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LOCUS OF CONTROL AND SOCIAL INHIBITION AMONG COLLEGE
FEMALES IN A NONEMERGENCY SITUATION:
WHO DOES THE HELPING?

A Thesis
by
JAMES MARSH CUNNINGHAM

Submitted to the Graduate School
Appalachian State University
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ABSTRACT

LOCUS OF CONTROL AND SOCIAL INHIBITION AMONG COLLEGE
FEMALES IN A NONEMERGENCY SITUATION: WHO DOES
THE HELPING? (December 1984)

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This study examined the thesis that internals (as determined by their score on the Rotter Internal-External Locus of Control Scale) would respond more quickly in a situation requiring their intervention.

The subjects for this study consisted of 83 female students enrolled in undergraduate psychology courses at Appalachian State University. Ages of the subjects ranged from 19 to 25. Each subject was asked to complete an "attitude survey" (actually the Rotter Internal-External Locus of Control Scale). Of these subjects, the data from seven subjects was excluded as a result of their receiving median scores on the Rotter Internal-External Locus of Control Scale; data from one other subject who saw through the deception was also excluded, leaving a total of 75 subjects.

Subjects were told that they would be asked to watch another subject via a "live" closed-circuit television picture (actually a prerecorded videotape recording) as part of an ESP experiment. They were told that the subject on the monitor would go through three sets of five ESP cards, white 3" x 5" cards with various geometric shapes on them. The subjects were asked to attempt to "sense" what design was on each card as the subject on the monitor concentrated on it. Subjects were randomly assigned either to watch the "broadcast" alone or with a passive confederate present. Halfway through the "broadcast" the picture was interrupted. Timing began at this point and ended when subjects either left the room to locate the experimenter or called out for assistance.

The data was analyzed employing an analysis of variance, Kruskal-Wallis H test, t test, and Pearson Product-Moment Correlations. Results indicated that subjects in the "alone" condition responded significantly faster than did subjects in the "with confederate" condition ($p < .01$). No significant differences were found between the response times of internals and externals in either experimental condition. In addition, degree of internality did not appear to be related to faster response times.

These results indicated that the inhibition of helping responses does occur among females in the presence of a female. Although differences between internals and externals did not achieve significance, problems encountered in the running of this study may have contributed to this lack of significant findings.

Further research is recommended to further explore the relationship between locus of control and helping behavior.

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I wish also to thank all of the students who participated in this study--without them, of course, this study would not have been possible.

DEDICATION

Dedicated to my wife Monica,
who shared my burdens, supported my hopes,
soothed my fears,
and generally made it all worthwhile.

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INTRODUCTION

Apathy towards victims of misfortune is not a problem unique to our society or our time. Children are taught the story of the Good Samaritan and (hopefully) instilled with the knowledge that helping is a virtue. Yet hardly a day goes by without the media presenting another incident in which the pleas of a victim are ignored by onlookers.

Perhaps one of the most infamous incidents of this type involved a young girl named Catherine (Kitty) Genovese. While returning to her home in New York one night in 1964, she was attacked by a would-be mugger. During the struggle, which lasted over 30 minutes, 38 neighbors watched from their homes. In all that time, during which Kitty Genovese almost escaped from her attacker, but was caught again and finally killed, not one person called the police (Rosenthal, 1964). This incident triggered a tremendous wave of research investigating the factors that brought about this failure to help.

In one of the first studies to examine factors influencing bystander intervention, Latane and Darley (1968) found that the presence of other people affected intervention rates. Subjects were male undergraduates from Columbia University. They were assigned a designated time to arrive for an interview prior to the experiment. On arrival, subjects were ushered into a room and told

to wait until their name was called. Subjects waited either alone, with two other "subjects" (actually confederates of the experimenter), or with two other actual subjects. After a few minutes, smoke began to enter through the air conditioner vent, gradually filling the room. After about six minutes, if no response had been made by the subject, the experimenter entered the room and announced that it was time for the subject's interview. The dependent measure was the time elapsed between the introduction of smoke and action taken by the subject. Although note was taken of other behavior, a response was counted as intervention only if the subject left the room or called for assistance.

Seventy-five percent of the subjects in the alone condition reported the smoke; with two passive confederates present, however, only 10% reported the smoke. Even the group of three naive subjects achieved only a 38% response rate--that is, only 38% of the groups contained even one person who responded. This result was obtained despite the fact that there were three people available to respond, thus increasing the probability that a given group would contain at least one intervener. These results suggested that the mere presence of others was sufficient to lower intervention rates, a finding replicated in later studies by the same authors (Latane & Darley, 1970).

From their work they developed a theoretical view of the intervention process. They hypothesized that an individual, faced with an emergency, must make a series of decisions in order for intervention to occur. The person must notice the event, interpret

it as an emergency, take the responsibility to deal with it, and possess the necessary skills and resources to act effectively. Any interruption of this sequence can result in nonintervention.

Latane and Darley (1970) pointed out that an emergency situation is one in which a prospective intervener has little to gain and oftentimes a great deal to lose. They reasoned as follows:

If a bystander to a potential emergency can convince himself that nothing really is wrong, he can avoid any conflict about whether to take action. Obviously, there are pressures on him not to believe in the reality of a given emergency and to downgrade its seriousness. (p. 33)

A further proposition of their theory is that the presence of other people tends to interfere with the sequence of decisions leading to intervention--in other words, inhibits the impulse to help. This process they term social inhibition (Latane & Darley, 1970).

Other researchers have confirmed their findings. Schwartz and Clausen (1970) conducted a study in which subjects, supposedly taking part in a group discussion via intercom, heard one of the participants suffer an apparent seizure. Results indicated that as the number of subjects taking part in the "discussion" increased, helping rates (as determined by subjects taking appropriate measures to locate the experimenter) declined, demonstrating the effects of social inhibition even when the other subjects were not physically present.

Research in this area has not been limited to the laboratory. Piliavin, Rodin, and Piliavin (1969), in an attempt to demonstrate the social inhibition effect was an artifact of the laboratory

settings in which previous studies had taken place, conducted a study on the subways of Philadelphia. The precipitating incident was the apparent collapse of a fellow subway rider; an unobtrusive observer took careful note of the number and behavior of the other riders. The incident was staged on alternate days and on different lines of the subway system to reduce the likelihood of getting the same subjects twice. They claimed that no social inhibition effect was found--i.e., that increasing the number of bystanders did not lower intervention rates. However, in a later critique of this study, Latane and Nida (1981) pointed out that alone helping rates were not obtained; comparisons were made among relatively large groups (the average number of bystanders was 43 in the Piliavin et al. (1969) study). What they may have demonstrated was that a "ceiling" effect was obtained in which increasing group size further ceased to influence helping rates. It is possible that social inhibition was present but was not apparent because comparisons were not available with groups small enough to have a lessened social inhibition effect.

Other researchers have found social inhibition effects in field settings. Schwartz and Gottlieb (1976) conducted a study in Jerusalem, in which they interviewed witnesses to acts of violent theft. They found that as the number of witnesses increased, intervention rates dropped, indicating that social inhibition had occurred.

Social inhibition appears to occur in response not only to so-called "emergency" situations but also to situations of a less

severe nature. Misavage and Richardson (1974) conducted a study in which subjects listened to a tape recording either alone or with another subject, with instructions that they would later be tested on the information given on the recording. After five minutes the recorder apparently broke. Five more minutes were allowed to pass, then the experimenter returned if the subject (or subjects) had not either sought him out or called for assistance. The dependent variable consisted of the time elapsed between the breaking of the recording and appropriate action-taking on the part of one or both subjects. Results showed that subjects who were with another person were slower in reporting the broken tape recording than were subjects in the alone condition.

Hurley and Allen (1974) obtained similar results in their study, in which the precipitating incident was a motorist with a flat tire. The results indicated that aid was offered more readily when only one person was present; as the number of witnesses increased, offers of assistance dropped off dramatically.

Other studies have demonstrated that subjects were less likely to answer an intercom (Freeman, 1974), pick up coins or pencils in an elevator (Latane & Darley, 1975), or even accept a coupon for a free cheeseburger (Petty, Williams, Harkins, & Latane, 1977) in the presence of others.

As has been shown, social inhibition is a powerful factor in determining if and when intervention will occur in a variety of situations. Previous research has in general demonstrated an inverse relationship between the number of people present and the

likelihood that intervention will occur. The question remains, however, as to what other factors, if any, can influence the extent to which social inhibition operates in any given situation. In order to examine this, one must look at the social inhibition process, as conceptualized by Latane and Darley (1970). They proposed that social inhibition occurs as the result of three psychological processes: social influence, audience inhibition, and diffusion of responsibility.

In regard to social influence, Latane and Darley (1970) stated as follows:

People depend on the reactions of others around them to tell them what to believe and how to behave. When faced with a possible emergency, an individual will be considerably influenced by the way in which other people act. If everyone else seems to regard the event as not being serious and the proper course of action as nonintervention, this will strongly affect the individual. He will perceive the situation as less critical and be less likely to act. The consequences of this social influence process prove to be of major importance. (p. 33)

Thus, social influence refers to the extent to which an individual's actions are influenced by other bystanders' behavior.

Audience inhibition refers to the individual's tendency to avoid the risk of embarrassment which might occur if, in the presence of others, one misinterpreted a situation as an emergency when it actually was not. The third process is diffusion of responsibility: the knowledge that others are present and able to respond allows an individual to shift to others some of the responsibility for acting. The combined action of these processes results in the observed effect of social inhibition (Latané & Darley, 1970).

These three processes do not necessarily operate to the same degree from situation to situation. They vary in intensity in response to differing conditions in each situation; as they vary, social inhibition could be expected to vary accordingly. For example, a clearcut emergency would probably lessen the effect of social influence (because the correct course of action would be obvious, eliminating any need for a bystander to look to others for cues) and audience inhibition (since there is virtually no risk of misinterpreting the situation). Diffusion of responsibility would still operate, perhaps to a greater degree, because of possible increased costs associated with intervening.

Studies investigating relevant aspects of emergency situations fall roughly into three categories, based on the variable of interest: characteristics of the incident, characteristics of the victim, and characteristics of the bystander.

Characteristics of the Incident

One of the most salient characteristics of emergency situations is the degree of ambiguity present. Smoke filtering into a room could indicate a fire or perhaps a malfunctioning air conditioner. Screams on the street could indicate an assault or a family quarrel. To the extent that an emergency is ambiguous, the bystander is free to interpret it in a number of ways (Latane & Darley, 1970).

Research has shown a strong relationship between ambiguity and social inhibition. In a study by Clark and Word (1972), subjects were placed in a room either alone, in two-person groups, or in five-person groups. They then overheard a maintenance man in an

adjoining room fall and cry out in agony, obviously hurt and in need of assistance. This condition was deemed an unmistakable emergency, and elicited a 100% helping response rate from all subjects. When similar groups were exposed to a more ambiguous emergency (overhearing an identical fall without the verbal cues indicating that the victim was injured), results showed that alone subjects were more likely to help than were subjects in either the two- or five-person groups. Thus, the presence of others served to inhibit helping responses only when the stimulus was ambiguous.

Indications from previous research seem to suggest that social influence operates to a greater degree in situations of increased ambiguity, thus exerting a greater relative effect in the cumulative effect of social inhibition. An ambiguous situation leaves the bystander in the unenviable position of having to choose a course of action quickly with little relevant information available. Under such conditions it is only natural that one would look to other bystanders for cues as to how to act (Latane & Darley, 1970).

In addition, having to make a difficult decision under these circumstances would generate some degree of stress in bystanders. In a study designed to investigate the effect of stress on susceptibility to influence, Darley (1966) divided his subjects into two groups. One group was told that after taking a hearing test, they would be subjected to a series of electric shocks, while the other was told only that they would be given a hearing test. All subjects were then given a hearing test in which they heard a number of clicks and were asked to estimate how many they heard. Since a

number of the subjects were tested at the same time, estimates made by others could be heard by the subject. Several times during testing it was arranged that the estimates subjects heard were incorrect. Results indicated that subjects under the stress of anticipated electric shocks were more likely to be influenced by the incorrect estimates of others than were the unstressed subjects. These results lead one to speculate that bystanders, experiencing the stress of having to make a decision under uncertain conditions, might be more likely to be influenced by others' behavior.

Another characteristic of situations requiring intervention is that they vary in terms of severity. Social inhibition has been demonstrated in situations ranging from tipping in restaurants (Freeman, Walker, Bordon, & Latane, 1975) to witnessing a murder (Rosenthal, 1964). As a general rule, one could expect that a situation of a more serious nature would impose more costs upon bystanders in terms of the actions required to effectively remedy the situation.

Piliavin and Piliavin (1972) proposed that not only do costs for giving aid increase with the severity of the situation, but also that the costs associated with not intervening increases. Thus, the consequences of inaction become more severe, with a resultant increase in guilt and anxiety on the part of the bystanders. They conducted a study in which they again staged the apparent collapse of an invalid on a subway car. In one condition, the individual simply lay on the floor of the subway car, feigning unconsciousness; in the second condition, as the victim lay on the

floor, a small trickle of blood ran from his mouth. They predicted that the victim suffering a simple collapse would receive more help than his bloody counterpart; in addition, they predicted that the bloody victim would receive more forms of indirect aid, resulting from the conflict caused by increased severity. Results confirmed both predictions: the bloody victim received far fewer offers of assistance, but elicited more indirect helping responses (such as calling for an ambulance) than did the unbloodied victim.

One methodological problem frequently encountered in studies manipulating severity is that this manipulation tends to be confounded by a concomitant variation in the level of ambiguity of the "emergency." To use the previously cited study by Piliavin and Piliavin (1972) as an example, the presence of blood could be regarded as providing an important cue to bystanders as to whether or not the situation constituted an emergency. Certainly, a person collapsing is a more ambiguous situation than a person collapsing with blood flowing from his/her mouth! The results of this study seemed to indicate that the decrease in ambiguity (which would be expected, judging by research previously cited, to increase intervention rates) was outweighed by the aversive stimulus of blood. However, the difficulty of manipulating severity and ambiguity independently remains a problem.

Characteristics of the Victim

Very few studies have systematically varied victim characteristics, and most of that research has concentrated upon the sex of the victim. Latane and Dabbs (1975) found that females were more

likely than males to receive help in picking up pencils or coins in an elevator. Similarly, Howard and Crano (1974) found college students more likely to help prevent the theft of a female's books than those of a male.

Other studies (Shaffer, Rogel, & Hendrick, 1975; Konecni & Ebbesen, 1975) have found no effect for sex. In all of these studies, no differences in the amount of social inhibition were found based on the sex of the victim; furthermore, social inhibition has been found in situations with female bystanders and a male victim (Misavage & Richardson, 1974), female bystanders and a female victim (Bickman, 1971), male bystanders with a female victim (Latane & Rodin, 1969; Smith et al., 1972), and male bystanders with a male victim (Levy, Lundgren, Ansel, Fall, Fink, & McGrath, 1972).

Physical appearance of the victim also has been found to have an effect on helping rates. Several studies (Harris & Baudin, 1973; Bickman, 1974) found that a well-dressed victim was more likely to receive help than a sloppily dressed one. Similarly, attractiveness seems to be a factor; West and Brown (1975) found that attractive females (as judged by the experimenters) received help more often than unattractive females. Piliavin, Piliavin, and Rodin (1975) conducted a study using male victims which found that the presence of physical stigmata lowered helping rates.

Characteristics of the Bystander

Sex of the bystander has received some attention from researchers. Social inhibition has been found with males in the presence

of other males (Shaffer et al., 1975), and with males in the presence of females. Studies investigating social inhibition in females have been lacking in consistent results (Latane & Nida, 1981). Latane and Dabbs (1975) found that the helping behavior of females tended to be inhibited by the presence of others, regardless of the sex of the other bystanders. Thalhofer (1971), however, found no social inhibition effect among females; this result was obtained both with other females present and with other males present. In general, the majority of studies investigating social inhibition have employed male subjects; few studies have systematically examined social inhibition utilizing female subjects as bystanders.

Age of bystanders is another variable that has not received much systematic attention. Most laboratory experiments have used college students as subjects, and the many field studies sampling adult populations have not varied age systematically. One study by Staub (1970), which examined developmental aspects of helping behavior, found social inhibition in children as young as nine years of age. General trends in the research seem to indicate that social inhibition effects can be found more or less uniformly in preadolescents to adults (Latane & Nida, 1981).

Perhaps one of the most interesting variables associated with helping behavior is that of the personality characteristics of the bystander. Despite the quantity of research that has been performed on the topic of bystander intervention, few studies have examined possible personality correlates of helping behavior.

There are occasions in which helpful bystanders do step forward to offer assistance. What internal mechanisms or resources are present in these people which influence them, despite the opposition of powerful social forces, to intervene?

In one study by Huston, Ruggiero, Conner, and Geis (1981), people were interviewed who had intervened in a violent crime (muggings, break-ins). Compared to a matched control group, interveners were larger, stronger and had more exposure to crime in terms of personal victimization and witnessing the victimizations of others. No personality correlates could be found, however. An earlier study (Huston, Geis, Wright, & Garrett, 1976) found that interveners in crime situations tended to be motivated by specific feelings about crime rather than by humanitarian motives.

As was demonstrated in the study by Piliavin and Piliavin (1972), in more extreme situations direct intervention becomes more costly to the bystander--perhaps so costly that only a specific combination of personal knowledge and characteristics can cause it to occur. If this is true, then one could expect to see variance stemming from personality correlates become more apparent as the drastic nature of the situation lessens and the masking effect of context-specific variables (e.g., knowledge of life-saving techniques) diminishes. In addition, emergencies tend to develop and reach some resolution very quickly. Situations which allow more time for bystanders to react could also allow individual differences to have a greater effect on behavior.

Latane and Darley (1970) reasoned as follows:

For one thing, the situational forces affecting a person's decision are so strong that the individual faced with an emergency does not have time to think; he must make a quick decision under strong pressure. It is possible, under such circumstances, that personality variables do not have much room for play. (p. 115)

They go on to say that personality traits, such as alienation, Machiavellianism, and need for approval did not predict the speed or likelihood of help, whereas the perceived number of bystanders did. However, the focus of their studies was the effect of situational variables: they did not vary a particular personality variable while holding constant the situational factors. In general, Latane and Darley's conclusions have been verified, in that results regarding personality variables have been inconclusive.

Nelson and Dynes (1976) surveyed 663 adults in a city that had been struck by a tornado; they did find that church attendance consistently predicted helping behavior. However, this study relied largely upon self-report questionnaires for its data, and so many conclusions drawn must be done so with caution.

In a similar study, Annis (1976) investigated emergency helping behavior among individuals with differing degrees of religious conviction. The results indicated that the presence of strong religious convictions was not an accurate predictor of emergency helping behavior.

A personality variable which has been of interest to investigators of helping behavior is Machiavellianism, which refers to the tendency of individuals to manipulate others for their own ends

(Wolfson, 1981), and as such should be negatively correlated with helping behavior. Redfering and Bird (1979) examined the relationship between Machiavellianism and helping behavior but found no consistent correlation.

Locus of Control

As has been demonstrated, group inhibition of intervention rates occurs in a wide range of situations. In order for a personality variable to have an effect on intervention rates, researchers have assumed that such a variable must: (a) be a relatively enduring characteristic (in order to obtain replicable results), and (b) be capable of influencing behavior in a variety of situations (since group inhibition occurs in a variety of situations) (Latane & Darley, 1970). One such potentially relevant characteristic is locus of control of reinforcement. In order to consider the possible effect locus of control could have on helping rates, one must first examine the nature of the construct.

Rotter (1966) theorized that people have a generalized expectancy concerning the degree to which they can affect their environment through their own behavior. He labelled this construct "locus of control of reinforcement." People who feel that they have little control over what happens to them, believing that luck or fate plays an important part in shaping their lives, are said to have an external locus of control. Conversely, people who feel that what happens to them is mainly a result of their own personal doings, believing that fate or luck has little to do with their lives, are said to operate from an internal locus of control.

Rotter (1966) developed a 29 item, forced-choice questionnaire (see Appendix A for complete text) designed to determine an individual's view concerning locus of control over life's reinforcements. He described the questionnaire as follows:

Item analysis and factor analysis show reasonably high internal consistency for an additive scale. Test-retest reliability compares satisfactorily with other methods of assessing the same variable, such as questionnaires, Likert scale, interview assessments, and ratings from a story-completion technique. Discriminant validity is indicated by the low relationship with such variables as intelligence, social desirability, and political liberalness. The most significant evidence of the construct validity of the I-E scale comes from predicted differences in behavior from individuals above and below the median of the scale or from correlation with behavioral criteria. (p. 25)

He goes on to say that internal-external (I-E) expectancies should operate with greater force in situations which are ambiguous; these situations allow an individual more free rein in calling upon past experience to assist in dealing with a situation. This prediction was confirmed in a study by Phares and Wilson (1976), in which differences between internal and external subjects appeared only under conditions of greater ambiguity.

Rotter (1966) concluded that a person who is identified as operating from an internal locus of control would be more likely to be resistant to subtle attempts to influence him or her than would a person with an external locus of control. This conclusion leads one to speculate that internals would be less influenced by the actions of others and thus more resistant to the inhibiting effects of social influence.

In addition, Geist and Borecki (1982), in a study employing male and female undergraduates as subjects, found that embarrassment and anxiety in situations involving social contact was indicative of an external orientation. Assuming that distress in social situations would be a factor in audience inhibition, one could tentatively conclude that externals might be more affected by this process.

Other studies have linked an internal orientation with increased social action-taking (Gore & Rotter, 1963), increased awareness of social and environmental responsibility (Tucker, 1978), and a higher level of activity in dealing with their environment (Davis & Phares, 1967; Phares, 1968). These results, combined with the nature of the I-E construct, suggest that internals would not be affected by diffusion of responsibility as would externals.

The previously cited research, when viewed in conjunction with the three psychological processes that result in social inhibition, would appear to suggest that internals should be less affected by the overall process of social inhibition. Little research has been performed in this area, however. One study by Seaman (1979) looked at locus of control as one predictor of helping behavior. Subjects were shoppers, ages 20 to 60, at a shopping mall in California. Approximately equal numbers of males and females were obtained. An 'emergency' was staged in which a young man on crutches fell and painstakingly rose to his feet close to the bystander. Four confederates, two males and two females, were placed

on either side of the bystander to simulate a 'crowd' effect. When the man fell, all four bystanders studiously ignored each other and the incident. The dependent measure was whether help was given or verbally offered during the time it took the young man to rise to his feet. After he had left, the researcher approached the 'group' saying that he was a college instructor studying human behavior, and then offering them five dollars if they would complete a questionnaire (actually the Rotter Internal-External Locus of Control Scale) and several demographic and attitude surveys. The four bogus subjects displayed courteous interest and began filling out the forms. This procedure was repeated until 30 helpful and 30 unhelpful subjects had been found who agreed to fill out the questionnaire. Results indicated that those bystanders who exhibited a helpful response had a significantly lower (more internal) score on the average than did unhelpful subjects. No differences in helping behavior were found based on the sex of the bystanders.

Although this study provides support for the notion that internals are less susceptible to social inhibition, questions still remain. Although helpers tended to be more internal than non-helpers, mean scores for both groups were in the internal range of the Locus of Control Scale, preventing one from drawing firm conclusions about the differential behavior of internals and externals, as classified by Rotter (1966).

In addition, two methodological problems exist in this study. One problem is that subjects were given the Locus of Control Scale immediately after the incident, thus raising the possibility that

their scores reflected a short-term effect caused by their recent experience.

Another problem is that no determination was made as to whether any subjects connected the two events (the fall and the request to fill out a questionnaire) or were suspicious of the four confederates, nor was any allowance made to exclude the response of such subjects. It was also not indicated whether any subjects refused to fill out the questionnaire.

Statement of the Problem

Data from previous research on the relationship of personality characteristics to helping behavior has been for the most part sparse and inconclusive. Evidence suggests that locus of control would be a probable factor in situations involving social inhibition effects, yet few studies have examined this relationship.

The study by Seaman (1979), which is similar in focus to the present investigation, found an association between helpful behavior and increased internality. However, this study was not able to conclusively demonstrate that internals are more helpful than externals.

The purpose of this study is to systematically examine the effect one's locus of control has on helping response rates. Subjects will be exposed to an ambiguous situation which requires intervention (an interrupted video broadcast), similar to the stimulus used in the study by Misavage and Richardson (1974). Independent variables will consist of the subject's classification as internal or external (as determined prior to the incident) and whether they

witness the incident alone or with a passive confederate present. The dependent measure will be the length of time subjects take to respond.

Two predictions are made in terms of subjects' response times:

Hypothesis 1: Subjects in Condition 1 (the "alone" condition) will respond more quickly than will subjects in Condition 2 (the "with confederate" condition).

Hypothesis 2: Across both conditions, internals will respond more quickly than will externals.

METHOD

Subjects

The subjects were 83 female college students enrolled in undergraduate psychology courses at Appalachian State University during the summer and fall of 1984. Seven of these subjects obtained scores of 12 on the Rotter Internal-External Locus of Control Scale; since they could not clearly be categorized as internal or external (Rotter, 1966), their responses were excluded. One subject saw through the deception and was also excluded, leaving a total of 75 subjects. The age of the subjects ranged from 19 to 25. The subjects' participation was obtained by posting a sign-up sheet in the psychology building on the Appalachian State University campus. Subjects were told only that this was a behavior prediction experiment. All subjects received one-half hour of extra credit for their participation.

Apparatus

The experiment took place in three small rooms in a suite of five rooms in Smith-Wright Hall, the psychology building on the ASU campus. Each room contained a table and two chairs.

Personality measure. All subjects filled out an "attitude survey," actually the Rotter Internal-External Locus of Control Scale. This scale is a widely used 29 item forced-choice

questionnaire; subjects indicated their responses by circling one of a pair of statements (see Appendix A).

Videotape equipment. A Zenith brand 21 inch color television (Model M2310W) and a VHS video cassette recorder (produced by JVC, Model CR-6060U) were placed in one of the testing rooms. The television rested on a stand with the video cassette recorder beneath it. The VCR had a dust cover concealing it with a prominent sign saying, "Do not touch!" lying on the dust cover. A live broadcast was simulated by a color videotape recording made on a Scotch UCA 60 minute video cassette. This recording contained a prerecorded "malfunction" and was about 10 minutes in length (see Appendix B).

ESP cards. On the table in the same room with the VCR and television monitor were placed five white 3" x 5" cards, each with a different geometric design on it. The designs used were similar to those used in actual ESP experiments (Douglas, 1977) and consisted of: a circle, a square, a cross, three parallel wavy lines, and a star.

Procedure

Subjects were assigned to one of the two experimental conditions prior to their arrival. Each day that the experiment was run the experimenter first randomly selected a column in a table of random numbers. He then flipped a coin to decide whether Condition 1 (the "alone" condition) or Condition 2 (the "with confederate" condition) would be even, having arbitrarily decided that heads would indicate that Condition 1 would be even, while tails would indicate that Condition 2 would be even. He then looked at the

first number in the column he had previously selected. For example, if the first number in the column was even and the coin toss had come up heads, that would mean that the first subject on the sign-up sheet would be assigned to the "alone" condition. This was repeated until all subjects were assigned to one of the two conditions.

When a subject arrived she was greeted by the experimenter, a neatly dressed 30-year-old white male, and was ushered down a short hallway to one of the testing rooms. A copy of the Rotter Internal-External Locus of Control Scale had been previously placed on the table in this room. She was told that this was an attitude survey and that she should indicate which of each pair of responses she agreed with the most. After the subject had finished the survey, which was not scored until after each subject had completed the experiment, the experimenter told the subject (regardless of the condition to which the subject was assigned) that another subject had arrived at the same time.

Condition 1. The subject was asked if she minded waiting briefly while the experimenter gave the other subject a survey to fill out. The experimenter then left the room, returning in about 30 seconds.

Condition 2. The subject was asked if she minded waiting briefly for the other person to finish her survey so that the experimenter could run both subjects at the same time. The experimenter then left the room. After about 30 seconds, the other "subject," a casually dressed female of college age (actually a

confederate of the experimenter) emerged from his "office" (where she had supposedly been filling out the survey), saying that she was finished. The experimenter escorted her into the room with the actual subject and asked her to be seated.

From this point on the procedure was identical for both conditions. Referring to a written script (see Appendix C) as necessary to minimize variations in his presentation, the experimenter explained that this was actually an experiment in extra-sensory perception (ESP) which was investigating the relationship between a person's belief in luck and her ESP ability. Subjects were told that they would be watching a closed-circuit television picture that was being broadcast live from another room in the same building. Their task would be to watch the subject on the television monitor as she went through three sets of the five ESP cards and to attempt to "sense" which design was on each card as she concentrated on it. Subjects were told to record their responses on the back of the survey.

After answering any questions, the experimenter requested that subjects write their name and address on the survey so that he could contact them later with the results (actually so he could later debrief them). As the subjects were doing this, the experimenter left the room, saying that he had to check on the equipment as he had been having some problems with the camera earlier. At this point, he entered the room with the television monitor, turned on the VCR, waited about 15 seconds, and returned for the subjects, saying that everything seemed to be ready. He then ushered the

subjects into the room, saying, "Go ahead and take a seat. I'll go on and tell her to begin. I'll be across the hall if you need me." The experimenter then left the room and quietly returned to his "office." When the "malfunction" occurred, he began timing. Timing ended when the subject either called out or exited the room to locate the experimenter.

If no response had occurred by two minutes from when timing began, the experimenter reentered the room. This length of time was decided upon because, had the hypothetical experiment actually been continuing, it would have taken two minutes for the "subject" on the monitor to go through the rest of the cards, at which point the experimenter would have reentered the room to end the experiment.

When the "malfunction" occurred, the confederate (who had extensive acting experience) was instructed to simply sit passively, waiting for something to happen. If questioned by the subject as to what to do, she responded with, "I don't know," or a similar noncommittal response.

After the experiment was concluded, subjects were asked how they thought they had done and what technique seemed to work best. The purpose of this informal questioning was to ascertain if anyone had seen through the deception or was suspicious about the experiment. Information was also obtained as to the subjects' age. The subjects were then given extra credit slips, and after being thanked by the experimenter for their participation, dismissed. After all subjects had been run and the experiment concluded,

subjects were sent a letter which briefly explained the true purpose of the experiment and summarized the results.

RESULTS

An analysis of variance indicated that subjects in Condition 1 (the "alone" group) responded significantly faster than did subjects in Condition 2 (the "with confederate" group), $F(1, 71) = 10.27$, $p < .01$. This result supports the prediction made in Hypothesis 1. Table 1 presents mean response times for internals and externals in the two experimental conditions: a summary of a 2 x 2 analysis of variance is presented in Table 2.

Further inspection of the results of the analysis of variance revealed that the main effect for type of participant did not achieve significance, $F(1, 71) = 1.63$, $p < .05$, indicating that, across the two experimental conditions, internals and externals did not differ significantly in their response times. This finding runs counter to the prediction made in Hypothesis 2. The interaction of condition with type of participant also did not achieve significance.

One of the assumptions implicit in the use of the analysis of variance technique is that of homogeneity of variance. Since an initial inspection of the data revealed a disparity between the variances obtained within the four groups, a Cochran C test was employed to test for homogeneity of variance. This test was found to be significant, $C = .822$, $p < .01$, indicating that the

Table 1

Mean Response Times in Each Group

| Condition | Type of Participant | |
|-----------------------------------|---------------------|-----------|
| | Internals | Externals |
| Condition 1 (alone) | x = 28.9 | x = 44.8 |
| | n = 27 | n = 14 |
| | s = 24.4 | s = 39.2 |
| Condition 2 (with confederate) | x = 58.4 | x = 62 |
| | n = 22 | n = 12 |
| | s = 38 | s = 39.3 |

Table 2

Analysis of Variance

| Source of Variance | df | SS | MS | F |
|-------------------------|----|-------|-------|--------|
| Condition (C) | 1 | 11981 | 11981 | 10.27* |
| Type of Participant (P) | 1 | 1897 | 1897 | 1.63 |
| C X P | 1 | 530 | 530 | .454 |
| Within Groups | 71 | 82859 | 1167 | - |
| Total | 74 | 97267 | | |

* $p < .01$

differences in variances were greater than would be expected on the basis of chance alone.

In addition, nine responses were obtained in which subjects waited until the experimenter returned (thus receiving the maximum response time of 120 seconds); these responses created a positive skew in the distribution of scores and raised the possibility that another assumption of the analysis of variance, that of normality of distribution, may have been violated. By adopting a more stringent significance level (.01), it was felt that the use of the analysis of variance technique was justified. Norton (1951) studied the effects of the violation of these assumptions on obtained F ratios and compared the obtained F ratios with the theoretical distributions. He concluded that, for sampling from populations having the same shape but different variances, there was little effect on the obtained F ratios.

However, since the assumptions of the analysis of variance may have been violated, a nonparametric test, the Kruskal-Wallis H test, was employed to obtain a distribution-free test of the findings of the analysis of variance. This test is regarded as a more conservative test than the analysis of variance and is recommended for use when homogeneity of variance cannot be assumed (Edwards, 1960; Anderson, 1961). Response times obtained in each cell were ranked and a chi-square equivalent was obtained. Results did achieve significance, chi-square (3) = 18.13, $p < .01$; this indicated that the differences in response times obtained in Condition

1 and Condition 2 were significant, thus verifying the results of the analysis of variance.

Despite the fact that the prediction made in Hypothesis 2 was not supported by the data, an inspection of the mean response times of internals and externals in Condition 1 revealed that the mean difference obtained was quite large (see Table 1). In order to determine if this difference was significant, a post-hoc analysis was performed using a t test. Results of this test did not achieve significance, $t(39) = 1.60$, $p > .05$.

In order to determine if faster response times could be correlated with increasing internality, several Pearson Product-Moment Correlations were computed. A correlation coefficient was obtained for all subjects, for subjects in Condition 1, and for subjects in Condition 2. These results also did not achieve significance (for all subjects, $r(73) = .13$; for subjects in Condition 1, $r(39) = .21$; and for subjects in Condition 2, $r(32) = .09$), indicating that internality was not related to faster response times.

DISCUSSION

The prediction made in Hypothesis 1 was supported by the data; this result is consistent with most of the earlier research on bystander intervention (Latane & Darley, 1970; Clark & Word, 1972; Misavage & Richardson, 1974), which has demonstrated that individual subjects tend to respond more quickly than do subjects in groups of two or more. One addition made by this study to the body of previous literature was the finding that, in this study, social inhibition did occur among females in the presence of another female; earlier studies had been lacking in consistent results on this point (Thalhofer, 1971; Latane & Dabbs, 1975; Latane & Nida, 1981).

The prediction made in Hypothesis 2 was not supported by the data--differences in response times between internals and externals across both conditions did not achieve significance. This finding could indicate that, as Latane and Darley (1970) hypothesized, the situational factors affecting the individual's decision to intervene or not tend to overwhelm any personal differences (such as one's internal-external orientation). Other studies investigating possible personality correlates that could logically be expected to affect intervention behavior (such as Machiavellianism, or degree of religious conviction) have similarly not been able to demonstrate a clear relationship between these variables and intervention behavior (Annis, 1976; Nelson & Dynes, 1976; Redfering & Bird, 1979).

In the study by Seaman (1979), bystanders who provided helpful responses were found to be more internal than the unhelpful bystanders. This correlation of helpfulness with increasing internality was not found in this study. Although the mean response time of internals in Condition 1 was considerably faster than the mean response time of externals in Condition 1, this difference did not achieve significance. However, there are some aspects to this study which may have contributed to the lack of significant differences between internals and externals.

One possible contributing factor may have been that the situation requiring intervention was not sufficiently ambiguous. Phares and Wilson (1972) found that differences between internals and externals appeared only when the situation was sufficiently ambiguous to allow individual differences in expectancies to operate. In this study, it was originally felt that the interruption of the "live" broadcast was ambiguous to generate differences in behavior between internals and externals. However, since all subjects were told prior to the interruption that there had been problems with the camera earlier in the day (in order to discourage attempts at adjusting the monitor to correct the malfunction), this additional information may have served to reduce the ambiguity of the situation sufficiently to prevent differences in behavior between internals and externals from becoming apparent.

One problem encountered in the analysis of the data stemmed from the variability exhibited in the subjects' responses. Internals in Condition 1 exhibited the least variability ($\underline{s} = 24.4$); the

other three groups demonstrated a great deal of variability (the mean standard deviation obtained among these three groups was 38.8). This result made it extremely difficult to statistically determine that differences obtained between internals and externals were due to an experimental manipulation and not just to chance fluctuations.

As indicated previously, the difference in variances among the groups was found to be significant: this result is in itself an interesting finding. Internals in the "alone" condition exhibited considerably less variation in their responses than did either internals in Condition 2 or externals in both conditions. To some extent this observation could be a result of the fact that this group contained the most subjects ($n = 27$). In addition, one could speculate that internals' responses (when alone) were less influenced by extraneous factors than were externals' responses. This possibility would seem to be consistent with the contention that internals are more resistant to subtle influences (Rotter, 1966). This tendency for internals to respond more consistently, however, appeared to be "washed out" when another person was present.

The amount of variability in three out of the four groups may also indicate a possible weakness in this study. Once the "broadcast" had been interrupted, subjects may have felt that the experiment was "spoiled," and thus their intervention was unnecessary, or at least not that helpful. Their letting the experimenter know that the equipment had malfunctioned could then have depended more

on whether they were late for a class, for example, than on an impulse to help. One could speculate that had the incentive to intervene been stronger (either by making it clearer that intervention would be helpful, or by increasing costs attached to nonintervention), more consistent responses might have been obtained.

Other problems were encountered in the running of this study which could also have contributed to the lack of conclusive findings. One difficulty immediately became apparent when subjects were first solicited to participate. The original intention of this study was to investigate helping behavior in both males and females. After the first two days of running the experiment, during which none of the males who signed up to participate showed up for the experiment, it was decided to limit the study to females only. This decision was made based primarily on two practical considerations: (a) if females were more likely to show up, the available time slots should be allotted for females only in order to ensure a more reliable subject flow; and (b) of the 24 time slots given for the first two days of the study, only four males signed up, while 18 females signed up. This indication that females seemed to be both more willing to sign up and more likely to show up caused the experimenter to decide to utilize females as subjects. In addition to these practical considerations, it was felt that, since the bulk of previous research has concentrated upon male subjects, the use of female subjects could provide additional

information in an area in which the data has been somewhat sparse and inconsistent (Latane & Nida, 1981).

Although the disparity in participation rates between males and females may not have directly contributed to the lack of significant findings, this disparity may indicate that a sampling bias was introduced by the method of recruitment. Subjects were not required to participate--in order to take part in the experiment, a subject had to locate the sign-up sheet, find a convenient time, and then remember to show up at that time. Perhaps this procedure in itself limited the sample to highly motivated subjects, for example.

Another problem stemming from sampling bias which may have contributed to the lack of significant findings was the imbalance between the number of internal and external subjects obtained. Subjects were categorized as internal if they scored below 12; those who obtained scores of 13 or higher were classified as externals. Subjects who obtained scores of 12 were excluded from the data analysis. This procedure was recommended by Rotter (1966) and by Phares (1968) as a means of ensuring that two distinct groups would be obtained. Of those who participated in the present study, 65% were categorized as internal. This disparity, which was greater than has been obtained in the majority of studies investigating the internal-external dimension (Phares, 1976), lowered the sample sizes in the two external groups, thus causing a proportionate increase in the likelihood of fluctuations due to extreme scores.

In addition, the mean locus of control score for externals was 14.4, 2.4 points from the "neutral" score of 12. In contrast, the mean locus of control score for internals was 7.6, 4.4 points from the "neutral" score. Thus, the population of externals may not have been as representative of an external orientation as were their internal counterparts. This tendency for the scores to be skewed toward the internal end of the spectrum could have been to some extent controlled for by performing a median split of the obtained scores, as in the study by Seaman (1979), in which an internally skewed distribution of scores was also obtained; in this study a median split could not be performed. During the process of data analysis, the data from the seven subjects who obtained scores of 12 were accidentally destroyed, rendering a median split impossible.

Given that the sample as a whole may have been skewed toward the internal end of the spectrum, within the sample group degree of internality did not appear to be related to faster response time, as indicated by a Pearson r . Another aspect of the distribution of the locus of control scores may have contributed to this lack of correlation: 68% of the sample scores fell in the range from 7 to 14, thus limiting the effective range of the personality variable and reducing the likelihood of finding a significant correlation.

In addition to the problems generated by the unequal numbers of internals and externals obtained, another problem was encountered that further contributed to the unequal sizes of the groups. Seven subjects who had been randomly assigned to Condition 2 (the "with

confederate" condition) showed up at the same time as another subject. Since they had already seen another subject, the rationale of presenting the confederate as yet another subject who had arrived at the same time was felt to be untenable. These subjects were then assigned to the alone condition; this departure from the randomization procedure was felt to be preferable to running the risk of raising their suspicions and then having to exclude their responses entirely.

One major concern of the experimenter was whether subjects would be taken in by the purported ESP experiment and the supposedly live broadcast. Of all the subjects who participated, only one saw through the deception. This subject had seen a movie dealing with other intervention studies immediately before she participated in the experiment and voiced suspicions concerning the true purpose of the study before she had been told anything about it. All other subjects indicated by their comments that they were deceived by the procedure.

Although this study was not able to conclusively demonstrate that internals intervened more quickly than did externals, it did succeed in demonstrating the occurrence of social inhibition among females in the presence of a female confederate. This finding, derived as it was from a small-town college population, may be limited in its generalizability. However, given the consistency of the results with the vast amount of research that has been performed utilizing male subjects (Latane & Nida, 1981), this result is offered with confidence as an indication of the broad spectrum

of persons and situations affected by the process of social inhibition.

As has been indicated, numerous problems were encountered which, it is felt, contributed to the lack of significant differences in behavior between internals and externals. If, in future research on this topic, researchers take pains to ensure that more nearly equal groups are obtained, that more equivalent representation of each orientation is achieved, that subjects are appropriately motivated to intervene, and that the stimulus is sufficiently ambiguous to allow individual expectancies to operate, one could speculate that differences in behavior between internals and externals might become apparent.

Given the problems encountered, this researcher feels that the possibility of the internal-external dimension being an important mediator of the intervention process remains. Evidence suggests that internality can be correlated with helping behavior (Seaman, 1979); this finding, in combination with the nature of the construct (Rotter, 1966) and with other studies investigating behavioral correlates of locus of control (Gore & Rotter, 1963; Davis & Phares, 1967; Geist & Borecki, 1982), suggests that locus of control should play an important role in intervention behavior. The results of this study are offered with the expectancy that the suggestions made can serve to guide future researchers. Although this study did not succeed in demonstrating conclusively a personality correlate of intervention behavior, it is hoped that these findings will not deter others from investigating the effect of

personal differences on the widespread phenomenon of social inhibition.

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APPENDIX A

Rotter Internal-External Locus of Control Scale

Rotter Internal-External Locus of Control Scale

- *1. a. Children get into trouble because their parents punish them too much.
b. The trouble with most children nowadays is that their parents are too easy with them.
2. a. Many of the unhappy things in people's lives are partly due to bad luck.
b. People's misfortunes result from the mistakes they make.
3. a. One of the major reasons why we have wars is because people don't take enough interest in politics.
b. There will always be wars, no matter how hard people try to prevent them.
4. a. In the long run people get the respect they deserve in this world.
b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.
5. a. The idea that teachers are unfair to students is nonsense.
b. Most students don't realize the extent to which their grades are influenced by accidental happenings.
6. a. Without the right breaks one cannot be an effective leader.
b. Capable people who fail to become leaders have not taken advantage of their opportunities.
7. a. No matter how hard you try some people just don't like you.
b. People who can't get others to like them don't understand how to get along with others.
- *8. a. Heredity plays the major role in determining one's personality.
b. It is one's experiences in life which determine what they're like.
9. a. I have often found that what is going to happen will happen.
b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.
10. a. In the case of the well-prepared student there is rarely, if ever, such a thing as an unfair test.
b. Many times exam questions tend to be so unrelated to course work that studying is really useless.

11.
 - a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.
 - b. Getting a good job depends mainly on being in the right place at the right time.
12.
 - a. The average citizen can have an influence in government decisions.
 - b. This world is run by the few people in power, and there is not much the little guy can do about it.
13.
 - a. When I make plans, I am almost certain that I can make them work.
 - b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.
- *14.
 - a. There are certain people who are just no good.
 - b. There is some good in everybody.
15.
 - a. In my case getting what I want has little or nothing to do with luck.
 - b. Many times we might just as well decide what to do by flipping a coin.
16.
 - a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.
 - b. Getting people to do the right things depends upon ability; luck has little or nothing to do with it.
17.
 - a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.
 - b. By taking an active part in political and social affairs the people can control world events.
18.
 - a. Most people don't realize the extent to which their lives are controlled by accidental happenings.
 - b. There really is no such thing as "luck."
- *19.
 - a. One should always be willing to admit mistakes.
 - b. It is usually best to cover up one's mistakes.
20.
 - a. It is hard to know whether or not a person really likes you.
 - b. How many friends you have depends upon how nice a person you are.
21.
 - a. In the long run the bad things that happen to us are balanced by the good ones.
 - b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.

- 22. a. With enough effort we can wipe out political corruption.
b. It is difficult for people to have much control over the things politicians do in office.
- 23. a. Sometimes I can't understand how teachers arrive at the grades they give.
b. There is a direct connection between how hard I study and the grades I get.
- *24. a. A good leader expects people to decide for themselves what they should do.
b. A good leader makes it clear to everybody what their jobs are.
- 25. a. Many times I feel that I have little influence over the things that happen to me.
b. It is impossible for me to believe that chance or luck plays an important role in my life.
- 26. a. People are lonely because they don't try to be friendly.
b. There's not much use in trying too hard to please people, if they like you, they like you.
- *27. a. There is too much emphasis on athletics in high school.
b. Team sports are an excellent way to build character.
- 28. a. What happens to me is my own doing.
b. Sometimes I feel that I don't have enough control over the direction my life is taking.
- 29. a. Most of the time I can't understand why politicians behave the way they do.
b. In the long run the people are responsible for bad government on a national as well as on a local level.

Note. Astericks indicate filler items.

APPENDIX B

Description of Videotape Recording

Description of Videotape Recording

The "subject" in this recording is actually a female student enrolled in an acting class at Appalachian State University. The videotape recording begins by showing an empty chair and a desk with a stack of cards on it. After about 45 seconds, the experimenter's voice is heard.

E: "All right, we're ready to begin. You can take your seat now."

S: "These are the cards?"

E: "Yes. (Pause as the subject moves into the camera's view and seats herself.) Start whenever you're ready. I'm going to head back downstairs."

The subject then says, "Trial one," and picks up a card from the pile. After concentrating on it for about 15 seconds, she says, "End trial one," and puts the card down. This procedure is repeated for trials two through six. The picture begins to flicker just before she says, "End trial six." This is the point at which the experimenter begins timing. Before she begins trial seven, the picture goes blank but the audio portion can still be heard as she says, "Trial seven." After she says this the audio portion also cuts off. The screen remains blank with occasional static interference for the remainder of the recording; this blank portion lasts for an additional five minutes.

APPENDIX C

Script Used by Experimenter

Script Used by Experimenter

"Now that you've finished the survey, I can tell you that this is actually an experiment in ESP, extra-sensory perception. I didn't mention this on the sign-up sheet because I didn't want to attract subjects who were especially interested in ESP or who had taken part in ESP experiments previously. Have you (or, "Have either of you...") ever done anything like this before?" (Pause) "Good. Now, what I'm interested in is the way one's attitudes about luck and chance could be reflections of ESP working unconsciously. As you may have guessed, the survey is used to pick up on your attitudes about luck. As an example of what I mean, and I'm not saying that this is necessarily true, perhaps people who strongly believe in luck have more than their share of ESP ability, and so things seem to happen for them--they're in the right place at the right time."

"We're going to be using a standard set of ESP cards, five cards with various geometric shapes on them: a circle, a square, wavy lines, and so on. I'm going to take you in the next room, where I have a television monitor set up which will be showing a closed-circuit picture being broadcast from another room in this building. On the monitor you'll see another subject who will have three sets of the ESP cards. She will go through these cards, one by one. I simply want you to try and guess what design is on each card as she concentrates on it."

"I'm using the monitor because, in previous ESP experiments in which the subjects were face-to-face, people have later criticized the results, saying that the "sender" could have unconsciously been giving some sort of cues to the other subject. I'm hoping to get around this by having you watch her on the monitor. You will have a set of the cards to refer to. In order to record your responses, turn your survey over and number from 1 to 15 on the back--(pause as the subjects do this)--then, opposite each number, simply draw in whatever design you think is on that particular card. Use any technique that you feel might work for you--some people feel that looking at the cards helps, some have said that simply closing their eyes and concentrating on the subject's voice seems to work. Okay, do you have any questions?" (Pause to answer questions, if any.)

"All right. Now, if you'd like to find out the results of this experiment, write down your name and an address where I can reach you. While you're doing this, I'm going to check the equipment to make sure everything is working--I've been having some problems with the camera today. I'll be right back, and then we can get started." (Experimenter leaves the room.)

VITA

James M. Cunningham was born in Jacksonville, Florida, on September 6, 1954. Shortly after his birth his family moved to Atlanta, Georgia, and then to the nearby town of Gainesville, where he attended elementary school. In 1963 his family moved to Asheville, North Carolina, where he finished elementary school and entered Asheville Country Day School.

After his high school graduation in 1973, he entered The University of North Carolina at Chapel Hill, from which he graduated in August 1977 with a Bachelor of Arts degree in Psychology. He applied to the Clinical Psychology program at Appalachian State University and was accepted in December 1977. He was awarded a fellowship and entered the program in 1978 to begin study towards a Master of Arts degree.

In 1980 he married the former Monica Kane, and in 1983 they celebrated the birth of a daughter, Julia Elizabeth. The degree of Master of Arts was awarded in December 1984.

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