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CATHARSIS AND AGGRESSION: THE EFFECTS  
OF THE SEX OF THE ANNOYER

by

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Abstract

Eighty subjects (40 males, 40 females) were run individually in a design that involved three phases. In the first phase, either a male or female confederate annoyed the subject. In the next phase, the subject was provided with the opportunity of a cathartic experience by aggressing against either the original confederate that annoyed him (or her), a different confederate of the same sex as the original confederate, or a confederate of the opposite sex of that of the original confederate. A control group was given no opportunity to aggress during this phase. In the third phase, each subject was then given the opportunity to give socially sanctioned shocks to the confederate that annoyed him. The dependent variables were the number and cumulative duration of the shocks administered during this phase, which measures indicated the relative cathartic effect of Phase II activities, any differential effect due to the sex of the annoyer, and any effects or interactions of the sex of the subject with these variables. The 2 x 2 x 4 factorial design (sex of subject x sex of annoyer x mode of catharsis) failed to show significant differences between the modes of catharsis or the effects of the sex of the annoyer. Significant interactions were found, however, between the sex of the subject and the sex of the annoyer, suggesting that people tend to aggress more towards members of their own

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sex. Significant interactions were also found between the sex of the subject and the mode of catharsis, most notably in the "Same Sex" category. This condition produced the highest aggression levels in male subjects and the lowest aggression levels in female subjects. The overall results were interpreted as indicating that sex identification alone is not a sufficient factor for stimulus-generalization.

Catharsis and Aggression: The Effects  
of the Sex of the Annoyer

The catharsis phenomenon (as related to aggression) usually refers to a decrease in aggression after some act of aggression. The basic notion behind this concept goes back as far as Aristotle, who believed that an exhibition of emotion could "purge" an individual of that emotion. The concept was given its current name by Freud, who developed the phenomenon as a fundamental process of psychotherapy. The effect is generally explained in Hullian terms as the draining away of the drive leading to aggression (Miller, 1941). These basic models typify the "energy model" of catharsis that is relatively familiar, and appears to have won general acceptance due to the fact that it makes sense in the metaphorical nature.

An equally appealing explanation of the catharsis phenomenon is offered by Lewin's (1935) demonstration of the Zeigarnick effect, where it is indicated that people tend to resume interrupted tasks more frequently than to take up those tasks that they have completed. Presumably, failure to complete the tasks creates tension that leads to the tendency to resume them again. In applying this notion to Berkowitz's (1964) idea of anger resulting in an "instigation to aggression," it can be seen that the person would not obtain "completion" until he has injured his target, or until someone else has done so.



Along this same line of thought, Berkowitz (1962) proposes that an object is capable of evoking aggressive responses to the extent that it is associated with the previous anger or aggression instigators. Thus Neal Miller's well-known concept of displacement via a stimulus-response generalization gradient offers a means of studying the relative effectiveness of an object in substituting for the original object that caused the instigation to aggress. Those who support the stimulus-generalization gradient propose that the cathartic value of a substitute object is directly proportionate to the degree of similarity between the original and the substitute objects (Berkowitz, 1962).

There are those who would disagree somewhat with this idea (Buss, 1961), and instead propose that the effectiveness of the substitute object is determined by the degree to which it represents a "safer" object to attack, as is exemplified by the defenseless wife who gets chewed out as a result of her husband's anger toward his more "threatening" boss. The phenomenon has been called "target substitution," and is said to be determined by the lower threshold for aggression of the substitute object; i.e., the ability of a wider range of stimuli to elicit stronger aggressive responses.

As a third alternative, Bindra (1959) suggests that the target of our substitute aggression and its subsequent relative effectiveness is determined by our enduring habits that

we have developed. This is demonstrated by habitually displacing anger towards ethnic groups, sexes, etc.

Even of more interest is that in some cases (Bandura, 1965; Berkowitz, 1965; Geen & Berkowitz, 1967) witnessed aggression has led to an increase in subsequent aggression. As pointed out by Doob (1970), however, it should be noted that in those situations that resulted in increasing subsequent aggression, the subjects were merely observing aggressive acts; they were not participating in the aggression. The emphasis of actual participation in aggression is attested by the well-supported fact that we do tend to feel better when we see that the person who has angered us has been hurt (Berkowitz, Green, and McCaulay, 1962; Bramel, Taub, & Blum, 1968; Doob, 1970).

In any case, it has been demonstrated that in certain conditions, the expression of aggression does lead to a decrease in the subsequent level of aggression. Feshbach (1955) demonstrated that the opportunity to aggress through fantasy on the Thematic Apperception Test significantly reduced the aggressive attitudes towards a male experimenter that had previously insulted the subjects. Hokanson (Hokanson & Burgess, 1962a, 1962b; Hokanson & Shetler, 1961) has demonstrated a significant decrease in the subject's systolic blood pressure (used as an indicator of arousal) if the subjects were able to aggress either directly or verbally after having been angered by a male confederate. He has also demonstrated (Hokanson, Burgess, and Cohen,



1963) that by varying the similarity of the cathartic object with the frustrator, results were obtained that suggest the functioning of a stimulus-gradient effect; however, the results in this instance were not statistically significant. Doob (1970) presents evidence that if a subject is allowed to "hurt" a male confederate that has annoyed him, he tends to show lower subsequent levels of aggression than those subjects that had been annoyed and had no opportunity to aggress.

Also of interest is the fact that while males are generally considered to have stronger aggression habits (Berkowitz, 1962), studies have shown that females will aggress just as much as males, under secure conditions, if annoyed by a male (Mallick & McCandless, 1966; Scharff & Schlottmann, 1973). Explanations of this apparent discrepancy have been proposed by Markey (Jersild & Markey, 1935) as a qualitative difference rather than a quantitative difference in the common modes of the expression of anger by the two sexes, in that girls tend to aggress verbally while boys tend to be more physically aggressive. Scharff and Schlottmann (1973) interpret their findings as suggesting that aggression in males is generally socially accepted, whereas females are usually expected to inhibit their aggression. If the anger arousal situation is strong enough, it will break through the female's inhibition and enable her to fully express her anger. They also suggest

that significant differences in results might be obtained if the insulter in the experiment were a woman.

Interestingly enough, in all of the studies on aggression there has been only one in which females were used to annoy the subjects (Konecni and Doob, 1972) and in that experiment they were randomly alternated with males with no effort made to determine the differential effect of the person doing the annoying.

The present experiment was essentially an extension of the design used by Konecni and Doob (1972) and sought answers to two questions: (1) Is there any differential effect in using either males or females as the annoying confederate; and (2) Will a person achieve greater catharsis by aggressing towards a person of the same sex as the insulter (thus supporting the stimulus-generalization gradient theory of catharsis), or will a person achieve greater catharsis by aggressing towards a person of the opposite sex than that of the person who annoyed them (thus supporting an alternate theory such as either the lower threshold or enduring habit theory of catharsis).

#### Method

Overview. There were three phases in the experiment. In the first phase, either a male or female confederate annoyed the subject. In the next phase, the subject was provided with the opportunity of a cathartic experience by



delivering a fixed number of shocks either to the original confederate that insulted him (or her), or to a different confederate of the same sex as the original confederate, or to a confederate of the opposite sex of that of the original confederate. A control group was given no opportunity to aggress (no catharsis) during this phase; rather, they remained isolated in the experiment room for approximately the same length of time as was required to complete the second phase. In the third phase, the dependent variable was measured by the number and cumulative duration of shocks administered when each subject was then given the opportunity to aggress against the original confederate that annoyed him (or her). The shocks administered during this phase were interpreted as indicating the relative cathartic effect of each of the activities of Phase II, any differential effect due to the sex of the annoying confederate, and any effects or interactions of the sex of the subject with any of these variables. Of course, in all situations shocks were never actually administered.

Subjects. The subjects were volunteers from introductory psychology courses at Appalachian State University. Of the 92 original subjects who participated in the study, 8 subjects refused to administer shock and withdrew from the experiment. The data from 4 other subjects could not be used in that they failed to follow instructions properly. This left 80 subjects--40 males and 40 females--with a

mean age of 19.8. In this 2 x 2 x 4 factorial design (sex of subject x sex of annoyer x mode of catharsis), the subjects were randomly assigned to one of the eight annoyance-catharsis conditions of their sex, yielding five subjects in each of the 16 cells.

Apparatus. The testing room consisted of a large room partitioned into cubicles. In the central area there was a large table with a dividing screen in the middle, and two chairs. On the wall above the table was a wall clock. In the corner of the room was a small table on which there was a cassette recorder containing tape recordings of the instructions for the different phases of the experiment. Behind a screen and out of sight were two identical cans, one filled with folded slips of paper on which "SUBJECT A" was printed, the other filled with slips of paper saying "SUBJECT B." From the central room, one could see into an adjacent cubicle where there was an impressive array of electrical apparatus and two chairs. This equipment cubicle also contained a tape recorder and a weighted microphone with a cord long enough to reach the nearest seat in the center room. Within the subject's view from the central area, either on the table before him or else on the table in the equipment cubicle, was a small box with a lever on top, and a wire and jack leading from its base. Adjacent to the equipment cubicle was another cubicle with a table and chair, a small intercom box on the table, and a



plug with wires leading into the equipment cubicle. This plug was connected to a counter and a timing device that measured the cumulative duration of the closed circuit in units 0.15 second long. A camouflaged closed circuit television camera, along with the intercom speaker, allowed visual and audio monitoring of this second cubicle. As the wall between this cubicle and the equipment cubicle did not extend completely to the ceiling, one could converse easily between the two rooms; however, it was impossible for a person in this cubicle to see either into the equipment cubicle or the center room.

The confederates were two typical male and two typical female upperclassmen who were participating in the experiment for course credit.

Procedure. In the first phase of the experiment, the subject and either a male or female confederate arrived at the testing room at approximately the same time. The confederate posed as a student from Lees-McRae Junior College (a nearby school) who was also participating in the experiment for extra credit in a psychology course, but who had to come to the A.S.U. campus to do so, since they have no graduate experimental program at his school.

Upon entering the testing room, both the subject and the confederate were requested to sign consent forms stating that they were aware that stress might be involved in the experiment, that they had the right to withdraw at any time

if they so desired, and that they agreed to keep all information concerning the experiment confidential. While the forms were being signed, copies of the instructions for Phase I were placed face down on the table in front of the subject and the confederate. Once the forms were signed, the experimenter brought out the can containing slips of paper saying "SUBJECT A." The subject was asked to draw one of the pieces of paper, and upon seeing that it said "SUBJECT A," it was explained that for the first phase of the experiment he would be Subject A and the other student (the confederate) would be Subject B. The subject was asked to sit in the chair nearest the equipment cubicle if he was not already doing so.

Both were then asked to turn over the instructions before them and to begin reading as the same instructions were simultaneously played aloud on the cassette recorder. The experimenter then switched on the recorder, playing the following instructions:

This is one in a series of research studies we are conducting in the field of cognitive processes, especially those involved in problem solving. The two of you will be working on anagrams. An anagram is a group of letters which, if properly rearranged, will spell a well-known word. As you may know, some authors believe that thinking aloud, saying



associations that come to mind, helps problem solving of this kind. We are interested in finding out whether this is so. Subject A will be saying aloud anything that comes to your mind in connection with the problem you are working on. Naturally, you won't have to be speaking all the time. Associations sometimes don't come so easy. But when something in connection with the problem you are working on does cross your mind, be sure to say it aloud so that we get it on the tape. I've attached the microphone, so that you don't have to think about speaking into it. Subject B will be working on the same anagrams, except that you won't be saying anything aloud. You simply write down the solutions, when you reach them, in the space provided. Since the two of you will be working independently, please don't say the solution itself aloud when you reach it, but simply write it down. Here are your lists, they are identical. Each contains seven anagrams, seven letters long, and you will have seven minutes to solve them. The solutions, in all cases, are names of cities.

While the tape was playing, the experimenter attached the weighted microphone from the equipment cubicle around the subject's neck, and placed the list of anagrams face down in front of the subject and the confederate. After the

tape was stopped, the experimenter answered any questions by reading the appropriate parts of the instructions. He then started towards the tape recorder in the equipment cubicle; however, just before turning on the tape recorder, the experimenter turned to address the confederate and said:

By the way, the part about not saying the answers aloud applies to you also. Should you be concentrating on one of the problems and the answer suddenly comes to you, be sure not to blurt it out aloud, as we're using a very insensitive microphone on purpose, one that only picks up the voice of the person wearing it. If you were to say the answer aloud, we would have no way of knowing that you had contaminated that particular problem of the series.

The experimenter then turned on the tape recorder, started a stopwatch, and left the room. The actual purpose of the microphone was to discourage the subject as much as possible from speaking back to the confederate during the annoyance manipulation.

The anagrams were quite difficult (none of the subjects completed more than four of them); however, the confederate had been given the answers prior to the experiment. The annoyance manipulation began approximately two minutes after the experimenter left the room, at which time



the confederate made sure that the subject saw that he had finished the problems. The confederate then went into a period of being bored--tapping his pencil, humming to himself, or rocking back and forth--which lasted about two to three minutes. He then went through a period of attacking the person by starting off with saying, "Haven't you finished yet?" and then going on, saying how the problems were easy and that anyone with half a brain should be able to do them. He accused the subject of being phoney, that no one would take this long to solve the problems, and that this must be part of a set-up. He then began attacking the person even more directly, commenting on how the subject probably really needed the extra credit from the experiment for his grades, wondering aloud how he ever got into the college, and making derogatory remarks about the subject's school, major, or any other potential area of annoyance. The confederate tried to be as obnoxious as possible, without seeming phoney. It is understandable that the factors in this part of the experiment were not entirely constant, as the procedure obviously had to be varied somewhat from subject to subject in order to annoy each individual as much as possible. The confederates had rehearsed the annoyance manipulation with each other for two weeks prior to the beginning of the experiment to insure that they all had a relatively similar repertoire of obnoxious and annoying remarks.

After seven minutes, the experimenter returned to the room, turned off the tape recorder, removed the microphone from the subject, and collected the anagram work sheets.

At this point, the second phase (catharsis phase) was then begun. It should be noted that the original confederate was not aware of the cathartic condition to which the subject had been assigned, to avoid any bias during the annoyance phase. If the subject had been assigned to the "Same Person" condition, the subject and confederate were informed that they would be working together during the second phase of the experiment. If the subject had been assigned to one of the other conditions, the experimenter had the original confederate leave the room by stating, "For the second part of the experiment, you (the confederate) will be working with Bill Warren in Room 316, where he should have someone there to work with you." The confederate then asked appropriate questions concerning the directions to the room. The experimenter then addressed the subject, saying, "I should have someone here to work with you in the second phase of the experiment." If the subject had been assigned to either the "Same Sex" or "Opposite Sex" conditions, a second confederate (of either the same sex as that of the original confederate or opposite sex as that of the original confederate) was found seated in the hallway as the original confederate exited. The experimenter asked the second confederate's name and then



pretended to check his name on a list as though he were an actual subject. The confederate was then asked to enter the experiment room and be seated, being introduced as another student from Lees-McRae Junior College. If the subject had been assigned to the "No Catharsis" condition (the control group), the chair outside the experiment room was vacant when the original confederate left. The experimenter asked the subject to remain seated while he checked a nearby waiting room to see if the other subject were there. Upon hastily returning from the other room, the experimenter explained to the subject, "The person scheduled to work with you during the second phase has apparently failed to show. I'm sorry, but that means that I have nothing for you to do during this time. I guess that you'll just have to wait for about ten minutes, and then we'll still run the third part of the experiment." The subject was then left alone in the experiment room for approximately the same length of time that it took to run the second phase of the experiment.

For those subjects assigned to one of the actual cathartic conditions ("Same Person," "Same Sex," or "Opposite Sex"), once they had been paired with the appropriate confederate, instructions were placed face down in front of both the subject and the confederate. The confederate was then asked to draw a slip of paper from a can identical to the one used earlier, except that this one was filled with slips of paper reading "SUBJECT B". When the confederate

announced his selection, it was explained that he would act as Subject B for this phase of the experiment and that the subject would act as Subject A.

The experimenter then instructed them to turn over and begin reading their copies of the following instructions, as they were also played on the cassette recorder:

As you know, memory and strength of retention are an important part of the cognitive processes. Subject A will be the teacher in this experiment, and Subject B will be the learner. As the learner, Subject B will have four minutes to memorize this list of paired associates after which the teacher, Subject A, will examine him. Subject A will read the stimulus word in each pair, the one of the left, while Subject B will respond with the number that is on the right of each pair. As you no doubt know, reward and punishment have a great deal of influence on learning and performance. We are particularly interested in the effects of punishment on recall. Subject A, the teacher, will say aloud "correct" if the response is correct; if the response is not correct, you will press this bar, which will cause an electric shock to be delivered to the learner. The shock will be relatively painful, for otherwise there is no effect, but will, naturally, leave no damage. For each wrong response, you will press



the bar just once, and a shock of fixed length and voltage will be delivered. After you have said "correct" or delivered a shock, you will note his response on the sheet. Is everything clear?

While the tape was playing, the experimenter placed the list of paired associates face down in front of the confederate, and placed the box with the lever in front of the subject. At the end of the tape, the confederate expressed a reasonable amount of concern over the shocks and pain that would be involved. The experimenter read the appropriate portions of the instructions in response to any questions. The confederate was then told that he had four minutes to memorize the list in front of him, as the experimenter started a stopwatch and took a seat in the chair in the doorway of the equipment cubicle. If the subject attempted to make any noise or converse with the experimenter while the confederate was pretending to memorize the list, he was immediately instructed to remain quiet so as to not disturb the confederate. At the end of four minutes, the confederate was asked to hand the list to the subject and then to sit in the chair that was in the doorway of the equipment room. After palm electrodes were then attached to the confederate in clear view of the subject, he was asked to take a seat beside the equipment, which happened to be out of sight of the doorway. The subject was then led to the adjacent cubicle where the lever box was

plugged into the jack leading into the equipment cubicle. The experimenter then instructed the subject that he could converse with the confederate through the open portion of the wall between the two cubicles, and requested that both the subject and the confederate limit their conversation to the stimulus words and response numbers. The subject was instructed to press the button on the intercom box when the task had been completed to signal the experimenter that they had finished. After reminding the subject not to begin until told to do so, the experimenter returned to the equipment cubicle where he noisily flipped a few switches and dials and asked the confederate if he were comfortable. The subject was then instructed to begin as the experimenter left the room.

While the subject then began to "test" the confederate, the confederate was actually reading responses from a list in the equipment cubicle, giving 14 incorrect responses. In this manner, each subject aggressed against the confederate by administering 14 "shocks" of fixed length and voltage (confederates were never actually shocked). The subject was monitored via closed circuit television during this task to insure that he was following the instructions properly. If he did not adhere to the instructions, or if he attempted to ask the confederate if the shocks hurt, the experimenter immediately interrupted and reminded the subject of the proper instructions and to



limit conversation to the stimulus words and response numbers.

After the subject signaled that the task had been completed, the experimenter returned to the room, disconnected the confederate from the apparatus, and brought the subject and confederate back to the central room.

In preparation for the third and final phase which measured the dependent variable (residual aggression), the confederates were then maneuvered to arrange for the original annoying confederate to work with the subject during this third phase. If the subject had been in the "Same Person" condition, the subject and confederate were informed that they would again be working together in the third part of the experiment. If the subject had been in either the "Same Sex" or "Opposite Sex" category, the second confederate was removed in the same manner as used earlier, by stating that he (the confederate) was to work with Bill Warren in Room 316 for the third part of the experiment and that someone else was to work with the subject during the next phase. As the confederate left the room, the original confederate was found waiting in the chair in the hallway, and was asked to enter and be seated. For subjects in the "No Catharsis" condition, the experimenter merely returned with the original confederate after an appropriate length of time, and explained that they would be working together for the third and final part of the experiment.

Once the original annoying confederate had been re-established in the experiment, the phase measuring the dependent variable was begun by placing written instructions for Phase III face down in front of the subject and original confederate. The subject was then asked to draw from one of the rigged identical cans, this one filled with slips of paper reading "SUBJECT B." After the subject announced his selection, it was explained that he would act as Subject B for the final phase of the experiment, and that the confederate would be Subject A.

They were then instructed to turn over and begin reading the instructions as they were also played aloud. The cassette recorder was then switched on, playing these instructions:

In this experiment we will be dealing with one aspect of what is called creative thinking. To avoid any bias on the part of the experimenter, Subject B will act as the examiner, and Subject A will act as the respondent. I expect each of you to carry out your respective tasks conscientiously. Subject B, the examiner, will read these words in the order they are on the sheet, and Subject A, the respondent, will respond within about three seconds with another word. However, rather than say just any word, the respondent should try to make his response to be a creative one. If



Subject B, the examiner, finds his response to be creative, he will simply say aloud "Good" as positive feedback, and then write it down before going to the next word on the list. If the examiner, Subject B, does not think it is a creative response, and it's really completely up to you, you will press this bar which will cause an electric shock to be delivered to the respondent. We think that under such conditions more creative responses will be given. After a shock or shocks have been given, the examiner will write the response down and then read the next word on the list. Now let me explain about the shocks. The examiner may give more than one shock for any particular response that you think is not creative at all, and you may also keep the bar down for as long as you think it appropriate, the uncreativity of the subject's response being the criterion. Shocks are painful in order for the desired effect to be produced, but they will leave no damage. The examiner does not have to worry about the well-being of the respondent, because we have a fairly sophisticated apparatus here which takes a number of basic physiological measurements, such as blood pressure, galvanic skin response, etc., so that it determines for shock

and each subject individually when the shock may become too much for the subject, and then it automatically terminates it. This is done because people react differently to shocks in the physiological sense; different thresholds are in question, and they vary a great deal for different people. So, please follow the instructions that I have given you: give as many and as long shocks as you think appropriate with respect to the creativity of a particular response. Here is the list. Is everything clear?

While the tape was playing, the experimenter brought a box with the lever and placed it on the table in front of the subject, and then placed the list of stimulus words in front of him, face down.

At the end of the tape, the confederate expressed a reasonable amount of concern over the shocks, asking if they would hurt much and questioning the subject's qualifications to assess creativity. Again, the experimenter answered any questions by reading the appropriate sections of the instructions. The confederate was then asked to sit in the chair that was in the doorway of the equipment cubicle while palm electrodes were attached in clear view of the subject. After asking the subject to take a seat beside the equipment, which happened to be out of sight of the doorway, the experimenter led the subject to the



adjacent cubicle where the lever box was plugged into the jack leading to the counter and timer in the equipment cubicle. The subject was instructed that he could converse with the confederate through the open portion of the wall between the two cubicles, and was told that he and the confederate were to limit their conversation to the stimulus and response words. When he had completed the task, the subject was to press the button on the intercom box to signal the experimenter. The subject was asked not to begin until told to do so, after which the experimenter returned to the equipment cubicle where he noisily fumbled with switches and dials. The experimenter then told the subject to begin and left the room.

During this part of the experiment, the confederate gave predetermined responses, each confederate giving the same responses. Subjects could give as many shocks as they felt appropriate for any response on the 30 item list, and they could give shocks for as long a duration as they thought appropriate (again, actual shocks were never administered). Recordings were made of both the number of shocks administered and the total cumulative time that shocks were given. Subjects were monitored during this task (as described in Phase II) to insure that they followed instructions properly and did not talk with the confederate beyond that which was required by the task.

When the subject signaled completion of the task, the experimenter returned to the room where he disconnected the confederate from the apparatus, and then brought the subject and confederate back to the central room.

They were then told that they would undergo individual debriefings before being dismissed. The confederate was told to go to Room 316 where Bill Warren would debrief him, and the subject was told that the experimenter would debrief him in an adjacent classroom. During the debriefing the subject was first asked to complete a critique sheet checking on procedural matters in the experiment and asking the subject's preference regarding the possibility of working again with the other persons involved in the experiment. The primary purpose of the questionnaire was to check on the effectiveness of the annoyance manipulation and see whether or not the subject was willing to work again with the annoying confederate. The subject was then asked if he had developed any hypotheses regarding the experiment, what he thought was the purpose of the study, and whether or not he had any information regarding the nature of the experiment prior to participation. The actual purpose of this phase of the "debriefing" was to evaluate the effectiveness of the deceptions employed during the experiment and to insure that the subjects had no prior knowledge which might bias their performance. The deception that the study was an investigation of cognitive processes and creativity, and



that shocks were actually administered, was perpetuated during this "debriefing." Actual full debriefings were held in the classrooms from which volunteers were drawn after all the data had been collected.

### Results

The results of the experiment indicate that there was no statistically significant difference between the effects of the various modes of catharsis of Phase II; nor did the sex of the annoyer or the sex of the subject produce a statistically significant effect on the levels of aggression measured in Phase III. However, there were significant interaction effects between the sex of the annoyer and the sex of the subject, as well as a significant interaction between the sex of the subject and the mode of catharsis, as indicated by the cumulative duration of shocks.

The annoyance phase was relatively successful, as indicated by the fact that during the first debriefing session 70% of the subjects indicated that they had definitely been annoyed. While 44% of the subjects specified this by marking on the questionnaire that they would not like to work again with the other person (the annoying confederate) from Phase I of the experiment, the questionnaire did not in itself prove to be a reliable indication of annoyance. An additional 26% of the subjects marked that they were willing to work again with the annoying

confederate, yet indicated verbally that he had irritated them.

As predicted by previous studies, there was no significant difference between male subjects and female subjects as indicated by the number of shocks delivered ( $F(1,64) = < 1$ ) and the cumulative duration of shocks ( $F(1,64) = < 1$ ). The average number of shocks delivered by male subjects was 6.82, with an average cumulative duration of 2.19 seconds. Female subjects gave an average of 6.05 shocks, lasting an average cumulative duration of 1.78 seconds.

Tables 1 and 2 present an overview of the effects of the other two factors (the sex of the annoyer and the mode of catharsis) without regard to the sex of the subject. The results of the analyses of variance for the two measures of aggression are depicted in Table 3.

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Insert Tables 1, 2, and 3  
about here

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There was no significant difference resulting from the different modes of catharsis in either of the two measures of aggression.

While male annoyers did tend to elicit slightly higher aggression levels than female annoyers, this difference was not statistically significant. The average number of shocks given to male annoyers was 6.98, with an average cumulative



duration of 2.21 seconds. Female annoyers received an average of 5.90 shocks, lasting an average cumulative duration of 1.86 seconds.

The significant interaction between the sex of the annoyer and the sex of the subject (as measured by cumulative duration of shocks) is depicted by Figure 1 and indicates that subjects tended to aggress more towards annoyers of their own sex.

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Insert Figure 1 about here

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The significant interaction effects between the mode of catharsis and the sex of the subject (as measured by the cumulative duration of shocks) were seen principally in the "Same Sex" condition of catharsis. Figure 2 indicated that this particular mode of catharsis yielded the highest level of aggression for male subjects and the lowest level of aggression for female subjects.

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Insert Figure 2 about here

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#### Discussion

The interaction between the sex of the subject and the sex of the annoyer suggested that people tend to aggress more towards members of their same sex. This would lend support to a lower threshold theory of catharsis as

suggested by Buss (1961) or possibly the enduring habits theory of catharsis (Bindra, 1959). There was no support for a stimulus-generalization gradient of the modes of catharsis used in the experiment, except possibly in the cumulative duration of shocks administered to female annoyers (see Table 2). This implied that sex identification (the variable in the modes of catharsis used) is not in itself a sufficient factor for stimulus-generalization.

The interaction effects between the sex of the subject and the mode of catharsis were somewhat confusing and difficult to interpret. In the case where in Phase II the subject aggressed against the confederate of the same sex as the annoying confederate, it appeared as though inhibition of aggression tended to be lowered in male subjects (see Figure 2). This reaction appeared similar to the facilitation of aggression described by Geen and Berkowitz (1967). In contrast, however, this same condition appeared to have resulted in the highest level of catharsis for female subjects, producing the least aggression during the third phase. This was even lower than that of the female subjects who had the opportunity to aggress against the original annoying confederate during the catharsis phase. This was not easily explained by any previous theory of catharsis and aggression, and would be fruitful grounds for later investigation. The explanation of this effect may involve a combination of factors and theories, where female



subjects who aggressed against the original annoyer in Phase II became less inhibited about aggressing towards that individual in the third phase, while female subjects aggressing during the second phase against a substitute confederate of the same sex as the annoyer experienced catharsis and still maintained a relatively high degree of inhibition in aggressing against the original confederate when given the opportunity.

Another interesting result of the study was the increase in the number of shocks administered by subjects who aggressed against a female confederate during the catharsis phase, and were then given the opportunity to aggress against a male annoyer (see Table 1, Male Annoyer--"Opposite Sex" condition). Though these results were not statistically significant, there appeared to be a strong indication that once a person had aggressed against a female, he (or she) showed very little reservation about later aggressing against a male. This could be due to an underlying bias of perceiving the female as being more frail than the male, with the underlying rationalization that "If a girl can take the shock, you know a guy can."

An explanation of the rationale for employing the first deceptive debriefing may be in order, as some may question the ethics of not immediately providing subjects with accurate feedback. The deceptions within the experiment were deemed essential for the results to be meaningful. As

the data was to be collected over a twelve-week period on a relatively small college campus, there was a high risk that subjects who had completed the experiment might discuss the study with other students who had not yet participated, thereby contaminating them as subjects. A committee comprised of three faculty members from the psychology department at Appalachian State University met to discuss possible alternatives to deal with this problem. It was unanimously agreed that a deceptive debriefing was the best possible solution, provided that it was later followed by a full accurate debriefing in the classrooms of the volunteer population. The concern about the discussion of the experiment among students turned out to be well founded. In spite of the fact that during the false debriefing strong emphasis was placed on the necessity for confidentiality regarding the nature of the experiment, and that all participants signed statements that they would not discuss the experiment with anyone, a survey taken during the classroom debriefings showed that 45% of the female subjects and 15% of the male subjects had discussed the experiment in some manner and thereby violated the confidentiality agreement.

One of the most obvious facts demonstrated by this study was that there is high variability in aggression tendencies from individual to individual. While the study did produce significant results, it could have been strengthened considerably by running more subjects.



Possible improvements in the design might involve mechanizing the annoyance manipulation to insure more adequate control of this variable. This might be accomplished by having the subject continuously defeated in a mechanized game where he thinks that he is playing against another person, but is actually playing against a computer programmed to continuously win. If the process were mechanized, it might also be possible to run more subjects in a shorter time, thus reducing the problem of subjects disclosing the deceptions to students who have not yet participated.

In closing, it appeared that there was no one rule or theory that applied to all cases of catharsis and aggression; rather, there seemed to be an interaction of the various proposed theories in different situations. There is still ground for fruitful study in pursuing the principles that govern the cathartic value of aggression, and the effects that the sex of individuals plays in catharsis.

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Table 1

Average Number of Shocks Delivered in  
Phase III by Male and Female  
Subjects Combined<sup>a</sup>

Sex of Annoyer	Mode of Catharsis			
	Same Person	Same Sex	Opposite Sex	No Catharsis
Male	5.3	6.7	9.0	6.9
Female	4.1	6.6	6.4	6.5

<sup>a</sup>n = 10.

Table 2

Average Cumulative Duration of Shocks  
Delivered in Phase III by Male and  
Female Subjects Combined  
(in seconds)<sup>a</sup>

Sex of Annoyer	Mode of Catharsis			
	Same Person	Same Sex	Opposite Sex	No Catharsis
Male	1.62	2.76	2.13	1.94
Female	1.41	1.56	1.86	2.59

<sup>a</sup>n = 10.

Note. Original measurements were in units of 0.15 second in length.



Table 3

Analyses of Variance				
Measurement	Source	df	MS	F
Number of shocks	Sex of Annoyer (A)	1	23.11	-- < 1
	Sex of Subject (B)	1	12.01	-- < 1
	Mode of Cathar-			
	sis (C)	3	31.51	1.35
	A x B	1	78.01	3.34*
	A x C	3	6.25	-- < 1
	A x B x C	3	13.88	-- < 1
Within Cell	64	23.36		
Cumulative Dura- tion of Shocks <sup>a</sup>	Sex of Annoyer (A)	1	57.80	-- < 1
	Sex of Subject (B)	1	151.25	1.19
	Mode of Cathar-			
	sis (C)	3	97.78	-- < 1
	A x B	1	540.80	4.25**
	A x C	3	128.33	1.01
	C x B	3	419.91	3.30**
	A x B x C	3	160.93	1.26
Within Cell	64	127.27		

<sup>a</sup>One unit = 0.15 second.

\* $p < .10$

\*\* $p < .05$

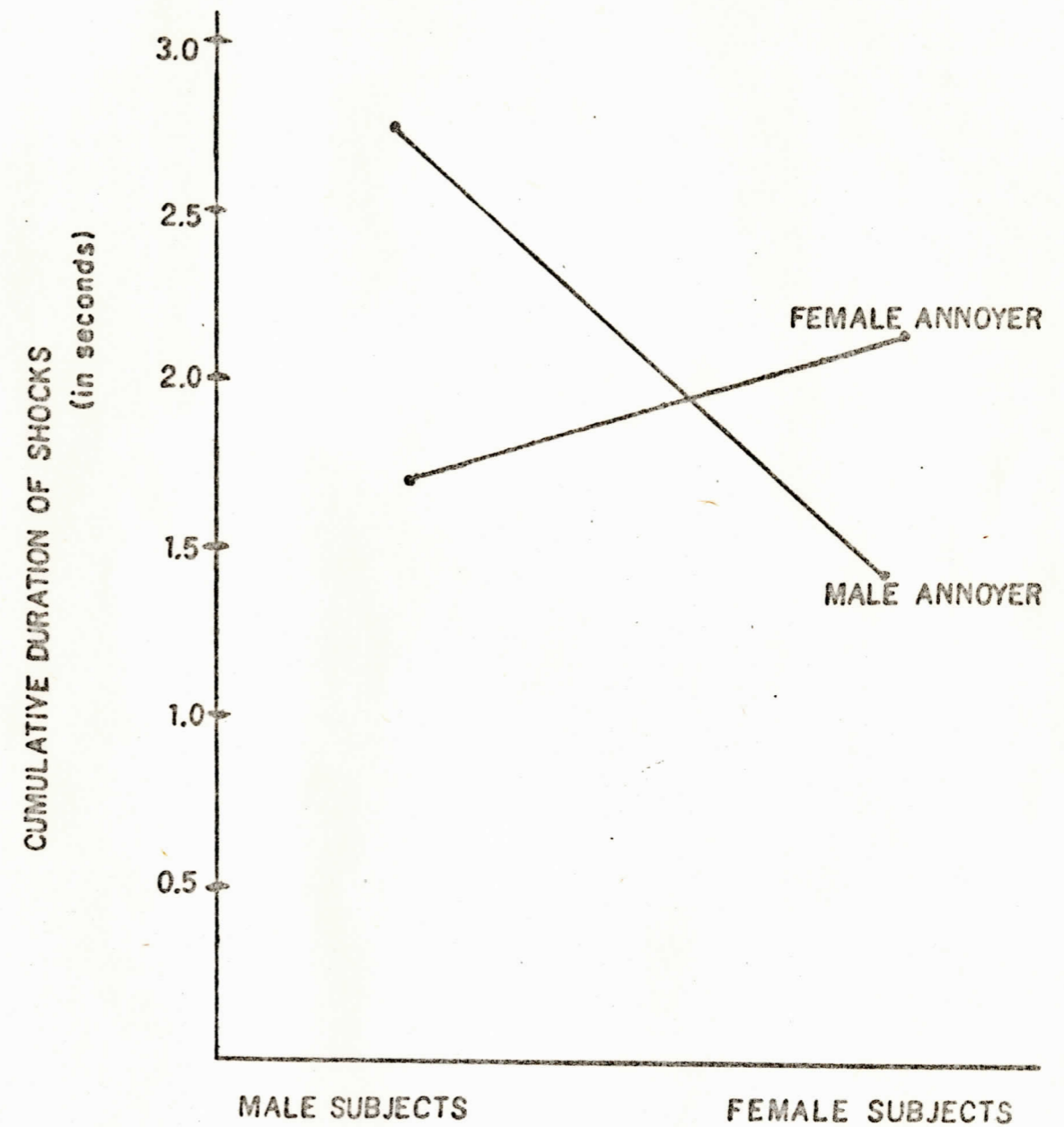


Figure 1. Interaction effects of the sex of the annoyer and the sex of the subject as measured by cumulative duration of shocks.



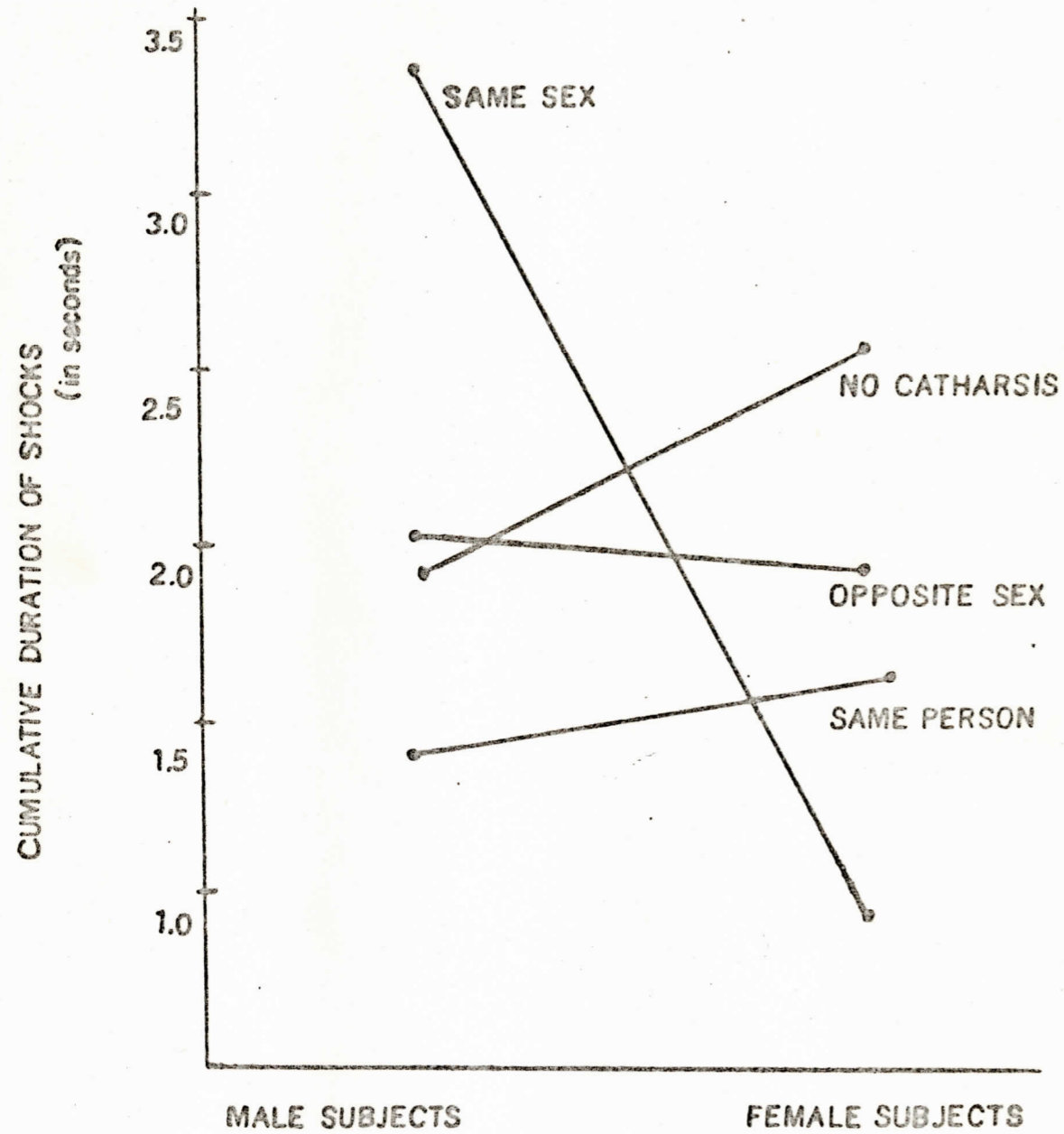


Figure 2. Interaction effects of the sex of the subject and the mode of catharsis as measured by cumulative duration of shocks.

Appendix A

I, \_\_\_\_\_  
 realize that there may be some elements of stress in this current experiment. I willingly choose to participate and reserve the right to withdraw at any time, if I so desire.

I also agree to keep confidential all information regarding this experiment--the nature of the tasks, knowledge of persons involved, and any and all experiences during the experiment, etc.--and agree not to discuss the content or nature with anyone.

Signed

\_\_\_\_\_  
 Date: \_\_\_\_\_



## Appendix B

Anagrams

NSMIDOA . . . . .	(MADISON)
WOLAGGS . . . . .	(GLASGOW)
HERAGIL . . . . .	(RALEIGH)
CARDEUT . . . . .	(DECATUR)
VILVETA . . . . .	(TEL AVIV)
ROTEPWN . . . . .	(NEWPORT)
EEILANB . . . . .	(ABILENE)

## Appendix C

Creative Thinking Section

COLOR.....(RED)	GLOOM.....(DARKNESS)
MAN.....(GIRL)	WIN.....(IF)
CHILD.....(TOY)	BLACK.....(VERY)
SHAPE.....(FEEL)	WOMAN.....(MOTHER)
BRIGHT.....(DARK)	STIMULUS.....(STATUS)
NEVER.....(ALWAYS)	BLAME.....(DELUSION)
BALL.....(ROLL)	HOME.....(NOW)
MORNING.....(SUNRISE)	FIRE.....(WATER)
SOUND.....(HEAR)	MOUNTAIN.....(HIGH)
RAIN.....(SNOW)	TREE.....(BUSH)
CAR.....(EDSEL)	TELEVISION.....(TECHNICOLOR)
SOMETIME.....(OFTEN)	APPLE.....(WORM)
ALONE.....(TOGETHER)	BOOK.....(KNOWLEDGE)
MUSIC.....(GOOD)	SINK.....(FLOW)
FIX.....(CAR)	JOY.....(ECSTASY)

## Appendix D

NAME: \_\_\_\_\_

AGE: \_\_\_\_\_ SEX: M F

#	Tm
Cn	6
S	
(DO NOT MARK)	

Critique Sheet

- YES NO 1. Have you ever been in an experiment before?
- YES NO 2. Have you had any prior contact with the experimenter?
- YES NO 3. Have you had any prior contact with the other subject(s) in this experiment?
- YES NO 4. Do you feel that the experimenter was unbiased in his presentation?
- YES NO 5. Did you understand all instructions?
- YES NO 6. Would you like to work in another experiment with the other subject who was in the first phase of the experiment?
- YES NO 7. Would you like to work in another experiment with the other subject who was in the second phase of the experiment?
- YES NO 8. Would you like to work in another experiment with the subject who was in the third phase of the experiment?
- YES NO 9. Would you like to work in another experiment with this same experimenter?
10. Additional comments:

DO NOT WRITE BELOW THIS LINE

## Appendix F

The following questions pertain to Charlie Brown's experiment on Catharsis (presented under the deception of cognitive processes). All questionnaires will be completely anonymous, therefore your cooperation and honest answers will be appreciated.

1. Sex: Male Female (circle one)
- YES NO 2. Did you sign up to participate in the experiment?
- YES NO 3. Did you actually participate in the experiment?
- YES NO 4. Did you mention or discuss the experiment with anyone prior to the actual class debriefing?
- YES NO 5. Did anyone discuss or mention the experiment to you prior to the actual class debriefing?
- YES NO 6. If you had prior knowledge about the nature of the experiment did this influence your participation (or decision not to participate)?

ADDITIONAL COMMENTS



## Appendix G

Individual Cell Means<sup>a</sup>

Cumulative Duration of Shocks <sup>b</sup>					
Annoyer	Subject	Mode of Catharsis			
		Same Person	Same Sex	Opposite Sex	No Catharsis
Male	Male	9.2	32.4	16.4	14.2
	Female	12.4	4.4	12.0	11.6
Female	Male	9.6	12.6	10.6	11.8
	Female	9.2	8.2	14.2	22.8

Number of Shocks					
Annoyer	Subject	Mode of Catharsis			
		Same Person	Same Sex	Opposite Sex	No Catharsis
Male	Male	4.6	10.8	10.6	7.4
	Female	6.0	2.6	7.4	6.4
Female	Male	3.8	7.2	5.6	4.6
	Female	4.4	6.0	7.2	8.4

<sup>a</sup><sub>n</sub> = 5 for each cell.

<sup>b</sup><sub>1</sub> unit = 0.15 second.

## Appendix H

I wish to give special thanks and appreciation to my confederates in the experiment--Richard Freeman, Ronald Fisher, Nancy Alexander, and Ann V. Alexander. They were all magnificent in their roles, and their criticisms, suggestions, and observations were invaluable. Some of these observations are deserving of special attention as they indicate various factors that definitely affect the course of an experiment, but are rarely reported in a psychological report.

The annoyance manipulation did not come easy to the confederates. Many hours of practice were required before they reached a point where they felt competent in the annoying role. They had to handle feelings of guilt about hurting the subject's feelings, and each confederate expressed an uncomfortableness when required to blatantly attack the subject. In attempting to deal with this situation, it was found that they were more successful in annoying and felt much more comfortable about their role if they concentrated primarily on their playing the role of an extremely obnoxious person. If they were a totally obnoxious individual, any feelings that the subject had regarding his inability to complete the anagrams or reactions to the confederate's comments could easily be channeled into hostility towards the confederate. The

confederates felt much more comfortable handling this as opposed to playing the role of a nice, quiet individual whose derogatory comments might result in the subject internalizing feelings of inferiority and self-doubt.

Both male and female confederates found it more difficult to annoy males than females. This was expressed as finding males generally less vulnerable than females. It is also notable that the confederates found subjects of their own sex to be more suspicious of annoyance and "hassling" than members of the opposite sex. This may be due to the fact that members of opposite sexes often engage in verbal games and teasing as a part of social interaction and "courting." The annoying remarks might themselves have been interpreted as an indication of social interest coming from a stranger of the opposite sex, while the same remarks would have seemed unnatural from a stranger of the same sex as the subject.

Another aspect of the experiment which would ordinarily go unmentioned is the fact that there did seem to be differences in the types of subjects who immediately volunteered for the experiment and those who signed up to participate in the last two weeks of the quarter. Recognizing the problem of possible contamination of subjects, an attempt was made to control this factor by avoiding running subjects from one class for a long period of time. Volunteers were taken from one class to fill the time slots

for one to two weeks, after which volunteers were recruited from a different class for the next two weeks, etc. During the last two weeks of the quarter, however, it was necessary to return to some of the classes to seek additional volunteers. The volunteers from the second recruiting sessions seemed to have a higher failure rate, a higher withdrawal rate, and in general less interest in the experiment than the first round volunteers. This may have been due to the fact that the later volunteers had little personal investment in participating in an experiment, and signed up to participate only because they needed the extra credit. The more conscientious students who were eager to learn what it was like to be in an experiment probably signed up during the first sessions.

An interesting note is that most people who withdrew from the experiment appeared to do so thinking that the experiment was designed to test some moral aspect of whether or not they would be willing to give shock. Even though it was clearly explained that there were safeguards for the person supposedly receiving the shocks and that the "shocked" person could withdraw at any time, most of the subjects who withdrew cited some vague reference to the Milgram studies where the protesting "shocked" confederate was not allowed to withdraw and was supposedly shocked to the point of unconsciousness.



As a concluding observation, an overwhelming majority of the students surveyed during the actual debriefing supported the decision to have a deceptive debriefing as a safeguard against possible subject contamination. Only one individual out of the 225 persons surveyed indicated serious disapproval and stated that she did not plan on participating in any more experiments. The remaining survey sheets generally contained supporting comments, ranging from "Whoever talked was an S.O.B." to "Jesus Loves You."