

## THE EFFECTS OF THWARTING OF AGGRESSION ON SUBSEQUENT AGGRESSION

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In the first of 2 studies, male undergraduates were either angered or not angered by a confederate and then randomly assigned to 1 of 3 conditions (no thwarting, nonarbitrary thwarting, and arbitrary thwarting) in a 2 x 3 factorial design. Following the thwarting manipulation, participants were given an opportunity to aggress against the confederate. It was hypothesized that: (a) greater aggression would be displayed by the angry participants, and (b) thwarting of both classes of aggression (angry and-nonangry) would lead to an increase in subsequent aggression. Both hypotheses were confirmed – participants in the angry condition displayed more aggression, and thwarting increased subsequent aggressivity. Additionally, the amount of aggression displayed increased linearly from the no-thwarting to the nonarbitrary thwarting to the arbitrary thwarting condition for both classes of aggression. In the second study, a delayed posttest was employed to determine the durability of aggression following the arbitrary thwarting of an instigation to aggress. It was found that the aggression aroused by arbitrary thwarting was maintained for at least one day.

*Keywords:* aggression, thwarting, influence, subsequent aggression levels, males.

According to the initial formulation of the frustration-aggression hypothesis (Dollard et al., 1939), the thwarting of a goal-oriented response (a primary instigation) produces a frustration which leads to a secondary instigation which is manifested in aggression. In subsequent work in this area (e.g., Berkowitz, 1962, 1965; Miller, 1941) it has been shown that in many cases frustration does lead to aggression. It is unclear, however, what the effect of the thwarting of an aggressive act will be. The purpose in the present study was to determine the nature of the functional relationship between the thwarting of aggression and subsequent aggressivity. More specifically, this study investigated the effect of each of two types of thwarting (arbitrary and nonarbitrary) on two classes of aggression (angry and instrumental).

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Arbitrary thwarting refers to thwarting behavior by an antagonist which is viewed by the participant as intentional or voluntary. Nonarbitrary thwarting refers to thwarting behavior by an antagonist which is viewed by the participant as unintentional or involuntary. Cohen (1955) and others (e.g., Burnstein & Worchel, 1962; Kregarman & Worchel, 1962), have suggested that only arbitrary thwarting will yield aggression. However, in none of these studies was the thwarting of an aggression act (i.e., secondary instigation) employed. Berkowitz (1966) did investigate the effect of nonarbitrary thwarting of an aggressive act on subsequent aggression. The amount of aggression displayed by a group of participants who had been angered and then nonarbitrarily thwarted in their attempt to retaliate was compared with the aggression displayed by a group of participants on the second of two unthwarted opportunities to retaliate against their antagonist. The "thwarted" participants aggressed more than did the "unthwarted" participants on this second occasion. However, an inspection of his data discloses that the significant difference Berkowitz obtained was due to a decreased amount of aggression by the unthwarted participants on their second opportunity to retaliate.

In discussing the effects of thwarting on subsequent aggression, one must also consider the type of aggressive act that has been thwarted. Buss (1961) has drawn a conceptual distinction between angry aggression, in which the goal is the injury or suffering of another individual, and instrumental aggression, in which the goal is related to the attainment of some reward or the obedience to some command (e.g., Milgram, 1965). Both classes of aggression are goal-oriented responses and, as such, their thwarting should lead to increases in subsequent aggressivity. However, certain aspects of this conceptual relationship remain unclear. First, since angry aggression seems to represent a stronger drive as measured by response strength, at least in the laboratory (Baron, 1971; Berkowitz, 1965, 1966; Hokanson & Burgess, 1962), will thwarting have similar effect on both types of aggression? Second, although there is little doubt that arbitrary thwarting is more frustrating than non-arbitrary thwarting (Cohen, 1955), what is the relative effect of these two types of thwarting on both classes of aggression? It was the intent of this study to examine these two questions. Based on prior research in this area, the following predictions were made:

**Hypothesis 1:** Aggression following anger arousal will be greater in magnitude at all levels of thwarting relative to the non-angry condition.

**Hypothesis 2:** The thwarting of both classes of aggression will increase subsequent aggressivity with aggression increasing in a linear fashion from the non-thwarting through the arbitrary thwarting condition.

## STUDY I

### DESIGN

A 2 x 3 factorial design with two between-subject variables was used. The two variables were anger arousal (angry vs. nonangry) and thwarting (arbitrary, nonarbitrary, and none). Five participants were randomly assigned to each of the six experimental conditions.

**PARTICIPANTS**

Thirty male undergraduate psychology majors served as participants. They received extra credit class points in introductory psychology in exchange for their participation. All participants signed an informed consent form prior to the onset of the experiment.

**APPARATUS**

The equipment consisted on one standard timer, two voltage meters, a display-response panel, a pair of palm electrodes, and three sets of “physiological sensing electrodes.” The standard electric timer and one voltage meter were in a room adjoining the experimental room. These were used by the experimenter to monitor the intensity and duration of the shock supposedly delivered to the victim. The second voltage meter was placed in the experimental room in a position where voltage readings were visible only to the victim. A light attached to the voltage meter was illuminated when shock was supposedly initiated by the harmer. The function of this item of equipment was to inform the victim of the intensity and duration of the shocks. Also located in the experimental room and directly in front of the subjects was the display-response panel. It contained four features: (1) six “shock intensity level” switches and a reset button; (2) an additional voltage meter which provided a visual display of shock level selected by the participant; (3) a 5-second clock with a sweep hand that moved backward to 0 seconds when activated; and (4) a response button which supposedly initiated shock. A low wooden barrier permitted visual contact between harmer and victim, but prevented direct view of the other’s equipment.

**PROCEDURE**

The experiment began with the naive participant and confederate signing an informed consent form. The experiment was presented as a study of physiological response to stress, namely, the administering and receiving of electric shock. A rigged drawing made the confederate the administrator of the shock for the first 10 trials and the recipient for the last 20 trials.

The participant and the confederate were seated across from each other with the dummy physiological sensing electrodes attached to both. Shock was delivered to the participant via electrodes attached to the palm of his hand. Pain thresholds were calibrated individually for each participant.

A trial began with the administrator selecting the shock intensity by depressing 1 of 6 switches. Shortly thereafter, the experimenter gave a verbal “ready” signal; 0.5 to 1.5 seconds later a sweep hand on the display-response panel began to move from 5 toward 0 seconds. When the administrator pushed the response button, shock was delivered to the recipient until the sweep hand reached 0. Shock was given to the participant at supra-pain threshold levels.

Ten trials were conducted in which the confederate was the administrator, following by a role-reversal. Following the completion of the experiment, the participants were debriefed completely.

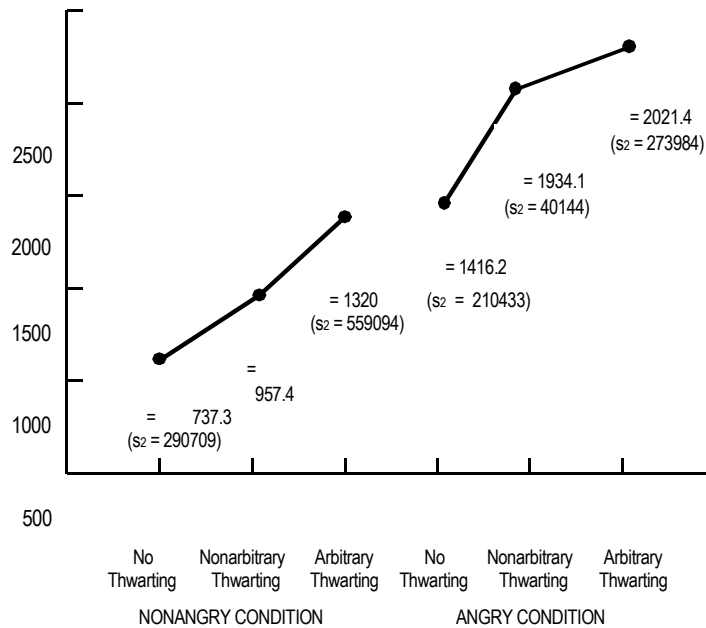
#### INDEPENDENT VARIABLES

**Thwarting** In all experimental conditions there was a 10 minute delay before the roles of administrator and victim were reversed. However, in the no-thwarting condition, participants were told that there would be such a delay immediately before role reversal. In the nonarbitrary thwarting condition, participants expected immediate role reversal, but this was prevented by an alleged equipment breakdown. In the arbitrary thwarting condition the equipment breakdown was caused by the confederate deliberately “jamming” the equipment after the 10th trial, despite an earlier comment from the experimenter that “fooling around” with the equipment might break it. In both thwarting conditions, participants were led to believe that the experiment would be terminated, but the equipment was repaired after 10 minutes.

**Anger Arousal** In the angry condition a confederate administered electric shock at a maximum intensity (6) and for a maximum duration (about 5 seconds) for the first 10 trials. This was done despite statements from the experimenter that this was not necessary. At the end of the 10-trial block, the experimenter commented on the confederate’s apparent pleasure in shocking the naive participant. In the nonangry condition, the confederate and the experimenter engaged in exactly the same behavior but the trials on which the participant was the recipient were presented as “dummy” trials in which shock would be administered only on the last trial. Pilot work had shown that only the former condition (anger arousal) reliably produced self-reports of anger in the participants.

#### RESULTS

The mean aggression score for each participant was computed by multiplying the intensity of the shock (level 1-6) by the duration (in hundredths of a second) for each of the 20 trials and then computing the mean of the products. These means were subjected to a 2 x 3 factorial analysis of variance (Winer, 1962). The two between-subject variables were: (1) anger arousal (angry vs. nonangry) and (2) thwarting (none, nonarbitrary and arbitrary). The cell means and variance are presented in Figure 1. The main effect for anger was significant ( $F = 19.55$ ,  $df = 1/24$ ,  $p < .001$ ), as was the main effect for thwarting ( $F = 3.80$ ,  $df = 2/24$ ,  $p < .05$ ). There was no significant interaction between the two variables. Fisher’s least significant difference (LSD) test (Kirk, 1968) was used for subsequent comparisons. The significance levels for all subsequent



**Figure 1:** Mean aggression scores as a function of class of aggression and type of thwarting. (Maximum aggression score possible was 3000.)

comparisons was .05. There was significantly more aggression in the angry condition than in the non-angry condition in all three thwarting conditions; however, there was no significant difference among thwarting conditions within the two anger-aroused conditions ( $LSD = 635.2$ ). Collapsing across conditions of anger arousal, it was found that the only significant difference was between the arbitrary and no thwarting conditions ( $LSD = 449.14$ ).

A multiple regression analysis (Li, 1964) was performed to determine the degree of linear relationship between the independent variables (anger arousal and thwarting) on the one hand, and the dependent variable (aggression) on the other. A significant linear trend was found ( $F = 14.74$ ,  $df = 2/27$ ,  $p < .001$ , multiple  $R = 0.72$ ). This linear trend is reflected in Figure 1. Additionally, both variables contributed significantly to the linear trend. For anger arousal, the  $t$  value for the beta weight was 4.62 ( $df = 27$ ,  $p < .001$ ); for thwarting the value was 2.85 ( $df = 27$ ,  $p < .01$ ).

#### DISCUSSION

The results of this study supported both hypotheses presented in the introduction. With regard to the first hypothesis, the amount of aggression displayed by the participants was significantly greater in the angry than in the nonangry condition. This finding held across all levels of thwarting and is in accord with prior research in this area (Baron, 1971; Berkowitz, 1965, 1966; Hokanson & Burgess, 1962).

The second hypothesis was that the thwarting or aggression would increase aggression, and that aggression would increase from the no-thwarting through the arbitrary thwarting condition. Despite the fact that the no-thwarting/nonarbitrary thwarting difference and the nonarbitrary thwarting/arbitrary thwarting differences were not statistically significant, the second hypothesis was substantially confirmed. Visual inspection of Figure 1 and consideration of the multiple regression analysis given in the results section clearly shows that these two variables summed in a linear fashion, and that both variables contributed significantly to the linear trend. Thus, it would seem that as the degree of thwarting of aggression increased, subsequent aggression also increased.

In considering the interrelationship between the effect of the anger manipulation and the effect of the thwarting manipulation, one must allow for the possibility that the two manipulations are not discrete. That is, it was assumed that attack by the confederate (via administration of electric shock) produced anger in the participant and that the thwarting of immediate attempts to retaliate produced frustration. It is possible, however, as Berkowitz (1962) has suggested, that attack (the supposed anger-arousing operation) had frustrating properties. The self reports of the participants in the debriefing provided no reliable data as to which of these positions is more tenable. Although participants in the pure attack condition described their predominant emotion as "anger", one cannot exclude the possibility that the anger was the result of the frustrating properties of being attacked. Thus, it is not possible to state definitively if: (a) both the independent variables produced frustration and thus the linear trend observed is a function of successively greater amounts of frustration, or (b) the attack manipulation produced anger; the thwarting manipulation produced frustration and the two summed in a linear fashion. This conceptual problem does not, however, seem to invalidate the results of the study since both conceptualizations would account for the obtained results.

## STUDY II

In the preceding study, as in the vast majority of studies in this area, the dependent measure was taken immediately after the experimental manipulation. Thus, there are no data on the durability of the aggression observed in Study I.

In the second study, participants were angered by the confederate and then arbitrarily thwarted in their attempt to retaliate. Three delay periods were used: 10 minutes, one day, and one week.

### EXPERIMENTAL DESIGN

The participants were randomly assigned to 1 of 4 conditions: (1) No anger-no thwarting (control condition); (2) anger-arbitrary thwarting, 10-minute delay; (3) anger-arbitrary thwarting, one-day delay; and (4) anger-arbitrary thwarting, one-week delay.

**PARTICIPANTS**

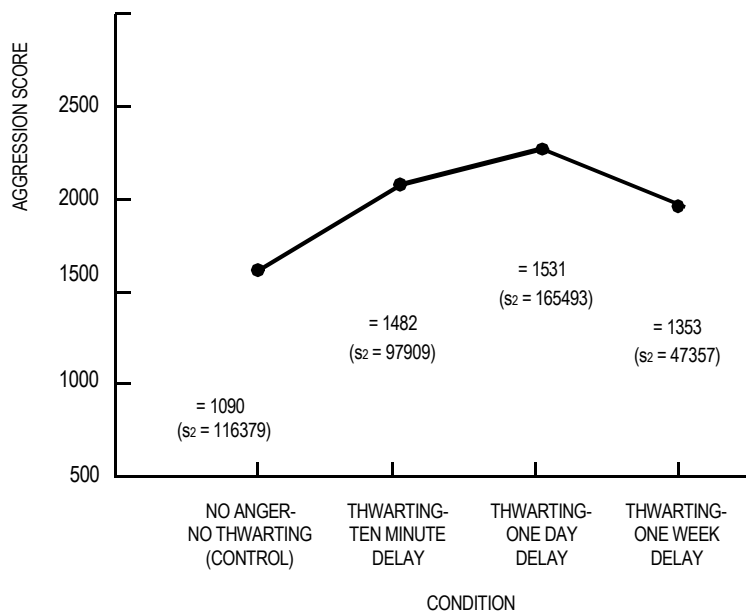
Thirty-one male undergraduate psychology majors served as participants in exchange for extra credit class points. Prior to the onset of the experiment, all participants signed the informed consent form described in Study I. Going from experimental conditions (1) to (4), the sample sizes were 9, 10, 6, and 6, respectively.

**PROCEDURE**

The apparatus employed and the instructions given were exactly the same as in Study I. Experimental condition (1) in this study was identical with the no-anger/no-thwarting condition in Study I. The delay periods were 10 minutes, one day, and one week in experimental conditions (2) through (4), respectively. With the exception of the increased delay periods in conditions (3) and (4), the procedure was identical with that used in Study I.

**RESULTS**

The mean aggression score for each participant was computed in the same manner as in Study I and subjected to a one-way analysis of variance. Fisher's least significant difference test was used for all subsequent comparisons with the level set at .05. The cell means and variances are presented in Figure 2.



**Figure 2:** Mean aggression scores as a function of experimental condition. (Maximum aggression score possible was 3000.)

A significant  $F$  ratio was obtained ( $F = 3.056$ ,  $df = 3/27$ ,  $p < .05$ ). The post hoc comparisons disclosed that the nonaroused group displayed significantly less aggression than the 10-minute and 1-day delay groups. Although the 1-week delay group did not differ significantly from the nonaroused group, the difference was in the predicted direction.

#### DISCUSSION

The results of the second study suggest that the thwarting of an instigated aggressive response leads to an increase in the instigation to aggress. This increase was maintained for at least one day and there was some tenuous evidence that it was still operative after one week. The tremendous practical difficulties in arranging 2-day, 3-day, etc., posttests prevented the making of any more definitive statements on the durability of the effect.

There are at least two general approaches which can be taken in explaining the maintenance of the aggressive response over time. The first, a drive explanation, is simply that the thwarting activated an aggressive drive which was maintained over time. Assuming that the individual was not able to release his aggressive drive energy in the interim, he would return to the lab and demonstrate a heightened aggression. However, it is felt that a more parsimonious explanation would be that the confederate and laboratory environment acquire the cue properties to elicit aggression. Hence, when the participant returns for session two, the stimulus situation reinstigates the aggressive response.

In either case these results would suggest that the instigation of an aggressive response may have an effect well beyond the immediate temporal instance.

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