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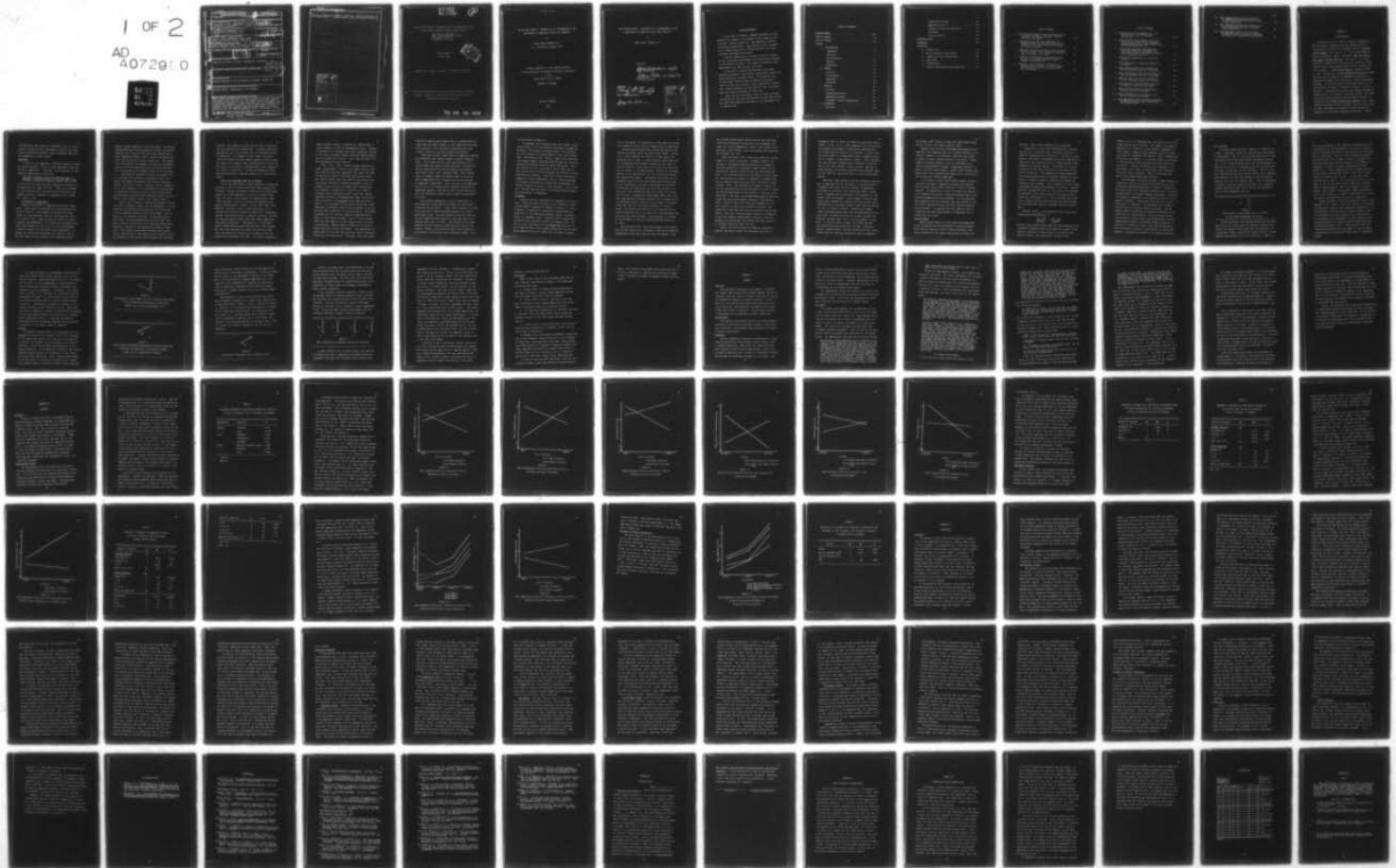
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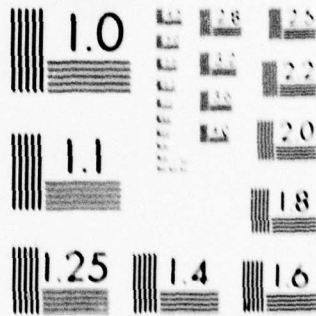
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effect of provocation was also predicted. Results supported the "initiator effect," "rooster effect," and "provocation effect."



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THE ROOSTER EFFECT: AGGRESSION AS A CONSEQUENCE OF THE  
COMPOUNDING OF SAME-SEX RIVALRY AND INEQUITY

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A thesis submitted to the University of Georgia, Athens  
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THE ROOSTER EFFECT: AGGRESSION AS A CONSEQUENCE OF THE  
COMPOUNDING OF SAME-SEX RIVALRY AND INEQUITY

by

HENRY LEWIS THOMPSON III  
B.A., Methodist College, 1977

A Thesis Submitted to the Graduate Faculty  
of the University of Georgia in Partial Fulfillment  
of the  
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THE ROOSTER EFFECT: AGGRESSION AS A CONSEQUENCE OF THE  
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## CHAPTER I

### INTRODUCTION

A periodic review of local or national newspapers or law enforcement literature provides headlines such as "Youth kills four blacks over unhappy romance" (Juvenile Justice Digest, 1977, 5:17, p. 6), "Couple forewarned by police--murdered by jealous boyfriend" (AELE Law Enforcement Legal Liability Reporter, 1976, 46, p. 6), or New York (AP)-"a grand jury is looking into the murder charge against former horse trainer Howard "Buddy" Jacobson in a love triangle..." (The Atlanta Journal, August 22, 1978, p. 7-A). In addition, the FBI Uniform Crime Reports (1969) revealed that the majority of aggravated assaults occur among family members with about half of these being spouse-killings. In 1975 the reports showed that 7% of all U.S. murders were the result of romantic triangles or lover's quarrels. These statistics also show a yearly increase in violent crime. For instance, from 1960 to 1975, the total arrests of males increased 22.8% and female arrests increased by 101.7% (FBI Uniform Crime Reports, 1976). What factors contribute to such violence? Why do we kill those we love? The search for answers to these and similar questions is intriguing researchers world wide. Before

narrowing this issue down to a manageable size, it is necessary to present a brief discussion of some of the significant variables (according to past literature) that concern aggression in small groups.

### Aggression

A review of the aggression literature reveals at least one general problem: there is little agreement on the definition of aggression. Therefore, for the purpose of this research, aggression is defined as

any form of behavior directed toward the goal of harming or injuring another living being that is motivated to avoid such treatment (Baron, 1977, p. 8).

It should also be noted here that aggression (behavior) is distinguished from anger (emotion). Anger may be defined as "the emotional state resulting from a frustration presumably creating a readiness for aggressive acts" (Berko-witz, 1964, p. 104).

### Antecedents of Aggression.

Numerous antecedents of aggression have been investigated. These might be categorized as environmental/situational or social. Environmental antecedents are those factors in the environment that the individual has little or no control over. These include such factors as noise, crowding, and temperature. The situational antecedents are those that emanate from the context of the environmental situation in which the individual finds him/herself. Although the situational antecedents are numerous, some of the more common in the literature are heightened physio-

logical arousal, aggressive cues, and drugs. The environmental/situational antecedents have received considerable attention as of late and have been shown empirically to affect aggression (Baron, 1977). Social antecedents are those that arise out of social interaction. They appear to be very powerful and capable of producing devastating effects on both the individual and those around him/her. This is witnessed by the examples given in the introduction. Some specific examples of social antecedents are such variables as frustration, aggressive models, the media, third party instigation, and verbal or physical attack. The latter, verbal or physical attack, appears to be the most effective of the antecedents as demonstrated in laboratory situations in which research participants perceived that they were being harmed by another (Borden & Taylor, 1973; Pisano & Taylor, 1971; Taylor, 1967).

Taylor (1967) devised an aggression paradigm in which the level of physical attack could be manipulated. In this paradigm, the research participant was told that he/she would be competing against another participant ("the opponent") in a reaction-time task. At the beginning of each trial, the participants were instructed that they were to select a shock level (1-5) that they wanted their opponent to receive if the opponent was slower on that trial. The research participant realized that on each trial, either he/she or the opponent would receive a shock, the intensity of which each would determine for the other.

Actually, the frequency of wins and the shock intensities were determined by the experimenter. Research using this paradigm has shown that people tend to reciprocate levels of aggression. For example, Borden, Bowen, and Taylor (1971) have shown that most people respond to direct physical attack with somewhat equal counterattacks of their own. The effect of the attack is demonstrated by the strength of the "norm of reciprocity." O'Leary and Dengerink (1973) have provided further empirical support for a reciprocity effect.

#### Sex of the Aggressor and Sex of Target

One of the most widely accepted phenomena in human aggression is that of greater male than female physical aggression. Maccoby and Jacklin (1974) point out that males appear to be more aggressive, not just in certain situations, but under a wide variety of circumstances. Buss (1971) has gone so far as to allege that aggression is mainly characteristic of males. On the other hand, Frodi, MaCauley, and Thome (1977, p. 634) found that "of 72 studies that involved a measure of some form of aggressive behavior (excluding studies of general hostility), 61% did not show the expected higher male than female aggressiveness across conditions." Additionally, "of 314 experimental studies dated between 1967 and 1974, 54% concerned men only, 24% concerned both sexes, 8% concerned women only, and 14% did not specify sex of subject or did not analyze sex differences" (p. 635). The recent increase in

female arrests, however, indicates that females may be just as capable of physical aggression as males. Because of the paucity of adequate male-female comparison studies at this time, the male's greater physical aggressiveness must be accepted with caution. Also, some evidence of no sex differences has been reported.

Frodi, et al. (1977) reviewed a paper presented by Lando, Johnson-Payne, Gilbert, and Deutsch (Note 1) that found that men were more aggressive than women only when provoked by and able to retaliate with electric shock. The authors further state that when the provocation and retaliation consisted of material punishment, such as monetary fines, both men and women fully reciprocated. In an apparent contradiction to Lando et al. (Note 1) findings, Taylor and Epstein (1967) found that females responded relatively non-aggressively under low and moderate provocation, but equalled males under high provocation. In an extension of the Taylor and Epstein (1967) experiment, Richardson (1978) found an absence of sex differences under conditions of high provocation. The author concluded that (a) "females respond as aggressively as males do--when highly provoked," and (b) "that although males were more aggressive than females under low levels of provocation, females seemed to adhere to the norm of reciprocity more closely than males." One explanation the author gave for this was that males may tend to overreact during the first few trials. Silverman (1971) also found

that male research participants did not differentiate between male and female targets in the competitive reaction-time situation if the opponents consistently set high levels of shock for the male research participant.

Both sexes exhibit higher levels of aggression against male attackers than female attackers (Taylor & Epstein, 1967). This effect has also been demonstrated in situations where the target neither physically attacked nor had the opportunity to retaliate against the research participant (Buss, 1966; Youself, 1968). This reduced level of response toward the female seems to be one aspect of aggression that is agreed upon by the majority of aggression researchers. Thus, the sex of the aggressor and the sex of the target become important variables in aggression studies. Although it can be shown empirically that this difference exists, there is still disagreement as to why.

One possible explanation of this contradiction is that males and females may not perceive the same types of situations as provocative. Frodi (1977) conducted a survey of 60 male and 70 female students enrolled in a social psychology course. She asked questions such as "what is the most anger-provoking behavior a girl your age could display toward you?" (p. 463). The results of her investigation provide a possible explanation for the sex difference. Namely, this difference may be that females do not perceive the electrical shock (physical attack) to be

as provocative as males do.

In summary, the literature shows that verbal or physical attack is the most powerful antecedent of human aggression. The studies involving attack as an antecedent are not conclusive in establishing a "true" sex differential. The evidence does, however, support the contention that females respond less aggressively under low levels of physical provocation (electric shock) than males. One of the reasons for this, according to Frodi (1977) may be that females do not perceive physical provocation to be as provocative as males do. This lack of solid theoretical support for a sex differential, and the various findings of different investigators require that considerable attention be given to the sex of the "attacker," sex of "target," and the type and level of provocation when planning an investigation of aggression.

#### Exclusion

Another potential determinant of aggression is exclusion. Being excluded is defined as the condition in which a group member's presence or absence, attention or lack of attention, or comments or reactions to comments make no difference to the other group members (Geller, Goodstein, Silver, & Sternberg, 1974). Shuntich (1976) posited that attraction was a positive function of exposure time. If this is true, then would not the intentional reduction of one's exposure time (active group interaction) by the other group members function to reduce the individual's attrac-

tion to the group? An examination of the effects of exclusion presented below do seem to support such an hypothesis.

Persons being excluded from a group may develop less favorable feelings toward the other group members. Geller, et al. (1974) examined the effects of being ignored by (excluded from) a dyad. A female research participant and two confederates were brought together and told that it would be helpful if they would get to know each other during the absence of the experimenter. During the 10-minute absence of the experimenter, the two confederates ignored the research participant. The authors found that the experimental group (ignored individuals) participated less in the conversation, evaluated both themselves and their confederates less favorably, and were less willing to reward one of the confederates than the controls in a similar situation. Pepitone and Welipizeski (1960) also found that experimentally induced exclusion (two confederates in a three-person group) resulted in more negative attitudes toward both the self and others relative to a control group. The authors concluded that "not only were the rejector's opinions held to be less valid, but personally the rejectors were more disliked...(and) produced an increase in the strength of both self-depreciation and hostility" (p. 362).

Doob and Wood (1971) found that research participants who had been annoyed by a confederate liked the confederate significantly less than those who were not annoyed. Also

the annoyed research participants did not feel that they could ever become good friends with the confederate and rated him "as more aggressive, colder, less likable, more emotional, less friendly, less interesting, more dishonest, and stronger" (p. 160).

Insko and Wilson (1977) found that during the initial stage of a triadic interaction, strangers seemed to go through an information-seeking process in an attempt to discover similarities (especially common friends and acquaintances) between themselves and the other group members. In a situation where one individual is being excluded, the excludee can usually be expected to dispense with the information-seeking process within two minutes (Insko & Wilson, 1977). The excludee may attempt to explain or fix the responsibility for the exclusion in order to reduce the anxiety experienced in the situation. This can be accomplished in two ways: self-depreciation and/or hostility toward the other group members (Pepitone & Welipizeski, 1960). Konecni (1975) found that group members who had been insulted by other group members considered themselves more angry than did those who had been treated neutrally. Also, the "insulted people rated the confederate as far less likable, less pleasant, less warm, more aggressive and domineering, and doubted that they could be on friendly terms with them" (p. 709).

Rather than distributing the blame for exclusion among all the group members, an individual may elect to

scapegoat, that is, place the blame on a particular group member. Geller, et al. (1974) suggested that this allowed the research participant to dismiss any responsibility that he/she may have had for the exclusion. If more than one group member had independently made a negative evaluation of him/her, it was harder to refute. Other variables that may influence scapegoating are physical attractiveness of the other members, status, and sex. Any one of these variables could make a particular group member stand out more than the others and result in their being scapegoated.

Berkowitz (1965) proposed that the transition from anger to aggression may be the result of "stimulus cues" or "triggers" that cause the overt display of aggression. Excluding an individual from a group may cause a "readiness" to aggress that may manifest into aggression if the proper "cues" are present. As an example, exclusion may cause anger (readiness to aggress) and the physical provocation/attack in the Taylor reaction-time task may provide the "cue" or signal to attack. Berkowitz and LePage (1967) have demonstrated that just the participation in an experiment involving shock does not produce as much "aggression" as when other "cues," such as weapons, are present. It must be noted, however, that there has been some controversy surrounding this finding. Although a similar "weapons effect" has been obtained by Frodi (1975), others using the identical procedures used by Berkowitz

and LePage (1967) failed to obtain the same results (Buss, Booker, & Buss, 1972; Page & Scheidt, 1971).

Kaplan (1975) has also investigated predisposition to aggression and suggested that once a person developed a relatively negative self-attitude, he/she was more likely to adopt a deviant response pattern in the future. These negative attitudes seemed to move the individual to a state of preparedness to engage in aggressive behavior against the other group members. Kaplan (1975) further suggested that these responses may become overtly hostile and even escalate to physical aggression.

In an effort to show a relationship between this preparedness to engage in aggressive behavior and negative self-attitudes, Wood (1961) conducted a study of criminal behavior. He specifically looked at crimes involving personal assaults and property crimes and related them to the personal backgrounds of the offenders. His correlational data suggested that the offenders were more likely to have had social experiences that could have produced negative self-attitudes. He suggests that this negative self-attitude may have been instrumental in "preparing" the offenders for the crimes.

#### Equity Theory

Equity theory seeks to predict when individuals perceive a situation as just (equitable) or unjust (inequitable) and how they will react in these situations. The theory consists of four basic propositions and their cor-

ollaries. Only a brief summary will be presented.

Proposition I posits that individuals are "selfish" and will try to maximize their "outcomes" (positive or negative consequences of a situation). This can be interpreted to mean that if individuals were left completely unrestrained, they would run afoul of others who were also attempting to satisfy desires. Fortunately for society, a means of control has evolved and is outlined by Proposition IIA and IIB. This proposition states (generally) that groups maximize their collective "rewards" by developing an "accepted" system of distributing rewards and costs among their members. Also, members who treat others inequitably are generally punished by the group. Walster, Berscheid, and Walster (1973, p. 152) define an "equitable relationship" as one that exists when the person scrutinizing the relationship (i.e., the scrutineer--who could be an outside observer) perceives that all participants are receiving equal relative outcomes from the relationship.

Walster, Walster, and Berscheid (1978) define this relationship mathematically as

$$\frac{(O_A - I_A)}{(|I|)^{k_A}} = \frac{(O_B - I_B)}{(|I|)^{k_B}}$$

Briefly, this formula states that the relative gains in an interaction between person A and person B is equal to the person's outcomes (O) minus inputs (I) divided by the absolute value of the inputs (|I|) raised to the

power of +1 or -1 (depending upon the sign of A's and B's inputs and A's and B's gains). The reader is referred to Walster et al. (1978) for a more detailed explanation of this formula. Simplistically speaking, equity is dependent upon two fundamental principles. First, relevant attributes of the person, i.e., how much he/she contributes to the situation, helps determine how he/she should profit from it. Second, the nature of the situation, i.e., good times, so-so times, or hard times, also influences the profit from a situation. That is, when times are good, little input reaps large outcomes.

As individuals constantly interact, either directly or indirectly, they are continually scrutinizing the interactions and making determinations of equity. Proposition III states that if an individual defines his/her situation as inequitable, then he/she becomes distressed. The amount of distress is purported to be a positive function of the amount of inequity. Proposition IV states that once in this state of "inequity," the individual will attempt to restore equity and thereby reduce the stress. The two modes of equity restoration as described by Walster et al. (1973) are (a) "actual equity"--altering either his/her own outcomes or those of the other group members, and (b) "psychological equity"--distorting his/her perception of his/her own outcomes or those of the other group members. With these basic concepts of equity theory in mind, more specific illustrations relevant to the present study will

be presented.

One might assume that when a member of a triad is excluded (victimized), he/she will perceive the relationship as inequitable. That is, the victim may perceive the relative gains of the other participants as greater than his own. If the victim believes he/she has the same amount of input up to the point of exclusion, then the victim's relative gain is less than the two excluders'. They not only are receiving the same gains as the victim, but in addition, have formed a coalition that appears to provide them additional gain from the original input. This is represented in Figure 1 with the research participant ( $S_v$ ) being excluded (indicated by the lack of arrows) by confederate one ( $C_1$ ) and confederate two ( $C_2$ ).

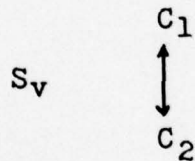


Figure 1

The Exclusion of One Member ( $S_v$ ) of a Triad  
by the Other Two Members ( $C_1$  and  $C_2$ )

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In this situation, the inequity produced by the exclusion of  $S_v$  by  $C_1$  and  $C_2$  would be expected to produce distress in  $S_v$  because he/she would feel that he/she is receiving less (fewer outcomes than inputs relative to other members) than deserved from the interaction. After all,

they were strangers (in the condition established for this investigation) at the beginning of the interaction and  $S_v$  has not exhibited any behavior that should have caused him/her to be excluded. Just the initial seating arrangement alone should have been enough to enhance involvement (in this particular case, they are seated in a triangular arrangement). However,  $S_v$  finds him/herself excluded. Walster et al. (1973) suggests that the distress produced by the inequity may manifest itself in the form of anger toward the cause of the inequity. In this case, that would be both  $C_1$  and  $C_2$ . If  $S_v$  perceives  $C_1$  and  $C_2$  as the cause of the inequity (harm-doers) he/she may be predisposed to aggress against them in an attempt to restore equity. Ross, Thibaut, and Evenbeck (1971) demonstrated that if the victim ( $S_v$ ) is given the opportunity to retaliate against the harm-doers ( $C_1$  and  $C_2$ ), he/she will.

Another prediction that can be made from equity theory (Walster et al., 1973) is that if an inequity is intentionally produced, distress (and consequently aggression) will be manifested in the victim at a greater magnitude than in a situation where the inequity occurs inadvertently. The existence of a differential distress produced by intentional/inadvertent inequity has been demonstrated by Greenberg and Frisch (1972). These authors found that research participants were more eager to restore equity by paying back an intentional helper than an inadvertent helper.

If we again establish an inequitable relationship by excluding a member from a triad, and this time, as indicated in Figure 2, assign the specific roles of "initiator" and "follower" to the confederates, we would expect to find a differential distress situation resulting in differential levels of aggression. In Figure 2, the confederate "initiator" ( $C_i$ ) initiates the interaction with the confederate "follower" ( $C_f$ ) and excludes the victim ( $S_v$ ).  $C_f$  initially interacts with  $S_v$ , but soon becomes monopolized by  $C_i$ . Eventually  $C_i$  succeeds in causing  $S_v$  to be totally excluded by both him/herself and  $C_f$ . This situation would be expected to cause  $S_v$  to perceive the inequity to have been caused primarily as a result of  $C_i$ 's manipulative interaction with  $C_f$ . A distress differential should develop with the greater distress (and retaliation, if allowed) to be directed toward  $C_i$  (Figure 3).

#### Purpose

The general research issue is the explanation of the aggression elicited by the dynamics of the "love triangle." In this particular study, I will deal only with same-sex rivalry for the opposite sex triad member in an exclusion situation. Equity theory offers an explanation for the expected behavior. In reviewing the literature, two little explored factors relevant to the purpose of this investigation have been identified. First, research participants in the past have not been given the opportunity to physically aggress against a male and a female target simultane-

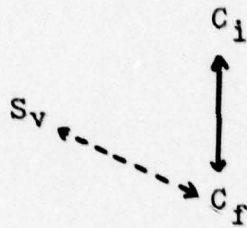


Figure 2

The Exclusion of One Member ( $S_v$ ) of a Triad as the Result  
of the Deliberate Monopolization of the Third  
Member ( $C_f$ ) by the Second Member ( $C_i$ )

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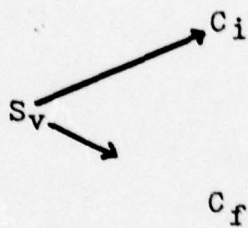


Figure 3

Differential Distress and Aggression Directed Toward the  
Individual ( $C_i$ ) Perceived as being the Primary  
Cause of  $S_v$ 's Inequitable Situation

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ously; and second, equity theory has not been applied to exclusion as an antecedent of aggression. As both of these may be factors in the aggression elicited by "love triangles," this investigation examined aggression as a consequence of the compounding of inequity and same-sex rivalry by employing a paradigm that allowed the research participant to aggress against a male and a female target simultaneously.

The aggression literature demonstrated that a male can be expected to aggress at a higher level toward another male than toward a female. This is indicated in Figure 4. Therefore, if a situation was established as in Figure 4 with a male ( $M_1$ ) being attacked by another male ( $M_2$ ) and a female (F), one might expect  $M_1$  to exhibit a higher level of aggression toward  $M_2$  than F, even though they ( $M_2$  and F) are attacking him ( $M_1$ ) at the same level. That is,  $M_2$  and F are equally responsible for the attack against  $M_1$ .

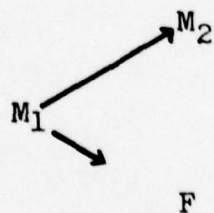


Figure 4

Differential Aggression as a Function of Sex

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However, one might expect the differential to be supported provided that the only provocation was the direct attack produced from a situation such as that of the Taylor aggression paradigm. You will recall that the Taylor aggression paradigm places the research participant into a competitive situation where he allegedly retaliates against another competitor.

If the exclusion condition depicted in Figure 2 were established using the inequity produced by the "initiator" and "follower" and varying the sex of the "initiator" and "follower," then the interaction of sex of "initiator" and sex of "follower" may be expected to affect aggression levels. Using only male research participants, the four conditions depicted in Figure 5 would be possible.

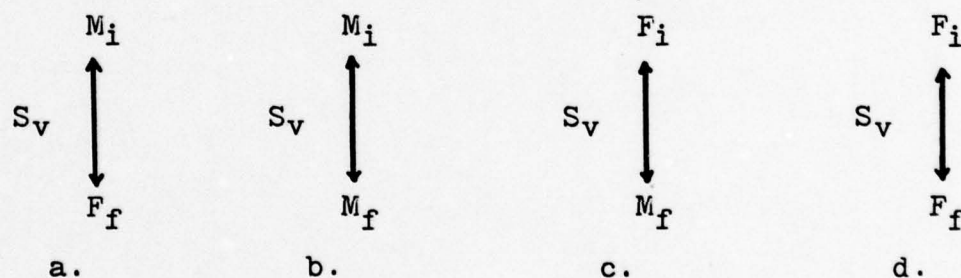


Figure 5

Four Conditions of Inequity Produced by Exclusion

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In each condition, an "initiator effect" was expected to increase the level of aggression exhibited toward the "initiator" such that the "initiator" would receive more

aggression than the "follower." Of particular interest were conditions 5a and 5c. In 5a, not only was there expected to be an "initiator effect," but that there would be an interaction between sex of "initiator" and sex of "follower" (dyad composition) that would produce a same-sex rivalry ("rooster effect") for the attention of the female "follower." The term "rooster effect" comes from an investigation by Eskilson and Wiley (1976) of sex composition and leadership in small groups in which they found that in a triad with a male "leader" and a male and female "follower," the male "follower" challenged the male "leader." They labeled this the "rooster effect." The authors suggested that perhaps there was a hidden agenda that dictated male competition for female appreciation. A similar form of this same-sex rivalry for the opposite-sex "follower" was expected to manifest itself here as an additional provocation when  $M_1$  was excluded by  $M_2$ . The compounding between the "initiator effect" and the "rooster effect" was expected to raise the aggression level of dyad A significantly above the mean of the combined level of the other three dyads.

Condition 5c was of particular interest because not only did it provide another situation where the research participant had the opportunity to aggress against a male and a female simultaneously, but also demonstrate the power of the "initiator effect" by raising the level of aggression directed toward this dyad up to the level

received by the all-male dyad (B).

### Hypotheses

Based on the review of the literature above and the four conditions represented in Figure 5, the following predictions were made.

- a. A main effect of target ("initiator/follower") such that "initiators" receive higher aggression scores than "followers" after the victim is excluded.
- b. A main effect of sex of "initiator" such that male "initiators" receive higher aggression scores than female "initiators" after the victim is excluded.
- c. An interaction between sex of "initiator" and sex of "follower" such that dyad A will receive higher aggression scores than the other dyads combined (rooster effect).
- d. A main effect of provocation such that as provocation by the excluding pair increases, so will the victim's level of retaliation.

In summary, this investigation attempted to explicate one of the elementary factors involved in love triangles. In doing this, novel approaches were used. Specifically, this study allowed for displays of aggression against multiple opponents and placed the research participant in a position where in two situations he had to retaliate against both a male and a female target simultaneously.

In order to test the above hypotheses, the four conditions in Figure 5 were used with male research partici-

pants. The research participants were placed into one of the four conditions of inequity and then given an opportunity to retaliate by means of physical attack (electric shock).

## CHAPTER II

### METHOD

#### Overview

The experiment consisted of two phases. In phase I, the research participants were brought together and the independent variables, sex of "initiator" and sex of "follower" manipulated during an exclusion condition. During phase II, the research participants were placed in a situation where they were physically attacked by the confederates and allowed to retaliate. This provided a method of measurement of the dependent variable, aggression.

#### Participants

The research participants were 47 male undergraduates enrolled in introductory psychology classes at the University of Georgia. Participation was in partial fulfillment of course requirements.

#### Apparatus

The main apparatus consisted of a modification of the competition/reaction-time equipment used by Taylor (1967) to measure aggression. There were two research participant consoles (A and B) and an experimenter console, all located in separate rooms. Console A (confederate console) had two sets of electrodes attached to it by wires. Con-

sole B (research participant console) had one set of electrodes and an additional gray metal console with 10 shock level buttons and a set of headphones, all of which are attached to the main console. Intercom transceivers for communication with the experimenter were also available to confederates and the research participant.

The experimenter console was located in a center room equipped with one-way mirrors allowing observation from the participant's rear. Along with the experimenter console was located an intercom transceiver master station.

#### Procedure

The research participants (two confederates and one actual subject) were instructed to enter one of the "team" rooms as their names were called off. Male research participants were paired with a team of confederates that consisted of either two males, two females, or a male and a female. The chairs were arranged such that there was a triangular seating arrangement. Both calling off the names and the seating arrangement were important for the manipulation. The experimenter then gave the following briefing.

The purpose of this experiment is to determine the effects of team cooperation on reaction time. In a few minutes I will divide you into two teams and have you compete in a competitive task involving reaction time. The experiment will involve a small electric shock, the maximum strength of which each of you will determine for yourselves prior to beginning the experiment. If anyone of you has an objection to participating because of the shock, you may leave now and still receive credit for the experiment. However, I assure you that you will be allowed to determine the maximum level that you will be allowed to receive. If everyone is still willing to participate, please read and

sign these forms and witness them for each other. I shall return in a few minutes.

During the experimenter's absence, the exclusion manipulation took place. The first confederate ( $C_i$ ) initiated a casual conversation with the second confederate ( $C_f$ ) while excluding the participant ( $S_v$ ) from the conversation. The sex of  $C_i$  and  $C_f$  was varied so as to provide the four conditions in Table 1. This conversation was interrupted after approximately 5 minutes by the return of the experimenter.

Has everyone completed their forms? Let me get them out of the way. In this experiment we are interested in determining the effects of team cooperation on reaction time. We will have two teams competing against each other in a competitive task involving reaction time. Since we need two teams, I'm going to divide you into a one-person team and a two-person team. None of you knew each other before you arrived, right? Unless you have some objection, I will assign you by drawing lots. ( $C_i$  then asked if he/she could be on the same team with  $C_f$ . The experimenter approved  $C_i$ 's request.)

OK, so  $C_i$  (name) and  $C_f$  (name) will be competing against  $S_v$  (name). If you two ( $C_i$  and  $C_f$ ) will slide your chairs forward to the table, I will attach your electrodes. Do you want the electrode attached to your right or left wrist? After I have everyone ready, I will read the instructions for setting your unpleasantness threshold and explain the task. You ( $C_i$  and  $C_f$ ) will have to decide who will work the shock level buttons and the reaction time button. Do not begin planning your strategy until after (name) and I have left the room. Each of you could receive a different shock level depending on what (name) wants to set for you. I'll leave (name) name card next to the shock level buttons. I'll be talking to you over the intercom in a few minutes.  $S_v$  (name), if you will come with me please, I'll take you to your room.

(to research participant)

If you will have a seat behind the console, I will

attach your electrode. Which wrist do you want it attached to? You will notice that there are two consoles. One to control the shock level for each opponent. I need to label these for you. Let's see, (name) was sitting on the right or left? (The participants in all cases responded with the correct position.) And (name) is on the left. So this console controls (name's) shock level and this one controls (name's). You must decide on the shock level settings at the beginning of each trial and push the appropriate buttons. You will also be required to wear these headphones so that you cannot hear your opponents planning their strategy. You will be able to hear me when I talk through the headphones. If you need to talk to me, just speak in a normal voice and I'll hear you through the intercom system.

The experimenter returned to the control room and continued the following dialogue.

C<sub>i</sub> (name) and C<sub>f</sub> (name), can you hear me? S<sub>v</sub> (name) can you hear me? I am going to play the instructions for setting your unpleasantness thresholds. Please listen carefully.

The instructions (Appendix B) were played over the intercom (headphone) system using the reel-to-reel tape recorder.

At the conclusion of the instructions, the following dialogue was repeated three times, beginning with the confederates and ending with the participant.

(Name), I will adjust your unpleasantness threshold now. Please tell me when you first feel the shock.

I am going to increase slowly, tell me when it begins to tingle.

OK, I'm going to continue to increase slowly, tell me when it is definitely unpleasant.

OK, that's the highest shock level that you can receive during the experiment.

After the unpleasantness thresholds had been determined, the task instructions were played (Appendix C).

The experimenter then engaged in the following dialogue.

$C_i$  (name) and  $C_f$  (name), do either of you have any questions? (Pause for 5 seconds as if questioned by confederates.) No, you have to set the shock level for your opponent at the beginning of each trial. Be sure to do this when the white "set" light comes on.  $S_v$  (name), do you have any questions? OK, we'll begin the competition now.

The experimenter then initiated the session by engaging the automatic cycle switch and allowing the trial sequence to progress through 21 cycles. After this, the automatic cycle switch was disengaged. A trial consisted of four specific events; (a) a signal (ten seconds) to "set" the shock level the two opponents were to receive, (b) a signal (five seconds) to press the "reaction" button, (c) a "release" signal for the participant to remove his finger from the "reaction" button as fast as possible, and (d) a feedback signal (a numbered red light) that indicated the level of shock the opponents had selected for the participant, and, if appropriate, a shock of that level as well. An inter-trial interval of 5 seconds was used and a shock duration of 0.2 seconds. Feedback and shock administration were partially randomized (Appendix D) within blocks of trials to eliminate an order effect. In the first block of trials (1-6), the "opponents" set 3's, 4's, and 5's for the research participant giving a mean of 4.17 for block one. In the second block (7-12), 5's, 6's, and 7's were used for a mean of 6.0. The third block (13-18) contained 8's, 9's, and 10's for a mean of 9.0. An additional trial (19) was used to determine the participant's response to the "opponents'" last setting (18).

As a means of assuring credibility, if a participant had a relatively fast reaction time, he did not receive a shock on that trial, and if he was relatively slow on a trial, he did receive a shock. In all cases, the schedule was adjusted so that the same number of shocks were received by each participant (three shocks per block).

As mentioned previously, the intensity judged to be definitely unpleasant was designated Number 10. Number 1 was set at 55% of Number 10, and the remaining numbers evenly distributed at 5% intervals between Numbers 1 and 10.

After completion of the reaction time task, each research participant completed a two section questionnaire (Appendix E). Section I was designed to continue the deception and to inquire about the research participant's general reaction to the task. Section II consisted of three identical sets of 18 adjective pairs--one set with instructions for the research participant to rate himself and one set for rating each of the confederates. The sets of adjective pairs were counter-balanced to prevent an order effect. Imbedded within the sets of adjective pairs were the manipulation checks for exclusion, "initiator" role, and "follower" role.

After the research participant had completed the questionnaire, a very detailed debriefing was conducted. It was phrased such that only portions of the deception were revealed at a time and the participant given the

opportunity to ask questions and voice any suspicion. During these debriefings, six research participants described the purpose of the experiment in enough detail to cause rejection of their data. One even admitted to intentionally giving the "follower" higher shocks than the "initiator" because he thought the purpose of the experiment was to do the opposite. The rejection of the seventh set of data was due to the failure of the research participant to understand the instructions.

Overall, the debriefing was an educational experience in experimental design and included the basic strategies for competing against multiple opponents. All the participants signed a debriefing form (Appendix F) pledging not to discuss the deceptions used in the experiment and indicating that their questions concerning the experiment had been answered.

## CHAPTER III

### RESULTS

#### Overview

It will be recalled that this investigation was designed primarily to measure aggression in inequitable situations in which individuals were excluded from same and mixed-sex triads. Two types of data were collected. First, there was the level of physical aggression administered by the research participant to the targets. These data were subdivided into "shock settings" set for the targets on the initial trial and the "aggression scores" set for the targets during provocation levels 1-3 (mean of these six trials at each level). The second type of data collected was based on questionnaire responses. These data were subdivided into "manipulation checks" and "attraction measures."

#### Manipulation Checks

The manipulation check was divided into two parts and used eighteen item checklists as a measurement instrument. The first part was the research participant's self-rating with the adjectives of interest being attractive, accepted, excluded, noticed, and angry. A multivariate analysis of variance and univariate analyses were

performed and revealed nonsignificant results. This was interesting given it's inconsistency with the behavioral data. The second part of the manipulation check was the research participant's rating of the targets.

It was expected that the variables sex of "initiator," sex of "follower," and target would produce differential results with respect to adjectives such as attractive, sociable, dominant, independent, included, warm, leader, and friendly on the two sets of ratings involving the targets. Thus, these adjectives were selected as a means of performing a manipulation check on the above three independent variables. They were embedded in a list of 18 adjectives and rated on a scale of 1-6. This list was included (as was the self-rating) as part of a post-experimental questionnaire (Appendix E) administered to the research participants at the conclusion of the reaction-time competition. Because the adjectives were expected to be highly correlated, a multivariate analysis of variance (MANOVA) was performed on the research participant's responses using a 2 (sex of "initiator") x 2 (sex of "follower") x 2 (target) model.

A Pillai's trace indicated that the MANOVA was not significant. A power test (Anderson, 1968) was performed and indicated that the MANOVA lacked sufficient power to detect significance at  $p < .05$  with an N of 40 (280 required). Therefore, univariate analyses were used (Table 1).

Table 1

Univariate Analysis of Adjective Ratings as a Function  
of Sex of Initiator, Sex of Follower, and Target

Variable(s)	Adjective	F
<u>Target</u>	Dominant	6.25*
	Cold	9.81**
<u>I X F</u>	Dominant	4.51*
	Independent	6.40*
	Excluded	5.71*
<u>I X T</u>	Physical Attractiveness	8.93**
	Excluded	4.63*
	Cold	8.54**

\*p<.05

\*\*p<.01

A significant main effect of target was obtained for two adjectives. "Initiators" were rated as more dominant ( $\bar{X}=4.1$ ;  $\bar{X}=3.4$ ),  $p < .02$ , and cold ( $\bar{X}=3.7$ ;  $\bar{X}=2.9$ ),  $p < .01$ , than "followers." The interaction between sex of "initiator" and sex of "follower" (dyad composition) was significant for dominant, dependent, and excluded. Simple main effects analyses indicated that dyad D was rated as significantly,  $p < .05$ , higher on dominance than dyad A ( $\bar{X}=3.4$ ; see Figure 6). Dyad C ( $\bar{X}=3.2$ ) was rated significantly,  $p < .05$ , higher on dependence than dyad B ( $\bar{X}=4.0$ ) or D ( $\bar{X}=4.7$ ; see Figure 8).

There was also a two-way interaction between sex of "initiator" and target for the adjectives attractive, excluded, and cold,  $p < .05$ . Simple main effects analyses indicated that male "initiators" ( $\bar{X}=3.8$ ) were significantly,  $p < .05$ , less attractive than female "initiators" ( $\bar{X}=3.1$ ). The most attractive,  $p < .01$ , rating was received by "followers" ( $\bar{X}=2.9$ ) paired with male "initiators" (Figure 9). "Followers" ( $\bar{X}=3.6$ ) paired with female "initiators" were significantly,  $p < .01$ , less attractive than "followers" ( $\bar{X}=2.9$ ) paired with male "initiators." The most excluded rating,  $p < .05$ , was received by male "initiators" ( $\bar{X}=3.9$ ) and the most included by the female "initiators" ( $\bar{X}=4.6$ ; see Figure 10). Male "initiators" ( $\bar{X}=4.1$ ) were rated as significantly,  $p < .05$ , colder than "followers" ( $\bar{X}=2.6$ ) paired with them (Figure 11). They were also significantly,  $p < .01$ , colder than female

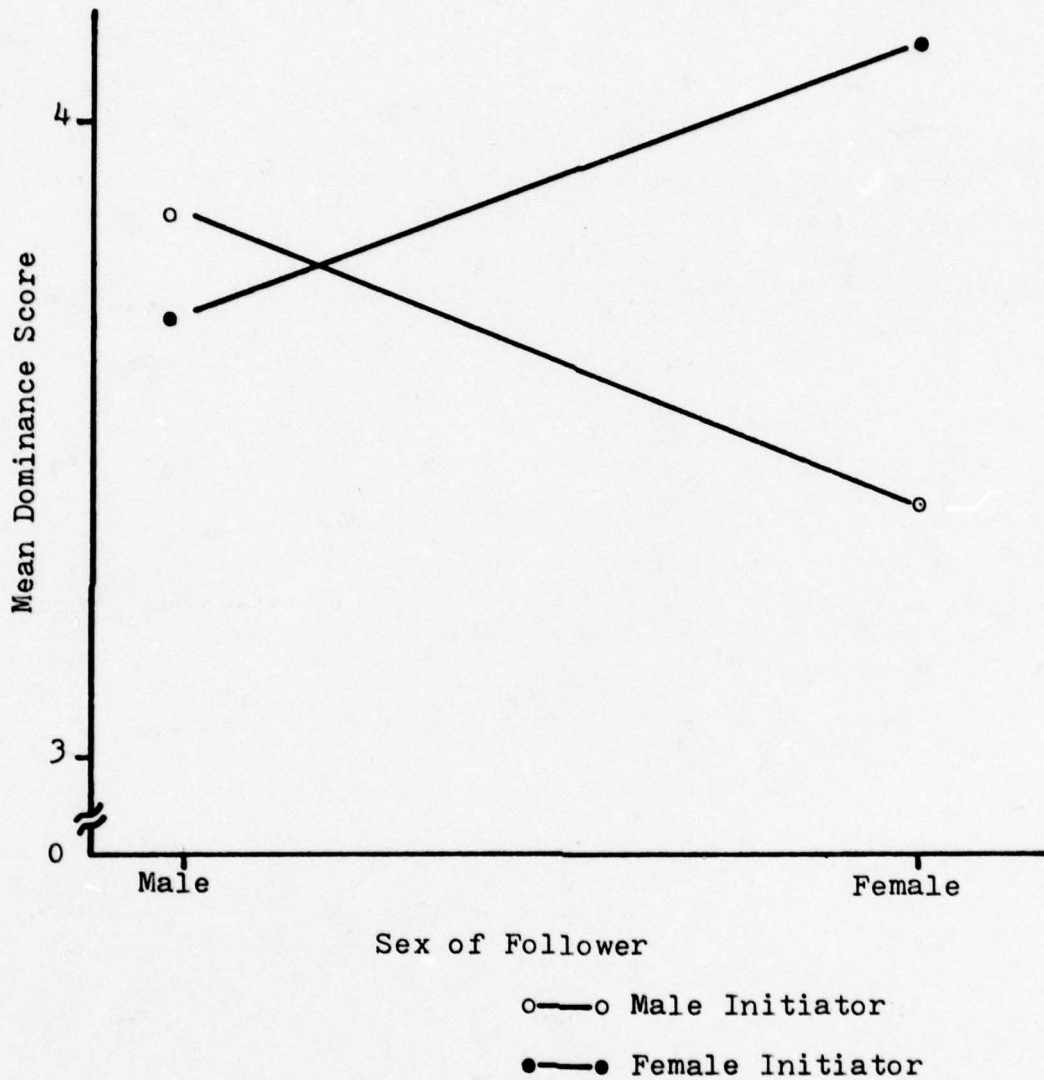


Figure 6

Mean Dominance Score as a Function of Sex of  
Initiator and Sex of Follower

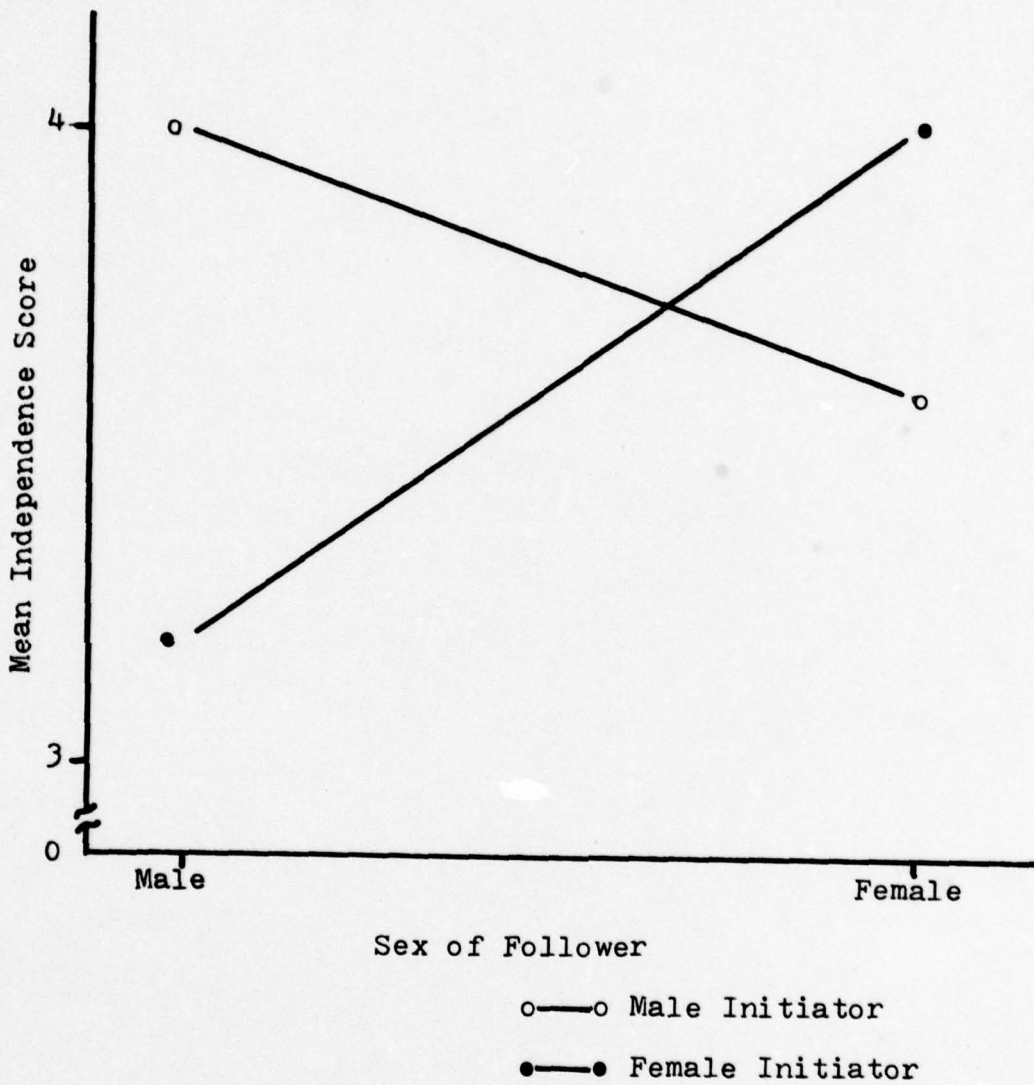


Figure 7  
Mean Independence Score as a Function of Sex of  
Initiator and Sex of Follower

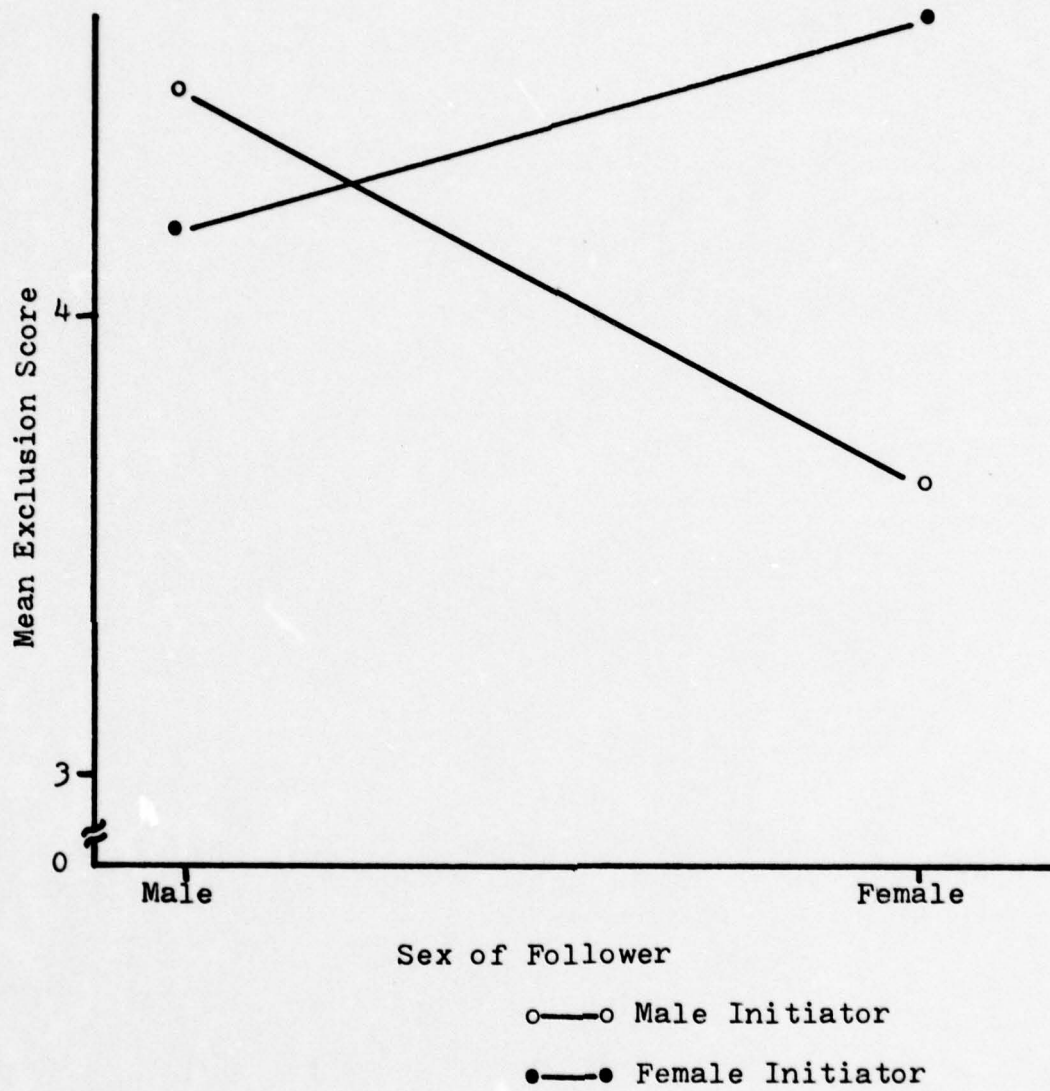


Figure 8  
Mean Exclusion Score as a Function of Sex of Initiator and Sex of Follower

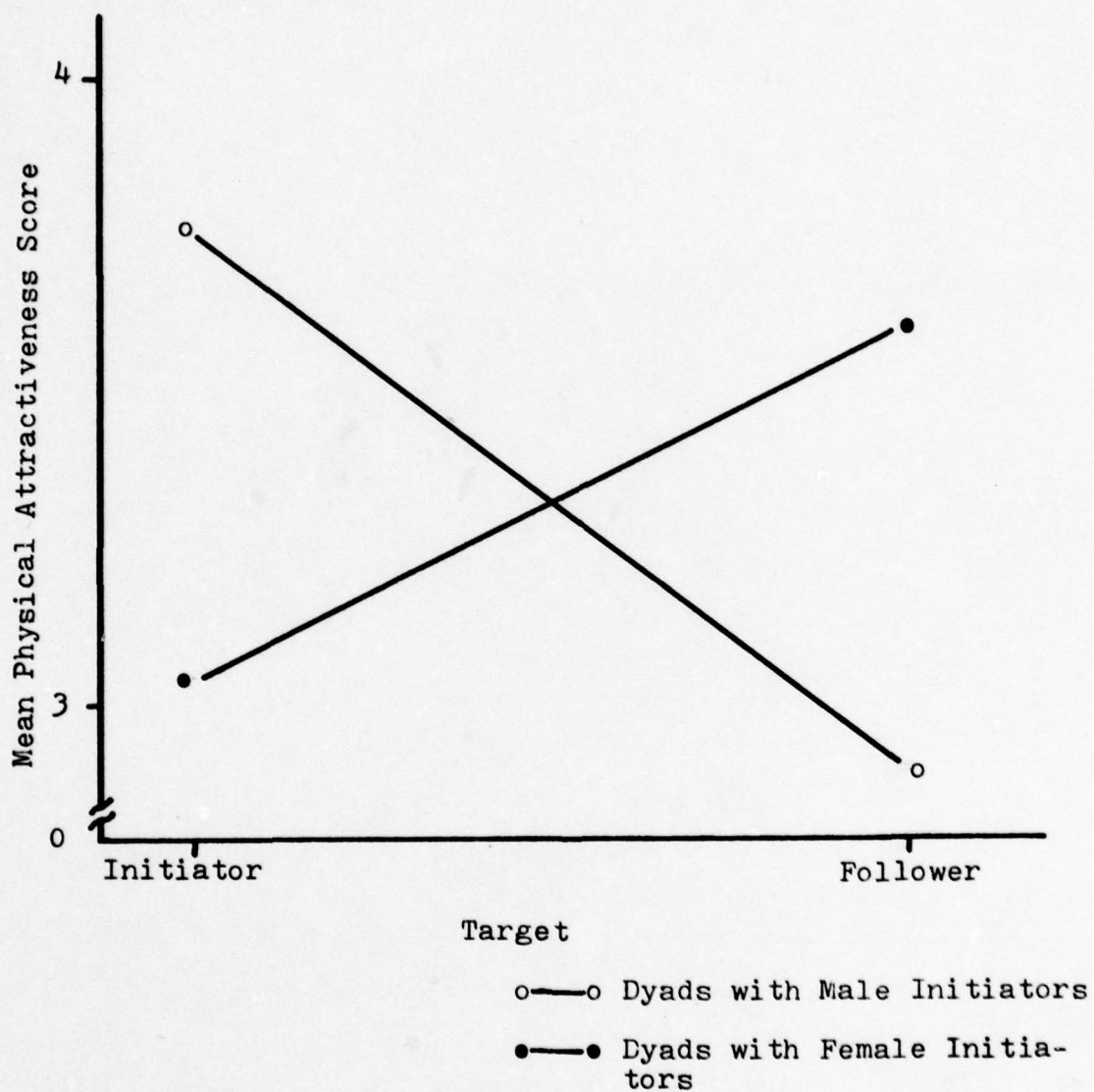


Figure 9  
Mean Physical Attractiveness Score as a Function of  
Initiator and Target

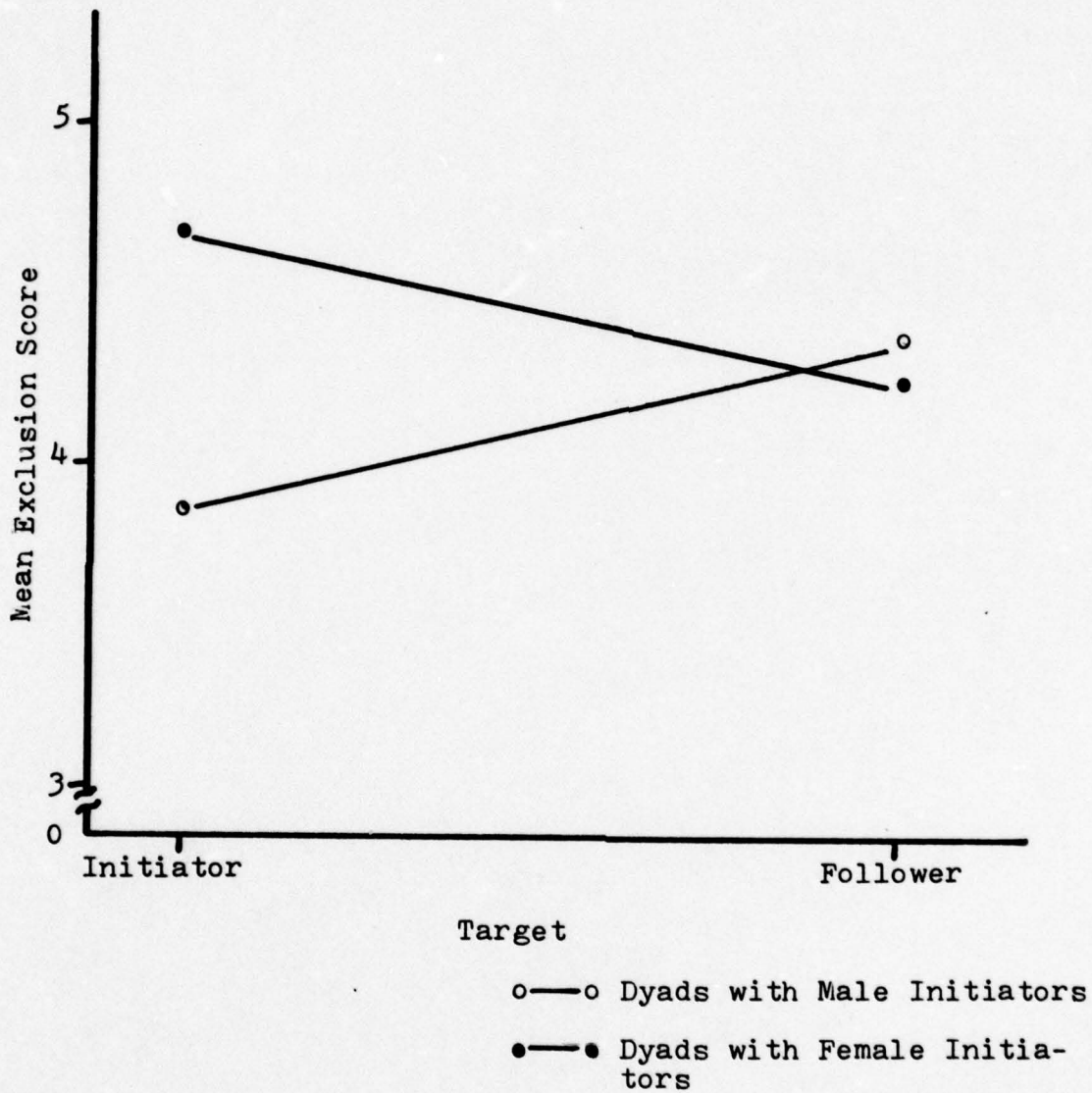


Figure 10

Mean Exclusion Score as a Function of Sex  
of Initiator and Target

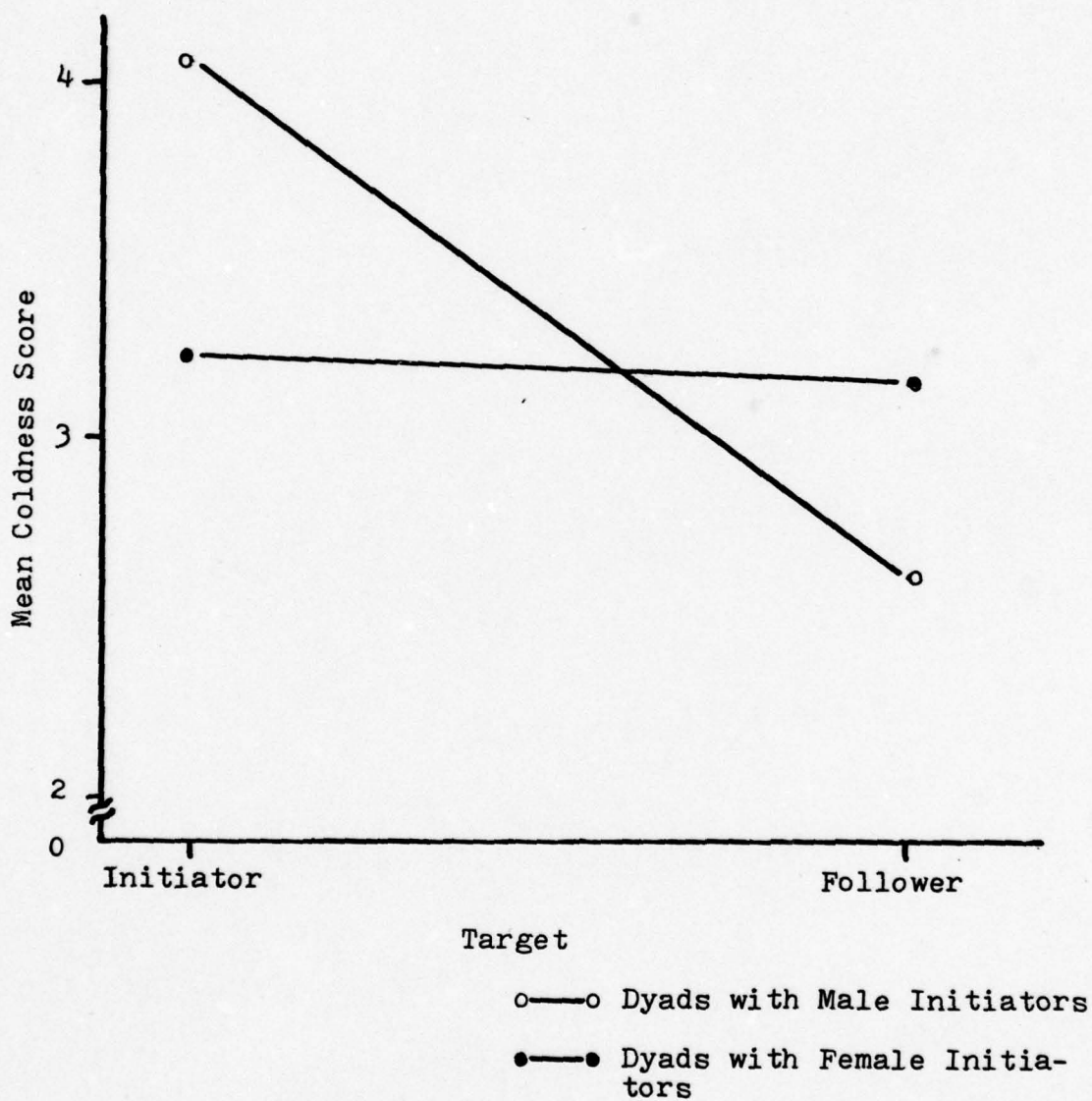


Figure 11  
Mean Coldness Score as a Function of Sex  
of Initiator and Target

"initiators" ( $\bar{X}=3.3$ ).

To determine if, as intended, the "initiator" was seen as primarily responsible for the shock settings administered to the victim, a single group t-test was performed. To do this, the obtained grand mean of 2.75 was subtracted from the theoretical mean of 3.50 on the bipolar question dealing with attributed responsibility for the shock settings. It will be recalled that a grand mean below the theoretical mid-point would be in the direction of attributing primary responsibility to the "initiator," whereas, the theoretical mid-point signifies that both the "initiator" and "follower" were seen as equally responsible. The results indicated that the "initiator" was perceived as being significantly,  $F(1, 39)=7.5$ ,  $p < .01$ , more responsible than the "follower" for the shock levels received by the research participant (victim).

A 2 (sex of "initiator") x 2 (sex of "follower") analysis of variance was performed in order to determine if dyad composition had an effect on attribution of responsibility. The analysis indicated that there were no significant differences between the four dyads (Table 2).

#### Aggressive Behavior

On the initial trial, the research participants were required to select a shock intensity for each of the targets without prior physical provocation. A 2 (sex of "initiator") x 2 (sex of "follower") x 2 (target) analysis of variance was performed (Table 3) on the initial trial

Table 2

Analysis of Variance for Attribution of Responsibility  
for Shock Received by the Victim as a Function  
of Sex of Initiator and Sex of Follower

Source of Variance	<u>df</u>	<u>MS</u>	<u>F</u>
Initiator (I)	1	1.60	<1
Follower (F)	1	.90	<1
I X F	1	0	
Error	36		

Table 3  
 Analysis of Variance for Mean Shock Settings for  
 the Initial Trial by Sex of Initiator,  
 Sex of Follower, and Target

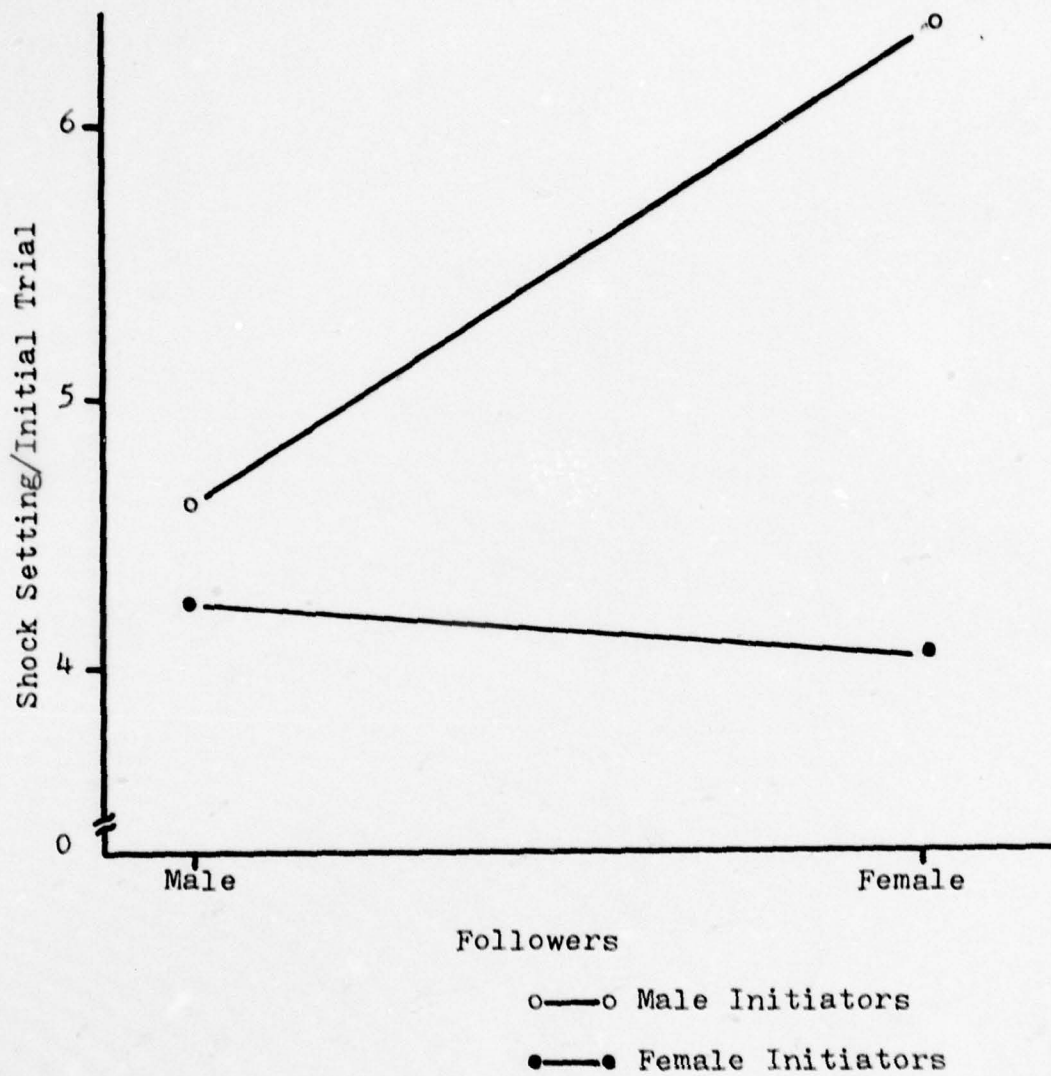
Source of Variance	<u>df</u>	<u>MS</u>	<u>F</u>
<u>Between Subjects</u>	<u>39</u>		
Initiator (I)	1	35.11	5.29*
Follower (F)	1	12.01	1.81
I x F	1	17.11	2.58
Error (S/I x F)	36	6.64	
<u>Within Subjects</u>	<u>40</u>		
Target (T)	1	.11	.29
I x T	1	.31	.82
F x T	1	.31	.82
I x F x T	1	1.01	2.65
Error (T x S/I x T)	36	.38	

\*p < .05

shock settings. The main effect of sex of "initiator" was significant,  $F(1, 36)=5.29$ ,  $p < .03$ . As expected, a Duncan range test indicated that male "initiators" received significantly higher shock settings than female "initiators" ( $\bar{X}=5.50$ ;  $\bar{X}=4.18$ ).

The a priori prediction that dyad A would receive a higher level of aggression than dyads B, C, and D justified the use of a more liberal test than the omnibus (sex of "initiator" x sex of "follower")  $F$  test. Thus, a planned comparison was used. Dyad A was contrasted against dyads B, C, and D. The results indicated that dyad A received significantly,  $p < .05$ , higher shock settings than B, C, and D ( $\bar{A} > \overline{BCD}$ ). The large difference (approximately two settings) between dyad A and the other dyads was consistent with the hypotheses (Figure 12).

In order to assess the influence of sex of "initiator," sex of "follower," target, and provocation, a 2 (sex of "initiator") x 2 (sex of "follower") x 2 (target) x 3 (provocation) analysis of variance was performed on the mean aggression scores for each provocation level (block of six trials; see Table 4). The main effect of sex of "initiator" was significant,  $F(1, 36)=6.57$ ,  $p < .02$ . A Duncan range test indicated that male "initiators" received significantly higher aggression scores than female "initiators" ( $\bar{X}=6.11$ ;  $\bar{X}=5.25$ ) as on the initial trial. As expected, a main effect of target,  $F(1, 36)=25.97$ ,  $p < .0001$ , was also obtained. A Duncan range test indicated



Followers

- o—o Male Initiators
- Female Initiators

Figure 12

Mean Aggression Score for Sex of Initiator by Sex of Follower (Dyad Composition) for Initial Trial

Table 4  
 Analysis of Variance for Aggression Scores  
 by Sex of Initiator, Sex of Follower,  
 Target, and Provocation

Source of Variance	<u>df</u>	<u>MS</u>	<u>F</u>
<u>Between Subjects</u>	<u>39</u>		
Initiator (I)	1	43.87	6.57*
Follower (F)	1	.04	.01
I x F	1	18.70	2.80
Error (S / I x F)	36	6.68	
<u>Within Subjects</u>	<u>200</u>		
Target (T)	1	5.02	25.97**
I x T	1	.15	.78
F x T	1	.01	.01
I x F x T	1	.20	1.05
Error (T x S/I x F)	36	.19	
<u>Provocation</u>	<u>2</u>	<u>104.93</u>	<u>59.66**</u>
I x P	2	.59	.31
F x P	2	.10	.05
I x F x P	2	.17	.10

Error (P x S/I x F)	72	1.76	
<hr/>			
T x P	2	.80	4.35*
I x T x P	2	.66	3.60*
F x T x P	2	.01	.03
I x F x T x P	2	.21	1.16
Error (T x P x S/I x F)	72	.18	
<hr/>			

\*p < .05

\*\*p < .01

that "initiators" received higher aggression scores than "followers" ( $\bar{X}=5.82$ ;  $\bar{X}=5.53$ ). A main effect of provocation was significant,  $F(2, 72)=59.66$ ,  $p < .0001$ , with a Duncan range test indicating that the aggression scores increased significantly at each level of provocation (level 1,  $\bar{X}=4.75$ ; level 2,  $\bar{X}=5.32$ ; level 3,  $\bar{X}=6.96$ ; see Figure 13).

A two-way ordinal interaction between sex of "initiator" and sex of "follower" (dyad composition) was significant at the  $p < .05$  level. A planned comparison indicated that dyad A received significantly higher aggression scores than dyads B, C, and D ( $\bar{A} > \overline{BCD}$ ) as on the initial trial. A two-way ordinal interaction between target and provocation was also obtained (Figure 14). An inspection of the means indicated that most of the discrimination was at provocation level 3 with "initiators" receiving higher aggression scores than "followers" ( $\bar{X}=7.22$ ;  $\bar{X}=6.70$ ). An analysis of the simple main effects substantiated that the "initiators" received significantly,  $p < .01$ , higher aggression scores only in provocation level 3.

A simple interaction effects analysis of the significant three-way ordinal interaction between sex of "initiator," target, and provocation indicated that male "initiators" received significantly,  $p < .05$ , higher aggression scores at each level of provocation than female "followers" and that female "initiators" received significantly,  $p < .05$ , higher aggression scores than the "followers"

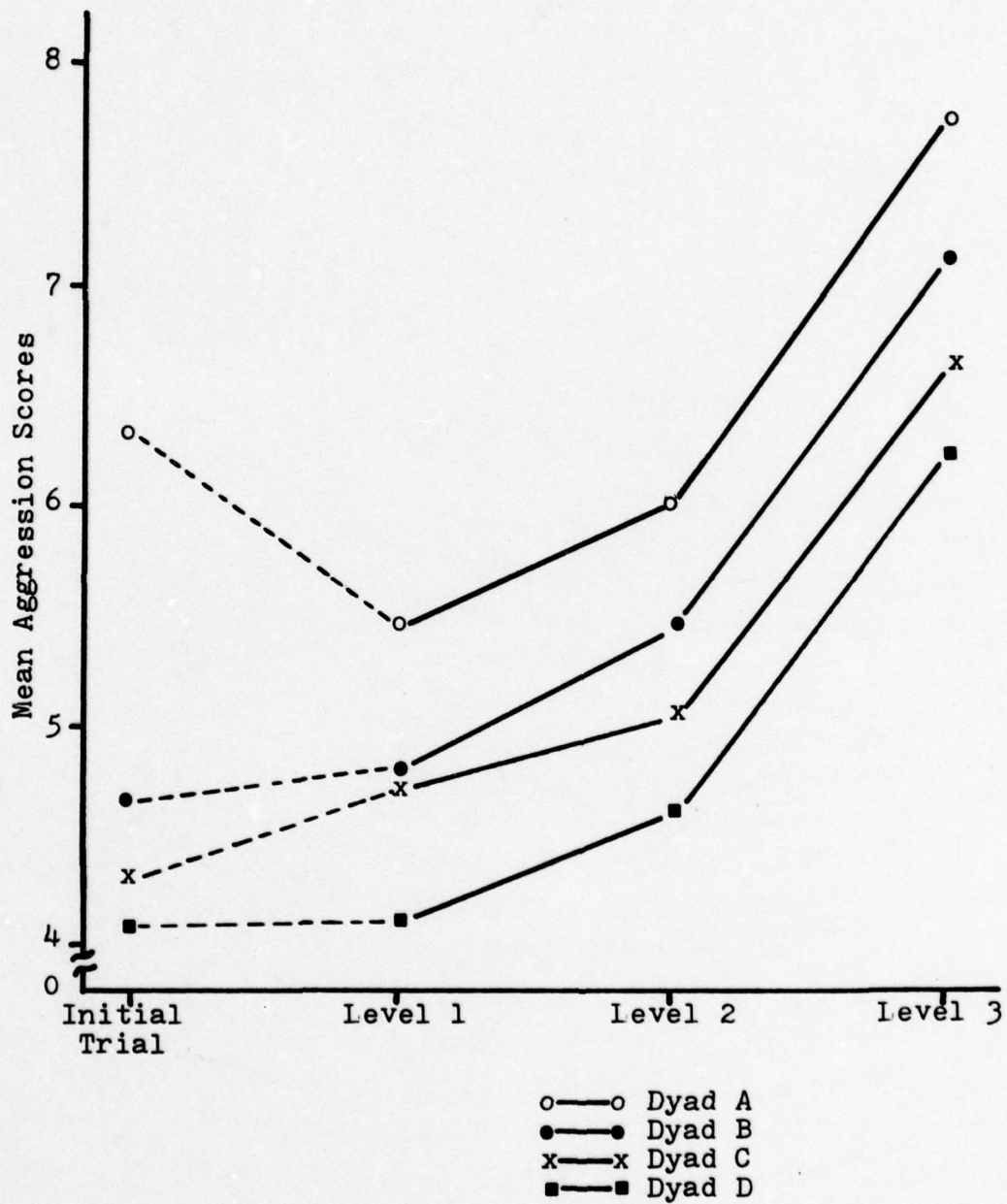


Figure 13

Mean Aggression Scores as a Function of Initial Trial  
and Provocation Level by Dyad Composition

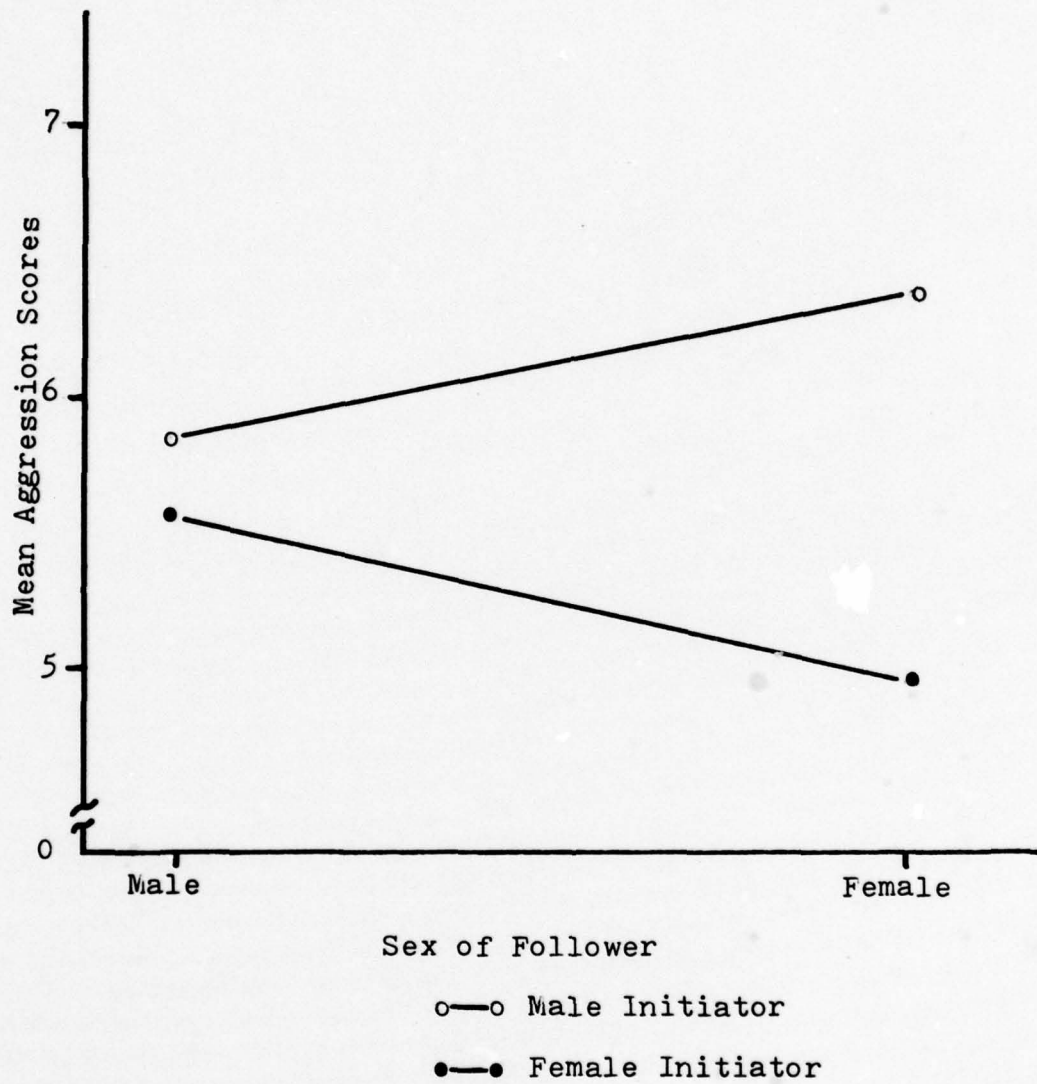


Figure 14

Mean Aggression Scores as a Function of Sex of Initiator  
and Sex of Follower (Dyad Composition)

paired with them. Additionally, male "initiators" and their "followers" received significantly,  $p < .05$ , higher aggression scores than female "initiators" and their "followers" (Figure 15).

#### Prospect of Future Interaction

The last question in the questionnaire was a forced choice item designed to measure attraction by determining the research participant's interest in future interaction with the targets. Thus, the research participant had to choose one of the two opponents with whom to be paired for a future interaction. Table 5 shows the Chi Square data produced by partitioning the frequency scores (Winer, 1971). There was a significant main effect,  $\chi^2=8.52$ ,  $p < .002$ , of sex of "initiator" with the "followers" being chosen almost exclusively in preference to the "initiator" when the "initiator" was male, than when the "initiator" was female.

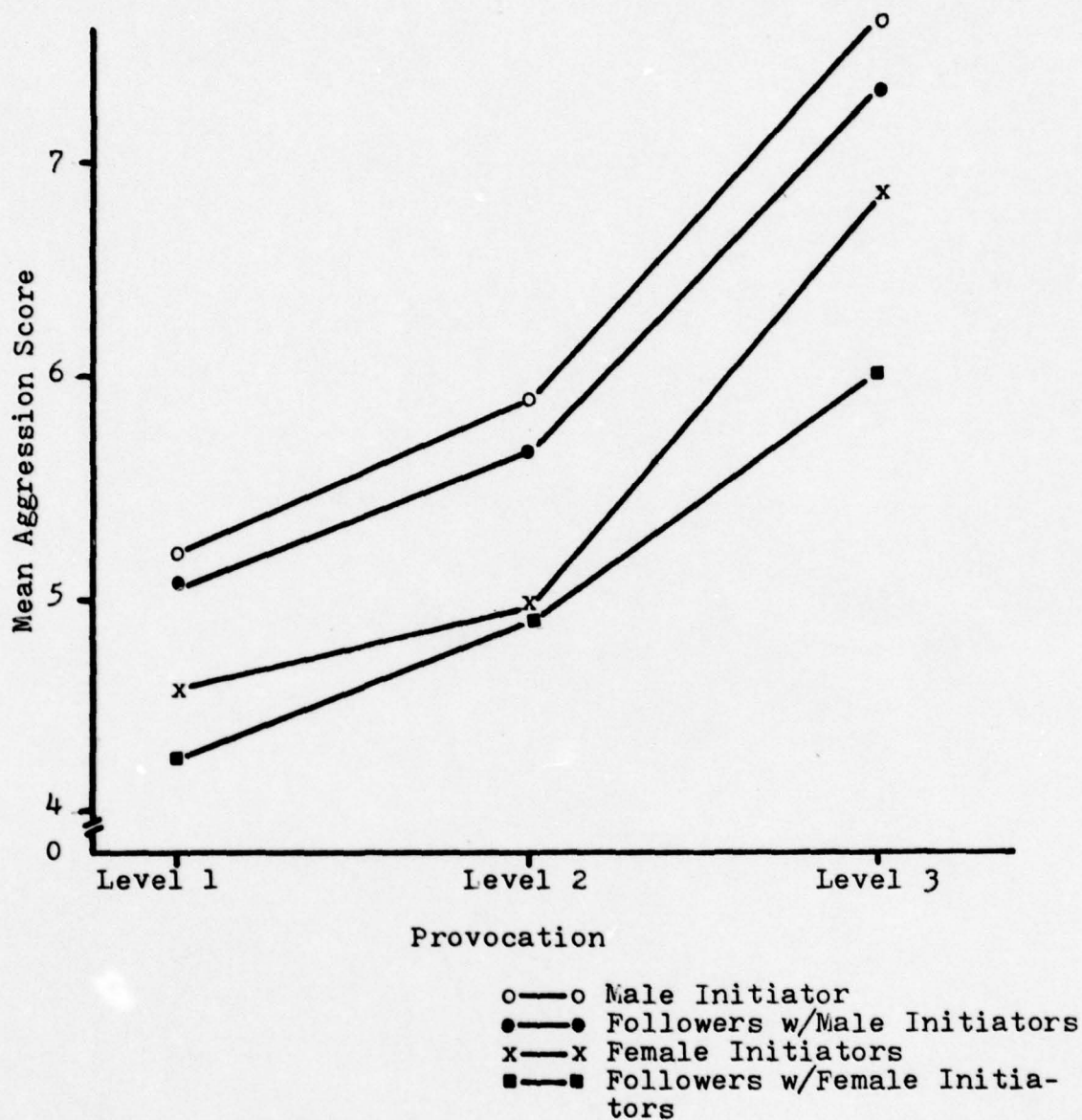


Figure 15

Mean Aggression Scores for the Simple Interaction Effects  
of Sex of Initiator and Target as  
a Function of Provocation

Table 5

Partition of Chi Square on Frequency of Preferring the  
Follower to the Initiator, as a Function of Sex of  
Initiator and of Follower

Source	<u>df</u>	<u><math>\chi^2</math></u>	<u>p</u>
Total	3	9.06	.0129
Sex of Initiator (AC)	1	8.52	.0019
Sex of Follower (BC)	1	0	
ABC	1	.54	.4144

## CHAPTER IV

### DISCUSSION

#### Overview

The purpose of this study was to provide an explanation for the aggression elicited by triads as they relate to love triangles. To accomplish this, triads were formed that consisted of the necessary sex mixture, male (research participant)-male ("initiator")-female ("follower"), to simulate that found in heterogeneous love triangles. In addition, triads consisting of male-male-male and male-female-female were formed to provide a basis of comparison. The male research participant was then excluded from the triad as a result of the overt actions of one of the other two members ("initiator"). This exclusion of one member of the triad by the other two members was believed to be an analog of a love triangle.

It was predicted that exclusion would produce an inequitable situation for the research participant, and if he were given an opportunity to relieve the stress produced by this inequity with physical retaliation in an aggression paradigm, he would do so with the highest retaliation being exhibited in the condition that most closely resembled a love triangle (male-male-female). It was

also predicted that of the two remaining members of the triad (targets), the research participant would exhibit the strongest aggression toward the target perceived as the primary cause of the inequity ("initiator"). Because the level of perceived physical attack toward the research participant was then increased over three levels, it was predicted that the research participant would retaliate with greater aggression as the attack from the targets increased.

Findings supported the predictions and indicated three factors related to the aggression produced by an inequitable situation. These were sex of "initiator," dyad composition, and provocation.

#### Manipulation Checks

The results of the questionnaire data indicated that the targets ("initiator/follower") were perceived differentially. This was evidenced by the "initiator" targets being rated as more "dominant" and "cold" than the "follower" targets. Although an attempt was made (by having the scales on different pages) to eliminate the possibility of relating judgments of one target to those of the other, research participants were observed to flip back and forth. This was presumably in an attempt to compare their ratings of the previous target in order to avoid giving an appearance of discriminating between the two targets. This tendency may account to some extent for the lack of significant differences on the other adjective

pairs. Furthermore, the uncertainty that the research participant may have felt as to the use to be made of the questionnaire data (e.g., would they be shown to the targets) may account for some additional hesitancy about appearing to discriminate. Further evidences of a hesitancy to discriminate on the paper-and-pencil measure were the responses of the research participants during the oral debriefing which were clearly more negative than their written evaluations, e.g., "I wonder if she ("initiator") is always that big of a bitch?"

Although there were only two adjectives with significant main effects, there were several significant and interesting interactions. The sex of "initiator" x sex of "follower" (dyad composition) interaction was significant for dominant, dependent, and excluded. The average target in dyad D was rated as significantly more dominant than in dyad A. This suggests that the targets in dyad A may have been perceived as acting out relatively normal sex roles. That is, the male was masculine and pursuing the feminine female. This was contrasted with dyad D where at least one female ("initiator") may have been perceived as acting out of her sex role stereotype, thereby making the targets' behavior more salient.

The average target in dyad C was rated as significantly more dependent than in B or D. It is suggested that this difference may also be explained by salience. Dyads B and D were both same-sex triads. Here the research

participant may have expected the members of the all-male dyad to be independent because of the male stereotype. The members of the female dyad (D) may have been perceived as independent as a result of the anti-stereotypical behavior of the female "initiator" combined with the impression (as stated by two research participants during the oral debriefing) that, "they were both girls and really didn't have anything in common with me." The independence attributed to the members of these two same-sex dyads may have been contrasted against the male "follower's" anti-stereotypical behavior in dyad C. The male "follower's" dependence upon the female "initiator" may have caused this dyad's members to have been perceived as more dependent than the others.

Exclusion was perceived as significantly higher in connection with dyad A than dyad D or B. Again, salience is posited to have been the cause of this. Exclusion should have been perceived more in connection with dyad A if the hypothesized same-sex rivalry did occur. Dyad D may have caused the research participant to perceive more inclusion because he expected the females to have more in common and, therefore, may not have perceived his exclusion as intentional. This lack of intentionality may have made the exclusion less salient. Dyad B may have produced less salience of exclusion because the dyad again may have been perceived to have had more in common and not to have intentionally excluded the research participant. In both of

these dyads there was no same-sex rivalry for the opposite-sex member as there may have been in dyad A. Thus, these data appear to provide support for the "rooster effect."

The second two-way interaction was between sex of "initiator" and target. The three significant adjectives were attractive, excluded, and cold. Male "initiators" were rated as significantly less attractive than the "followers" paired with them. Male "initiators" were also rated as significantly less attractive than female "initiators." This within itself presents no great surprise. Females are normally perceived as more attractive than males when the rater is male. However, the fact that "followers" paired with male "initiators" were rated as significantly more attractive than "followers" paired with female "initiators" suggests that the "followers" in dyads A and B were perhaps more desirable than those in dyads C and D. This may have been due to feeling deprived of the freedom to pair with the "follower" in dyad A because of the male "initiator's" winning of the female "follower." This reactance to dyad A may have been strong enough that when combined with feelings toward dyad B, it produced a significant interaction.

The research participants perceived more exclusion with male "initiators" than with female "initiators." It is suggested that this is primarily the result of the salience of the exclusion in dyad A, rather than a general, over-all target effect. This is supported by the fact

that there was no main effect for exclusion for the target variable.

When the "initiator" was male, he was rated as colder than "followers" paired with him. When the "initiator" was female, there was no difference between them and their "followers." This may be the result of two things. First, males may be perceived generally as colder than females, and second, the result of a continued derogation of the male "initiator" in dyad A. Further support for this apparent greater attraction for the "followers" is the fact that "followers" paired with female "initiators" were rated as colder than the "followers" with male "initiators."

In summary, the adjective data indicates that "initiators" were perceived as more dominant and cold than the "followers." The most domination was seen in dyad D, the most independence in A and D, and the most exclusion in A. This was consistent with expectations. Additionally, the most attractive were "followers" paired with male "initiators" indicating that the "followers" (presumably more so in dyad A) were more desirable. Male "initiators" were perceived as more excluding than female "initiators." Finally, male "initiators" were perceived as the coldest, with the "followers" paired with them as the warmest.

A second and important manipulation check was the research participant's perception of who was most instrumental in determining the level of shock that he (research participant) received. Results on this measure

established responsibility concretely as being that of the "initiator" regardless of dyad composition. Thus, the manipulation of target appeared to have been successful.

In addition to the manipulation check on exclusion mentioned above, the behavior of the research participants during pre-paradigm interaction suggests that the manipulation was indeed effective. Insko and Wilson (1977) found that in an exclusion situation similar to this one, the research participant would spend two or more minutes in an "information seeking process." The exclusion in this investigation appeared to have been manipulated so strongly that all attempts at interacting with the targets ceased by the end of the first minute. Only on two occasions were attempts made after the first minute, and both of these were in dyad A. Typically, the research participant sat back in his chair and either observed the targets intensely while listening to their conversation or looked randomly around the room as if he was ignoring the targets. The effect of the exclusion was presumed to be further evidenced by the fact that in no instance did a research participant object to the "initiator's" request to be paired with the "follower." In fact, the most common reaction was to say, "That's fine with me." Considering the aggressive behavior that followed, it is clear that they were not indifferent. Thus, it was felt that this exclusion simulated, on an elementary level in the laboratory, the type of exclusion that may be produced by a

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love triangle.

### Aggressive Behavior

It was posited that within the triad there were three distinguishable roles, victim, "initiator," and "follower." These roles were operationally defined as follows. The victim was the member of the triad that was initially paired with one of the other two members (targets) but was later excluded by both. It will be recalled that in this experiment, the "follower" was initially friendly with the victim. Thus, when excluded by the other two members of the triad, the victim found himself in an inequitable situation. The "initiator" was defined as the triad member who intervened in the interaction between the victim and the "follower" and initiated and controlled the exclusion. The "follower" was the triad member that was initially friendly to the victim, but was soon monopolized by the "initiator" and followed his or her lead.

Initiator Effect. Because of the differences in the "initiator" and "follower" roles (targets), it was predicted that the research participant would respond to them differentially both on paper-and-pencil measures and in his aggressive behavior toward them. Of particular concern in this experiment was the aggressive behavior of which the "initiator" was expected to bear the brunt. The first measure of this aggressive behavior toward the targets was the shock setting administered on the initial trial. The failure to obtain a significant effect of

target may have been due to the small number of scores (one per target) used in the analysis (Taylor, 1967). If so, it then becomes evident that there must be a powerful manipulation of an antecedent of aggression in order to obtain an effect on the initial trial. It is speculated that even though the roles of the targets were salient at this point, there was enough ambiguity created by the new situation (reaction-time competition) to create an initial hesitancy to overtly discriminate between them.

The second measure of aggressive behavior consisted of the aggression scores for each of three successive, increasing provocation levels which did reveal a significant main effect. The results clearly indicated that the "initiator" received the highest aggression scores as predicted. This "initiator effect" seemed to manifest regardless of the sex of the "initiator." This provides evidence that the lack of target effect during the initial trial may have been partly due to the small N.

It is suggested that the "roles" played by the targets ("initiator/follower") resulted in the research participant perceiving the "initiator" as being the primary cause of the inequitable situation in which he found himself. The questionnaire data supports this in three primary ways. First, "initiators" were perceived to be more dominant than the "followers," and consequently may have been perceived as more responsible for the inequity. Second, the "initiator" was perceived as more cold than

the "follower" which could be construed to have resulted from the "initiator's" dominant behavior. A "cold" person may be more likely to be the the instigator of an inequity. Third, the "initiators" were perceived to have been primarily responsible for the shock the research participant received. This indicated that at least during the reaction-time competition, the "initiator" was seen as responsible for the control of the dyad and could only have been inferred from the prior excluding activity.

Having "designated" the "initiator" as the primary cause of the inequity, it should have resulted in a greater stress being felt in the direction of the "initiator." It is suggested that, as predicted in hypothesis (a), the attempt to relieve this distress, and thereby to restore equity, resulted in higher aggression scores being received by "initiators" than "followers."

Sex Effect. The main effect of sex of "initiator" on the initial trial suggests that male "initiators" may have been perceived as more responsible than the female "initiator" for the distress the research participant experienced. This was, in fact, supported by the questionnaire data. This is also consistent with equity theory and hypothesis (b), in that the male "initiator" conditions contained dyad A. It will be recalled that dyad A was predicted to produce the greatest level of distress and thus to receive the highest aggression scores. This was further supported by the research participant's

perception of the male "initiator" as less attractive, cold, and as more suggestive of exclusion, than the female "initiator." Additionally, it will be recalled that more exclusion was attributed to dyad A than to the other dyads.

A further examination of the aggression scores indicated that male "initiators" received significantly higher aggression scores than did female "initiators." Previously reviewed literature indicated that under low (level 1) and moderate (level 2) provocation males tend to set lower shock levels for females than for males (Silverman, 1971). Since two-thirds of the settings in this experiment were made under low to moderate provocation, this apparent sex differential was predicted to occur. It is interesting to note, however, that there was no effect for sex of "follower," thus, suggesting a hesitancy to harm "followers" regardless of sex.

The Rooster Effect. The next factor to be considered was the sex of "initiator" x sex of "follower" (dyad composition) interaction. As predicted, dyad A received significantly higher aggression scores than dyads B, C, and D on both the initial trial and over provocation levels. This was indicative of the powerful manipulation of an antecedent of aggression. The fact that dyad A received such a high initial shock setting (almost two levels above the others) cannot be explained merely by the sex composition of the dyad. It was noted that dyad A and dyad C had the same sex composition. What was it then that

produced such a strong effect in dyad A? The only difference between the two dyads was the sex of the targets. That is, in dyad A the "initiator" was male and the "follower" was female. Dyad C was the reverse. Thus, it is suggested that when a male "initiator" was paired with a female "follower," a rivalry between the two males may have developed. This same-sex rivalry for the opposite-sex "follower" may have produced the increased level of aggression toward the male "initiator" in dyad A ("rooster effect"). The compounding of this "rooster effect" with the "initiator effect" may have produced an antecedent of aggression powerful enough to elicit a significant difference in aggressive behavior toward dyad A. This effect was also evidenced in the aggressive behavior prior to physical provocation from the targets, i.e., on the initial trial. This, along with the questionnaire data provides strong support for the "rooster effect."

A second contributing factor to the difference between dyads A and C may have been the research participant's perception of the female "initiator" in dyad C. It is suggested that the rivalry between the males did not develop in dyad C because the male "follower" was not perceived as a rival. In fact, the questionnaire results indicate that he may have been perceived as more submissive than the male in dyad A. Additionally, the "followers" in dyads C and D were not rated as being as attractive as the "followers" in dyads A and B. This may have occurred

for two reasons. First, the male "follower" was acting in a non-masculine (submissive) manner. He made no attempt to compete for the "lady" with the research participant and, therefore, may not have been perceived as a rival. Second, the fact that the female "initiators" were acting in an anti-stereotypical manner (dominant, cold) may have caused them to be perceived as more masculine and, therefore, less desirable. Additionally, the female "initiator" overtly chose the male "follower" over the research participant as a team member. Therefore, the research participant may not have perceived the situation in dyad C as a competitive situation with the other male.

Provocation Effect. Previously reviewed literature indicated that if an antecedent of aggression was manipulated prior to participation in a potentially aggressive interaction, relatively high levels of aggression could be expected to manifest during the interaction. Consistent with this is the finding, that over all, dyad A's aggression scores did remain significantly higher than those of dyads B, C, and D. It is suggested that the compounding of the "rooster effect" and the "initiator effect" led to the over all effect of dyad composition as the level of provocation increased.

Although the initial trial and the provocation levels cannot be compared directly, it is interesting to note that dyad D remained virtually constant from the initial trial through provocation level 1, dyads C and B increased

very slightly, and dyad A decreased dramatically. This indicates that the low provocation of level 1 had little overt effect on the research participant's aggressive behavior, except in dyad A. A possible explanation for this "lack of effect" is that the prior manipulation was as powerful in dyads B, C, and D as low physical provocation, thereby masking the effect of the low provocation. The dramatic decrease in dyad A may have been due to an effect of the "norm of reciprocity," that is, a tendency to reciprocate the levels of shock received. The fact that dyad A still remained well above the provocation level mean may indicate that the "rooster effect" had given dyad A a greater "preparedness to aggress" (Berkowitz, 1969) than the other dyads. Thus, the low provocation had an additive effect on dyad A.

An interesting result was that the level of aggression toward dyad D remained essentially constant from the initial trial through level 1. This may have been due to the hesitancy of males to harm females under low levels of provocation. By the completion of level 2, the dyads had separated almost equidistantly, indicating that the "initiator" and "rooster" effects had stabilized. That is, the powerful effects of provocation had equalled the previously manipulated effects.

From provocation level 2 through the completion of level 3, there was an equal increase in aggression scores in each dyad. This might suggest that under high levels of

provocation, the less powerful antecedent effects were "washed out." However, the three-way interaction between sex of "initiator," target, and provocation indicate that under high provocation there was a discrimination among targets with male "initiators" receiving the highest aggression scores in provocation level 3. This indicates that under high provocation, the victim retaliated strongest toward the target he believed to be most responsible for the attack and/or the inequity. This discrimination under high provocation is not consistent with the literature. In fact, the literature reviewed did not reveal any antecedents that were powerful enough to cause discrimination under conditions of high provocation. The literature suggests, then, that once a certain level of preparedness to aggress (anger) is reached and then set in motion by physical provocation, chain reaction occurs. That is, once the victim is physically attacked (low provocation), he reciprocates with a moderate counterattack which may, in turn, cause the "initiator" to respond at a higher provocation level. This continues until both are responding with high provocation (fighting, shooting, etc.). At this point, the whole episode is being sustained, not by the initial cause of the altercation, but by the high physical provocation. A graphic example of this is where, during the course of a verbal altercation, one male places his hand on the other (low physical provocation). The second male responds by rapidly and viciously removing the

hand (moderate provocation). This is followed by the first male pushing the second, who responds by hitting the first (high provocation).

The present data, however, suggests that when responding to multiple opponents, the victim retaliates the strongest toward the most powerful attacker. This perceived power may be a combination of physical (male) power and the power of the "initiator" to control the other attacker ("follower").

#### Prospect of Future Interaction

The last factor to be investigated by this study was the research participant's "liking" for his two opponents. To do this, a forced choice item was designed to measure attraction by determining the research participant's choice of teammate for a future interaction. A main effect of sex was obtained. This indicated that if the "initiator" was male, then the research participant preferred (almost exclusively) to be paired with the "follower." If the "initiator" was female, there was no preference. It is suggested that this provides further support for the same-sex rivalry hypothesis. The male research participant may not have wanted to have been paired with a dominant male. This is further supported by a lack of inhibition to be paired with a male "follower" in dyad B. Thus, it was not just the sex of the future teammate, but also the role ("initiator/follower") that the male apparently chose, that was instrumental in making the selection.

In dyads C and D, however, there was no preference for the "initiator" or "follower." It is suggested that this lack of preference resulted from two factors. First, some of the research participants in dyad C may have seen this as an opportunity to take the female away from the other male, indicating that a latent "rooster effect" may have been present. This may have been stronger in some research participants than others. A second possible factor is that some research participants may have wanted to pair up with the female "initiator" even though they did not like her in order to avoid receiving high shocks. Several research participants stated in the oral debriefing that they did in fact choose the "initiator" as the future teammate because they felt that she was responsible for the high shocks they had received. By having her on the same team, they could avoid the high shocks. Over all, the results of the prospect of future interaction were as expected.

#### Conclusion

In this investigation I have attempted to use an analog of a love triangle (triad) and to manipulate rivalry within it. Although there are obviously differences between a love triangle and the triad formed in the laboratory, this investigation, nevertheless, provides insight into some of the possible mechanisms operating there and their potential power. For example, if the "rooster effect" can manifest among strangers after a few minutes

of interaction and result in significantly high levels of aggression in the controlled setting of the laboratory, then this phenomenon may account for some of the killings mentioned at the beginning of Chapter I.

The approach to the explication of this research has been from an equity theory stand point. An alternative theory that may provide an explanation is the Origin and Pawn theory. The reader is referred to deCharms (1968) for a detailed treatment of this theory. Briefly, an Origin is a person who perceives that he/she is in control of his/her own decisions. He/she is a leader. An Origin would correspond to the "initiator" in this investigation. The Pawn, on the other hand, would correspond to the "follower" and the victim. The Pawn is controlled by others. When a person recognizes that he/she is a Pawn and is being used by an Origin, distress is manifested and directed toward the Origin. This distress may lead to aggressive behavior.

#### Future Research.

The results of this study suggest several areas for future systematic research. An investigation of the "initiator" and "rooster" effects should be conducted using female victims. The hypothesis would predict essentially the same results, i.e., an "initiator effect" and a "rooster effect." The "rooster effect" would be expected to result from a same-sex rivalry between the female victim and the female "initiator" for the male "follower." It is

possible, too, that female victims might be more willing to admit to feelings of exclusion.

It is further recommended that the research be continued moving from triads composed of strangers to triads composed of two friends, or a dating couple with a confederate "initiator." The "rooster effect" would predict that the level of aggression would be a positive function of the attraction between the victim and the "follower."

Finally, this study provides the first step in the investigation into the dynamics of aggression in triads. It is hoped that it will also provide a starting point for future research, as mentioned above, that will eventually lead to an understanding of the aggression produced in love triangles and methods of controlling it.

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APPENDIX A

CONSENT FORM

Date \_\_\_\_\_

I, \_\_\_\_\_, freely and voluntarily and  
(research participant)  
without undue inducement or any element of force, duress,  
or other form of constraint or coercion, consent to be a  
participant in the research project entitled, "The Effect  
of Team Cooperation on Reaction Time," to be conducted in  
the Psychology Department at the University of Georgia,  
during \_\_\_\_\_ quarter, 19\_\_ with Dick Thompson as Princi-  
pal Investigator. The procedures to be followed, and  
their purposes, including identification of any procedures  
which are experimental, have been explained to me and I  
understand them. That is, I understand that (1) I will  
compete in a reaction-time task with 2 other individuals,  
(2) there is a slight shock involved in the experiment  
(I will set my own level), and (3) the experimenter will  
thoroughly inform me of the benefits of this study when my  
participation is completed. Thus, the attendant discom-  
forts and risks and potential benefits reasonably to be  
expected by my participation in the experiment have been  
explained to me and I understand them. I understand that

this consent and data may be withdrawn at any time without prejudice. I have been given the right to ask and have answered any inquiry concerning the foregoing. Questions, if any, have been answered to my satisfaction. I have read and understand the foregoing.

---

(witness)

---

(research participant)

## APPENDIX B

### SHOCK THRESHOLD INSTRUCTIONS

Prior to beginning the competition, we are going to determine your "unpleasantness threshold" for shock. Each of you will set your own threshold in order to determine the maximum level of shock that each of you could receive during the competition. To do this, I will give each of you a series of shocks, gradually increasing the intensity with each one. When the shock is first presented, it will be below your sensation threshold and you will not feel it. First it will feel like a pinprick, then a tingling sensation, and finally it will reach an intensity that is definitely unpleasant. I want you to tell me three things: (1) report when you first feel the shock, (2) report when it feels like a tingle, and (3) report when it is definitely unpleasant. We will stop at this point. The level that you report to be definitely unpleasant will be the maximum shock level that you can receive during the competition. You may report to me by simply speaking out. I'll hear you through the intercom system. At this time, we will begin setting the thresholds with team B.

## APPENDIX C

### COMPETITION TASK INSTRUCTIONS

The purpose of this experiment is to determine the effects of team cooperation in a competitive task. There are two teams participating in this experiment, each located in a separate room. Both teams have a similar apparatus and the same task to perform. Please observe your console as I read the instructions.

At the beginning of each trial, the "set" light will come on. At this time, you must immediately set the amount of shock you wish your opponents to receive if you should be faster on the coming trial. You will do this by pressing one of the ten buttons located at the bottom of the console. The one button corresponds to the least intense shock, the ten button to the most intense shock. Team A will have to set the shock level for each opponent using both the console and the small box to the left of the console. Team B will only set one shock level for each trial. It is important that each team set the shock level at the beginning of each trial. Team A will make two settings, one for each member of the opposing team. After a short interval, each team will see the yellow "press" light come

on and is to depress the reaction time key firmly. At some interval after this, the blue "release" light will come on and you are to remove your finger as fast as possible from the reaction time key. You must not remove your finger prior to the onset of the blue "release" light. If you do, you will receive a maximum time for that trial and will receive a shock. At some interval after your response, you will find out whether you were faster or slower than the opposing team on that particular trial. The slower team will receive a shock of the intensity that was chosen by the opposing team. The faster team will not receive a shock but will see one of the red lights come on indicating the shock level the opposing team set for its competitor(s).

You will be able to tell how much shock the other team set for you in two ways. First, by the intensity of the shock which you actually feel, and second, by which of the ten red lights at the top of your console comes on. As you can see, there are ten red lights, one for each level of shock. The light on the right indicates the most intense shock. The light on the left indicates the least intense shock. The maximum shock that an individual can receive, that is, the number ten, will correspond to the unpleasantness threshold that was established prior to the beginning of the competition. The other settings will be percentages of this.

To summarize, when the "set" light comes on, you are

to immediately set the amount of shock that you wish your opponents to receive if they are slower in the coming trial. When the "press" light comes on, you are to depress the reaction time key and hold it down until the blue "release" light comes on, at which time you are to remove your finger from the reaction time key as fast as possible. The slower team on that trial will receive the shock set by the opposing team. The faster team will not receive a shock, but will see the light corresponding to the level the opposing team had chosen for them. It is important that both teams set the shock as soon as the "set" light comes on and respond to the blue "release" light as fast as they can.

APPENDIX D

Sex \_\_\_\_\_  
 BSR \_\_\_\_\_  
 Shock level \_\_\_\_\_  
 Provocation \_\_\_\_\_  
 Situation \_\_\_\_\_

Date \_\_\_\_\_

Control No. \_\_\_\_\_

Group No. \_\_\_\_\_

TRIAL	SHOCK	FEEDBACK	C <sub>i</sub>	C <sub>f</sub>	RT	C <sub>i</sub> _____
1	+	5				C <sub>f</sub> _____
2	+	3				
3	+	4				Block 1
4	-	3				
5	-	4				C <sub>i</sub> _____
6	-	5				C <sub>f</sub> _____
7	-	6				$\bar{X} = 4.17$
8	+	5				
9	-	5				Block 2
10	+	7				
11	-	6				C <sub>i</sub> _____
12	+	7				C <sub>f</sub> _____
13	-	8				$\bar{X} = 6.00$
14	-	9				
15	+	8				Block 3
16	+	10				
17	-	9				C <sub>i</sub> _____
18	+	10				C <sub>f</sub> _____
19	-	8				$\bar{X} = 9.00$

Remarks: .

## APPENDIX E

### Team A

This questionnaire is designed to obtain information about different aspects of the experiment. Please answer all questions and answer them as frankly and honestly as possible. Your responses will remain anonymous. Please do not put your name on this questionnaire. When you have finished answering all of the questions, place the questionnaire into the envelope and remain seated. I will return shortly.

#### Section I--Competition

1. Do you think the competition made your reaction time faster or slower?  
\_\_\_\_\_Faster          \_\_\_\_\_Slower
2. Were you following any system with regards to the reaction time key? Please write a brief sentence.
3. Were you following any system with regards to the shock level buttons? Please write a brief sentence.
4. Do you think your opponents were following any system in regard to the shock level buttons? Please write a brief sentence.

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ARMY MILITARY PERSONNEL CENTER ALEXANDRIA VA

F/G 5/11

THE ROOSTER EFFECT: AGGRESSION AS A CONSEQUENCE OF THE COMPOUND--ETC(U)

JUN 79 H L THOMPSON

UNCLASSIFIED

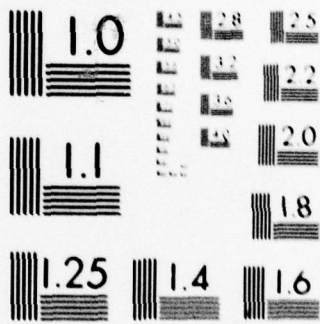
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MICROCOPY RESOLUTION TEST CHART  
NATIONAL BUREAU OF STANDARDS 1963-A

Please answer the following questions by circling the number which best answers the question. The following example illustrates how to use the scale.

Ex. Did you feel nervous during the interaction?

1    2    3    4    5    6  
 yes, very                    no, not at all  
 much

If you felt very nervous during the interaction, you would circle number 1.

If you felt moderately nervous, you would circle number 2.

If you felt a little nervous, you would circle number 3.

If you felt a little relaxed, you would circle number 4.

If you felt moderately relaxed, you would circle number 5.

If you felt very relaxed, not nervous at all, you would circle number 6.

5. To what extent was your strategy determined by what your opponents did?

1    2    3    4    5    6  
 very much                    not at all

6. If given the opportunity to participate in this experiment again, would you prefer to compete alone or with another person?

1    2    3    4    5    6  
 strongly prefer                    strongly prefer to compete  
 to compete alone                    with another person

7. Did you feel nervous during the interaction?

1    2    3    4    5    6  
 yes, very                    no, not at all  
 much

8. Who do you think had the greatest influence in determining the level of shock your opponents set for you?

1    2    3    4    5    6

was fully  
responsible

was fully  
responsible

## Section II--Social Interaction

9. Your responses to the following check list are to be based on the impression you formed of yourself as a result of the interaction you had with your two opponents. Please circle one number for each pair of adjectives.

physically attractive	1	2	3	4	5	6	physically unattractive
accepted	1	2	3	4	5	6	rejected
unsociable	1	2	3	4	5	6	sociable
submissive	1	2	3	4	5	6	dominant
cruel	1	2	3	4	5	6	kind
artificial	1	2	3	4	5	6	genuine
dependent	1	2	3	4	5	6	independent
excluded	1	2	3	4	5	6	included
shy	1	2	3	4	5	6	bold
competitive	1	2	3	4	5	6	not competitive
stable	1	2	3	4	5	6	changeable
warm	1	2	3	4	5	6	cold
disloyal	1	2	3	4	5	6	loyal
weak	1	2	3	4	5	6	strong
follower	1	2	3	4	5	6	leader
friendly	1	2	3	4	5	6	rude
noticed	1	2	3	4	5	6	ignored
angry	1	2	3	4	5	6	not angry

10. Your responses to this check list are to be based on the impression you formed of \_\_\_\_\_ during the interaction you had with him/her. Please circle one number for each pair of adjectives.

physically attractive	1	2	3	4	5	6	physically unattractive
accepted	1	2	3	4	5	6	rejected
unsociable	1	2	3	4	5	6	sociable
submissive	1	2	3	4	5	6	dominant
cruel	1	2	3	4	5	6	kind
artificial	1	2	3	4	5	6	genuine
dependent	1	2	3	4	5	6	independent
excluded	1	2	3	4	5	6	included
shy	1	2	3	4	5	6	bold
competitive	1	2	3	4	5	6	not competitive
stable	1	2	3	4	5	6	changeable
warm	1	2	3	4	5	6	cold
disloyal	1	2	3	4	5	6	loyal
weak	1	2	3	4	5	6	strong
follower	1	2	3	4	5	6	leader
friendly	1	2	3	4	5	6	rude
noticed	1	2	3	4	5	6	ignored
angry	1	2	3	4	5	6	not angry

11. Your responses to this check list are to be based on the impression you formed of \_\_\_\_\_ during the interaction you had with him/her. Please circle one number for each pair of adjectives.

physically attractive	1	2	3	4	5	6	physically unattractive
accepted	1	2	3	4	5	6	rejected
unsociable	1	2	3	4	5	6	sociable
submissive	1	2	3	4	5	6	dominant
cruel	1	2	3	4	5	6	kind
artificial	1	2	3	4	5	6	genuine
dependent	1	2	3	4	5	6	independent
excluded	1	2	3	4	5	6	included
shy	1	2	3	4	5	6	bold
competitive	1	2	3	4	5	6	not competitive
stable	1	2	3	4	5	6	changeable
warm	1	2	3	4	5	6	cold
disloyal	1	2	3	4	5	6	loyal
weak	1	2	3	4	5	6	strong
follower	1	2	3	4	5	6	leader
friendly	1	2	3	4	5	6	rude
noticed	1	2	3	4	5	6	ignored
angry	1	2	3	4	5	6	not angry

During the second phase of the experiment, you will be paired with one of the other two research participants to compete on your team against the other participant.

With whom do you wish to be paired?

(Please circle one name and leave this page on the outside of the envelope.)

---

Thank you for your cooperation.

## APPENDIX F

### RESEARCH PARTICIPANT DEBRIEFING FORM

The experimenter has fully explained to me the purpose of this research, how the experiment was conducted, the form of the deception involved, and the reasons that the deception was necessary. I have been given the opportunity to ask and have had answered all my questions concerning the experiment. I feel that I understand the rationale for the use of deception in this experiment and agree that it was necessary in order to obtain the data needed to test the hypotheses.

I further understand that the data being collected would be useless if other participants were informed in advance of their participation in the experiment. The experimenter's willingness to completely explain the research procedures and purposes was a benefit to me in that I was able to learn more about psychological research. But I realize that this benefit entails a responsibility to the experimenter to protect the validity of the research. I therefore pledge not to reveal any

information about the experiment to anyone except that it involves a competitive reaction time task.

\_\_\_\_\_  
(witness)

\_\_\_\_\_  
(research participant)

\_\_\_\_\_  
(date)