

THE MITIGATION OF AGGRESSION: THE INFLUENCE
OF TYPE OF INTERVENTION, TEMPORAL DELAY,
AND INDIVIDUAL DIFFERENCES
IN PERSONALITY

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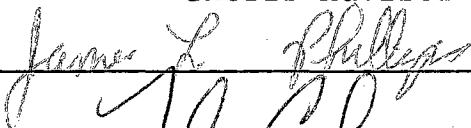
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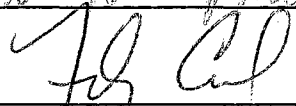
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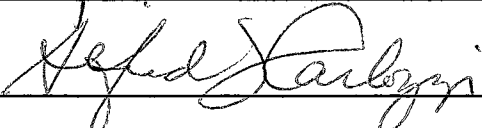
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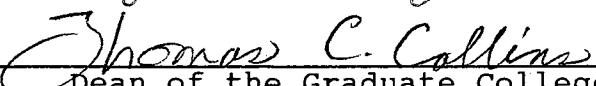


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The Mitigation of Aggression:
The Influence of Type of Intervention,
Temporal Delay, and Individual Differences
in Personality
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Running head: THE MITIGATION OF AGGRESSION

Abstract

This study investigated the effectiveness of empathy, self-awareness, and touch in reducing aggression, and the temporal stability of the revealed effects. Measures of trait aggression, trait empathy, and positive functioning were included for examination. Independent variables consisted of the three interventions and a control group, and three temporal delay periods (0, 24 hours, and 7 days delay) separating the institution of treatments and the assessment of aggression. Sixty female subjects were randomly assigned to one of the twelve groups. Anger was instigated during an interaction with a confederate, followed by the institution of one of the respective treatments. Two aggression measures were subsequently employed: the reward levels provided to the confederate in an aggression machine procedure, and written interpersonal ability ratings of the same confederate. Results revealed that only the empathy intervention significantly mitigated aggression, and this mitigation was maintained across the seven day delay period. Trait aggression was positively correlated with fantasy aspects of empathy, and negatively correlated with empathic concern/sympathy for others.

I. Introduction

Caprara, Fromme, Zelli, Romeo, and Carrabbia (1987) investigated the efficacy of various theoretically derived aggression mitigating interventions in a population of Italian females. In the study, anger was first instigated by exposing subjects to a self-esteem provocation. This procedure involved the subjects being given a negative personality evaluation by experimental confederates on a first impression rating scale. After the anger instigation phase of the experiment, the subjects and confederates were requested to return the following day (i.e., 24 hours later) to complete a "communication" task. The subjects were then exposed to an aggression mitigating intervention in the form of written instructions, and were subsequently given the opportunity to express aggression toward the confederate. Two aggression measures were utilized in the study: the reward levels subjects gave to the experimental confederates for successful performance on an "extrasensory perception" task (i.e., the communication task) utilizing an aggression machine procedure, and the subject's written ratings of the confederate's interpersonal abilities. Six aggression mitigating

interventions were compared with a control group. The mitigation conditions were based on various theoretically derived models of therapeutic change and consisted of:

1) cognitive reframing instructions, 2) historical self-awareness instructions, 3) historical other-awareness instructions, 4) experiential self-awareness instructions, 5) experiential other-awareness instructions, and 6) touch interactions.

In the cognitive reframing condition the subjects' attention was first focused on the previous negative personality evaluation, and they were then provided a socially acceptable rationale for the negative evaluation. Both the historical self-awareness and the historical other-awareness conditions were based on psychodynamic therapeutic approaches. In these interventions the subjects were instructed to "reexperience" the time of provocation from either their own perspective or the confederate's perspective. These interventions were designed to provide subjects an opportunity to "work through" negative feelings that may have accrued during the anger instigation phase of the experiment. In contrast, in the experiential conditions the subjects focused on either their own or the confederate's current

emotional situation. In the touch condition subjects gave the confederate a hug just prior to the assessment of aggression.

Results revealed that only the touch and the experiential self-awareness conditions differed significantly from the control group on the ability to mitigate aggression on the first aggression measure (i.e., reward levels). The experiential other-awareness condition approached significance ($p < .06$). No significant effects were revealed for the interpersonal ability ratings of the confederates.

The primary interest of the present study was to further examine these findings in an American population. Although there have been numerous studies which have examined the effectiveness of various aggression mitigating procedures at the time of provocation, little research has been undertaken, particularly in a laboratory setting, to examine comparatively the temporal stability of the procedures under investigation. Based on previous results reported by Caprara, Renzi, Mazzotti, Pastorelli, and Zelli (1985), indicating that anger was maintained for a period of up to seven days following provocation, the present study examined the stability of aggression

mitigating influences, by assessing aggression at three points across a seven day time period following the institution of the interventions (i.e., 0 delay, 24 hours delay, or 7 days delay). As such, a primary interest of the present study was to examine the temporal stability of any effects associated with the aggression mitigating interventions. In addition, trait measures of aggression, empathy, and positive functioning were included to examine whether individual differences in personality influence amenability to various mitigation strategies than others, and how they might be interrelated.

In an attempt to increase the realism of the quasi-therapeutic setting, modifications were made in the methodology utilized by Caprara et al. (1987). Although the aggression mitigating interventions were based on the written instructions employed by the Caprara group, the interventions utilized in the present study were modified to resemble the verbal interactions that occur in actual therapeutic settings (i.e., the subject and experimenter engaged in a therapeutically analogous verbal dialogue). In addition, both historical conditions, and the cognitive condition were excluded from the present study. As stated, the Caprara group

instituted the aggression mitigating interventions twenty-four hours after the anger provocation, and just prior to the assessment of aggression. As such, this delay period provided the rationale for having the subjects "reexperience" the anger provocation. Since in the present study the interventions were presented immediately following the anger instigation, there was essentially nothing to reexperience (i.e., the self-esteem provocation had occurred only moments prior to the institution of the intervention), and, as such, design limitations precluded the inclusion of the historical conditions. In addition, the cognitive reframing condition was excluded due to an absence of significant effects in the Caprara study. The experiential other-awareness condition was included in the present study because this intervention was conceptualized as actually representing an empathic condition, which was of primary interest to the investigator. For clarity, the experiential other-awareness condition will subsequently be referred to as the Empathy condition. In addition, for simplicity, the emotional self-awareness condition will be referred to as the Self-awareness condition. As such, the present study examined the

aggression mitigating effects of self-awareness, empathy, and touch, and the stability of any revealed effects, by assessing aggression at various times across a seven day time period.

Literature Review

Definition of Aggression

A central problem to the study of aggression has been the perplexing question of how aggression should be operationally defined. First, two types of aggression have been differentiated based on the motivation for harm-doing behavior. In the first type, referred to as instrumental aggression (Geen, 1990; Berkowitz, 1993), harm-doing results from an attempt to achieve a particular goal (e.g., to obtain money, for self-defense, to accomplish medical procedures), rather than injuring the victim. Although harm may occur to the victim, obtaining personal gain rather than expressing negative emotions toward the victim is seen as motivating the behavior. In contrast, in the second type, referred to as emotional or affective aggression, harm-doing is viewed as an expressive reaction to the underlying emotional state of anger, and the primary intent is to harm the victim (i.e., retaliate for perceived

mistreatment). Since in the present study the subjects were provoked in the form of a negative personality evaluation, and no tangible personal gain could be obtained by displaying increased aggressive behavior, dependent variables were conceptually defined as measuring affective/emotional aggression.

Secondly, although researchers have been in agreement regarding the above distinction, there has been disagreement regarding what criteria should be employed in determining whether negative behaviors should be viewed as aggressive. Two opposing views have predominated. According to Buss (1961), aggression is simply defined as harm-doing behavior. Although this approach has the advantage of making the operationalization of aggressive behavior straightforward, it has the obvious disadvantage of not giving consideration to the motivation for harmful behavior, and consequently, behaviors not typically viewed as aggressive are defined as such (e.g., accidents/mistakes). An alternate approach has been to define aggression as actions or behaviors that are motivated by the intention to inflict harm (Feshbach, 1970; Bandura, 1973; Berkowitz, 1974; Baron, 1977; Geen, 1990). In this view, however, the attribution of

aggressive intent is dependent upon the subjective judgment of an outside observer, and objectivity may be compromised. At the present time, all definitions of aggressive behavior have been shown to have limitations, and there has been no unequivocal resolution to this problem (Tedeschi, Smith, & Brown, 1974; Megaree, 1993). It has been primarily left to researchers investigating the aggression construct to use their own judgment in resolving this issue. In the present study, consistent with Caprara et al. (1987), an attributional approach was used because it takes into account the interpersonal dynamics occurring within dyads (the subjects were exposed to an anger provocation by experimental confederates), and seems most consistent with contemporary laboratory approaches to aggression research. In this regard, Berkowitz and Donnerstein (1982), responding to complaints that laboratory aggression research based on attributional definitions lacked external validity, stated, "The essential feature of the laboratory behavior for the subjects, the meaning their actions have for them, is that they intentionally are hurting their victims. This intentional harm fits what we regard as the best definition of "aggression"

and also provides the measure with a fair degree of external validity" (p. 253).

Aggression Machine Methodology

Laboratory studies of aggression have largely employed procedures developed by Buss (1961). In his aggression machine procedure, aggression is assessed as the level of noxious stimuli (e.g., shock, noise, or heat) that subjects deliver to a target in response to failures at a given task. Numerous studies have employed this paradigm and several reviews have examined the validity of the procedure. Edmunds and Kendrick (1980), after a comprehensive review of studies employing aggression machine methodology, concluded that the procedure has the advantage of utilizing an operational definition of aggression that is consistent with an attributional view, that the measures are objective and quantifiable, and that evidence existed supporting the validity of the measure. In regard to the latter conclusion, Wolfe & Baron (1971) examined the degree to which aggression machine scores were related to overt aggression in naturalistic settings. In the study, a population of violent young adult prisoners (who had a documented history of social aggression), were compared

with a group of matched college students (who did not have a history of aggressive behavior) on the expression of aggression. Utilizing an aggression machine procedure, aggression was operationalized as the level of shock that subjects provided to a confederate who had previously insulted them. Results revealed that the prisoners exhibited significantly more shock than the student subjects. The researchers concluded that results from the aggression machine procedure were positively correlated with naturalistic indices of aggression, and that the procedure was a valid means to measure aggression. In a related previous investigation that supports this conclusion, Shemberg, Leventhal, and Altman (1968), utilizing an aggression machine procedure, found that highly aggressive male and female teen-agers gave significantly higher levels of shock to a confederate when compared to teen-agers rated low in aggressivity. Finally, Baron (1977) and Geen and Donnerstein (1983), in reviews of studies employing aggression machine procedures, also concluded that there was ample empirical evidence to support the validity of the procedure.

In order to preserve the internal validity of the aggression measures used in aggression machine procedures

(i.e., to control for response biases), a central requirement is that the subject be unaware that the assessment of aggressive behavior is the goal of the investigation. Historically, this has been accomplished by informing subjects that their task was to discipline a target person for mistakes made on an assigned task (Buss, 1961). However, Baron and Eggleston (1979) observed that using this approach to obtain the required deception for the procedure might actually connote a nonaggressive meaning to the delivery of punishment (i.e., that the subjects were actually helping the target by punishing them). It was believed that although the target was being exposed to painful stimuli, aggressive intent could not be inferred, and, if this was the case, the validity of the aggression measure was compromised.

Caprara, Passerini, Pastorelli, Renzi, and Zelli (1986) attempted to address the deception problem, as well the way aggressive behavior is operationalized in a series of experiments. Utilizing an attributional approach to define aggressive behavior, they examined the efficacy of using a negative evaluation of a subject's personality as a means of provoking an anger condition in which a desire for retaliation might result. A further

interest was the effect that mode of retaliation had on the expression of aggression. In their view, even if a person is instigated to aggress, there might be a psychological unwillingness on the part of the aggressor to inflict physical harm on another. They reasoned that physical punishment might be seen as either too severe or too obvious, resulting in unpleasant emotional reactions for the aggressor (e.g., anxiety or guilt), which could mitigate the expression of aggression and compromise the validity of the measure. As such, it was hypothesized that making the expression of aggression less obvious or more psychologically palatable would minimize the possible mitigating influences associated with inflicting physical harm on another, and would result in a more valid measure of expressed aggression.

In order to examine this hypothesis, Caprara et al. (1986) developed an approach based on a modification of the Buss aggression machine procedure. In this approach, subjects provided "feedback" to the confederate in the form of supposed financial rewards for successful performance on a communication task. As such, the expression of aggression was measured by the degree in which subjects withheld the maximum amount of rewards

possible, rather than exposing the confederate to overt physical harm. In consequence, since the subjects were not requested to "discipline" the confederate for poor performance, the potential confounding of the aggression measures by response biases (e.g., providing punishment to help them) would be expected to be minimized.

In the experimental procedure, the "extrasensory perception" task required the confederate to "guess" a series of colors the subject was attempting to "communicate." In actuality, there was a standard sequence of correct and incorrect responses provided to the subject by the confederate. Using an aggression machine procedure (i.e., subject and confederate in separate rooms with communication via manual manipulation of switches displaying visual signals), feedback was communicated to the confederate in the form of lights indicating correct or incorrect responses. For correct responses, subjects gave reward points that were worth a supposed financial remuneration to the confederate. Reward levels were communicated to the confederate as "feedback" after each correct response. Aggression was assessed as the difference between the maximum reward possible and the subject's actual reward level, summed

across trials. The researchers reasoned that since the confederate had performed a trial with the highest degree of success when making a correct response (i.e., had correctly identified the target color), any reward level below the maximum represented negative feedback, and hence, an expression of aggression.

Employing this procedure, the researchers performed two experiments to investigate both the validity of using a negative personality evaluation as a means of anger instigation, and the usage of reward withholding as an approach to assessing aggression. In the first study, male and female subjects were randomly assigned to either a self-esteem threatening condition (were exposed to a negative personality evaluation by a confederate) or to a self-esteem nonthreatening condition (a control group). They then performed the "extrasensory perception" task, with the administration of shock as the first aggression measure. A second aggression measure consisted of the subject's rating of the confederate's: 1) interpersonal abilities, 2) reliability in following instructions, and 3) suitability for regular employment as a researcher on the university staff. These ratings were made on a ten-step Likert scale, immediately

following the aggression machine procedure. For the first aggression measure (shock), the results indicated a significant main effect only for the self-esteem threatening condition ($p < .05$), with the insulted subjects providing higher shock levels than noninsulted subjects. This finding provided support for the validity of the anger instigation procedure. For the second aggression measure (evaluations), no significant differences were revealed between groups. The researchers hypothesized that this may have been the result of the subjects having experienced a negative emotional reaction to having previously delivered shock to the confederate, and the more favorable evaluation scores represented a need to compensate for such harsh treatment.

In the second study, procedures were identical except that reward levels were used instead of shock levels to operationally define aggression. The second aggression measure was the same as in the first experiment. The results also yielded a significant main effect for the self-esteem threatening condition on the first aggression measure ($p < .01$). Consistent with expectations, the insulted subjects provided less rewards than the noninsulted group. Also, and contrary to the first

experiment, the same effect (less favorable evaluations) was revealed for each of the three personality evaluations. The researchers suggested that this finding may have provided support for the hypothesis that the absence of physical punishment in the first aggression measure mitigated negative emotional reactions by the subject, and resulted in less need for compensatory positive ratings on the second measure.

The results from these studies provide support for the validity of using a negative personality evaluation as a means to instigate an anger condition, and for the reward withholding procedure as an effective approach to operationalizing expressed aggression. As such, the present study employed Caprara's modification of the Buss aggression machine procedure to create, in vivo, a situation in which anger could be instigated and aggressive behavior examined.

Mitigation Interventions:

1. Self-awareness

A central tenet of humanistic and existential approaches to psychotherapy is the importance of "experiencing" in producing therapeutic change. Although there has been a paucity of experimental research in

this area, studies have generally shown that the experiencing of emotion in psychotherapy is associated with positive outcome (see Greenberg & Safran, 1987). In addition, the ability to express emotional arousal has also been associated with change processes.

A. The "experiencing" of emotion

Researchers interested in examining empirically client-centered approaches to psychotherapy were the first to examine "experiencing" as a construct. The Experiencing Scale (Klein, Mathieu, Gendlin, & Kiesler, 1969) has been a frequently used instrument in these studies to assess the status of client involvement in therapy sessions. The instrument employs a seven-point scale to rate either tape recordings or transcripts of psychotherapy sessions. Lower ratings reflect impersonal or superficial involvement, midpoint ratings indicate a description of personal feelings (a shift from attending outwardly to focusing internally), and at higher scale ratings, affective and cognitive processes merge to bring about an integration of material, which results in problem-solving or insight. In general, the scale attempts to measure the process of moving from an external to an internal affective focus, which is presumed to

be essential in facilitating change.

The Experiencing Scale has been used to examine process and outcome in a variety of settings and with assorted normal and clinical populations. In one representative study, Rogers, Gendlin, Kiesler, and Truax (1967) compared 14 schizophrenics in therapy with 14 matched nonpatient controls. Experiencing Scale ratings were made by four judges, averaged across 30 interviews, and over all treatment sessions. The results revealed that "experiencing" was associated with change on several indices including: absence of depression, improvement on the Sc, Hs, and Pd scale of the MMPI, clinicians evaluation of change, and percent of time deinstitutionalized. Orlinsky and Howard (1978) reviewed the literature of studies utilizing the scale and found that of ten studies reviewed, nine revealed positive correlations between higher levels of experiencing and positive therapeutic outcome. Other studies have also supported these results (Karon & VandenBos, 1970; Kiesler, 1971; Orlinsky & Howard, 1986; Klein, Mathieu-Coughlin, & Kiesler, 1986). Finally, Luborsky, Chandler, Auerbach, Cohen, and Bachrach (1971), in their classic meta-analysis of therapeutic outcome studies found, that of all process

measures, experiencing was the best predictor of outcome (i.e., change).

Empirical support for the importance of "experiencing" has also been demonstrated in behavioral approaches to the treatment of anxiety disorders (see Barlow, 1988). Two procedures, implosion and flooding, involve the client being intentionally exposed to high levels of emotional arousal (e.g., anxiety). Numerous studies have shown these procedures to be effective in treating a variety of fear-avoidance problems including: post-traumatic stress disorder (Boudewyns & Lewis, 1975; Keane & Kaloupek, 1982); agoraphobia (Jansson & Ost, 1982; Barlow, O'Brien, & Last, 1984; Jansson, Jerremalm, & Ost, 1986); obsessive-compulsive disorder (Foa, Steketee, & Ozarow, 1985); and specific simple phobias (Crowe, Marks, Agras, & Leitenberg, 1972; Turner, 1984; Marks, 1987).

B. The expression of emotion

A second area that has supported the positive influence of emotional experience on therapeutic outcome has been studies of emotion expression. Historically, these studies have examined the influence of cathartic processes in therapeutic analogue experiments. Catharsis

is typically defined according to the psychoanalytical view that emotions become stored and accumulate until discharge is possible. When discharge is blocked, a heightened state of arousal occurs, with a greater propensity for poorly modulated expressions of affect. Catharsis is the mechanism by which discharge occurs. As such, catharsis leads to tension reduction, resulting in homeostatic equilibrium. Several studies have examined the influence of catharsis on change processes. Nichols (1974) compared "feeling expressive" therapy with traditional psychodynamic psychotherapy. The results indicated that high emotional dischargers improved significantly more than low dischargers on a measure of goals.

In an attempt to circumvent methodological problems associated with analogue studies (e.g., subjective ratings of outcome), Karle, Corriere, & Hart (1973) used physiological measures to examine the effects of expressive therapy. Using blood pressure, pulse rate, and rectal temperature as measures of tension, they found decreased levels after exposure to primal therapy sessions. This study demonstrated the immediate effects of emotion expression. In a subsequent study using the

same measures, Karle, Corriere, Hart, Gold, Maple, & Mopper (1976) examined the long-term effects of emotional expression in therapy. They found that patients experienced in "Feeling Therapy" (had been in therapy for 3 or more years) displayed lower levels on all measures when compared to inexperienced patients (2 to 4 months in therapy) across a ten-day period. Other studies have supported the positive influence of emotion expression on therapeutic change (Goldman & Eisler, 1956; Dittes, 1957; Green & Murray, 1975; Bohart, 1977; Pierce, Nichols, & Dubrin, 1983).

Lastly, recent research examining processes involved in psychosomatic illness has provided support for the influence of emotion expression on change processes. Pennebaker, Hughes, and O'Heeron (1987) investigated the short-term autonomic correlates of disclosing traumatic events (i.e., confession). According to their inhibition-disease model, "inhibiting or otherwise restraining ongoing behavior, thoughts, and feelings requires physiological work" (p. 781). As such, inhibition results in increased autonomic nervous system activity, which, over time, acts as a low level cumulative stressor. The cumulative effect of this process is the

development of stress-related diseases. Utilizing skin conductance levels (SCL) and cardiovascular measures to assess autonomic nervous system activity, the researchers hypothesized that high disclosers of traumatic experiences would display greater decreases in SCL (reflecting disinhibition) and increases in cardiovascular activity (reflecting behavioral activation) during disclosure than low disclosers. Two studies were employed to examine this hypothesis. In the first study, subjects were asked to talk into a tape recorder about either traumatic experiences or trivial topics. The subjects were then divided into four groups based on disclosure level and type of topic discussion. These included: high disclosure/trivial topic, high disclosure/profound topic, low disclosure/trivial topic, and low disclosure/profound topic groups. The results supported the experimental hypotheses. The second study further extended these results by examining the influence of talking to another person, as opposed to talking into a tape recorder, and the physiological changes that result from thinking versus talking about events. The results revealed that both talking to someone and thinking about traumatic events led to lowered SCLs for high disclosers.

In a series of subsequent investigations, Pennebaker and Susman (1988) examined the role of trauma disclosure on long-term psychosomatic processes. Based on their inhibition-disease model, the researchers hypothesized that subjects with unreported traumas would display more adverse health effects, have higher levels of rumination than those who had confided, and further, that trauma disclosure would result in improved health and decreased rumination. Initially, the researchers employed questionnaire measures to obtain trauma and disclosure information from a population of corporate executives. The results from the study revealed that trauma-no disclosure subjects reported significantly more major and minor health problems than either no trauma or trauma-disclosure subjects. In a subsequent investigation (reported in the same study), the researchers obtained disclosure information from a group of individuals whose spouses had either been killed in a car wreck or who had committed suicide. This information was obtained approximately one year after the trauma. The results supported the experimental hypothesis that significantly more health problems would be reported by the no disclosure group. Anecdotal results reported by Grinker

and Spiegel (1945), using narcosynthesis in treating combat traumatized World War II soldiers, lends non-empirical, historical support for the view that the expression of emotion linked to traumatic events facilitates overcoming the negative psychological effects from such events.

As applied to the study of aggression, Dollard, Doob, Miller, Mowrer, and Sear's (1939) frustration-aggression hypothesis has provided the theoretical framework for the prediction that facilitating the discharge of affect would mitigate the subsequent expression of aggressive behavior. Although contemporary researchers have concluded that cathartic effects are weak in reducing subsequent aggression (see Tedeschi, 1983), several early studies have revealed positive correlations between emotional catharsis and the mitigation of aggression (Konecni, 1972; Holt, 1970).

More germane to the present study is the role that emotion is seen to play in the Gestalt approach to therapeutic change. In this approach both awareness and the expression of emotion, rather than discharge are seen as necessary for change. The awareness/experiencing of emotion is viewed as central

to the change process rather than simply as a preliminary to catharsis. Avoidance of emotion is seen as at the root of maladaptive behavior. As such, emotions serve an integrating function, and awareness rather than emotional discharge results in the modulation of affect (Greenberg & Safran, 1987). Consistent with this approach, Bohart (1977) compared role-play (viewed as combining insight with the experiencing of affect), emotional discharge, and an intellectual analysis condition, with a control group on their effectiveness in reducing aggression. In the role-play condition subjects employed the Gestalt Two-chair technique. In this procedure the subjects first role-played expressing anger toward a confederate who had provoked them, then role-played the provocateur as a means of developing insight into both the self and other. The results revealed that the role-play condition was significantly better than all other conditions in a subsequent aggression machine procedure.

The significance of the above findings to the present study is that the experiencing of emotion and the subsequent ability to express emotion has been shown to be related to change processes. As such, in the

self-awareness aggression mitigating intervention, the subjects were asked to first become aware of their emotional reactions to the experimental situation (i.e., the self-esteem provocation) through reflection, and then to express those feelings in a therapeutic analogue situation.

2. Empathy

Empathy is generally viewed as the sensitivity of one person to another person's feelings or situation. However, there has been disagreement among researchers as to the mechanism by which social sensitivity occurs. Researchers have emphasized both cognitive and affective processes. In the cognitive view, empathy results from accurate perspective-taking, and is related to social responsiveness and acuity (Hogan, 1969). Researchers emphasizing affective processes view the vicarious experiencing of another's feelings as being central to the empathy process (Mehrabian & Epstein, 1972). More recent researchers have proposed that empathy occurs through an interaction of cognitive and affective abilities (Coke, Batson, & McDavis, 1978; Davis, 1980).

Affective empathy has been associated with a variety

of prosocial behaviors. Studies employing questionnaire measures to assess the construct have revealed positive correlations between affective empathy and helping behaviors (Barnett, Howard, King, & Dino, 1981; Mehrabian & Epstein, 1982), moral conduct (Eisenberg-Berg & Mussen, 1978; Latourneau, 1981), and social awareness (Eisenberg-Berg & Mussen, 1978). As such, it might be expected that the ability to empathize with another person would have a mitigating influence on the expression of aggression toward that person. Several studies have examined this hypothesis. Miller and Eisenberger (1988) conducted a meta-analysis of studies examining the influence of empathy on aggressive behavior. Although the study examined several different approaches to operationalizing empathy and aggression, the results regarding the relationship between affective empathy and externalized negative behaviors is most relevant to the present investigation. Overwhelmingly, these results supported the hypothesis that low levels of empathic responsiveness were associated with a greater amount of externalized negative behaviors. Based on the results from the study, the researchers concluded that "training of the affective components of empathy

may promote the reduction of negative social behaviors as well as improve individual's prosocial interactions with others" (p.334).

The overall results from these studies provide empirical evidence that fostering empathic emotional responses toward another person is an effective approach in mitigating the expression of negative social behaviors. In the present study, consistent with Caprara et al. (1987), empathy was defined according to the affective view. However, methodological modifications were made for the purposes of the present study. Most previous empathy studies have examined the subject's sensitivity to the confederate's responses to negative stimuli during the aggression measures (e.g., pain), and not empathy for the emotions or situations that may have motivated their mistreatment. In the present study an attempt was made to have subjects empathize with the confederate's presumed emotional state at the time of the self-esteem provocation as an aggression mitigating approach. An alternate exploratory interest was to examine the relationship between trait empathy (as assessed by a self-report personality questionnaire) and aggressive behavior.

3. Touch.

Previous studies examining the influence of touch in interpersonal exchanges have revealed both positive and negative results. Aguilera (1967) found that patients exposed to both touch and verbal communication, employed by nurses in a psychiatric setting, displayed increased verbal interaction, had greater rapport, and exhibited more approach behaviors toward those caregivers than patients exposed exclusively to verbal interaction. In a related investigation, Pattison (1973) trained counselors to employ hand-touching when attempting to elicit more information from therapy clients. Results revealed that clients exposed to touch interactions were more self-disclosing than those who interacted with counselors who did not utilize touching behaviors. Fisher, Rytting, & Heslin (1976) also found that subjects displayed more positive responses toward a confederate after being exposed to a momentary touch in a library setting. The subjects in the touch condition rated their affective state and the confederate more positively than those in a no touch group. Other studies have revealed that touch: led to more favorable ratings of confederates by subjects after touch interactions than those in verbal

or visual interactions (Bardeen, 1971 (cited in Fisher et al., 1976); Boderman, Freed, & Kinnucan, 1972); led to a decrease in palmar sweat index for subjects receiving and providing back rubs (Geis & Viksne, 1972); enhanced prosocial behavior (Kleinke, 1977); increased compliance (Willis & Hamm, 1980); enhanced ratings of counselor effectiveness (Alagna, Whitcher, Fisher, & Wicas, 1979); and fostered altruistic behavior toward a college peer (Patterson, Powell, & Lenihan, 1985). Also, as previously discussed, Caprara et al. (1987) found touch to be one of two aggression mitigating interventions that differed significantly from a control group in reducing aggressive behavior.

Touch has also been associated with negative effects. Sussman and Rosenfeld (1978) found touch, received from a stranger, to be generally experienced as intrusive and threatening. In contrast to Alagna et al. (1979), Stockwell and Dye (1980) found that ratings of counselor effectiveness was not enhanced by touch. Nicosia and Aiello (cited in Harper, Wiens, & Matarazzo, 1978) found that subjects exposed to touch in a crowded elevator showed lower frustration tolerance than those crowded but not touching. Other studies have also supported

these negative findings (Hewitt & Feltman, 1982; Hoddinott & Follingstad, 1983; Nicosia, Hyman, Karlin, Epstein, & Aiello, 1979).

Gender differences have played a part in these inconsistent findings. Stier and Hall (1984) conducted a comprehensive review of studies examining gender differences associated with touch. To summarize the forty-three studies reviewed, the researchers employed percentile ratings to answer several empirically and theoretically derived propositions regarding touch (i.e., percent of studies that confirmed/disconfirmed the propositions). Although both positive and negative results were revealed, the general findings suggested that females initiate and receive touch more than males, and engage in more same sex touching than male counterparts.

Most relevant to the present investigation, however, is how touch is perceived by females. A more comprehensive review of several previously cited studies revealed that females: perceived momentary touch more favorably than males (Fisher et al., 1976)); reported more positive feelings for a confederate in a touch versus no touch condition (Susman and Resenfield, 1978); and

reacted more positively to touch as employed by nurses in a hospital setting (Whitcher and Fisher, 1979). Major and Heslin (1982) also found that females provided the highest ratings of attractiveness on slides depicting touching versus nontouching dyads. Finally, Major (1981), in a review of the literature on gender and touch, concluded that a number of studies supported the general finding that females respond more favorably to touch. This conclusion suggests that touch, occurring between females, might be effective at reducing negative interpersonal behaviors, including aggression. However, with the exception of Caprara et al. (1987), no studies were found that manipulated touch as an aggression mitigating intervention.

The Stability of Aggression Mitigating Interventions

Few studies have examined the temporal stability of aggression mitigating interventions. Studies that have examined this question have primarily assessed the efficacy of the interventions by comparing pre and post test scores on various indices of aggression during the course of, or following a period of treatment (Hazaleus & Deffenbacher, 1986; Deffenbacher, Story, Stark, Hogg, & Brandon, 1987). One problem with these and other

studies is that the subjects have not been typically anger aroused in an experimental manipulation involving interactions with other people. Rather, subjects have been selected based on their self-report of anger problems and/or scores on personality questionnaires. As such, anger has not been initiated and aggression assessed in actual, ongoing social situations, where aggressive behavior is likely to occur. A primary interest of the present study was to examine how aggression mitigating interventions are affected by temporal delays separating the institution of the intervention and the opportunity to retaliate (i.e., express aggression) in actual interpersonal relationships. In Caprara et al. (1987), aggression was only assessed twenty-four hours after the anger instigation, but immediately following the institution of the aggression mitigating interventions. In the present study, the interventions were provided immediately following the anger instigation, but aggression was assessed at various times across a seven day delay period.

Individual Differences in Personality

Huesmann, Eron, Lefkowitz, and Walder (1984), in a 22 year longitudinal study, have convincingly demonstrated

that aggressiveness, when developed early, has a high degree of probability in leading to adult aggressive behavior. From the results of the study, the researchers concluded that "whatever its causes, aggression can be viewed as a persistent trait that may be influenced by situational variables but possesses substantial cross-situational consistency." (p. 120).

Caprara (1983, 1986) has attempted to identify stable personality traits related to a propensity for social aggression. Toward this goal, he and his associates have developed several scales designed to assess both cognitive and emotional traits associated with a tendency to react aggressively in response to provocation. Beginning with an attempt to validate the Italian version of the Hostility Inventory (Buss & Durkee, 1957), the researchers found that only the Irritability subscale of the measure had sufficient internal consistency. However, the overall results of the analysis resulted in the identification of two constructs related to reactive aggression, which they identified as irritability and emotional susceptibility.

Employing Buss and Durkee's definition of irritability (a readiness to explode at the slightest

provocation, including quick temper, grouchiness, exasperation and rudeness), the Irritability Scale was developed (Caprara, 1983). The Emotional Susceptibility Scale (Caprara, 1983) was designed to assess "the tendency of an individual to experience feelings of discomfort, helplessness, inadequacy, and vulnerability" (p. 93). Factor analytical studies indicated that both scales were related to the decreased ability to tolerate frustration and control excitation. Further analysis of the scales has led the researchers to hypothesize that emotional susceptibility is associated with a "passive defensive attitude", while irritability is more related to an "active offensive attitude" in response to frustration. More specifically, emotional susceptibility results in a sensitivity to loss of emotional control, whereas irritability is more closely related to overt aggression. It was further hypothesized that each tendency may represent different expressions of the same underlying mechanism (e.g., anxiety or sensitivity to frustration).

The construct validity of the two scales was supported by a series of experimental and correlational

studies. Using an aggression machine procedure, studies revealed that high scorers on both the Emotional Susceptibility Scale and the Irritability Scale, when compared to low scorers: chose higher shock levels in response to a negative evaluation of their performance on a learning task (Caprara, Renzi, Alcini, D'Imperio & Travaglia, 1983); had higher systolic blood pressure and heart rates, both before and after provocation (Caprara, Renzi, D'Augello, D'Imperio, & Rielli, 1985); and displayed lower general tolerance for frustration (Caprara, Renzi, Alcini, D'Imperio, & Travaglia, 1984; Caprara, Renzi, Amolini, D'Imperio, & Travaglia, 1984).

Correlational studies have further supported the construct validity of the scales. Caprara (1983) reported positive correlations between the Irritability Scale and the Authoritarianism Scale (Degrada, 1975), the Anxiety Scale Questionnaire (Cattell & Scheier, 1963), and the E variable of the Picture Frustration Test (Rosenzweig, 1978). For the Emotional Susceptibility Scale, positive correlations were revealed between scale scores and the Trait scale of the State-Trait Anxiety Inventory (Spielberger, Gorsuch, & Lushene, 1970), and the Anxiety Scale Questionnaire (Cattell & Scheier,

1963).

Although irritability and emotional susceptibility were demonstrated to influence the expression of aggressive behavior immediately following provocation, in studies where length of time between the provocation to aggress and the actual ability to do so was varied, it was found that the aggression eliciting influence of these traits was diminished (Caprara, Conte, Gennarro, & Renzi, 1983; Renzi, Caprara, Crudele, Galante, & Giannone, 1984). In order to further examine these results the researchers investigated possible cognitive processes that may mitigate or enhance desires for retaliation. Following previous research by Konecni (1975) examining the effects of dissipation and rumination on the alteration of aggressive behavior, the Dissipation-Rumination Scale (Caprara, 1986) was developed. Consistent with Konecni (1975), the dissipation-rumination construct was defined as the decrease or increase in aggressive conduct that occurs as a function of the lapse of time separating the instigation to aggress and the moment in which it becomes possible to react aggressively. High dissipators-low ruminators are characterized by rapid dissipation of

anger and aggressive feelings with consequent minimal rumination. In contrast, low dissipators-high ruminators tend to harbor anger and desires for revenge with the passage of time.

Validity studies have indicated that low dissipators-high ruminators provided more negative evaluations of a confederate after insult when compared with high dissipators-low ruminators (Caprara, Coluzzi, Mazzotti, Renzi, & Zelli, 1984), and predicted hostility when subjects had the opportunity to retaliate immediately, 24 hours, or one week after being exposed to a provocation (Caprara et al., 1985; Caprara, Renzi, Mazzotti, Pastorelli, Prezza, Renzi, & Zelli, 1985). In a related study, Caprara, Gargaro, Pasterelli, Prezza, Renzi, and Zelli (1987) found that high scores on the Dissipation-Rumination Scale predicted higher shock levels when subjects were given the opportunity to retaliate after being provoked by a confederate (i.e., shock levels increased with increased rumination). Lastly, Zelli (1984) examined the role of irritability, emotional susceptibility, and dissipation-rumination on the expression of aggression with subjects in a provocation or no provocation condition. Dissipation-rumination

scores proved to be the best predictor of aggression in a multiple regression analysis.

The overall results from these studies provide a rather convincing body of evidence to suggest that dispositional traits of emotional susceptibility, irritability, and dissipation-rumination are positively correlated with aggressive behavior. One interest of the present study was to examine whether individuals with these traits show variable responses to aggression mitigating influences than others.

Davis (1983) has hypothesized that empathy is a multidimensional construct comprised of both cognitive and affective components, each related to a responsiveness to others. In order to investigate this hypothesis he developed the Interpersonal Reactivity Index (Davis, 1980). The measure is comprised of four subscales representing various related but discriminant empathy constructs: perspective-taking, fantasy, empathic concern, and personal distress. Each subscale reflects the following: Perspective-taking refers to the tendency to take the point of view of others; Fantasy is the tendency for "respondents to transpose themselves imaginatively into the feelings and actions of fictitious

characters in books, movies, and plays" (Davis, 1983, p. 114); Empathic Concern assesses the ability to experience sympathy for others; and Personal Distress measures self-oriented feelings of anxiety in unpleasant social interactions. Each subscale has historical ties to previous conceptualizations of empathic behavior. The Perspective-taking and Fantasy subscales are presumed to involve cognitive processes, while the Empathic Concern and Personal Distress subscales are believed to be related to affective or emotional aspects of social sensitivity.

Davis (1983) investigated the relationship between Interpersonal Reactivity Index scores and various indices of social functioning, self-esteem, emotionality, and sensitivity to others. Perspective-taking was positively related to effective social functioning, self-esteem, decreased anxiety and insecurity, and a sensitivity to others. Fantasy scores were most associated with a tendency toward emotional vulnerability and reactivity, and a sensitivity to others. Empathic Concern was associated positively with shyness and social anxiety, but negatively with loneliness and indices of undesirable interpersonal style. These scores were also associated with emotional vulnerability and insecurity. The scale

was also associated with a nonselfish concern for other people. Lastly, the Personal Distress scale was strongly associated with poor interpersonal functioning, low self-esteem, emotional vulnerability, uncertainty, and fearfulness.

Another interest of the present investigation was to examine the relationship between trait empathy and aggressive tendency. In the present study, the Interpersonal Reactivity Index was used to assess various affective and cognitive components of empathic ability.

A further exploratory interest was to examine the effect of positive functioning on aggressive behavior. As part of the experimental procedures (to be discussed), the subject and confederate observed each other providing responses to three cards from the Thematic Apperception Test (Murray, 1943). This was undertaken to provide the subjects an experiential basis upon which to make a subsequent first impression rating of the confederate, and to obtain a brief measure of positive functioning. The confederate's responses followed a standardized script.

Fromme (1966) developed an approach to scoring the Thematic Apperception Test (TAT) that was designed to

assess level of conflict in responses. Based on Epstein's (1962) view that high levels of conflict result in decreased or impaired behavioral performance, the Goodness of Response rating scale was developed. Although the scale may be assessing a variety of factors (e.g., conflict, lack of defensiveness, sensitivity to inner emotions, psychopathology), in the present study it was seen as providing a brief measure of positive functioning.

The Openness to Experience measure was developed as a further measure of positive functioning. The measure consisted of the number of feeling-oriented words contained in the subject's TAT responses, and was designed to assess a sensitivity to or accessibility of emotional experiences. Hypothetically, it might be expected that individuals having this ability would display more feeling-oriented verbalizations to affect laden-stimuli than those who do not. Since this information was readily available from the TAT responses, the measure was included for exploratory purposes.

The Present Study

The present study utilized an aggression machine procedure to investigate, in vivo, several aspects of aggressive behavior. Aggression was defined according

to an attributional viewpoint and was assessed in two ways: 1) the reward levels experimental subjects provided to confederates who had previously insulted them, and 2) the interpersonal ability ratings the subjects made of the same confederates following completion of the first aggression measure. Independent variables in the study consisted of: three aggression mitigating interventions (self-awareness, empathy, and touch), compared with a control group; and three temporal delay periods (0, 24 hours, and 7 days) separating the institution of the aggression mitigation interventions, and the opportunity to express aggression. In addition, the study examined the influence of individual differences in personality that have been shown to be theoretically and empirically related to aggression. These included empirically-derived questionnaire measures of emotional susceptibility, irritability, dissipation-rumination, and empathy. Briefrationaly-derived measures of positive functioning and trait aggression (as measured by a bi-polar adjective rating scale), were included for exploratory purposes.

The previous review of aggression mitigating interventions has indicated that each has been shown

to be effective at reducing aggressive behavior when instituted in close contiguity to the anger instigation. As such, it was predicted that each would be effective at reducing aggression in the 0 and 24 hour delay conditions. It was hypothesized that the empathy condition would be the least susceptible to dissipation because empathic responsiveness might be expected to result in a potential understanding of the reasons for the subject's mistreatment (i.e., a rationalization), which would not be expected, in the absence of further interactions, to be modified with the passage of time. In contrast, it was expected that the self-awareness and touch conditions would be most effective when the opportunity to aggress occurred in close temporal contiguity to the anger instigation. It was believed that having the subjects develop a greater awareness of their negative feelings might result in a momentary state of cognitive dissonance regarding personal values and standards, and minimizing or denying hostile feelings might be a mechanism by which dissonance could be temporarily reduced. In the touch condition it was expected that this type of intimate personal encounter would be incompatible with the immediate expression of

aggressive feelings, but that no cognitive processes were accessed that would result in the transfer of this effect across an extended time period. As such, it was predicted that the mitigating effects from the empathy condition would not be diminished by temporal delay, but that the touch and self-awareness interventions would show a decreased effectiveness at reducing aggression in the 7 Day Delay condition.

The personality measures were included for two purposes: to determine if the composition of groups differed on these traits (for control purposes), and to examine how these dispositions might be interrelated. Since subjects were randomly assigned to groups, it was not expected that the groups would be significantly different on these measures. Several a priori hypotheses were formulated regarding the interrelationships between the various individual difference measures.

First, since perspective-taking has been shown to be associated with effective social functioning, decreased emotionality (e.g., anxiety, fearfulness, and insecurity), and a concern for others, it was expected that high scores on this measure would be negatively associated with the measures of trait aggression. Fantasy has been shown

to be unrelated to social functioning, but positively related to emotional vulnerability and a concern for others. Due to the latter finding, it was also predicted that Fantasy scores would be negatively correlated with the trait aggression measures. Similarly, due to the strong relationship between scores on the Empathic Concern scale and sympathetic feelings toward others, it was also expected that the measure would be negatively correlated with trait aggression. Lastly, it was expected that scores from the Personal Distress measure would be positively associated with the measures of trait aggression. Since previous studies have found Personal Distress scores to be associated with low self-esteem, poor interpersonal functioning, emotional vulnerability, and a self-oriented approach in social interactions, it was believed that high scorers might also display an increased sensitivity to frustration, possibly resulting in heightened aggression.

Secondly, it was expected that the positive functioning measures would be negatively associated with trait aggression, and positively associated with empathy. This was based on the view that individuals relatively free of conflict, who have an awareness of, and ready

access to feelings, will have more positive interactions with other people (i.e., would be less aggressive, more sensitive to others). As such, it was hypothesized that high scores on the Goodness of Response and Openness to Experience measures would be negatively correlated with scores on the Emotional Susceptibility, Irritability, and Dissipation-Rumination Scales, but positively correlated with scores on the Perspective-taking, Empathic Concern, and Fantasy subscales of the Interpersonal Reactivity Index. It was further predicted that the Personal Distress subscale of the Interpersonal Reactivity Index would be negatively correlated with measures of positive functioning.

II. Method

Subjects

The subjects were 75 undergraduate females recruited from Introductory Psychology classes at Oklahoma State University. Initially, a subject pool was formed by asking individual classes for female volunteers to serve as subjects in a psychology experiment. The subjects were chosen randomly from the pool of volunteers meeting the following restrictions: a) age between 18 and 30 years, b) being of Caucasian race, and c) having United States citizenship. In addition, eleven subjects were subsequently replaced (five scored in the depressed range on the Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961); four experienced negative emotional reactions to the experimental procedures (i.e., the self-esteem provocation); one had previous interpersonal contact with a confederate; and one was aware of the actual goal of the experiment). Depressed subjects were excluded because it was believed that they would be adversely affected by participating in the experiment, and further, that the potential tendency for depressed individuals to internalize anger might confound the aggression measures. The remaining excluded

subjects were replaced for ethical and/or control purposes. Volunteers who did not meet the age, race, and nationality restrictions were given the opportunity to complete a personality questionnaire (which was unrelated to the present investigation) for their participation. Both the subjects, replaced subjects, and the volunteers who completed the personality questionnaire received extra-point credit as remuneration for participating in the study.

The 75 subjects were randomly assigned to one of 15 groups. These groups consisted of 3 aggression mitigation intervention conditions, and 2 control conditions, for each of 3 temporal delay periods. For ease of interpretation, Table 1 shows the descriptive statistics.

Insert Table 1 about here

The mitigation groups included: 1) a self-awareness condition, 2) an empathy condition, and 3) a touch

condition. The control groups consisted of a non angered/no mitigation group and an angered/no mitigation group. The temporal delay condition consisted of a period of either: 1) 0 delay, 2) 24 hours delay, or 3) 7 days delay prior to the assessment of aggression.

Confederates

The confederates were 5 female Psychology majors recruited from upper division psychology classes at the same university. The mean age for the confederates was 19.0 years ($SD = 3.53$). The confederates served as apparent subjects in the experiment. The choice of confederates was also based on the restrictions used for the subjects. In addition, none of the confederates had any prior exposure to subjects in the experiment. Each of the 5 confederates interacted with one person from each of the experimental and control groups for a total of 15 interactions.

Although no formal procedures were employed to control for individual differences in physical appearance (e.g., attractiveness), none of the confederates displayed any unusual physical characteristics that were notable (e.g., obesity, scarring, etc.). Confederates were instructed to dress in a manner that was typical for

a college student, but to avoid flamboyance.

To control for any bias that might be associated with individual personality differences, the confederates were trained to avoid taking the initiative in making conversation, but to respond to any attempts by the subject in a pleasant, but not overly expressive manner (i.e., respond to a question, but do not attempt to continue the verbal interaction). As the time spent together was structured with activities, opportunities for such social interactions were minimal.

Lastly, the confederates were trained on how to verbally present their TAT responses. This was accomplished through practice sessions with the experimenter, and each other. The goal of this training was to insure that responses were presented in a "natural" fashion (i.e., with appropriate pauses, changes in inflection, etc.), and to specifically avoid any appearance that responses were being presented in a mechanical style.

Procedure

The initial contact with the subjects involved the experimenter making oral requests for research participants to individual classes. The experimenter

informed prospective subjects that the experiment would investigate "personality, perception, and communication", and that participation would involve completing a series of short personality questionnaires, interacting with another subject on a verbal task, providing first impression ratings of the other subject, and engaging in a subliminal perception task with that person. It was further explained that since one interest of the study was to examine the effects of time on the experimental procedures, some subjects would be requested to return either 24 hours or one week later to complete the subliminal perception phase of the experiment. Lastly, the experimenter explained that confidentiality would be assured, and that any questions about the experiment would be answered in a debriefing session, immediately following completion of the experiment. Subjects were then chosen randomly from the pool of classmates volunteering who met the age, race, and nationality restrictions.

In the first phase of the experiment, the subject was met by the experimenter at a room in proximity to, but separate from the aggression laboratory. This room was approximately 5x7 meters in size, and was empty except

for a bookcase in one corner, and a table located against one wall. The subject was then seated at the table, informed that her first task was to fill out a series of personality questionnaires, and was reminded that later she would be joined by another female subject who was completing her questionnaires in another room. The subject was then given the Beck Depression Inventory (Beck et al., 1961), the Irritability Scale (Caprara, 1983), the Emotional Susceptibility Scale (Caprara, 1983), the Dissipation-Rumination Scale (Caprara, 1986), and the Interpersonal Reactivity Index (Davis, 1980). The experimenter requested that the subject hand in each questionnaire as it was finished, so he could verify that all items had been completed. In actuality, this provided the experimenter the opportunity to score the Beck Depression Inventory. Subjects scoring in the depressed range on the inventory (scores greater than 13) were debriefed immediately, provided with treatment resources if they so desired, and were excluded from further participation in the experiment. Subjects scoring in the no depression range completed the full battery of personality questionnaires, and were joined in the room by a confederate approximately one minute after

completion of the test material. This was accomplished by the confederate waiting in a room adjacent to the testing location, being cued verbally by the experimenter that the subject had finished, and counting to sixty before entering the room with test materials in hand. The pair was then introduced, asked to sit next to each other at the table, and were informed that the next task would involve making up stories to a series of pictures depicted on cards. The experimenter was seated between the pair. The stimuli for this part of the experiment consisted of cards 2, 6GF, and 7GF of the Thematic Apperception Test (Murray, 1943). Standard TAT instructions were provided to the pair (i.e., what is happening in the story at the present time, what precipitated these events, what will be the outcome of the story, and what are the thoughts and feelings of the characters in the story), but no further inquiry was provided. This procedure involved the subject verbally describing her three stories, followed by the confederate's responses to the three cards. The confederate's responses followed a standardized script and were designed to be ordinary in content (See Appendix A). The experimenter recorded both the subject's and

the confederate's verbatim responses on a sheet of paper. This aspect of the experiment was designed to provide the subject an experiential basis for making the subsequent first impression ratings (i.e., to increase the realism of the procedure), and to obtain the Openness to Experience and Goodness of Response measures.

Anger Instigation Procedure

Immediately following completion of the TAT responses, the pair were informed that the next task would involve each making a written first impression rating of the other person. The subject and confederate were then seated in chairs at opposite corners of the room, and were instructed to report their first impressions of each other by completing a bipolar adjective rating scale (See Appendix B). Following the written completion of the scale, the pair handed their ratings to the experimenter. For subjects in the angered/no mitigation control groups and aggression mitigation groups, the experimenter then gave the respective ratings to each person for their review. The confederate's responses to each subject were standardized and constructed to be insulting to the subject. This procedure was designed to serve as the

anger instigation for the forthcoming aggression machine procedure, and as a brief measure of trait aggression. Subjects in the non angered/no mitigation control groups performed all procedures but did not exchange ratings. As such, they were not exposed to the anger instigation procedure.

In the last phase of the experiment, subjects were exposed to the mitigation interventions (except for the control groups), and were either immediately taken to the aggression laboratory for completion of the experiment (the 0 delay condition), or were requested to reappear at the testing location 24 hours or 7 days later. The aggression laboratory consisted of two approximately 2x3 meter sized adjacent rooms, which were empty except for a desk in which the aggression machine apparatus was situated (see Apparatus section). Neither person was able to observe the other during the "subliminal perception" task.

0 Delay Condition:

Subjects and confederates in the control groups were immediately taken to the aggression laboratory and were seated in separate rooms. The confederate was then informed that the experimenter would be absent for a

few minutes while procedural instructions were being provided to the other subject. The experimenter then informed the subject that a coin toss had determined that she would serve as "transmitter" and the other subject as "receiver" in the task (this procedure was employed to manipulate the subject into the transmitter role). Procedural instructions (see below) were then provided to the subject, and she was informed that the experimenter would return in a few minutes (in order to provide the "other subject" with instructions) to cue her that she should begin the task. The experimenter then went to the confederate's room and repeated the instructions. Since the rooms were in proximity and were not soundproofed, in an attempt to avoid the appearance of deception in the experiment, instructions provided to the subject were also verbalized to the confederate. The experimenter then returned to the subject's room, informed her to begin procedures, and left the room.

Subjects in the Self-awareness and Empathy groups were first asked to remain seated while the experimenter escorted the other subject (i.e., the confederate) to the "subliminal perception laboratory" for "procedural

instructions". The confederate was then taken to the aggression laboratory (confederates were always seated in the same room), and the experimenter remained absent from the subject for approximately three minutes (the amount of time required to present the actual procedural instructions for the subliminal perception task). On the experimenters return, the respective aggression mitigation intervention was presented to the subject. The subject was then taken to the aggression laboratory, procedural instructions were explained, and the experiment was completed. For subjects in the Touch group, the intervention was initiated just prior to the pair being taken to the aggression laboratory. Subsequent seating and procedural instructions were identical to those listed above.

24 Hour and 7 Day Delay Conditions:

After agreement had been obtained from the pair to return at the prearranged later date for completion of the experiment, subjects and confederates in the control groups were dismissed. The confederate was asked to verify phone information and was allowed to leave. The subject was then requested to do the same. This procedure was employed to allow the confederate time

to vacate the area prior to the subject, in order to insure that the pair would not have contact during departure. On their return the seating and procedural instructions listed above for the 0 Delay Condition were employed.

Subjects in the mitigation groups received the respective interventions immediately following their agreement to return at the prearranged later date. For subjects in the Self-awareness and Empathy conditions, the confederate was dismissed (utilizing the phone number verification procedure), but they were requested to remain for further discussion about the experiment. The aggression mitigation intervention was then provided to the subject, and she was allowed to leave. For subjects in the Touch conditions, the intervention was instituted between the pair prior to the dismissal procedure.

On the subject's and confederate's return for completion of the subliminal perception phase of the experiment, the pair were taken to the aggression laboratory, and procedures were followed as above.

Aggression Mitigation Conditions:

The mitigation interventions consisted of the

experimenter interacting verbally with the subject in a therapeutically analogous fashion. In the following discussion of the individual interventions, information in quotations represents verbatim verbal instructions provided to the subject by the experimenter in the 0 delay condition. For the 24 hour and 7 day delay conditions, the statement "Before you leave I want to discuss something with you." was substituted for the first sentence in the empathy and self-awareness interventions.

1. Self-awareness intervention

"Before we get started with the subliminal perception phase of the experiment I want to discuss something with you. I am very concerned that the negative personality rating you received from (the confederate's name) may have a negative effect on your ability to communicate with each other, and have an undesirable influence on the subliminal perception part of the experiment. Our previous studies suggest that one way to mitigate the effects of negative evaluations by others is in trying to reach an adequate concentration upon and a deeper awareness of one's own emotional state. We've found that if you worry and become preoccupied

with these things it will usually lead to negative kinds of experiences. But, if a person can get in touch with their own feelings, it can mitigate these influences. With this in mind I would like to ask you to think of the current session of the experiment and to focus, as much as possible, on your own sensations and emotional feelings which characterize your current emotional state. Take a few seconds to experience those feelings . . . Now I would like for us to talk about what those feelings are. What I'm primarily interested in is getting you to express the feelings you are having at this particular time of the experiment."

At this point the experimenter engaged in a therapeutically analogous verbal dialogue with the subject. The goal of this procedure was to get the subjects to focus on and express their present feelings and emotional situation. The experimenter only verbally reflected the subject's expressed feelings, and no attempt was made to modify or challenge these feelings.

2. Empathy intervention

"Before we get started with the subliminal perception phase of the experiment I want to discuss something with you. I am very concerned that the negative personality

rating you received from (the confederate's name) may have a negative effect on your ability to communicate with each other, and have an undesirable influence on the subliminal perception part of the experiment. Our previous studies suggest that one way to mitigate the effects of negative evaluations by others is by developing an understanding of the other person's experience and perspective. With this in mind, I'd like to ask you to think back to the first part of the experiment, and to focus, as much as possible, on (the confederate's name) situation and emotional experience at that time. In particular, I would like for you to imagine yourself in her emotional situation. Take a few seconds to examine what those feelings might be like . . . Now, I would like for us to talk about those feelings. What I'm primarily interested in is getting you to examine and express what (the confederate's name) feelings might have been just prior to and during the time she was rating you."

The experimenter then interacted with the subject in a manner consistent with the previously described self-awareness intervention. An attempt was made to get the subject to express feelings on the part of the

confederate that may have resulted in the negative personality rating. If the subject's responses reflected cognitions, the experimenter directed the discussion to feelings. No attempt was made to change the subject's perceptions.

3. Touch intervention

Immediately following the exchange of personality ratings (the anger provocation), and just prior to the subliminal perception task, the following verbal instructions were provided to the subject and confederate in the 0 delay condition. For the 24 hours and 7 day delay conditions, "Before you leave I would like to take a moment to discuss something with the two of you." was substituted for the first sentence in the instructions.

"Before we get started with the subliminal perception phase of the experiment I would like to take a moment to discuss something with you. I am aware that you (the subject) were given a negative rating by (the confederate's name). I am very concerned that this may have a negative effect on your ability to communicate with each other, and have an undesirable influence on the subliminal perception part of the experiment. Our previous studies suggest that one way to mitigate the

effects of negative evaluations by others is by simply giving the other person a hug. We've found that it is difficult to maintain negative feelings toward the other person after being exposed to this type of intimate interaction. With this in mind, even though it may be a bit uncomfortable, I would like for each of you to give each other a hug. Most people don't find this too unpleasant, but if you should find that you cannot or even do not want to go through with this, you may certainly withdraw from the experiment without loss of your extra-point credit . . . If you are both agreeable I would like for you to stand facing each other (the pair were situated approximately 2 meters apart). Now walk toward each other and simply give each other a hug." (None of the subjects objected to the touch intervention).

After the hug was completed the pair were taken to the aggression laboratory for completion of the subliminal perception task, or were reminded to return at the prearranged later date for completion of the experiment.

Aggression Machine Instructions:

The following verbatim verbal instructions were provided to all subjects after they had been seated at

the aggression machine console.

"First, I would like to explain a little bit about the experiment and the procedures you will be following. This machine in front of you is connected to one almost identical to it in the room next door where (the confederate's name) is at. The primary difference is that where there are switches on your machine, there are lights on the other one, and vice versa. This is how you and (the confederate's name) will be communicating with each other on the subliminal perception task. Another difference is that in the other room there is a computer monitor in front of the machine. As you can see, the machine in front of you has a series of lights and numbered switches. The switches will be used by you to communicate with (the confederate's name), and the lights will indicate to you her responses. You will be trying to communicate to (the confederate's name) the designs depicted on this response sheet in front of you (See Appendix C). The procedure involves your first pressing this "ready" switch. This will lead to a representation of this first design being displayed subliminally to (the

confederate's name) on her computer monitor. This will also set off a light which will signal her that she is to guess what that design is. She will relay this information to you by one of these lights coming on. As you can see, each light corresponds to one of the five designs that are being communicated. Now, what I'm investigating in the experiment is the effect of feedback on communication. You will be giving (the confederate's name) feedback in the form of information about whether her guesses are right or wrong on each trial. If her guess is incorrect you will need to hit the "wrong" switch first, then press the "ready" switch again, which will lead to the next trial. If her guess is correct, I would like for you to give her feedback by pressing one of these twenty-four reward levels switches. Each of these reward points is worth five cents a piece, so, for example, the number five switch is worth 25¢, the ten switch is worth 50¢, the 15 is worth 75¢, and so forth. Does this seem clear? Once again, if her response is correct, first give a reward level then press the ready switch. Your feedback will be displayed visually to (the

confederate's name). You will also need to make a check in the box next to each trial number to insure that there is no confusion about which design is being communicated. You will use this procedure until you finish all 30 trials. It is very important, even essential to the experiment, that you choose reward levels that feel natural to you. Do the procedures seem clear to you?" (after acknowledgment that the procedures were understood, the experimenter then left the room)

In the subliminal perception procedure there were five basic designs being "communicated". Each subject was exposed to 30 design-guessing trials. The confederate responded with a prearranged sequence of correct and incorrect responses. This sequence consisted of 18 incorrect responses (i) and 12 correct responses (c) in the following order: (i,i,c,c,i,i,i,c,i,c,i,c,c,i,i,i,i,c,i,c,i,i,c,i,i,i,c,c,i,c (Caprara et al., 1987). Feedback was communicated to the confederate in the form of lights displayed on the aggression machine apparatus. Correct responses were indicated by lights reflecting various supposed financial reward levels (ranging from 5¢ to \$1.20). The confederate recorded the reward levels

selected by the subject on a sheet of paper. After completing the 30 design-guessing trials, the subject was asked to complete a brief questionnaire (See Appendix D). This consisted of ten questions concerning the confederate's suitability for employment as a researcher on the university staff. This represented the second aggression measure. The subject was then informed that her participation in the experiment was finished and she was subsequently debriefed about the actual goals of the experiment, instructed that the negative evaluation by the confederate was part of the experimental design, and informed that no rewards had been actually given to the confederate. The confederate participated in the debriefing as a means of reinforcing to the subject that the confederate was part of the experimental design, and further, as a way to mitigate any potential negative feelings that might have accrued due to the subject having received a negative personality rating from the confederate. The subject and confederate were asked to shake hands prior to leaving as means of providing closure. It was also requested that the subject not disclose any information about the experiment, as other classmates would be participating as subjects.

Summary of Procedures

As stated, the experiment consisted of two phases. In the first phase, subjects completed the personality questionnaires, gave TAT responses, made a first impression rating of the confederate, and were exposed to one of the aggression mitigating interventions (except for the control groups). In the second phase, aggression was assessed utilizing the aggression machine procedure, and interpersonal ability ratings. Subjects in the 0 Delay condition performed both phases of the experiment on the same day. Subjects in the 24 Hour Delay condition completed the first phase one day, but returned the next day to complete the second phase. Subjects in the 7 Day Delay condition completed the second phase of the experiment one week after completing the first phase.

Control Conditions

It is important to note that two control groups were employed for each of the three temporal delay periods. These consisted of three non angered/no mitigation groups, and three angered/no mitigation groups. The non angered/no mitigation groups were compared with the angered/no mitigation control groups to verify the effectiveness of the anger instigation procedure across the three

temporal delay periods. The aggression mitigation groups were compared with the angered/no mitigation control groups to assess treatment response.

1. Non angered/no mitigation control groups

In the non angered/no mitigation control groups the subjects were exposed to all procedures except the self-esteem provocation and aggression mitigation interventions. In this procedure, both the subject and confederate completed the first impression ratings, but did not exchange ratings. As such, the subjects were not exposed to the anger instigation procedure. They were subsequently only introduced to the subliminal perception task, and provided with the procedural instructions detailed above.

2. Angered/no mitigation control groups

In the angered/no mitigation control groups the subjects received a negative evaluation of their personality by a confederate (i.e., the anger instigation procedure), but were not exposed to an aggression mitigation intervention.

Aggression Measures:

The amount of possible reward (12 correct guesses x 24 possible points per trial = 288 points), minus the

actual reward level chosen by the subject during the aggression machine procedure was used as the first measure of expressed aggression.

A second measure of aggression was obtained by having the subjects rate the confederate's suitability for employment on the laboratory staff. A ten-item Likert scale was used by the subjects to rate the confederates' perceived interpersonal abilities and competency at performing psychological experiments. The ratings were summed to obtain the aggression measure.

Personality Measures:

The Beck Depression Inventory (Beck, et al., 1961) is a twenty-one item self-report questionnaire that was designed to assess depth of depression (See Appendix E). The inventory utilizes a four-point rating scale (none, mild, moderate, severe) to designate intensity of depression. Split-half reliability using a Spearman-Brown correction was assessed as .93. Internal consistency was also evaluated by examining the relationship between individual items and total score on the inventory. The results revealed that all items positively correlated with the total score (range .31-.68). These correlations were significant at the .001 level.

The validity of the Beck Depression Inventory has been established by the positive correlations found to exist between inventory scores and clinical ratings of depression, prediction of clinical change, and other measures of depression (see Beck, 1967). Beck and Beamesderfer (1974) recommended using a cut-off score of 13 for screening of depression. This criterion was used to exclude depressed subjects from the present study.

Since validity studies for the Irritability Scale, Emotional Susceptibility, Dissipation-Rumination Scale, and Interpersonal Reactivity Index have been previously reviewed, only the psychometric properties of the scales will be described in the present section.

The Irritability Scale (See Appendix F) consists of 30 items in a 6-point Likert scale format. Caprara (1983) reported the following reliabilities: test-retest = .83, split-half = .90, and a coefficient alpha of .81.

The Emotional Susceptibility Scale (Caprara et al., 1985) is a 40 item 6-point Likert scale (See Appendix G). The following reliabilities were reported for the scale: coefficient alpha = .88; Test-retest = .84; and split-half (even/odd) = .94.

The Dissipation-Rumination Scale (Caprara, 1986)

is a 20-item 6-point Likert scaled questionnaire (See Appendix H). Caprara (1986) reported the following reliabilities: coefficient alpha = .79 (Italian group) and .87 (United States group); split/half = .91 (Italian group); and test-retest = .81 (Italian group).

The Interpersonal Reactivity Index (Davis, 1980) is a 28-item self-report measure of empathic ability (See Appendix I). The measure is comprised of four subscales representing various related but discriminate empathy constructs: perspective-taking, fantasy, empathic concern, and personal distress. Davis reported the following reliabilities for the four scales: test-retest range = .62 to .71; internal consistency range = .71 to .77.

For the Goodness of Response measure, TAT cards 2, 6GF, and 7GF were used in the experiment. This determination was made arbitrarily and was based on a desire to elicit the themes typically associated with these cards (family, father/daughter, and mother/daughter). Scoring for the TAT responses was according to the Goodness of Response Rating Scale as developed by Fromme (1966). In general, the rating scale assesses the quality of responses by rating whether they meet ten criteria (See Appendix J for scoring criteria). Scoring ranges from

0 - 10. with higher scores representing better goodness of fit.

The Openness to Experience measure was developed by the experimenter and consisted of the number of feeling-oriented words included in the subject's TAT responses.

Since the subject's adjective ratings of the confederate (the first impression rating) occurred prior to the self-esteem provocation (the anger instigation), these ratings were seen as a potential brief measure of trait aggression. The measure was obtained by summing the subject's 9 adjective ratings of the confederate. Higher ratings reflected more positive attitude toward the confederate (i.e., decreased aggression). The measure will be subsequently referred to as Trait Aggression.

Apparatus

The aggression machine apparatus was constructed by the experimenter for the present experiment. This apparatus consisted of two beige-colored metal consoles connected by electrical wiring. These consoles were 20x28x9 millimeters in size, and on the front of each console was an array of lights and switches. On the subject's console was a "ready" light switch, a series

of five red lights (corresponding to each of the five designs being communicated by the confederate during the subliminal perception task), an incorrect response switch, and twenty-four switches representing the twenty-four possible reward levels. Underneath the switches/lights were written instructions/symbols of what each represented. The confederate's console was identical with the exception that lights corresponded to the location of the subject's switches, and switches on the confederate's console corresponded to lights on the subject's console. As such, communication between the pair was in the form of manual manipulation of switches, which led to a corresponding display of visual lights on the other's console.

III. Results

In order to standardize scores from the first aggression measure (reward levels), and scores from the second aggression measure (interpersonal ability ratings), raw scores in each distribution were converted to their z-score equivalents. As such, all reported means are in z-score units. Higher z-scores reflect increased reward levels or more positive interpersonal ability ratings of the confederate (i.e., decreased aggression).

Preliminary Screening for Personality Correlates

As a test of the possibility that untoward differences existed between groups, a series of personality measures was administered. It was believed that if the groups were not homogeneous, a covariate analysis would be more appropriate to test hypotheses. A series of two factor (Group x Temporal Delay Period) MANOVA's were calculated for this purpose, employing scores on the various personality measures as dependent variables. In these and subsequent MANOVA's, the Hotelling-Lawley Trace method was used to obtain F values.

The first set of analyses examined whether differences existed between the control groups. Since it was hypothesized that the trait aggression measures

(i.e., the Irritability, Emotional-Susceptibility, and Dissipation-Rumination Scales, first impression ratings of the confederate), and the Personal Distress subscale of the Interpersonal Reactivity Index would be positively correlated, these measures were grouped and served as dependent variables in a MANOVA. The results were nonsignificant, Group, $F(5,22) = .71, p < .62$; Temporal Delay Period, $F(10,42) = .53, p < .85$. Since it was hypothesized that the Perspective-taking, Empathic Concern, and Fantasy Scales from the Interpersonal Reactivity Index, and the two measures of positive functioning would also be positively intercorrelated, scores on these measures served as dependent variables in a second MANOVA. Results were also nonsignificant, Group, $F(5,22) = .89, p < .51$; Temporal Delay Period, $F(10,42) = .85, p < .60$. The results from both analyses indicated that the control groups did not significantly differ on any of the personality measures.

In the second series of MANOVA's, the experimental groups (the three treatments versus the Angered/no mitigation control groups), were compared across the three temporal delay periods. Results from the MANOVA utilizing the trait aggression and Personal Distress

scores as dependent variables were nonsignificant, Group, $F(15,146) = .26, p < .99$; Temporal Delay Period, $F(10,98) = 1.13, p < .34$. Results from the MANOVA utilizing the remaining empathy measures and the two measures of positive functioning as dependent variables were also nonsignificant, Group, $F(15,146) = .65, p < .85$; Temporal Delay Period, $F(10,98) = .32, p < .98$. The results from these analyses demonstrated that none of the groups differed significantly on the personality measures.

Main Analyses

Since it was crucial to the experiment to demonstrate the effectiveness of the anger instigation procedure, the Non angered/no mitigation and Angered/no mitigation control groups were exposed to experimental procedures prior to the mitigation groups. To examine the efficacy of this procedure, a 2 x 3 (Group x Temporal Delay Period) MANOVA was computed. In this analysis the Non angered/no mitigation control groups and Angered/no mitigation control groups were compared across the three temporal delay periods, using reward levels and interpersonal ability ratings as dependent variables. Results from the MANOVA revealed a significant effect for Group, $F(2,25) = 10.64, p < .001$. Univariate statistics were

obtained by computing two 2 x 3 (Group x Temporal Delay Period) ANOVA's. In the first analysis reward levels were used as the dependent variable, and in the second analysis the summed interpersonal ability ratings of the confederate served as the dependent variable. Results from the first analysis revealed a significant Group main effect, $F(1,24) = 19.89, p < .0005$. Subjects in the Non angered/no mitigation control groups ($M = .96, SD = .922$) were found to provide significantly higher rewards than those in the Angered/no mitigation control groups ($M = -.446, SD = .80$). There were no significant Temporal Delay Period ($F(2,24) = .81, p < .45$) or interaction effects revealed ($F(2,24) = 1.26, p < .30$). The second analysis also revealed a significant main effect for Group, $F(1,24) = 5.09, p < .05$. The Non angered/no mitigation control groups ($M = .723, SD = 1.04$) were also found to provide significantly more positive ratings of the confederates than those in the Angered/no mitigation control groups ($M = -.17, SD = 1.02$). Consistent with the first analysis, no significant Temporal Delay Period ($F(2,24) = .68, p < .52$) or interaction effects ($F(2,24) = .03, p < .98$) were revealed. The results from both analyses indicated that

the anger instigation procedure was equally effective across all time periods in the Temporal Delay condition.

To examine the hypothesis that the various aggression mitigation interventions would be effective at reducing aggression, and the temporal stability of any revealed effects, a 4 x 3 (Group x Temporal Delay Period) MANOVA was calculated. In this analysis the two aggression measures served as dependent variables. Since the primary purpose for the Non angered/no mitigation control groups was to verify the effectiveness of the anger instigation procedure, these groups were excluded from this analysis. As such, the analysis examined response to treatment by comparing the Empathy, Self-awareness, and Touch groups with the Angered/no mitigation control groups.

Results from the MANOVA revealed a significant main effect for Group, $F(6,92) = 2.21, p < .05$. Univariate statistics were obtained by calculating two 4 x 3 (Group x Temporal Delay Period) ANOVA's. In the first analysis reward levels were used as the dependent variable, and in the second analysis the summed interpersonal ability ratings of the confederate served as the dependent variable. Results from the first analysis revealed a significant Group main effect, $F(3,48) = 3.89, p < .05$.

There were no significant interaction effects, $F(6,48) = .12, p < .95$. Results from the second analysis were nonsignificant. For ease of interpretation, Table 2 shows the reward level and interpersonal ability ratings means.

Insert Table 2 about here

Since a control group was employed to assess response to treatment, individual comparison analyses were made utilizing Dunnett's method. Results from this analysis revealed that only the empathy intervention differed significantly from the control group in reducing aggression ($p < .05$).

Lastly, to examine the relationship between the various individual differences in personality, a correlational analysis was performed using scores from the personality measures as variables. For ease of interpretation, Table 3 shows these intercorrelations.

Insert Table 3 about here

IV. Discussion

Consistent with Caprara et al. (1986), the present results supported the validity of utilizing a self-esteem provocation to experimentally induce anger/aggression in a population of American females. Clear differences in the expression of aggression were revealed between subjects who were, and those who were not, exposed to this procedure. In addition, findings revealed that the aggression eliciting effects from the self-esteem provocation were maintained for a period of at least seven days.

The results did not support the hypothesis that each of the aggression mitigating interventions would be effective at reducing aggression. However, consistent with expectations, the empathy intervention was shown to mitigate aggression when compared with the control group, and further, this mitigation was maintained for a period of at least seven days. These results tend to support and extend the findings from previous research which has consistently revealed a positive relationship between empathic awareness and decreased aggression. Adding to previous findings, the results empirically demonstrated that empathic responsiveness, in addition

to having immediate effects, has some degree of temporal stability in mitigating aggressive reactions toward a provocateur. Adding to the significance of the present findings was that the empathy effect was obtained without the benefit of empathy training. Rather, it was sufficient to only instruct subjects to become affectively sensitive to a provocateur's perceived emotional situation during the time of provocation, and to express those feelings in a verbal dialogue with a stranger. This suggests that a treatment program involving actual empathy training might have an even more powerful aggression mitigating influence. The findings also suggest that rather than exclusively encouraging empathic responsiveness for the effects that one's subsequent behavior may have on another, it is also beneficial to foster an awareness of a provocateur's emotional state that might have resulted in mistreatment. It might be particularly interesting to employ such a program with a population of subjects having a predisposition to react with aggression (e.g., high scorers on the Irritability, Disipation-Rumination, and/or Emotional Susceptibility Scales), as a way to further examine the power of empathy in overcoming aggression.

It is possible that the nature of the interventions affected the negative results revealed for touch and self-awareness. In the self-awareness condition it was expected that having the subjects develop an increased sensitivity to their emotional experiences at the time of the self-esteem provocation would result in increased self-examination. It was believed that requiring the subjects to openly confront their angry feelings might create a momentary state of cognitive dissonance regarding personal values and standards. If such personal standards were to be nonthreatening or nonaggressive, treating the confederate harshly might compromise a positive view of self, and adhering to those standards might be expected to mitigate aggressive feelings. Whereas instructions in the empathy intervention were made explicit (to employ empathy to arrive at a reason for mistreatment), in the self-awareness condition it was only implied that greater awareness would result in an evaluation of personal values/standards. In the touch condition, it was only suggested that an intimate physical encounter would mitigate negative feelings. It may be that more explicit instructions, allowing for greater information processing, would result in more powerful aggression mitigating

influences.

Lastly, given that Caprara et al. (1987) utilized a population of Italian females as subjects, it is possible that cultural effects played a role in the different findings revealed between the studies. The results might be suggesting that American females feel more uncomfortable with touch than Italian females, thus, minimizing any aggression mitigating influences from this type of encounter. If so, at least in an American population, it might be very important in developing treatment strategies, for example, in abusive spousal/parenting situations, to maintain strong boundaries between parties, and to institute other treatments until anger is reduced before encouraging any type of physical contact. Future replications are necessary in both Italian and American populations. It might be particularly interesting for these studies to include personality measures assessing differential responses to touch (e.g., touch comfort), as a way to examine possible cultural influences that may enhance/inhibit the aggression mitigating effects from touch. The results may also be suggesting that self-awareness, as employed by American females, is simply less effective in modifying subsequent behavior than for

Italian females.

The results only partially supported the hypothesis that treatment effectiveness would be influenced by the passage of time. As stated, consistent with expectations, the effectiveness of the empathy intervention was shown to be uninfluenced by temporal delay. However, neither touch nor self-awareness was effective at significantly reducing aggression, and interaction effects for both aggression measures did not even approach significance. It may be that since only the empathy intervention was effective at reducing aggression, there were reduced opportunities for interaction effects to be revealed. Replications are necessary to confirm this hypothesis.

Results from the correlational analysis only partially supported the experimental hypotheses. First, the results provided support for the construct validity of the Emotional Susceptibility, Dissipation-Rumination, and Irritability Scales. The correlational analysis revealed that the scales were positively intercorrelated, and each was shown to be negatively associated with an empathic concern for others. It was expected that individuals showing a predisposition to react with aggression would also have a decreased sensitivity to the feelings of others

(i.e., be less sympathetic). Emotional-susceptibility, irritability, and dissipation-rumination were also shown to be associated with a capacity for fantasy aspects of empathy. Fantasy, as measured by the Interpersonal Reactivity Index, relates to the ability to easily transpose oneself into fictional characters or situations. The present results might suggest that individuals high in this trait may also have difficulty maintaining firm boundaries in actual interpersonal relationships, resulting in a heightened sensitivity to personal slights/insults, and the expression of aggressive behavior. Lastly, Irritability Scale scores were negatively associated with the provision of positive interpersonal ability ratings, and hence, the greater expression of aggression.

Results from the Trait Aggression measure (adjective ratings of the confederate prior to the anger instigation procedure) were shown to be positively correlated with measures of positive functioning (i.e., the Goodness of Response and Openness to Experience measures), and negatively associated with perspective-taking ability. It is not surprising that individuals prone to see others negatively would have difficulty taking the perspective of others. However, it is unclear how this tendency might

be associated with the measures of positive functioning. It is important not to overinterpret these latter results because each of these measures was derived on a rational basis rather than upon empirical grounds.

Finally, The Goodness of Response and Openness to Experience measures were shown to be positively correlated. This suggests a positive relationship between an accessibility to inner feelings and freedom from conflict, which, based on previous research, might be associated with positive functioning. However, contrary to expectations, no significant relationships were revealed between these measures and the questionnaire measures of trait aggression or empathy. As stated above, due to the lack of a firm psychometric foundation upon which to base results, replications are necessary.

Summary

The present study employed an aggression machine reward-withholding procedure to investigate the efficacy of empathy, self-awareness, and touch in reducing aggression, and the temporal stability of any revealed treatment effects. In addition, several trait measures of personality were included to examine the influence of individual differences in personality on treatment

response, and how they might be interrelated. These included empirically-derived questionnaire measures of trait aggression and empathy, and brief rationally-derived measures of trait aggression and positive functioning. The results only partially supported experimental hypotheses. Empathy was shown to significantly mitigate aggression when compared with the control groups, and that this effect was maintained across a seven day time period. In addition, it is notable that the significant empathy effect was obtained without the benefit of any actual empathy training. The results also suggested that fostering an awareness of a provovateur's emotional situation at the time of mistreatment may be effective at mitigating future aggression toward that person. Neither self-awareness or touch was successful at reducing aggression. Contrary to expectations, no interaction effects were revealed, which may have been due to decreased opportunities for expression, since only one of the interventions was effective at mitigating aggression.

Results added support for the construct validity of the various empirically-derived trait measures of aggression (i.e., irritability, emotional-susceptibility, and dissipation-rumination). Although all of these

measures were positively associated with a capacity for cognitive empathy (fantasy aspects), they were also shown to be negatively associated with empathic concern/sympathy for others.

Future research might replicate the present study with a population of subjects scoring high on trait measures of aggression, to further examine the power of empathy in mitigating hostile/aggressive feelings. It is also necessary that the present study be replicated with a male population to enhance the generalizability of the results.

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APPENDIXES

Appendix A

TAT script used by confederates

Card 2: "In the story, this is the oldest daughter of the man and woman. She is getting ready to leave for school in the morning. Her father will spend the day working the farm and the mother will do some light housework since she is pregnant. Nothing in particular led up to these events. It's just part of the day to day routine. The father is concerned with all the work that needs to get done that day. The mom is enjoying the early morning view from where she is standing overlooking the farm. The daughter is thinking about her classes and what she will do when she gets out of high school. In the future she will go away to college and the rest of the family will continue to work the farm as they raise the rest of their children."

Card 6GF: "In this story this woman's father has come up to tell her that she is wanted on the phone. She had been talking with her mother while the two of them were playing with her son. She was a little bit startled as she didn't hear her father walk up. The daughter has

Appendix A (cont.)

been visiting her parents while waiting for her husband to get off work. He has been working late and will pick them up in a short while. Everybody is having a good time and are feeling pleased that they could spend a week night together. When the husband arrives they will visit a while longer before going home."

Card 7GF: "This is a mother reading to her daughter. The daughter would rather be playing with her dolls and is not really listening to her mom. The mom is so focused on the story that she doesn't realize the daughter is not listening. This is a daily routine that the mom has done since she was old enough to listen. Eventually, the mom will recognize that the daughter is getting too old for this and will not force the daughter to do this anymore."

Appendix B

Self-esteem Threatening Profile (Caprara, 1986)

First Name _____ Last Initial _____

First Name of Person Rated _____ Date _____

Please use the following scale to rate the person you have just interacted with. Make your ratings by placing an X on one of the five choices for each of the nine categories.

	5	4	3	2	1*	
1. Secure	-	-	-	X	-	Insecure
2. Uninhibited	-	-	-	-	X	Inhibited
3. Original	-	-	-	-	X	Ordinary
4. Mature	-	-	X	-	-	Immature
5. Likable	-	-	-	-	X	Unlikable
6. Intelligent	-	-	-	X	-	Stupid
7. Interesting	-	-	-	-	X	Uninteresting
8. Pleasant	-	-	-	X	X	Unpleasant
9. Calm	-	-	X	-	-	Tense

Note. * Numbers used only for scoring. Not included when given to the subject.

Appendix C

Trial Number	Design Communicated	Response
1.	★	_____
2.	○	_____
3.	≡	_____
4.	★	_____
5.	+	_____
6.	+	_____
7.	□	_____
8.	○	_____
9.	≡	_____
10.	□	_____
11.	○	_____
12.	○	_____
13.	+	_____
14.	★	_____
15.	□	_____
16.	≡	_____
17.	+	_____
18.	≡	_____
19.	○	_____
20.	★	_____
21.	□	_____
22.	+	_____
23.	□	_____
24.	★	_____
25.	○	_____
26.	≡	_____
27.	+	_____
28.	★	_____
29.	□	_____
30.	≡	_____

Appendix D

Laboratory Assistant Evaluation Form

First Name _____ Last Name Initial _____
 Date of Birth _____ Date _____
 First Name of Person Evaluated _____

The results of this evaluation will be kept confidential and will not be revealed to anyone outside of the laboratory staff.

The Psychology laboratory at OSU is in the process of hiring paid research assistants. As part of this process, we are obtaining information about whether subjects in ongoing experiments have the necessary skills to perform in this role. More specifically, since you have had the opportunity to interact with the other subject in the Subliminal Perception experiment, we would like your feedback about whether you feel she possesses certain traits and abilities necessary to successfully perform in the role of psychological experimenter. What we've found is that many times the actual success or failure of an experiment depends on the degree to which the experimenter is able to carry out the procedures correctly, as well the interpersonal skills he or she possesses. In particular, we want people who are cooperative, patient, and sensible; those who have the ability to establish rapport easily with others; and finally people who are careful, attentive, trustworthy, and respectful.

We would like for you to rate the person you interacted with on the following scales. Low scores represent low abilities for a particular trait or skill. Please circle only one number for each question. Do not leave any blank.

- | | | | | | |
|---|---|---|---|---|---|
| 1) Cooperative | 1 | 2 | 3 | 4 | 5 |
| 2) Patient | 1 | 2 | 3 | 4 | 5 |
| 3) Sensible | 1 | 2 | 3 | 4 | 5 |
| 4) Attentive | 1 | 2 | 3 | 4 | 5 |
| 5) Trustworthy | 1 | 2 | 3 | 4 | 5 |
| 6) Reliable | 1 | 2 | 3 | 4 | 5 |
| 7) Sensitive | 1 | 2 | 3 | 4 | 5 |
| 8) Respectful | 1 | 2 | 3 | 4 | 5 |
| 9) Likeable | 1 | 2 | 3 | 4 | 5 |
| 10) Qualified (to
conduct experiments) | 1 | 2 | 3 | 4 | 5 |

Appendix E

This questionnaire consists of 21 groups of statements. After reading each group of statements carefully, circle the number (0, 1, 2 or 3) next to the one statement in each group which best describes the way you have been feeling the past week, including today. If several statements within a group seem to apply equally well, circle each one. Be sure to read all the statements in each group before making your choice.

<p>1 0 I do not feel sad. 1 I feel sad. 2 I am sad all the time and I can't snap out of it. 3 I am so sad or unhappy that I can't stand it.</p> <p>2 0 I am not particularly discouraged about the future. 1 I feel discouraged about the future. 2 I feel I have nothing to look forward to. 3 I feel that the future is hopeless and that things cannot improve.</p> <p>3 0 I do not feel like a failure. 1 I feel I have failed more than the average person. 2 As I look back on my life, all I can see is a lot of failures. 3 I feel I am a complete failure as a person.</p> <p>4 0 I get as much satisfaction out of things as I used to. 1 I don't enjoy things the way I used to. 2 I don't get real satisfaction out of anything anymore. 3 I am dissatisfied or bored with everything.</p> <p>5 0 I don't feel particularly guilty. 1 I feel guilty a good part of the time. 2 I feel quite guilty most of the time. 3 I feel guilty all of the time.</p> <p>8 0 I don't feel I am being punished. 1 I feel I may be punished. 2 I expect to be punished. 3 I feel I am being punished.</p> <p>7 0 I don't feel disappointed in myself. 1 I am disappointed in myself. 2 I am disgusted with myself. 3 I hate myself.</p>	<p>8 0 I don't feel I am any worse than anybody else. 1 I am critical of myself for my weaknesses or mistakes. 2 I blame myself all the time for my faults. 3 I blame myself for everything bad that happens.</p> <p>9 0 I don't have any thoughts of killing myself. 1 I have thoughts of killing myself, but I would not carry them out. 2 I would like to kill myself. 3 I would kill myself if I had the chance.</p> <p>10 0 I don't cry any more than usual. 1 I cry more now than I used to. 2 I cry all the time now. 3 I used to be able to cry, but now I can't cry even though I want to.</p> <p>11 0 I am no more irritated now than I ever am. 1 I get annoyed or irritated more easily than I used to. 2 I feel irritated all the time now. 3 I don't get irritated at all by the things that used to irritate me.</p> <p>12 0 I have not lost interest in other people. 1 I am less interested in other people than I used to be. 2 I have lost most of my interest in other people. 3 I have lost all of my interest in other people.</p> <p>13 0 I make decisions about as well as I ever could. 1 I put off making decisions more than I used to. 2 I have greater difficulty in making decisions than before. 3 I can't make decisions at all anymore.</p>
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Subtotal Page 1

CONTINUED ON BACK

Appendix E (cont.)

<p>14 0 I don't feel I look any worse than I used to. 1 I am worried that I am looking old or unattractive. 2 I feel that there are permanent changes in my appearance that make me look unattractive. 3 I believe that I look ugly.</p> <p>15 0 I can work about as well as before. 1 It takes an extra effort to get started at doing something. 2 I have to push myself very hard to do anything. 3 I can't do any work at all.</p> <p>16 0 I can sleep as well as usual. 1 I don't sleep as well as I used to. 2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep. 3 I wake up several hours earlier than I used to and cannot get back to sleep.</p> <p>17 0 I don't get more tired than usual. 1 I get tired more easily than I used to. 2 I get tired from doing almost anything. 3 I am too tired to do anything.</p> <p>18 0 My appetite is no worse than usual. 1 My appetite is not as good as it used to be. 2 My appetite is much worse now. 3 I have no appetite at all anymore.</p>	<p>19 0 I haven't lost much weight, if any, lately. 1 I have lost more than 5 pounds. 2 I have lost more than 10 pounds. 3 I have lost more than 15 pounds.</p> <p>I am purposely trying to lose weight by eating less. Yes _____ No _____</p> <p>20 0 I am no more worried about my health than usual. 1 I am worried about physical problems such as aches and pains; or upset stomach; or constipation. 2 I am very worried about physical problems and it's hard to think of much else. 3 I am so worried about my physical problems that I cannot think about anything else.</p> <p>21 0 I have not noticed any recent change in my interest in sex. 1 I am less interested in sex than I used to be. 2 I am much less interested in sex now. 3 I have lost interest in sex completely.</p>
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_____ Subtotal Page 2

_____ Subtotal Page 1

_____ Total Score

Appendix F

The Irritability Scale*

First Name _____ Last Initial _____
 Date of Birth _____ Date _____

Using the following scale, indicate the response which reflects your first reaction to each statement by placing an appropriate number before each item. Please do not leave out any item and be spontaneous and accurate as much as possible within the limits of choices offered below.

- 5 = completely true for me
- 4 = fairly true for me
- 3 = true to a certain extent
- 2 = false to a certain extent
- 1 = fairly false for me
- 0 = completely false for me

- _____ 1. I easily fly off the handle with those who don't listen or understand.
- _____ 2. I am often in a bad mood.
- _____ 3. Usually when someone shows a lack of respect for me, I let it go by.
- _____ 4. I have never been touchy.
- _____ 5. It makes my blood boil to have somebody make fun of me.
- _____ 6. I think I have a lot of patience.
- _____ 7. When I am irritated I need to vent my feelings immediately.
- _____ 8. When I am tired I easily lose control.
- _____ 9. I think I am rather touchy.
- _____ 10. When I am irritated I can't tolerate discussions.
- _____ 11. I could not put anyone in his place, even if it were necessary.
- _____ 12. I can't think of any good reason for resorting to violence.
- _____ 13. I often feel like a powder keg waiting to explode.
- _____ 14. I seldom strike back even if someone hits me hard.
- _____ 15. I can't help being a little rude to people I don't like.

Appendix F (cont.)

- _____ 16. Sometimes when I am angry I lose control over my actions.
- _____ 17. I do not know of anyone who would wish to harm me.
- _____ 18. Sometimes I really want to pick a fight.
- _____ 19. I do not like to make practical jokes.
- _____ 20. When I am right, I am right.
- _____ 21. I never get mad enough to throw things.
- _____ 22. When someone raises his voice I raise mine higher.
- _____ 23. Sometimes people bother me just by being around.
- _____ 24. Some people irritate me even if they just open their mouth.
- _____ 25. Sometimes I shout, hit and kick and let off steam
- _____ 26. I don't think I am a very tolerant person.
- _____ 27. Even when I am very irritated I never swear.
- _____ 28. It is others who provoke my aggression.
- _____ 29. Whoever insults me or my family is looking for trouble.
- _____ 30. It takes very little for things to bug me.

Note. *Deleted when administered to the subject.

Appendix G

The Emotional Susceptibility Scale*

First Name _____ Last Initial _____
 Date of Birth _____ Date _____

Using the following scale, indicate the response which reflects your first reaction to each statement by placing an appropriate number before each item. Please do not leave out any item and be spontaneous and accurate as much as possible within the limits of choices offered below.

- 5 = completely true for me
 4 = fairly true for me
 3 = true to a certain extent
 2 = false to a certain extent
 1 = fairly false for me
 0 = completely false for me

- _____ 1. Fear of failure worries me more than necessary.
 _____ 2. I like to be the center of attention.
 _____ 3. I am too sensitive to criticism.
 _____ 4. When I am afraid I completely lose control.
 _____ 5. I often have the feeling others pity me.
 _____ 6. I don't complain about what life has given me.
 _____ 7. I often feel more tired in the morning than when I go to bed.
 _____ 8. I am not afraid of loneliness.
 _____ 9. More than once I have been moved to tears at a movie.
 _____ 10. I easily get involved when someone tells me their troubles.
 _____ 11. Sometimes I feel sad without any reason.
 _____ 12. I have often felt lonely.
 _____ 13. I often feel inadequate.
 _____ 14. I am not scared of the dark.
 _____ 15. Even in emergency situations I am able to control my reactions.
 _____ 16. I often feel vulnerable and defenseless.
 _____ 17. When I feel low I cry over nothing.
 _____ 18. When I am waiting for someone I can't keep still, I pace up and down.
 _____ 19. Sometimes I feel moved over nothing.

Appendix G (cont.)

- _____ 20. I have always felt challenged by difficult situations.
- _____ 21. Strong emotions nearly paralyze me.
- _____ 22. I can't hold back my tears when someone tells sad stories.
- _____ 23. Sometimes I cry for no reason.
- _____ 24. I often feel like I can't go on.
- _____ 25. I often feel like I am not up to situations.
- _____ 26. I always try to meet new people.
- _____ 27. I feel rather uneasy when someone stares at me.
- _____ 28. I have often felt upset.
- _____ 29. I like new things.
- _____ 30. Sometimes I feel I am about to explode.
- _____ 31. I often feel depressed.
- _____ 32. Sometimes I feel on edge.
- _____ 33. I very seldom lose my temper.
- _____ 34. I feel down when others don't approve of me.
- _____ 35. I often feel tense and nervous.
- _____ 36. My voice trembles when I am very touched.
- _____ 37. I tend to trust others.
- _____ 38. When I am moved I find it difficult to hold back my tears.
- _____ 39. I have often had the feeling my head was heavy and confused.
- _____ 40. Sometimes I am afraid I will lose control of my feelings.

Note. *Deleted when administered to the subject.

Appendix H

The Dissipation-Rumination Scale*

First Name _____ Last Initial _____
 Date of Birth _____ Date _____

Using the following scale, indicate the response which reflects your first reaction to each statement by placing an appropriate number before each item. Please do not leave out any item and be spontaneous and accurate as much as possible within the limits of choices offered below:

- 5 = completely true for me
- 4 = fairly true for me
- 3 = true to a certain extent
- 2 = false to a certain extent
- 1 = fairly false for me
- 0 = completely false for me

- _____ 1. I never help those who do me wrong.
- _____ 2. I will always remember the injustices I have suffered.
- _____ 3. The more time that passes, the more satisfaction I get from revenge.
- _____ 4. It is easy for me to establish good relationships with people.
- _____ 5. It takes many years for me to get rid of a grudge.
- _____ 6. When somebody offends me, sooner or later I retaliate.
- _____ 7. I do not forgive easily once I am offended.
- _____ 8. I often bite my fingernails.
- _____ 9. I won't accept excuses for certain offenses.
- _____ 10. I hold a grudge, for a very long time, towards people who have offended me.
- _____ 11. I remain aloof towards people who annoy me, in spite of any excuses.
- _____ 12. I can remember very well the last time I was insulted.
- _____ 13. I am not upset by criticism.
- _____ 14. I enjoy people who like jokes.
- _____ 15. I still remember the offenses I have suffered, even after many years.
- _____ 16. If somebody harms me, I am not at peace until I can retaliate.
- _____ 17. When I am outraged, the more I think about it, the angrier I feel.
- _____ 18. I like people who are free.

- _____ 19. I am often sulky.
_____ 20. Sometimes I can't sleep because of a wrong done
to me.

Note. *Deleted when administered to the subject.

Appendix I

The Interpersonal Reactivity Index*

First Name _____ Last Initial _____
 Date of Birth _____ Date _____

Please use the following scale to rate yourself on the questionnaire. Select only one answer and place the corresponding number in the blank preceding the question number.

- 0 = Does not measure me well
- 1 = Measures me to a small degree
- 2 = Measures me to some degree
- 3 = Measures me moderately well
- 4 = Measures me very well

- _____ 1. I daydream and fantasize, with some regularity, about things that might happen to me.
- _____ 2. I often have tender, concerned feelings for people less fortunate than me.
- _____ 3. I sometimes find it difficult to see things from the "other guy's" point of view.
- _____ 4. Sometimes I don't feel very sorry for other people when they are having problems.
- _____ 5. I really get involved with the feelings of the characters in a novel.
- _____ 6. In emergency situations, I feel apprehensive and ill-at-ease.
- _____ 7. I am usually objective when I watch a movie or play, and I don't often get completely caught up in it.
- _____ 8. I try to look at everybody's side of a disagreement before I make a decision.
- _____ 9. When I see someone being taken advantage of, I feel kind of protective towards them.
- _____ 10. I sometimes feel helpless when I am in the middle of a very emotional situation.
- _____ 11. I sometimes try to understand my friends better by imagining how things look from their perspective.
- _____ 12. Becoming extremely involved in a good book or movie is somewhat rare for me.
- _____ 13. When I see someone get hurt, I tend to remain calm.

Appendix I (cont.)

- _____ 14. Other people's misfortunes do not usually disturb me a great deal.
- _____ 15. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments.
- _____ 16. After seeing a play or movie, I have felt as though I were one of the characters.
- _____ 17. Being in a tense emotional situation scares me.
- _____ 18. When I see someone being treated unfairly, I sometimes don't feel very much pity for them.
- _____ 19. I am usually pretty effective in dealing with emergencies.
- _____ 20. I am often quite touched by things that I see happen.
- _____ 21. I believe that there are two sides to every question and try to look at them both.
- _____ 22. I would describe myself as a pretty soft-hearted person.
- _____ 23. When I watch a good movie, I can very easily put myself in the place of a leading character.
- _____ 24. I tend to lose control during emergencies.
- _____ 25. When I'm upset at someone, I usually try to "put myself in his shoes" for a while.
- _____ 26. When I am reading an interesting story or novel, I imagine how I would feel if the events in the story were happening to me.
- _____ 27. When I see someone who badly needs help in an emergency, I go to pieces.
- _____ 28. Before criticizing somebody, I try to imagine how I would feel if I were in their place.

Note. *Deleted when administered to the subject.

Appendix J

GOODNESS OF RESPONSE RATING SCALE

GENERAL RULES

- A. The purpose of this scale is to assess conflict through its hypothesized effects upon the formal characteristics of a story. The following characteristics are considered: 1. accuracy of stimulus perception; 2. creativity and logic of story; 3. degree to which instructions are followed; 4. inclusion of unusual formal characteristics; and 5. unusual thematic developments.
- B. Stories are to be scored on a 0 - 10 point scale. In order to receive a maximum goodness-of-response score (10), a story must possess the following characteristics:
1. Major stimulus properties are perceived accurately--e.g., characters identified properly as to sex and approximate age.
 2. Major stimulus properties are integrated into the story--e.g., all characters included and with the appropriate sex- and/or age-typed roles.
 3. Story development is logical--i.e., one event follows from another in a reasonable order so that story has an inherent unity.
 4. Story departs in a reasonable manner from the picture--something new is added, such as another person, locale, etc., and is integrated with the rest of the story (score strictly).

Appendix J (cont.)

5. Story possesses qualities of vividness, drama, excitement; shows definite creative qualities (score strictly).
6. Characters in story are delineated in some manner--given names, occupation, background described, etc.
7. Motives, feelings, attitudes, etc., of characters are described.
8. Action (what is happening in picture) is described.
9. Events leading up to the present situation of the story are described.
10. Out-come of the story is described or alluded to.

C. Any story which is lacking in one or more of these criteria receives a goodness-of-response score of 10 minus \underline{x} (where \underline{x} equals the number of criteria which were not met). Further penalties are imposed (one point each) for the inclusion of any of the following unusual formal characteristics (from Eron, 1950).

1. Symbolic - depicting an idea or moral.
2. Abstract - depicting a feeling.
3. Descriptive - no action depicted, no story, just description.
4. Unreal - seen as picture, dream, not accepted as real situation.
5. Fairy tale - legend, impossible happening.
6. Central character is not in picture.
7. Autobiographical - narrator inserts self in story or refers to self--"like what happened to me".
8. Continuations - refers to past stories.
9. Alternate themes given for same picture.
10. Comments about artistic merits of picture.
11. Denial of a theme - "This is not..." when it is commonly given.
12. Peculiar verbalizations.

Appendix J (cont.)

13. Confused, no single discernible plot, impossible conclusion, etc.
14. Includes examiner in story.
15. Humorous.
16. Reification - makes characters real, gives them names of persons known by the narrator, etc.

D. A score of zero may be obtained in either of two ways: rejection of card (S refuses or is unable to make up story), or penalization of 10 or more points from the maximum score.

TABLES

Table 1Experimental and Control Group Descriptive Statistics

	<u>Mean Age</u>	<u>SD</u>
<u>Control Groups</u>		
Non angered-no mitigation/0 Delay	19.0	1.22
Non angered-no mitigation/24 Hours Delay	19.4	1.67
Non angered-no mitigation/7 Days Delay	19.2	1.30
Angered-no mitigation/0 Delay	19.2	1.78
Angered-no mitigation/24 Hours Delay	19.2	1.57
Angered-no mitigation/7 Days Delay	19.2	1.30
<u>Experimental Groups</u>		
Empathy/0 Delay	18.6	.55
Empathy/24 Hours Delay	19.2	1.73
Empathy/7 Days Delay	18.2	.45
Self-awareness/0 Delay	18.8	.67
Self-awareness/24 Hours Delay	18.6	.55
Self-awareness/7 Days Delay	20.2	2.86
Touch/0 Delay	19.2	1.78
Touch/24 Hours Delay	19.2	1.30
Touch/7 Days Delay	19.0	.50

Table 2

Mean Reward Levels and Mean Interpersonal Ability Ratings
for Treatment Groups (4 x 3 ANOVA)

Group	Rewards	Ratings
Control	-.516	-.013
Empathy	.51*	.241
Self-awareness	.146	.204
Touch	-.42	-.31

Note. *Differs significantly from the Control group at
 $p < .05$.

Table 3

Intercorrelations between Personality Variables
and Aggression Measures

	TRAIT	GOR	OTE	EMO	IRR	AGG1	AGG2
TRAIT	-	.36***	.31**	.15	.19	.01	.19
GOR		-	.43***	.01	.11	.13	-.11
OTE			-	.22	.05	-.11	-.03
EMO				-	.62***	-.08	-.20
IRR					-	-.21	-.34***
AGG1						-	.26**
AGG2							-

	DIS	FAN	EC	PT	PD
DIS	-	.27*	.48***	.11	-.22
FAN		-	-.25*	.24*	.01
EC			-	.13	.63***
PT				-	.32**
PD					-

* $p < .05$. ** $p < .01$. *** $p < .005$.

(table continues)

Table 3

Intercorrelations between Personality Variables
and Aggression Measures

	DIS	FAN	EC	PT	PD
TRAIT	.08	.09	-.22	-.29*	-.15
GOR	-.12	.03	.08	.06	.20
OTE	-.09	.09	-.10	-.04	-.01
EMO	.52***	.44***	-.34***	.07	.01
IRR	.69***	.23*	-.40***	-.07	-.15
AGG1	-.10	-.01	.25*	.05	.14
AGG2	-.20	.03	.26*	.19	.25*

Note. TRAIT = Trait Aggression, GOR = Goodness of Response, OTE = Openness to Experience, EMO = Emotional Susceptibility Scale, IRR = Irritability Scale, DIS = Dissipation-Rumination Scale, FAN = Fantasy, EC = Empathic Concern, PT = Perspective-taking, PD = Personal Distress. AGG1 = Reward Levels, AGG2 = Interpersonal Ability Ratings
* $p < .05$. ** $p < .01$. *** $p < .005$.

2
VITA

Robert R. Waller

Candidate for the Degree of

Doctor of Philosophy

Thesis: THE MITIGATION OF AGGRESSION: THE INFLUENCE
OF TYPE OF INTERVENTION, TEMPORAL DELAY, AND
INDIVIDUAL DIFFERENCES IN PERSONALITY

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OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
FOR HUMAN SUBJECTS RESEARCH

Proposal Title: Mitigation of Expressed Aggression: The Influence
of Type of Intervention, Temporal Delay, and Individual Difference in Personality

Principal Investigator: D. Fromme/R. Waller

Date: 8-28-91 IRB # GU-92-002

This application has been reviewed by the IRB and

Processed as: Exempt [] Expedite [] Full Board Review [X]

Renewal or Continuation []

Approval Status Recommended by Reviewer(s):

Approved [X]

Deferred for Revision []

Approved with Provision []

Disapproved []

Approval status subject to review by full Institutional Review Board at
next meeting, 2nd and 4th Thursday of each month.

Comments, Modifications/Conditions for Approval or Reason for Deferral or
Disapproval:

Need a statement from the Principal Investigator stating that the names will
not be used. A numbering system as agreed in meeting.

Please send to LeAnn Prater at 002 LSE.

Signature: Marcia L. Tilley

Chair of Institutional Review Board

Date: 10-3-91