally nonproductive except for the possibility of weakly reconfirming a main effect for perceived competence. Procedural problems were discussed and potential sources of experimental error variance were mentioned as possible causes of the nonhomogeneous variance experienced in the data.

As was mentioned in the introduction, some relatively well established variables have been individually identified as factors mediating

conformity. The need still exists for examination of how these variables interact to influence conformity. It is believed that a replication of the research presented here with systematic variation of the methodological changes inferred from the preceding discussion would prove to be beneficial in determining variable relationships in conformity research.

APPENDICES

APPENDIX A

Texas Social Behavior Inventory

SOCIAL BEHAVIOR INVENTORY

The Social Behavior Inventory is designed to gather background and social behavior data. Please answer on the accompanying IBM answer sheet. Be sure to fill in your sex and date of birth. The letters a, b, c, d, e, correspond to the blanks beside each number on the answer sheet. When you decide which letter is the best answer for a particular question, fill in the box provided beside that letter and question number on the IBM form.

PLEASE DO NOT WRITE ON THIS FORM

1. Race

   a. Black
   b. Chicano
   c. Oriental
   d. Caucasian

2. Birth order. How many siblings older than you do you have?

   a. 0
   b. 1
   c. 2
   d. 3
   e. 4 or more

3. How many siblings younger than you do you have?

   a. 0
   b. 1
   c. 2
   d. 3
   e. 4 or more

4. Is your next older sibling:

   a. 1 year older than you
   b. 2 years older than you
   c. 3-4 years older than you
   d. 5 or more years older than you
   e. does not apply

5. If you answered a or b to question 4, is your next older sibling:

   a. male
   b. female
   c. does not apply

6. Is your next younger sibling:

   a. male
   b. female
   c. does not apply

7. If you answered a or b to question 6, is your next younger sibling:

   a. 1 year younger than you
   b. 2 years younger than you
   c. 3-4 years younger than you
   d. 5 or more years younger than you
   e. does not apply

This scale is used to answer each of the following questions. Please mark the appropriate number on the answer sheet.

1	2	3	4	5
Not at all characteristic of me.	Not very	Slightly	Fairly	Very much characteristic of me.

8. I am not likely to speak to people until they speak to me.

9. I would describe myself as socially unskilled.

10. I frequently find it difficult to defend my point of view when confronted with the opinions of others.

11. I would be willing to describe myself as a pretty "strong" personality.

12. When I work on a committee I like to take charge of things.

13. I would describe myself as self-confident.

14. I usually expect to succeed in the things I do.

15. I feel confident of my appearance.

1	2	3	4	5
Not at all characteristic of me.	Not very	Slightly	Fairly	Very much characteristic of me.

16. I am a good mixer.

17. I feel comfortable approaching someone in a position of authority over me.

18. I enjoy being around other people, and seek out social encounters frequently.

19. When in a group of people, I have trouble thinking of the right things to say.

20. When in a group of people, I usually do what the others want rather than make suggestions.

21. When I am in disagreement with other people, my opinion usually prevails.

22. I feel confident of my social behavior.

23. I feel I can confidently approach and deal with anyone I meet.

24. I would describe myself as one who attempts to master situations.

25. I would describe myself as happy.

26. Other people look up to me.

27. I enjoy being in front of large audiences.

28. When I meet a stranger, I often think that he is better than I am.

29. I enjoy social gatherings just to be with people.

30. It is hard for me to start a conversation with strangers.

31. People seem naturally to turn to me when decisions have to be made.

32. I make a point of looking other people in the eye.

1	2	3	4	5
Not at all characteristic of me.	Not very	Slightly	Fairly	Very much characteristic of me.

33. I feel secure in social situations.

34. I like to exert my influence over other people.

35. I cannot seem to get others to notice me.

36. I would rather not have very much responsibility for other people.

37. I feel comfortable being approached by someone in a position of authority.

38. I would describe myself as indecisive.

39. I have no doubts about my social competence.

APPENDIX B

Results--Social Behavior Inventory

RESULTS--SOCIAL BEHAVIOR INVENTORY

	High	Moderate	Low
Capacity for Status	X		
Sociability		X	
Social Presence	X		
Social Acceptance	X		
Total	X		

Person shows self assurance and some self-reliant trends. His/Her thinking and approach toward interpersonal relationships is primarily resourceful and flexible in nature. His/Her TSBI profile suggests poise in unfamiliar social situations and a corresponding genuine acceptance from his/her peers.

RESULTS--SOCIAL BEHAVIOR INVENTORY

	High	Moderate	Low
Capacity for Status	___	___	X
Sociability	___	___	X
Social Presence	___	___	X
Social Acceptance	___	X	___
Total	___	___	X

Person shows a lack of self-confidence and some self-defensive trends. His/Her thinking and approach toward interpersonal relationships is primarily stereotyped and inhibited in nature. His/Her TSBI profile suggests awkwardness in unfamiliar social situations and a corresponding lack of real acceptance from his/her peers.

APPENDIX C

Personal Reactions to Results on the Social Behavior Inventory

PERSONAL REACTIONS TO RESULTS ON THE SOCIAL BEHAVIOR INVENTORY

With respect to the results you have just received about the social behavior inventory, please answer these questions by circling the most appropriate response for you.

1. How accurate do you feel the results are for you, in general?

   a. highly accurate
   b. moderately accurate
   c. moderately inaccurate
   d. highly inaccurate

2. How much agreement is there between your own assessment of your social behavior and that reported by the results?

   a. much agreement
   b. some agreement
   c. some disagreement
   d. much disagreement

3. Would you like to receive a more extensive report of your results on the social behavior inventory?

   Yes_____ No_____

   (check one)

Signature:_____

APPENDIX D

Rosenberg's Self-Esteem Scale

ROSENBERG'S SELF-ESTEEM SCALE

1. On the whole, I am satisfied with myself.
2. At times I think I am no good at all.
3. I feel that I have a number of good qualities.
4. I am able to do things as well as most other people.
5. I feel I do not have much to be proud of.
6. I certainly feel useless at times.
7. I feel that I am a person of worth, at least on an equal plane with others.
8. I wish I could have more respect for myself.
9. All in all, I am inclined to feel that I am a failure.
10. I take a positive attitude toward myself.

APPENDIX E

Embedded Rosenberg Self-Esteem Scale

EMBEDDED ROSENBERG SELF-ESTEEM SCALE

Answer the following questions based on your own attitude, belief, or feeling.

A	B	C	D
Strongly agree	Agree	Disagree	Strongly disagree

_____ 1. Obedience and respect for authority are the most important virtues children should learn.

_____ 2. One of the major reasons why we have wars is because people don't take enough interest in politics.

_____ 3. There will always be wars, no matter how hard people try to prevent them.

_____ 4. I take a positive attitude toward myself.

_____ 5. The best way to handle people is to tell them what they want to hear.

_____ 6. What this country needs most, more than laws and political programs is a few courageous, tireless, devoted leaders in whom the people can put their faith.

_____ 7. In the case of the well-prepared student there is rarely if ever such a thing as an unfair test.

_____ 8. I am able to do things as well as most other people.

_____ 9. Many times exam questions tend to be so unrelated to course work that studying is really useless.

_____10. One should take action only when sure it is morally right.

_____11. An insult to our honor should always be punished.

_____12. All in all, I am inclined to feel that I am a failure.

_____13. At times I think I am no good at all.

_____14. The average citizen can have an influence in government decisions.

_____15. I feel I do not have much to be proud of.

_____16. This world is run by the few people in power, and there is not much the little guy can do about it.

_____17. Anyone who completely trusts anyone else is asking for trouble.

_____18. I feel that I am a person of worth, at least on an equal plane with others.

_____19. On the whole I am satisfied with myself.

_____20. Most of our social problems would be solved if we could somehow get rid of the immoral, crooked, and feebleminded.

_____21. I wish I could have more respect for myself.

_____22. It is hard to know whether or not a person really likes you.

_____23. How many friends you have depends on how nice a person you are.

_____24. The biggest difference between most criminals and other people is that the criminals are stupid enough to get caught.

_____25. I feel I have a number of good qualities.

_____26. What youth needs most is strict discipline, rugged determination, and the will to work and fight for family and country.

_____27. What happens to me is my own doing.

_____28. Sometimes I feel that I don't have enough control over the direction my life is taking.

_____29. It is hard to get ahead without cutting corners here and there.

_____30. I certainly feel useless at times.

_____31. People can be divided into two distinct classes: the weak and the strong.

_____32. Most people don't realize the extent to which their lives are controlled by accidental happenings.

_____33. There is no such thing as luck.

_____34. When you ask someone to do something for you, it is best to give the real reasons which carry more weight.

_____35. Briefly state what you believe is the purpose of these questions.

APPENDIX F

Competence Manipulation Questionnaire

COMPETENCE MANIPULATION QUESTIONNAIRE

QUESTIONNAIRE NAME_____

1. During the first set of ten trials what percent of the choices did you get correct?
   a. 0-10%
   b. 20-40%
   c. 50-60%
   d. 70-80%
   e. 90-100%
2. During the second set of trials what percent of the choices do you think you got correct?
   a. 0-20%
   b. 30-50%
   c. 60-70%
   d. 80-90%
   e. 100%
3. On the second set of trials which statement best describes your performance as compared to your performance on the first set of trials?
   a. Much better
   b. A little better
   c. About the same
   d. A little worse
   e. Much worse
4. Do you feel that another set of trials would allow you to improve your performance as compared to the second set of trials?
   a. Yes
   b. No

5. In describing your performance on the second set of trials how would you rank your personal performance?
   a. Much better than average
   b. Better than average
   c. About average
   d. Less than average
   e. Much less than average

APPENDIX G

Deception Questionnaire

QUESTIONNAIRE

1. Being able to participate in this experiment was

   A. Very interesting
   B. Slightly interesting
   C. No opinion
   D. Not very interesting
   E. Boring

2. How many experimenters do you think were used in this experiment?

   A. One
   B. Two
   C. Three
   D. Four
   E. Five

3. What was the first thing you did in this experiment?

4. In the last part of this experiment how many people besides yourself were operating the boxes with buttons and lights?

   A. One
   B. Two
   C. Three
   D. Four
   E. Five

5. Had you heard about this experiment before coming here? (If "yes" please explain what you were told.)

   YES NO

6. In the space below please write at least a couple of sentences giving your general reactions to the whole experiment. Feel free to say anything you wish about the study, whether it's favorable or unfavorable. Try to describe your reactions to being in the experiment, any ideas or suggestions you may have about it.

7. Could the Social Behavior Inventory have been used to enhance this experiment?

YES NO

8. If you answered "yes" to the preceeding question, please explain briefly.

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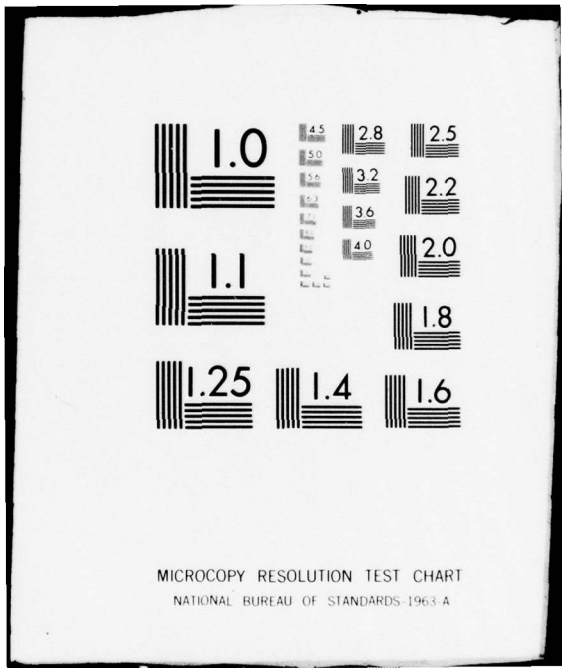
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MICROCOPY RESOLUTION TEST CHART
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APPENDIX H

Social Behavior Inventory Norm Evaluation

SOCIAL BEHAVIOR INVENTORY NORM EVALUATION

The attached Social Behavior Inventory was developed by R. L. Helmreich at the University of Texas. Extensive testing on this inventory has proven that it is a highly reliable and valid personality test. There is currently a large scale effort under way to establish national norms for the test. In order to accomplish this task, several psychology departments at various universities across the country have agreed to participate in recruiting college students to provide responses on this inventory.

Your cooperation in taking the time to provide carefully considered responses to this inventory will be appreciated.

PLEASE, BE SURE TO FILL OUT ITEMS 1 THROUGH 3 on the experimental credit card which is enclosed. In order to receive your test results from the Social Behavior Inventory you must put your phone number in Item 1. When you receive your test results your experimental credit card will be completed and returned to you so that you can be assured of receiving credit for experimental participation.

When you have completed the inventory and the card place them in the envelope provided.

Your answer sheets will be sent to Texas for computer scoring and evaluation by personnel at the University of Texas counseling center.

Your test results will be kept confidential by a coding process. When the scored results are returned to MSU you will be notified by telephone as to where you can receive your inventory results and experimental credit cards.

APPENDIX I

Subjects' Score Sheet

SCORE SHEET

1. A B C
2. A B C
3. A B C
4. A B C
5. A B C
6. A B C
7. A B C
8. A B C
9. A B C
10. A B C

Individual's number of correct responses_____

Group's average number of correct responses_____

After reviewing your results please return your score sheet to the experimenter.

APPENDIX J

Experimenter's Instructions to Subjects

EXPERIMENTER'S INSTRUCTIONS TO SUBJECTS

"Please come in and have a seat at one of the empty desks. For reasons that will be explained at the end of the experiment, we would like to ask that you not talk to any of the other people until the entire experiment is completed. If you have any questions, however, please feel free to ask me."

(Once all the subjects have arrived and have been seated continue instructions.)

"This is an experiment in which we are interested in studying a comparison between the perceptual ability of individuals as compared to the perceptual ability of groups. That is, we are trying to discover whether the perceptual ability of individuals is any different from the perceptions obtained from the averages of individuals working in a group.

"The experiment will consist of two sets of trials. During this first session you will be asked to observe a slide with a number of randomly displayed dots. After seeing the dots another slide will be presented with three choices of numbers marked A, B or C. Make your decision and

mark your answer sheet accordingly, by circling the correct letter. Each slide will be presented for five seconds.

"Before we get started with the first set of 10 slides, we will have three practice trials and use the light boxes on your desks to make sure the lights are working. The light boxes will be used exclusively during the second session, but we will use them now for practice before you answer on your score sheets.

"For the three practice slides, when the answer slide comes on, press the button on your light box and call out your answer."

(Conduct three practice trials.)

"Now that each of you has had three practices we will begin the first set of 10 trials. Please mark your responses on your answer sheets only for these 10 slides and remember each slide will be presented for only five seconds."

(After finishing these trials collect answer sheets, "grade" and return to subjects.)

"Now that you have had a chance to work on

the dot judging task individually we are going to let you work on the task as a group. You will be working as a group, but your personal responses will, in a sense, be kept secret from one another. We will do this by setting the light boxes in a mode where you will be able to see one another's responses, but your response sequence will be established by a random draw. We will do this by letting you draw a number from this sack. The number you draw represents the sequence position in which you will respond. The lighted boxes on your desk will allow you to see the other's responses, but none of you will know who is responding at a given time except when you yourself judge. Please pick a number from the sack."

(The sack is passed to subjects, all of the cardboard squares have the number four on them.)

"When I begin to present the slides again the slide with the dots will be on for five seconds. The answer slide will be presented for 20 seconds, this will allow each of you five seconds to respond.

"When the answer slide comes on I will say, "Number one respond", and whoever is number one should indicate his choice by pressing the

appropriate button and holding it until I say "number two respond". We will continue this way until number four is asked to respond. Whoever is number four will hold his button until the next dot slide is presented. This will provide us with the opportunity to record each of your responses.

"If there are no questions we will begin, there will be 10 slides with dots similar to those you saw in the individual judging situation."

(Scores were recorded by an assistant aiding the experimenter. See Appendix K for Experimenter's Score Sheet.)

APPENDIX K

Experimenter's Score Sheet

EXPERIMENTER'S SCORE SHEET

I.	1.	A B C	VI.	1.	A B C
	2.	A B C		2.	A B C
	3.	A B C		3.	A B C
	4.	A B C		4.	A B C
II.	1.	A B C	VII.	1.	A B C
	2.	A B C		2.	A B C
	3.	A B C		3.	A B C
	4.	A B C		4.	A B C
III.	1.	A B C	VIII.	1.	A B C
	2.	A B C		2.	A B C
	3.	A B C		3.	A B C
	4.	A B C		4.	A B C
IV.	1.	A B C	IX.	1.	A B C
	2.	A B C		2.	A B C
	3.	A B C		3.	A B C
	4.	A B C		4.	A B C
V.	1.	A B C	X.	1.	A B C
	2.	A B C		2.	A B C
	3.	A B C		3.	A B C
	4.	A B C		4.	A B C

Subjects' Names:

1. _____
2. _____
3. _____
4. _____

Condition: _____

APPENDIX L

Debriefing Outline

DEBRIEFING OUTLINE

"Now that we have completed the actual experiment I would like to spend just a few minutes more to get your reactions to and impressions about the entire experiment.

"First of all I would like for you to fill out this short questionnaire."

(Pass out questionnaire, Appendices F and G.)

After subjects have completed the questionnaire, the experimenter will continue:

"Now that you have filled out these questionnaires, do any of you have the impression that this experiment may have had some purpose other than that which had been explained to you originally?"

(If there are no affirmative responses, the debriefing continues. If there are affirmative responses the subject will be questioned further to see if he/she has a valid suspicion.)

"The fact is that sometimes in psychology experiments it is necessary to give the impression

of doing one thing while in fact you are actually doing something else. The reason for this is that sometimes when people are told a specific behavior of theirs is being observed they will consciously or even unconsciously alter that behavior. For example, if I told you that at this very moment there is a concealed camera in the room recording your eye blink rate, and that is what we have been studying during this entire session, you might start to think about, and try to control your eye blink rate.

"In fact the actual purpose of this experiment was to find how you would respond in the dot judging experiment after you had been given two types of feedback manipulation. The first feedback manipulation was regarding the results on your TSBI, and the second was regarding how you did on the first 10 trials in the dot judging task. I apologize for having deceived you, but I think you can see that if we had given everyone accurate feedback on these two factors, we would have had no way of controlling the experiment to see how certain types of feedback might affect your responding on this last set of judgements. This is why we had to give you false information, and why you couldn't be told about it before now.

"Is there anyone who doesn't understand the actual purpose of the experiment?"

(Wait for responses and clarify as necessary.)

"Do all of you agree that the deception was necessary for us to study your real reactions and responses?"

(Wait for an affirmative response from each subject.)

"I think that each of you can understand why it was important that you didn't know all of the details of the experiment before now. If you had, you might not have responded as naturally as you did. For this same reason it is equally important that other people who are going to participate in the experiment do not have any prior knowledge of our actual purpose. Don't you agree?"

(Wait for a response.)

"I would appreciate it greatly if you would agree not to tell anyone else about the experiment. Does anyone have any objections to this request?"

(Wait for a response.)

"If anyone else who is participating in the experiment directly asks you what you did in the experiment you could tell them simply that it was a perception experiment where you were required to judge the number of dots presented on a slide. This is <u>really</u> what you did during the experiment, and if you told that person no more you would be helping us to insure the validity of our study.

"If no one has any further questions, I would like to thank you for your cooperation, and remind you to be sure to get your cards crediting you with participation in this experiment."

APPENDIX M

Conformity Score Cell Means Prior to
Square-Root Transformation

Conformity Score Cell Variances Prior to
Square-Root Transformation

ANOVA Source Table of Conformity Scores Prior to
Square-Root Transformation

Cell Means for Analysis of Males and Females
Square-Root Transformation Applied

ANOVA Source Table for Males Only
Square-Root Transformation Applied

ANOVA Source Table for Females Only
Square-Root Transformation Applied

Transformed Conformity Scores

Table 1

Conformity Score Cell Means Prior to Square-Root Transformation

Competence	Esteem		
	Lo	No	Hi
Lo	6.86 (7)	5.13 (8)	5.71 (7)
No	5.25 (8)	4.33 (6)	4.50 (8)
Hi	4.63 (8)	4.56 (9)	4.71 (7)
Control	3.38 (8)		

Note. Numbers in parentheses represent the number of observations for that cell.

Table 2

Conformity Score Cell Variances Prior to Square-Root Transformation

Competence	Esteem		
	Lo	No	Hi
Lo	3.47	2.7	6.9
No	7.93	.27	15.14
Hi	1.13	3.53	5.24
Control	1.41		

Table 3

ANOVA Source Table of Conformity Scores Prior to Square-Root Transformation

Source	df	SS	MS	F
A-Competence	2	22.66	11.33	2.33
B-Esteem	2	9.64	4.82	.99
A X B	4	5.96	1.49	.31
Control vs All	1	20.66	20.66	4.24*
Control vs No/No	1	3.15	3.15	.65
MS_e	66		4.87	

Note. No/No represents the no competence-no esteem feedback condition.

*$p < .05$

Table 4

Cell Means for Analysis of Males and Females

Square-Root Transformation Applied

Competence	Esteem					
	Lo		No		Hi	
	M	F	M	F	M	F
Lo	2.73	2.49	2.45	2.44	2.57	2.24
No	2.39	2.24	2.10	2.19	2.22	1.98
Hi	2.26	2.47	1.97	2.41	2.09	2.21
Control	2.03	1.86				

Table 5

ANOVA Source Table for Males Only

Square-Root Transformation Applied

Source	df	SS	MS	F
A-Competence	2	1.46	.73	2.31
B-Esteem	2	.49	.25	<1
Control vs All	1	.27	.27	<1
Control vs No/No	1	.01	.01	<1
Lo/Lo vs Hi/Hi	1	1.11	1.11	3.51
Lo/No vs Hi/No	1	1.36	1.36	4.29*
No/Lo vs No/Hi	1	.16	.16	<1
MSe	35		.32	

Note. Source abbreviations represent hypotheses tested. The first abbreviation represents the competence feedback, the second represents the esteem feedback.

*$p < .05$

Table 6

ANOVA Source Table for Females Only

Square-Root Transformation Applied

Source	df	SS	MS	F
A-Competence	2	.36	.18	1.25
B-Esteem	2	.39	.20	1.34
Control vs All	1	.67	.67	4.60**
Control vs No/No	1	.23	.23	1.59
Lo/Lo vs Hi/Hi	1	.23	.23	1.59
Lo/No vs Hi/No	1	.004	.004	<1
No/Lo vs No/Hi	1	.36	.36	2.5*
MS_e	29		.15	

**$p < .05$ *$p < .14$

Table 7

Transformed Conformity Scores

Lo/Lo	Lo/No	Lo/Hi	No/Lo	No/No
2.9155	2.3452	2.3452	2.1213	2.1213
2.1213	2.1213	2.5495	3.0822	2.3452
2.5495	2.7386	1.5811	2.3452	2.1213
2.7386	1.8708	2.1213	1.5811	2.3452
3.2404	1.8708	2.9155	2.3452	2.1213
2.5495	2.5495	2.3452	1.8708	2.1213
2.7386	2.7386	3.2404	3.2404	
	2.5495		2.1213	

No/Hi	Hi/Lo	Hi/No	Hi/Hi	Control
1.2247	2.3452	2.5495	2.7386	1.8708
2.3452	2.5495	1.8708	2.1213	1.8708
2.1213	2.3452	2.9155	2.3452	1.8708
2.3452	2.1213	2.3452	2.1213	2.3452
0.7071	1.8708	1.8708	1.2247	1.5811
3.2404	2.5495	2.1213	2.9155	1.5811
3.2404	2.1213	1.5811	2.1213	2.1213
1.2247	2.1213	2.5495		2.3452
		2.1213		

Reference Notes

1. Wiesenthal, D. L., Endler, N. S., Coward, T. R., Edwards, J. Reversibility of relative competence as a determinant of conformity across different perceptual tasks. Representative Research in Social Psychology, 1976, 7, 35-43. (Dot estimation task slides available from David L. Wiesenthal, 4700 Keele Street, Downsview, Ontario, M3J 1P3, Canada.)

2. Speed, F. M. Analysis of Variance for Large Experiments. Unpublished manuscript, 1977. (Available from Department of Statistics, Mississippi State University, Mississippi State, Mississippi 39762.)

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