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EFFECTS OF EXPOSURE TO DIFFERENTIATED AGGRESSIVE FILMS,  
EQUATED FOR LEVELS OF INTEREST AND EXCITATION,  
AND THE VICARIOUS HOSTILITY CATHARSIS HYPOTHESIS

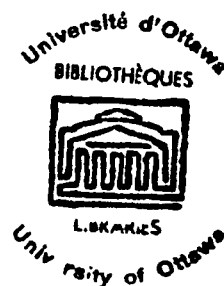
by

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Thesis presented to the School of Graduate Studies  
of the University of Ottawa as partial  
fulfillment of the requirements for the degree of  
Doctor of Philosophy

OTTAWA, CANADA, 1977

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## ABSTRACT

This study investigated the vicarious hostility catharsis hypothesis, i.e., the idea that the experience of vicarious aggression (aggressive film exposure) following aggressive arousal, serves to reduce partially the instigation to aggress and the probability of subsequent aggressive behaviour. Concurrently, three other hypotheses yielding differential predictions were also investigated. These were the Distraction-Attentional Shift Hypothesis, independently suggested by J. Singer and A. Bandura, D. Zillmann's Modified Attentional Shift Hypothesis, and L. Berkowitz's Aggressive Cue Model.

Two film segments were produced that significantly differed in aggressive-cue potential and did not significantly differ in their distraction-attentional shift potential (interest, excitement, involvement and enjoyment), or in their excitatory potential (degree of physiological excitation produced by the films).

Ss were differentially instigated verbally (angered, non-angered) during a bogus verbal aptitude test after which they saw the aggressive film, the non-aggressive film, or no film. Following this, they either filled out an evaluation

questionnaire which was potentially harmful to the instigator and reflected their aggressive behaviour, or they answered a mood check list assessing hostility (aggressive arousal or anger) and tension.

Results did not support the vicarious catharsis hypothesis. With respect to the hostility measure, both films reduced hostility in angered Ss to that of the non-instigated groups. There were no significant differences in hostility between these conditions. This was interpreted as evidence for the Distraction-Attentional Shift Hypothesis.

With respect to the measure of aggressive behaviour, the instigated groups expressed significantly more aggression than the non-instigated groups. In the instigated conditions, compared to the no-exposure control group, the non-aggressive film reduced aggression significantly. The reduction in aggression following aggressive film exposure was generally not significant. These results could alternatively be explained by Berkowitz's Aggressive-Cue Model or Zillmann's excitation-transfer paradigm.

The difference between hostile motive and aggressive behaviour in tests of vicarious catharsis, seems to be indicated in this study.

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### CURRICULUM STUDIORUM

Nathan Kuperstok was born on March 27, 1948 in Wroclaw, Poland. He attended the Rabbinical College of Canada and received the B.Sc. degree from McGill University in 1968. In 1972 he obtained an M.A. in clinical psychology from the University of Windsor. He registered as a Ph.D. student at the University of Ottawa in the fall of 1973.

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## CHAPTER I

### INTRODUCTION AND REVIEW OF THE LITERATURE

Currently, one major controversy in the area of aggressive behaviour centers around the relation between fantasy aggression and overt aggression (e.g., Berkowitz, 1970; Comstock, 1975; Schafer, 1970). In his review of the issues surrounding the portrayal of aggression in the media, Larsen (1968), noted two facts: "(1) Mass media content is heavily saturated with violence, and (2) people are spending more and more time in exposure to such content (p. 115)." Such findings have prompted a number of governmental inquiries regarding the effects of media aggression on aggressive behaviour.

The U.S. Surgeon General's Advisory Committee on Television and Social Behaviour (1972), which included network representation, concluded that television violence should be judged a cause of aggressiveness for those individuals predisposed to aggressive action. The committee indicated that the amount of exposure to media violence is related to levels of post-viewing aggression. Recently, the Royal Commission on Violence in the Communications

Industry, sponsored by the Province of Ontario in 1973, was set up to study the effects on society of the increasing exhibition of violence in all the media, and to determine whether there is any connection between it and the incidence of violent crime in society. The Interim Report (1976), published by the commission, suggests that media violence can lead to an increase in the level of aggression. Among the measures recommended was that the government could consider content quotas in films, television and other media so as to limit violence. In 1976, the Canadian Radio-Television Commission has held a series of symposiums on television violence and has cautioned the media to exercise suitable judgment in displaying violence.

Although these conclusions are based on a large number of psychological investigations, a smaller number of studies, buttressed by orthodox Freudian psychoanalysis, support the notion of catharsis--i.e., the idea that individuals can work out their aggressive tendencies by watching media violence, which thereby reduces aggression. The portrayal of violence in fantasy is seen as potentially preventing the overt expression of aggression, at least under some circumstances (e.g., Feshbach, 1961; Feshbach and Singer, 1971, Pytkowicz et al., 1967). There are very significant social and psychotherapeutic implications of this view of the function of fantasy. As stated by Singer (1975, p. 105):

If vicarious experience (whether in the form of private daydreams or as packaged daydreams presented in movies or television) serves as a discharge for pent-up sexual and aggressive energies, then exposure of all of us to considerable sexuality and violence in the popular media is probably fairly useful in keeping us from raping and killing indiscriminately. Is, then, the concern about portrayals of sexuality or violence on television needless?

This study attempts to further clarify the issue of whether vicarious hostility catharsis occurs through exposure to two films whose only significant difference lies in aggressive cue content.

A. The Concept of Catharsis in Theories of Aggression.

a. Psychoanalytic and biological conceptualizations

According to Freud (1933, 1950), aggression is an innate, driving force in mental life--an instinctual drive, being a manifestation of the death drive (Thanatos). Aggressive energy is assumed to be constantly generated in the organism and, following an hydraulic energy model of personality, must be discharged periodically or at least neutralized by the defense mechanisms. Failure to successfully achieve this can result in the pent-up urge expressing itself in destructive acts or in psychosomatic illness. Like all other fundamental, biological drives, aggressive energy is assumed to derive from somatic sources, though there is no evidence for this at present (Brenner, 1971). Also, like all other instincts, the source and aim of the aggressive instinct remain unchanged. However, through such mechanisms as displacement and sublimation, the objects required to satisfy the instinct can change. Substitute objects, of course, only partially satisfy the instinct, leaving residual energy, the nervousness and tension of civilization, behind. Presumably, a wide variety of activities (from rough sports to idle aggressive day-dreaming), can serve to partially satisfy the aggressive drive, thereby lowering the probability of subsequent

aggressive behaviour. This has come to be known as the hostility catharsis hypothesis: the expression of aggressive behavior serves to discharge pent-up energies and thereby reduces the incidence or probability of further aggressiveness. For Freud, and a majority of psychoanalysts, aggressive drive can be partially reduced through the medium of fantasy.

Actually, the notion of catharsis, goes back, at least, to Aristotle, who wrote of the "draining" or "purging" of an audience's feelings of sorrow and grief through watching these emotions portrayed on stage. Freud proposed a modern version of Aristotle's theory of catharsis as applied to hostility, namely, that the impulse to aggression or the strength of a person's inner aggressive pressure can be partially reduced through thinking aggressive thoughts, engaging in hostile fantasy or aggressive humor, expressing aggression through art and literature, or through observation of aggression in the mass media. This partial reduction in aggression makes it less likely that the aggressively predisposed individual will engage in subsequent aggression, and permits him to tolerate his frustration a little longer.

As elaborated by Rapaport (1960), Freud hypothesized that through the medium of the hallucinatory imagery of the

child, the transition from primary (associative, concrete, prelogical) to secondary process (logical, organized, abstract) thought developed. Since, in primary process thinking, no distinction is made between subjective and objective reality, a hungry child hallucinating the image of a breast or bottle achieves some temporary gratification of his hunger drive--enough release to reduce crying and fruitless motor activity until mother comes. This momentarily drive-reducing quality of imagination became the key to the later development of the ego with its secondary process thought and reality principle. However, what is essential for the catharsis hypothesis, according to Freudian psychoanalysis, is that thought and fantasy discharge energy, and are partially drive-reducing. For the adult, too, fantasy is seen as having a safety-valve quality, since it is a holdover of childish, wishfulfilling thought that serves as a means of partially discharging biological drives. Since fantasy activities represent wish fulfilment, symbolic aggression via fantasy can serve to partially reduce aggressive drive. This symbolic aggression may take the form of private fantasy, or may occur through the "packaged" fantasy found in movies and television, or even in art and literature. In either case, fantasy serves as a catharsis, and by engaging in vicarious

experiences of aggression a cathartic reduction in aggressive motivation is presumed to take place, lowering the probability of subsequent aggression. (In learning theory terms, fantasy may take on the properties of a secondary reinforcer to the extent that the child engages in fantasied gratification which shortly afterwards is satisfied in reality).

A comparable theory has been proposed by the ethologist Konrad Lorenz (1966). He suggested that in the absence of releaser stimuli which serve as innate instigators of aggression, the aggressive urge builds up. This aggressive instinct must find periodic outlets through "catharsis" or it can build up and explode into violent activity, even in the absence of any external instigation. However, in a recent interview (*Psychology Today*, Nov. 1974), Lorenz expressed doubt as to whether watching aggressive behaviour (sports, films etc.) has any cathartic effect.

#### b. Frustration-Aggression theory

A similar position is found in the Frustration-Aggression theory of Dollard, Doob, Miller, et al. (1939, 1964), who substituted reactive drives for autonomous instincts. According to them, frustration produces an aggressive drive which motivates aggressive behaviour, the naturally dominant response to frustration. This

constitutional reaction can be altered considerably through learning, and may be entirely absent from overt expression when strongly inhibited. However, because of continuous environmental frustrations, the resultant aggressive drive requires periodic release. Partial release can be achieved through displaced aggression. Thus, they state that "The expression of any act of aggression is a catharsis that reduces the instigation to all other acts of aggression" (p. 53).

Dollard, Doob, et al. (p. 183-190) underline the importance of vicarious aggression as having a beneficial effect in reducing the strength of the instigation to other, more socially dangerous forms of aggression. Thus, for example, watching public executions or listening and telling aggressive stories, should serve as a catharsis of pent-up aggression which might otherwise disrupt social harmony.

c. Critique by social learning theory and L. Berkowitz .

Although an adequate critique of the psychoanalytic and drive theories on aggression is beyond the scope of this study, nevertheless, if only for the sake of completion, brief mention is made here of a widely supported position in North American psychology as represented by A. Bandura, which emphasizes the importance of acquired behaviour through

imitation of parental and peer models. Bandura and others in this group argue that vicarious experiences of aggression through media-portrayed violence do not result in a catharsis of hostility.

Bandura (1973b) attacks the Frustration-Aggression theory as having little predictive power, especially since the terms "frustration" and "aggression" subsume such a diverse set of conditions and are colored by value judgments, that they no longer have specific meaning. Furthermore, animal experiments have failed to substantiate the idea that aggression is a fundamental instinct (cf Scott, 1958), but have shown that children and animals learn to behave aggressively by observation and imitation of aggressive actions.

In social learning theory, it is not that frustration creates aggression, but that aversive experiences produce emotional arousal that can elicit a variety of behaviors, depending on the types of reactions people have learned for coping with stress. The varied array of emotions experienced phenomenologically seem to stem from a common diffuse state of arousal, rather than distinct drive states. External defining influences determine what the arousal is called (anger, fear, etc.). Furthermore, Frustration-Aggression theory presupposes the existence of frustration

as a condition for aggressive behaviour. But Bandura and his co-workers have shown that this is not necessary. Indeed, human aggression can also be activated by anticipated positive consequences, thereby obviating the necessity for emotional arousal. Social learning theory does not view aggression as inevitable or unchangeable, but a product of the aggression-promoting conditions operating within society.

Another critique of the psychoanalytic and drive formulations of aggression comes from Leonard Berkowitz (1965b). He charges that they neglect the importance of situationally determined stimulus conditions, i.e., external stimuli. The emotional reaction (anger) resulting from a frustration creates only a readiness for aggressive acts. Previously acquired aggressiveness habits can also create such readiness. However, in order for an aggressive response to occur, there must be suitable cues, i.e., stimuli associated with the present or previous anger instigators. As a result, Berkowitz developed a cue model of aggression which largely denies the possibility of vicarious catharsis through media violence (discussed in section D, II a, c).

#### B. The Hostility Catharsis Hypothesis--vicarious aggression

Hostility catharsis implies that the instigation to aggression is lowered by aggressive actions. The expression

of aggression is seen as lowering the probability of further aggression, as resulting in the diminution in the tendency to aggress. The vicarious hostility catharsis hypothesis connotes that vicarious (symbolic) participation in aggressive activities presumably reduces hostile impulses, and therefore decreases the probability of subsequent aggressive behaviour.

There are actually two kinds of catharsis activities found in the experimental literature:

1. active hostility catharsis. Here the subject does some action instrumental in achieving the cathartic effect. This in itself can be sub-divided into (a) vicarious hostility catharsis, in which the subject expresses aggression motorically in fantasy play (with toys, etc.), or displaces his aggression by aggressing against a substitute target (other than the original instigating one); (b) direct hostility catharsis, in which the subject aggresses directly against his frustrator, or through some indirect way manages to retaliate against him (as, for example, having someone else hurt him, or by passive aggressive behaviour).

2. passive vicarious hostility catharsis. Here, the subject is relatively passive and does not have to engage in any behaviour other than fantasy. Examples of this would be watching an aggressive sports game, viewing a film

depicting violence, listening to aggressive stories, etc.

The assumption is that all these forms of aggressive expression "drain off" aggressive drive or motivation, and result in a diminished probability to further aggress.

However, over time, the term catharsis came to center around the feelings that an individual experiences following the expression of an emotion (Nighswander and Mayer, 1969). Thus, for example, the individual who expresses his hostility may often experience feelings of satisfaction and "tension" or arousal reduction. Indeed, the ego psychologists, Hartmann, Kris, and Loewenstein (1949) believe that aggression bears the same relation to pleasure and to unpleasure as does libido. Hence, discharge of aggression gives rise to pleasure; accumulation and lack of discharge give rise to tension or unpleasure. But "tension" reduction, a feeling of relief or pleasure, a decrease in physiological excitation, does not necessarily mean that some sort of diminution of aggressive impulses has occurred. Berkowitz (1962, 1964a, 1970), contends that tension reduction may be pleasurable, but it is problematic whether the overt hostility will necessarily lessen the likelihood of any further aggression. Instead, an aggressiveness habit may develop because of the reinforcement (tension reduction). Indeed, the experimental literature shows that the relation between

tension reduction and aggression reduction is often inverse. The confusion lies with investigators who refer to tension reduction as showing evidence for catharsis. The term pseudo-catharsis seems more adequate in describing this phenomenon.

In tests of the catharsis hypothesis, not only are the different forms of aggressive expression considered equivalent, but different dependent measures are used to assess post-experimental residual hostility (e.g., questionnaires measuring hostility, duration and intensity of electric shocks, physiological arousal, mood, etc.). Also, there seems to be a difference of opinion as to whether or not the subject has to be annoyed, frustrated or instigated. It would seem that a majority of investigators believe that it is important for the subject to be annoyed, although there are considerable exceptions to this assumption. Indeed, the often contradictory findings may be traced to different paradigms resulting from differences in cathartic aggressive expression, in level of subject arousal, and in the measurement of subsequent aggression.

#### Summary

The vicarious hostility catharsis hypothesis implies that vicarious aggressive experiences partially reduce or "purge" aggressive drive, resulting in the lowering of the

probability for further aggressive display. This lowering of the instigation to aggress can presumably occur through externally "packaged" fantasy such as found in aggressive films or on television shows depicting violence. The result should be a reduction of hostility in the organism. If true, then media portrayed violence may be a safe way to drain potentially destructive aggressive feelings. The present investigation devotes itself to further clarifying this issue.

C. Vicarious Aggression Experiences Without Prior Arousal

A large number of studies show that exposure to vicarious aggression in the absence of prior instigation, far from producing a cathartic effect in terms of reducing subsequent aggressiveness, serves to increase the incidence of aggressive responses. This stimulating effect may result because of the reduction of inhibitions against aggressing, or by the imitation of aggressive behaviour through modeling.

a. Passive vicarious aggression activities

Siegel (1956), found a trend toward an increase in aggressive play in nursery school children. Like-sexed pairs of children saw either an aggressive or non-aggressive cartoon, after which they were observed playing in another room by a concealed adult. Those exposed to the aggressive cartoon showed slightly less ratings for anxiety and guilt.

in play, than those exposed to the nonaggressive cartoon. There was no evidence for a cathartic effect. Instead, there was a slight increase in aggressive play following the aggressive cartoon exposure.

Lovaas (1961), demonstrated an aggression stimulating effect of exposure to filmed violence. In a series of three experiments with preschoolers, the frequency of a bar-pressing response which produced aggressive doll action (the measure of aggressiveness), was observed immediately after the children had been exposed to an aggressive film (a cartoon in which a human-life figure aggressed against another) or a nonaggressive film (a cartoon depicting pleasant play between bears). In the first study, the film followed by doll play was repeated three times, once on each of three days. This sequence occurred only once in the second study. Neither study produced a higher frequency of aggressive play following the aggressive cartoon. In the third study, each child was exposed to the film not seen previously and then had a chance to play with both toys, the aggressive doll toy and the neutral ball toy. The children who saw the aggressive cartoon played equally long with both; those who saw the neutral cartoon played less with the aggressive doll toy. Thus, nursery school children exposed to an aggressive movie cartoon exhibited

more aggressive responses with a toy than did children viewing a less violent film.

Larder (1962), in a replication of Lovaas' experiment, but using an aggressive story instead of an aggressive film, found an increased relative frequency of responding to the aggressive toy.

Perhaps the most extensive research on the imitation of aggressive behaviour through modeling is that of Bandura and his co-workers. In order to establish that the exhibited acts were imitated after those displayed by the model, they utilized novel responses, i.e., behaviour not in the repertoire of the observer, referred to as incidental learning.

In a study by Bandura and Houston (1961), children in the course of their play saw an adult engage in various play activities, some of which were aggressive. Subsequently, ninety percent of the children exposed to aggressive play were inclined to show aggressive reactions in their own play. These reactions were largely incidental to the game itself. Such nonfunctional responses included style of marching, verbalizations made while marching, and striking a doll. Prior nurturant experience especially increased the imitation of aggressive acts.

Bandura (1962), emphasized the learning of new aggressive responses by observation of media portrayed violence.

In a further study (1963), he demonstrated that children imitated the aggressive play of either a rewarded or neutrally treated model more than they did the aggressiveness of a punished model. However when asked, children who viewed the punished model could replay his aggression quite accurately. It seems then, that the observation of punished aggression suppressed manifestations of aggression only, not its ability to be reproduced.

Bandura and Walters (1963a), also indicate that aggression which is permitted or encouraged in one setting tends to generalize to other settings. Bandura, Ross, and Ross (1963b), showed a televised model either rewarded or punished for aggression. They compared this group with two control groups who either saw a non-aggressive model or no model at all. Those who saw the reward condition displayed more imitative aggressive behaviour than the other groups.

In Bandura's (1965a), study, models were either rewarded or punished for aggressive behaviour. Compared with a control group that saw the model neither rewarded nor punished, much less aggression was later shown by the model-punished group. The no-consequences control were almost as aggressive as the model-rewarded group, suggesting that children may be just as likely to imitate the aggressive character who gets away with it. In a test for spontaneous imitation,

children were offered positive incentives for performing behaviours they observed. With the promise of reward, there were approximately twice as many imitative aggressive responses.

Bandura (1965b), hypothesized that the unpunished occurrence of aggression may not only convey permissiveness for aggressive actions, but it may also result in some degree of vicarious extinction of anxiety responses that are usually conditioned to intensive forms of physical aggression.

Hicks (1965), studied the duration of retention of imitated aggressive behaviour. Films of children and adults engaging in aggressive play were shown to boys and girls who were then mildly frustrated and then given a free play opportunity. Results showed that the children tended to imitate all models more than the no-model control. Viewing the boy-model yielded the greatest effect. After six months, they still showed more aggression than the controls, although considerably lower than the first time. Similarly, Hicks (1968), found that approximately forty percent of the behaviors were recalled after eight months. In this study, children watched a televised aggressive model while in the presence of an adult "co-observer" who made positive statements for one set of subjects, and negative comments for

other subjects. In the control group, he remained silent. In a subsequent test with the co-observer who made positive comments, there was high imitative aggression. With the co-observer who made negative comments, there was a reduced level of aggression in comparison with controls. But when he was absent there were no differences between them.

The results of imitation of a model's aggressive behaviors are also found when the children are frustrated after the exposure to the model (e.g., Hicks, 1965). In a study by Bandura, Ross, and Ross (1961), preschool children observed an adult model aggress against a large rubber doll (Bobo doll). They were then frustrated by not being able to play with interesting toys, after which they were placed in a room with the Bobo and other toys. A control group was not exposed to the model, whereas a third group saw the model working constructively. Results indicated that observing the aggressive model significantly increased the imitation of aggressive behaviour in spontaneous play toward the Bobo toy. Other aggressive behaviour increased also, but not significantly. Thus, the aggressive-model frustrated group was significantly more aggressive than the other two groups. Boys were more aggressive than girls, especially when the aggressive model was a male.

Bandura, Ross, and Ross (1963a), tested the hypothesis

that the likelihood or extent of imitation of aggressive behaviour would be positively related to the degree of reality inherent in the behaviour. They exposed three models (live model, filmed model, and filmed fantasy-cartoon) plus a no-model control, to children. After a mild frustration, spontaneous play was observed. Results indicated that all experimental groups showed more aggressive behaviour than controls. Children who saw the filmed model (both adult and cartoon) showed more aggressive responses than those in the live adult model condition. Again, the style of aggressive play was affected by the relation between the child's sex and the model's sex. Boys exhibited more aggression. The researchers interpreted these results as evidence that observing aggressive behaviour can both stimulate and shape the form of aggressive behaviour.

Thus, the work of Bandura and his associates strongly suggests that under certain conditions depicted aggressive responses are imitated, and this has a facilitating effect on children resulting (in the absence of pain cues) in the increased expression of aggression. Imitation of aggressive play occurs especially when the model is rewarded or treated neutrally, the model is the same sex as the child, the child is moderately frustrated after exposure to depicted aggression, and no disapproval of the model's behaviour is provided

by adult's in the child's presence. Indeed, Bandura argues that much of the child's behaviour is acquired through imitation of parental or peer models.

Feshbach (1972), showed a brief movie of a campus riot to school children, after telling them that this was either a newsreel of an actual riot or a "Hollywood movie". At the completion of the film, the children who had viewed the supposedly real violence were more punitive than the subjects who believed they had seen only a fictitious film. Feshbach contended that the "real aggression" film had evoked aggression-enhancing reactions, whereas the "fantasy aggression" condition had lessened their aggressive inclinations, either by stimulating aggression-controlling mechanisms or by producing a vicarious catharsis. However, Berkowitz and Alioto (1973), suggest that by being aware of the make-believe nature of the "Hollywood movie", the children withdrew psychologically from the movie. The "fictitious" movie therefore had less of an impact on them--a suggestion borne out by research on the meaning or interpretation of viewed aggression (e.g., Berkowitz and Alioto, 1973; Geen and Rakosky, 1973; Geen and Stonner, 1972).

Exposure to aggressive stimuli has generally been shown to increase aggressive behaviour not only in young children, but, to a lesser extent, in adolescents and

adults as well, even though they are not aggressively provoked prior to the exposure. For example, Walters, Thomas, and Acker (1962), found that subjects increased their willingness to inflict physical pain as a result of viewing a violent film. Adult men subjects, believing that they were participating in a study of the effects of punishment on associative learning, were asked to administer electric shocks to a "learner" everytime he made a mistake. Errors were pre-programmed. After each error, the subject was to select one of the eleven intensity levels of the electric shock used as punishment. After thirty trials, some saw an aggressive film (knife-fight), others a control film (on co-operative action). This was followed by a second series of trials. Results indicated that the group shown the aggressive film shifted to higher punishment levels in comparison with the control group. Similar results were found by Walters and Thomas (1963), and Walters and Brown (1963), with teenage males, and male and female adults. Also, for example, Hartmann (1969), using delinquent boys, a social-economic class quite different than college subjects, found non-provoked subjects significantly more violent after seeing a violent film than those seeing a non-violent film. Film violence, it would seem, can stimulate aggressive motivations or response tendencies.

Liebert and Baron (1972), had boys and girls of two age groups view excerpts from actual television programs depicting either aggressive or non-aggressive scenes. This was followed by an opportunity to aggress against a peer, followed by a free play situation. Results indicated that children exposed to the aggressive program engaged in longer attacks ostensibly against a child victim than subjects exposed to the non-aggressive program. The aggressive program also elicited a higher level of aggressive play than the non-aggressive one, particularly among the boys. Again modeling and disinhibitory factors were used to explain the results.

In a naturalistic study, Goldstein and Arms (1971), also found a significant increase in hostility in male spectators who viewed a football game (an aggressive sport), compared to subjects watching a non-aggressive game (gymnastics).

The available evidence leaves little doubt that viewing television or movie violence leads to the learning of at least some aggressive responses in children, and to a lesser extent in adults. Several critics (e.g., Klapper, 1968) have argued that such findings are not directly relevant to the question of whether exposure to televised aggression will increase children's willingness to engage

in behaviour which might actually harm another person. But studies (e.g., Hanratty, O'Neal, and Sulzer , 1972; Liebert, and Baron, 1972) in which a human victim has replaced the inanimate target, have clearly demonstrated that exposure to the behaviour of filmed aggressive models may lead young children to directly imitate aggression against a human victim.

b. Active vicarious aggression activities

Kenny (1953), attempted to assess the strength of the instigation to aggression in children, following an experience in which aggressive behavior was permitted. The experimental group was provided with two catharsis situations utilizing a play therapy technique. The control group spent an equal amount of time playing on swings or with a jigsaw puzzle. Using the first five episodes on the Korner Incomplete Story Test for the assessment of initial aggressivity, and the last five episodes for the final hostility measure, it was found that the control group showed a decrease in total aggression scores which was significantly greater than the slight decrease in the experimental group. Of course, if vicarious hostility catharsis occurred, then the experimental groups given the vicarious aggression opportunities should have shown a greater decrease in aggression than the control group. However, these results

do not necessarily preclude catharsis since, as Berkowitz (1958) points out, the amount of frustration provided by the experimental task was not controlled, and the experimental groups may have been more interested in the swings and puzzles, so that they were actually angered more than the control subjects. Also, the subjects playing on the swings may have made more aggressive responses than experimental subjects, consequently resulting in less residual hostility.

Feshbach (1956), also found no evidence for a cathartic effect. He investigated whether the consequences of playing with aggressive versus neutral toys were cathartic or stimulating with respect to the degree of "inappropriate" (theme-unrelated) aggressive behavior manifested. The aggressive play objects elicited significantly more inappropriate aggression than the neutral toys. The difference between the control and experimental groups in the proportion of boys rated initially as less aggressive who increased in classroom aggression, was significant. Thus, he found no support for a cathartic reduction of hostility as a function of permissive free play experiences (the usual "play therapy".) There was no significant effect for girl subjects. However, he points out that subjects in this experiment were not protected from continuous sources of frustration, so that

the vicarious catharsis hypothesis cannot really be discounted.

c. Summary

Studies differing in choice of both aggressive stimuli and dependent measures, have shown that observation of models displaying aggressive behaviour with no untoward consequences, increased, rather than reduced, the incidence of aggressive responses in viewers (cf. Bandura, 1973a; Madsen, 1968). This has also been the case with subjects exposed to other vicarious aggressive activities, some active--such as playing with aggressive toys, others passive--such as listening to aggressive stories. Bandura's (1973a, b) social learning approach shows children and, to a lesser degree, adults adopting aggressive behaviour patterns when repeatedly exposed to aggression. The more similar the behavior depicted in the communication message is to the individual's situation in real life, the greater the probability of it being emulated.

The increase in aggressive behaviour has been explained as due to (1) reduction of inhibitions against aggressing by making it seem acceptable, (2) vicarious extinction of anxiety responses through observation of aggression, thereby lowering restraints against aggressing, (3) stimulation by film violence of aggressive motivations or response

tendencies; and (4) imitation of aggressive behavior through modeling. As Bandura (1973b), states: "The empirical evidence, considered together, reveals that modeling influences can function as teachers, instigators, inhibitors, disinhibitors, stimulus enhancers, and as emotion arousers" (p. 222). His theoretical orientation highlights the learning of aggressive behavior by observation of aggressive models, or on the basis of direct experience (positive and negative reinforcement) and indirect experience (vicarious reinforcement).

D. Vicarious Aggression Experiences With Prior Arousal

According to the vicarious catharsis hypothesis, vicarious participation in aggressive activities presumably reduces hostile impulses, and therefore decreases the probability of subsequent aggressive behavior. The largely negative findings (e.g., Bandura and Walters, 1963b; Berkowitz, 1962) have led some writers to a revision of the original form. Thus, for example, Bramel, Taub, and Blum (1968), Buss (1961), and Feshbach (1961; 1964) contend that the cathartic or drive-reducing function of aggressive modeling stimuli occurs when the observer has been aggressively aroused at the time of exposure. If aggressive motivation is not activated during the vicarious participation, the exposure augments ensuing aggressive responses.

I. Evidence for vicarious hostility catharsis  
a. Passive and active vicarious aggression  
activities

In Feshbach's (1955) study, college students were aggressively instigated by verbal insult or treated in a neutral fashion. This was followed by a period in which they could either write imaginative stories to TAT cards depicting aggressive scenes, or perform a neutral activity (a paper-pencil test). A control group of subjects were given the interpolated tasks without the insult treatment. To measure residual aggressive motivation, the subjects then responded to two aggression measures--a Sentence Completion Form and a questionnaire dealing with their attitude toward the experimenter, the experiment, and psychological research. On the Sentence Completion, the aroused group given the fantasy task of responding to the TAT cards had significantly less hostility than the aroused subjects given the neutral task. The insult fantasy group also scored significantly lower on the questionnaire (indicating less hostility) than the insult-neutral group. Feshbach interpreted this as evidence for vicarious (symbolic) hostility catharsis. However, Berkowitz (1958) suggests that the neutral task may have increased aggressive drive and that the frustrated subjects may have found the

fantasy task sufficiently enjoyable to overcome much of their annoyance. He further suggests (Berkowitz, 1960), that subjects' responses to TAT cards gave rise to guilt and/or aggression anxiety which suppressed subsequent manifestations of aggressive responses. Also McClelland (1956), suggests that the instructions for the TAT ("feel free to write whatever you like. . . .") reduced the subjects' irritation with the insulting experimenter. Another possibility is that the greater amount of writing (motor activity) on the TAT cards may have dissipated some arousal or tension. Strictly speaking, of course, this study is one on active vicarious aggression, and may not be akin to viewing film violence, a more passive activity.

In another study, Feshbach (1961), found that vicarious participation in film-mediated aggression had a cathartic effect on angered subjects. He employed a prize fight film which he compared with a neutral film (spread of rumors). Using as his dependent measures the rating questionnaire and a word association technique, he found that insulted subjects who saw the fight film gave fewer hostile responses on both measures than insulted neutral-film subjects. There was no difference in postexperimental aggression in the non-aroused groups exposed to these films. Berkowitz (1964b), suggests that the naked display of violence has an inhibiting

effect due to aggression anxiety and guilt, and this may account for Feshbach's results. Bandura (1965b), on the other hand, suggests that the failure of the aggressive film to yield an enhancement effect under nonaroused conditions in this study, may mean that the control film's content was not a neutral stimulus. Walters, Thomas, and Acker (1962), and Walters and Thomas (1963), also suggest that Feshbach's results might be due to the heightening of aggressivity by the "neutral" film about rumor mongering. Indeed, the latter investigations classified the rumor film as actually depicting socially aggressive behaviour. If that is the case, then Feshbach's results cannot be interpreted as evidence for vicarious hostility catharsis, since the neutral film may have really been an aggressive film.

Singer and Rowe (1962), arranged to have a surprise mid-term exam administered to college students, hence frustrating them. After the tests, some were given an opportunity to daydream and others performed an absorbing task. The former group showed a reduction in anger and aggression on the Feshbach's scales, but tended to increase their anxiety level. Nevertheless, Singer (1966, 1971, 1975), does not attribute this to catharsis, a partial reduction of a certain quantum of aggressive drive, but rather to a distracting effect, a change of moods or emotional arousal

level, which changed the prior motivational state. And, of course, the "absorbing task" may have been more frustrating.

Pytkowicz, Wagner, and Sarason (1967), used both TAT stories and free daydreaming as intervening tasks following prior induction of anger. For their dependent measures, they used the Feshbach attitude questionnaire, self ratings of hostility (Sarason Hostility Scale) and a modified word association test. Results indicated that only for those persons who showed a predisposition to frequent daydreaming was there a reduction in aggression following fantasy activity (either writing TAT stories to aggression-depicting cards or daydreaming). In addition and contrary to a simple energy concept of catharsis, the opportunity to engage in fantasy did not lead to a quantitative reduction of anger but rather shifted the emphasis of rage projected towards the insulting experimenter to increased self ratings of hostility. Furthermore, the high daydreamers who showed the reduction in direct anger did not resort to the intervening period to specifically aggressive fantasies, but showed a more general range of daydreams, again contradicting a specific-drive reduction conception. Again, Singer (1971, 1975) suggests that the opportunity to daydream afforded them a chance for relief from negative affect and changed their mood somewhat. Also, D.L. Singer

(1968) questions whether these results are evidence for vicarious catharsis. Instead, the subjects may have felt guilty for their aggressive stories and tried to undo these feelings by rating the experimenter more favorably.

Indeed, Goranson (1970), claims that reductions in aggressive behavior following a vicarious aggressive activity are more easily interpreted by inhibitory processes rather than catharsis. For example, Tannenbaum and Goranson (quoted in Goranson, 1970), had college men angered and then showed them an aggressive film (boxing match). Three different taped endings were given as the final outcome of the film: (1) a positive outcome resulting from the beating of the protagonist; (2) a negative outcome which stressed the defeated boxer's injuries; (3) a control tape recapitulating the fight. Results showed that the intensity of shocks the subjects' chose to administer was significantly reduced by exposure to the negative outcome version. Goranson (1969), using a similar procedure, found that the inhibitory effect was obtained even when the hostility and bloody suffering was not directly attributable to the fight. Comparison of mood ratings indicated that the reduced aggressiveness was not due to any pleasurable, cathartic reduction of anger or tension (because of the perception of suffering), since these changes were roughly

the same in the different conditions. The negative outcome group actually reported feeling less happy following the film.

That fantasy activity can produce a change in mood or a shift in cognitive focus, thereby reducing a tendency to aggress in aroused subjects was shown by Biblow (1970). In his study, children aged ten to eleven were angered by having their play disrupted by an older child. Then they were subjected to an aggressive film, a non-aggressive film, or no film. Subsequent free play was observed and rated for aggression and other emotions. Results indicated that children initially designated as highly imaginative showed a reduction in aggressive play following exposure to the films, especially the neutral film. The less imaginative children seemed more likely to increase in aggression after exposure to the films. Again, Singer (1971, 1975) underlines the importance of fantasy in affording a delay between impulse and action and furnishing a satisfying alternative behaviour. Biblow also questioned the results as indicating catharsis, and hypothesized that reduction in aggression following any type of fantasy activity is brought about by a mood change with the prevailing aggressive mood yielding to a new affective state. It was also proposed that only individuals with highly developed imaginal skills can

effectively utilize fantasy to change their aggressive mood.

In Paton's (1972) study, college subjects were subjected to a series of insults while performing a task. Immediately after, one group looked at pictures full of aggressive material, another group was shown interesting neutral pictures. The groups were then encouraged to engage in fantasies and to report these to the experimenter. Both groups who had an opportunity to fantasize, showed less aggression toward the insulter (on a questionnaire), than the group not given this opportunity. Subjects in the neutral fantasy condition showed a greater reduction in subsequent anger than those whose fantasies were primarily aggressive and violent. This too cannot be taken as evidence for catharsis, since one would have expected that the greatest drop in aggression would have occurred for angered subjects engaging in angry, hostile fantasy material rather than nonviolent ideation. Paton, adopting a cognitive-affective theory, suggests that the effect of fantasy following insult primarily diverts the subject from a high level of persisting tension, and provides him with an alternative mood state that reduces the likelihood of him showing subsequent anger.

Manning and Taylor (1975), suggested that previous inconsistent studies reflected the difference between

aggressive responses and hostile responses. Both responses may be different and may be controlled by different eliciting and reinforcing stimuli. The cathartic hypothesis, however, refers to a reduction in motivation, not behaviour. Their study involved a direct comparison of the two types of responses under conditions of instigation versus no instigation, and aggressive versus neutral film. Male college subjects were instigated by a confederate on a cognitive skills task, or treated in a neutral fashion. They were then shown either an aggressive film or a neutral film (on races). Their residual hostility was measured by the number of hostile responses seen through a tachistoscope presentation of ambiguous stimuli. The aggression measure were shocks ostensibly delivered on an aggression machine to the confederate on a learning task. Results showed that the hostility scores were significantly lower in the aggressive film condition than in the neutral film condition. But contrary to their hypothesis, there was no stimulation effect on aggressive responses. This they feel may have been due to the lack of justification for the film violence (cf. Meyer, 1972) which inhibited aggressive responses, and guilt which suppressed tendencies toward expressing more aggression. However, the results can be questioned in other ways, pointing away from a catharsis explanation. Thus,

other than the indirect measure of residual hostility employed, the two films may not have been equally absorbing (cf. Bandura, 1965b). The aggressive film, possibly being more interesting, caused a greater change in mood (cf. Singer, 1971, 1975), or attentional shift (cf. Bandura, 1965b). It may be that the absorbing quality of the aggressive movie altered the aggressive mood in the angered subjects by providing them with intriguing fantasies which distracted them from aggressive intent or reduced their high level of psychological arousal (cf. Tomkins, 1962). Furthermore, the subjects were instigated verbally and retaliated physically. The subject may have felt that shocking the instigator even though using lower shock intensity, was sufficient retaliation (cf. Geen, Stonner and Shope, 1975). Nevertheless, this study does point out the possible difference between hostile feelings and aggressive behaviour a difference discussed below.

It can be argued, of course, that instigation is probably not necessary for a catharsis effect, in the sense that it can be assumed that hostility is always minimally present in people. However, the numerous studies in which non-provoked subjects, whether children, adolescents or adults (cf. Goranson, 1970; Weiss, 1970), witnessing depicted aggression (filmed or live, cartoons, etc.),

generally showed an increase in aggressive behaviour, seem to counter the catharsis hypothesis. Although Singer (1971), comments that these studies seem artificial and are too far removed from the ordinary events of real life, nevertheless, studies in natural settings, dealing with nonprovoked subjects, are also equivocal. Feshbach and Singer (1971), studied young adolescent boys from middle and lower class backgrounds who were in private schools or residential treatment centers. One-half of each group were given regular diets of either aggressive or non-aggressive television shows to watch over a period of weeks. Daily ratings of actual aggressiveness were obtained. Results, especially for lower class boys, indicated that the aggressive film group was significantly lower in aggressiveness than they had been initially; the non-aggressive film group increased in aggressive behavior. The greater the initial aggressive level of a boy, the more likely he was to reduce his aggressiveness if he had a steady diet of aggressive films. These boys also reported that watching the more aggressive films increased their repulsion for aggression (thereby suggesting inhibitory processes rather than catharsis). However, it can easily be argued that those deprived of aggressive films may have remained more frustrated because of this forced withdrawal of exciting entertainment, and

consequently this may have increased aggressivity. A critical review of this study is presented by Liebert, Sobol, and Davidson (1972).

b. Studies on hostile humor

Freud (1960), proposed that hostile wit or humor is a valid form of attack. While in all humor pleasure is derived from the cognitive processes involved (e.g., word play, reference frames, incongruity), in hostile humor, expression of impulse provides an additional source of gratification. Hostile humor is a symbolic form of attack or aggression, and should be capable of providing a cathartic reduction in aggressive motivation, since from the psychoanalytic point of view, a partial reduction in motive strength is an inherent by-product of any form of impulse expression (Freud, 1959.; Rapaport, 1960).

Dworkin and Efran (1967), had angered subjects listen to either hostile humor, non-hostile humor, or a documentary and musical recordings. Humor significantly reduced reported feelings of anger and anxiety (as measured on the Nowlis-Green Mood Adjective Check List). However, since the hostile humor did not cause a significant greater drop in hostility scores than non-hostile humor, this cannot be taken as evidence for vicarious catharsis. In Landy and Mettee's (1969) study, subjects were induced to anger by a

confederate and then randomly assigned to one of three conditions: rating the humorousness of a set of hostile and non-hostile cartoons; rating a set of photographs; or subjects were asked to evaluate the confederate before rating the cartoons. They then evaluated the confederate on a questionnaire. Again, the humor condition was significantly more effective in reducing the degree to which the aggressor was disliked than either of the two other conditions. However, as the authors point out, to say that vicarious catharsis took place is uncertain, since it was impossible in this study to determine whether exposure to hostile humor specifically was responsible for reduction of the hostile feelings toward the confederate. Instead, the alternate explanation that exposure to humor produces responses which are incompatible with the expression of hostility, was offered.

Baron and Ball (1974), using electric shock as the dependent measure, found that exposure to non-hostile cartoons significantly reduced the duration of shocks given to the insulting confederate by the angered subjects, but failed to influence the level of aggression shown by the non-angry group. Again, the findings were interpreted in terms of the elicitation by humor of responses and emotional states incompatible with anger or overt aggression.

Leak (1974), found that angered subjects rated the insulting experimenter less negatively following aggressive humor (jokes), than aroused subjects given non-aggressive humor. Although this appears to be a case of vicarious hostility catharsis, the finding that angered subjects did not show an increased preference for hostile jokes when compared to non-aroused controls, which would be expected if real catharsis occurred (since by purportedly expressing the aggressive impulse more pleasure accrued), casts doubt on this interpretation. Also, although the hostile and non-hostile jokes did not differ in humorous quality (both judged equally funny), they may have differed in other qualities (e.g., complexity of content, esthetic form) that made them differentially absorbing (interesting).

D.L. Singer (1968), exposed black civil rights workers in the south to white, pro-segregationist, racist speeches in order to arouse their anger. Then, on tapes, they heard black performers deliver hostile, anti-segregationist humor, neutral humor, or a benign speech. Both hostile and neutral humor were aggression and tension reducing, as measured by a mood checklist, for moderately aroused subjects. For highly aroused subjects, hostile humor was particularly aggression and tension reducing. Although Singer sees this as support for the vicarious catharsis hypothesis, this

study, unlike the previously cited ones on aggressive humor, had the "hate object" as the target of the hostile humor, i.e., the hostility was directed at the anger-provoking stimulus (white racists). It is not too hard to imagine that extremely angered subjects were more gratified in hearing hostility directed at the "hate" object (cf. Berkowitz, 1962). The situation of watching an aggressive film, or generally non-directed hostile humor, is quite different from the situation present in this experiment. Indeed, the results here seem quite consistent with some studies on direct, rather than vicarious, hostility catharsis, where direct retaliation against the frustrator (either by the provoked subject or someone else) was aggression reducing (e.g., Doob, 1970; Doob and Wood, 1972). However this aggression reduction may have been induced by inhibitions (guilt or anxiety) against expressing hostility, after feeling pleasure (tension reduction) by listening to hostile humor. Also, the possibility exists that the hostile and neutral humor were differentially distracting or absorbing, and this was highlighted for the highly aroused subjects.

- c. Jerome Singer's and Albert Bandura's theoretical explanations of the quasi-cathartic effect

The number of studies showing reduced aggressiveness

following a vicarious aggressive experience, have been independently explained by Singer and Bandura without accepting the vicarious catharsis hypothesis.

Singer (1971), states that even if one questions the concept of aggression as a periodic drive reduced partially by vicarious (fantasy) expression, the possibility remains that witnessing an aggressive film (or engaging in some other vicarious aggressive activity) may provide some pleasure or distraction to an angry person, enough to change his mood, even if it does not dispel the original anger. The film may distract the angered subject from focusing on his problem, and may provide a satisfying alternative to direct action. That is, fantasy can provide alternative response possibilities which can yield pleasure, distraction, or offer different avenues of reaction in the face of frustration and aroused anger. Absorbing material, whether aggressive or not, may alter aggressive mood, providing fantasies which distract the person from an aggressive intent and thereby reduce a high level of psychological arousal (cf. Tomkins, 1962). Thus, what happens is not a partial reduction of a certain quantum of an aggressive drive, but rather a distracting effect, a form of diversion which changes the focus of attention, a shift in cognitive focus which changes the initial situation, thereby changing

mood or emotional arousal level. As he states relating to the level of film interest . . . " it may be that this absorbing quality of aggressive movies alters an aggressive mood . . . or provides fantasies . . . which because of their intrinsic interest distract the person from an aggressive intent. . . ." (Singer, 1971, p. 51). Furthermore, "in this sense it is possible that cathartic effects occur through the enjoyment changes in mood and escape value of aggressive material" (ibid., p. 53).

Thus, it is entirely possible that more reduction in aggression results after exposure to an aggressive film than a neutral film because of the differentiation in interest, absorption, or distraction. Presumably, an equal amount of lowered aggressivity should result if both the aggressive film and neutral film are similar in interest, absorption, or distraction. Indeed "we need more research evidence to show that the 'control' movies are as enjoyable as 'aggressive' movies" (Singer, 1966, ch. 4). Obviously, however, the reduced aggressivity is not due to a vicarious catharsis of hostility, a partial reduction of the aggressive drive, since theoretically, a similar reduction can occur by experiencing a non-aggressive vicarious activity. The phenomena of reduced aggressivity is really quasi-cathartic.

A similar point is made by Bandura (1965b, p. 28; 1973b, p. 210). A person who is in a heightened emotional state due to a frustrating event is apt to undergo some reduction in general arousal level. But this can be accounted for by stimulus-change processes. Emotional arousal following insult is revived and even enhanced on later occasions through symbolic reinstatement of the anger-provoking incident (i.e., by brooding over it). But this persistence of elevated arousal, according to social-learning theory, is not due to the existence of an undischarged reservoir of "aggressive drive". Rather, it is attributable to self-generated stimulation. By becoming immersed in a new activity that supersedes the preoccupying, internal eliciting stimuli, some arousal or "tension" reduction will occur. That is, engrossment in an absorbing activity will provide relief from self-generated distress. As a result, the diminution of emotional arousal is a consequence of attentional-shifts rather than a cathartic effect of having experienced aggression vicariously. Bandura, therefore, expects "equally salutary effects from getting involved in an absorbing book, a movie, a stage play, or a televised program containing few, if any, aggressive stimuli" (Bandura, 1965b, p. 28).

Thus, a similar quasi-cathartic effect in terms of

reduced aggressivity can follow from both a vicarious aggressive activity (viewing an aggressive film) and a non-aggressive activity (viewing a "neutral" film), if both are equally absorbing or interesting, and result in similar attentional shifts away from preoccupation with one's distress. This reduction in emotional arousal or "tension" can lead to reduced aggressivity, but not because of a purge of "aggressive drive". Hence, the phenomenon is really quasi-cathartic.

Therefore, studies purportedly showing the vicarious hostility catharsis effect can be challenged on the basis of whether the aggressive movie and neutral movie were similar in terms of interest, distraction, or degree of absorption. If the aggressive film was more interesting and involving, it should theoretically cause a greater reduction in arousal and thereby less residual hostility.

#### d. Summary

Although a number of studies, differing in choice of both aggressive stimuli and dependent measures, have purportedly shown reduced residual hostility or aggressiveness following a vicarious aggressive experience in angered subjects, the evidence for vicarious hostility catharsis is meager (Weiss, 1970), and does not compel an adoption of the vicarious catharsis hypothesis. Instead, any support

offered can adequately be explained by the arousal of aggressive anxiety and/or guilt leading to subsequent inhibition or suppression of aggressive behaviour (e.g., Berkowitz, 1962; Goranson, 1969); or by the distracting effect of vicarious activity leading to a mood change (e.g., Singer, 1971, 1975), or by an attentional-shift process generated by the absorbing or interesting material (Bandura, 1965b; 1973b). This quasi-cathartic phenomenon is not due to any drain of aggressive drive, especially since, theoretically, one can achieve equal reduced aggressiveness through a non-aggressive vicarious experience. Hypothetically, one can get either a "cathartic" or "instigational" effect depending on the guilt and aggression anxiety generated by the aggressive and non-aggressive films and their differentiated degrees of interest, involvement and distraction potential.

Singer's and Bandura's models, which can be called the Distraction-Attentional Shift hypothesis, appear to emphasize the change (reduction) in emotional arousal or mood. The prediction that can be made on the basis of this hypothesis is: given an aggressive and nonaggressive film that do not differ in their degree of involvement, interest or absorption, the reduction in emotional arousal should be the same, all other things being equal. Thus, the anger or

hostility experienced by an instigated person should similarly abate whether viewing the aggressive or nonaggressive film. This reduction in hostile motive however, does not necessarily have to lead to equal reductions in aggressive behaviour since there are other factors--both inhibitory and disinhibitory--that may facilitate or suppress aggressive responses. The possibility therefore remains that despite equal reductions in hostility and general tension that may accompany frustration (anxiety, depression, guilt, etc.), there still may be differences in the probability of subsequent aggressive behaviour.

## II. Evidence against vicarious hostility catharsis

A large body of evidence strongly suggests that the effects of exposure to vicarious aggression is counter-cathartic in aroused subjects, i.e., the observation of violence (or experiencing other symbolic aggression activities) increases rather than decreases the subject's subsequent aggressiveness.

### a. Passive vicarious aggression activities-- the Berkowitz studies

Mussen and Rutherford (1961), found that aggressive fantasy can produce an increase in aggressive play, if the play situation is permissive. Children were either frustrated or treated in a neutral fashion. They then saw

either an aggressive film, a nonaggressive film, or no film. The test for aggression was the desire to pop a balloon. Regardless of whether they were frustrated or not, the children who had seen the aggressive cartoon had a significantly higher "popping" score than did the other children. The authors attributed this to a reduction of inhibitions against aggressing, following the exposure to the aggressive film.

The most extensive research on the effects of film violence on aggressive behaviour is that of Leonard Berkowitz and his co-workers, who have reported increased aggression in angered subjects following exposure to aggressive models. A great difficulty in interpreting much of the catharsis literature is that of separating blocked response from reduced drive. It is always difficult to tell whether an observed reduction in aggressiveness represents an actual reduction in instigation or whether it indicates suppression of the aggressive response. Berkowitz (1958, 1960) argues that any reduction in aggressive behaviour following a vicarious aggressive experience can be interpreted, in most cases, as due to the guilt and/or aggression anxiety produced by the experience which suppresses or inhibits further manifestations of aggression.

Berkowitz (1962), suggested that the strong arousal of

socially disapproved drives often serves to elicit fairly strong restraints against the display of the prohibited actions. Nevertheless, it is occasionally possible that exposure to aggressive films may weaken the subject's instigation to aggression. This happens when (1) the angered member establishes a strong association between his own frustrator and the fantasy victim of aggression, and (2) the film (violent or not) may make him forget about the thwartings he has suffered. Carried away by the movie, not brooding on injuries done to him, his anger might well subside. His instigation to anger has weakened because he has not kept himself stirred up (comparable to Bandura, 1965b, 1973b; Singer, 1966, 1971, 1975).

According to Berkowitz (1962), an object is capable of evoking aggressive responses to the extent that it is associated with previous anger or aggression instigators. An angered individual is only aroused to commit an act of aggression. Whether he does perform such an act depends upon, among other things, the presence of stimuli associated with the anger instigator. Although he does believe in hostility displacement, he argues against the notion that the aggressive drive supposedly "pushes" aggressive acts into whatever target happens to be available and is safe to attack. He suggests that a target with appropriate

stimulus qualities "pulls" (evokes) aggressive responses from a person who is ready to engage in such actions. Under certain conditions, observed violence serves as a cue activating previously acquired aggressiveness habits (Berkowitz, 1962, ch. 9). Observed violence has both an eliciting and a disinhibitory effect (Berkowitz, 1962, 1964a). Indeed, depicted aggression increases the probability of later hostility as a direct function of such factors as: the strength of the observer's aggressiveness habits; the degree of association between the witnessed situation and the situations in which the hostile were learned and the later setting; and the intensity of the guilt and/or aggression anxiety aroused by the observed violence (1962, p. 238).

The theory that anger arousal creates a readiness to act aggressively but suitable cues associated with the present or previous anger instigators are necessary to evoke the aggressive responses, was investigated by Berkowitz (1964a). Male college subjects were either angered during a task or treated in a neutral fashion by the who confederate was introduced as either a college boxer or a speech major. They were then shown either a brief brutal prize fight film segment or one dealing with Marco Polo's travels. The subjects seeing the prize fight were given a

brief story outline (which lowers internal restraints against aggression, cf. Berkowitz and Rawlings, 1963). Then each subject was asked to rate the confederate on special forms ostensibly going to the dean and potentially damaging to the confederate. Results showed that the greatest hostility was directed toward the insulter confederate when he had some association with the prize fight movie, (i.e., the college boxer). Since he was associated with both arousal sources, the insult and the aggressive film, he had a relatively strong cue value for aggressive responses. Thus, the effects of depicted modeled aggression are a joint function of the observer's level of internal arousal and the target's cue properties which serve as eliciting stimuli. Under low arousal, a powerful external stimulus is presumed to be necessary to elicit aggressive responses, whereas a relatively weak external stimulus is sufficient under high instigation to aggression.

Berkowitz (1962) has theorized and subsequently supported the hypothesis that when people view acts of violence which seem warranted or justified, inhibitions are lowered and aggressive responses facilitated. When the violence seems unwarranted, aggressive responses are inhibited. The rationale is that in incidents of justified violence, the victim receives the punishment he deserves.

But if the violence is too severe, it will remind him of the need to suppress his aggressive feelings.

Berkowitz and Rawlings (1963), conjectured that Feshbach's (1961) results may have been due to the arousal of aggression anxiety by the aggressive film which inhibited aggressive responses, so that real catharsis did not take place. When people see a villain receiving punishment that is justified, inhibitions may be lowered and people may attack the villains in their lives. Seeing unjustified violence may cause inhibition and suppression of aggressive behaviour. Justification of the violence depicted, then, should prevent the development of aggression anxiety by implying that it is acceptable to be hostile to a person who deserves such treatment. College students were shown a short prize fight film after having been deliberately insulted (verbally) or treated in a neutral fashion by a confederate. Half the groups within both the angered and non-angered conditions were given a questionnaire measuring their attitudes toward the confederate, before viewing the films. One-half the subjects were given a justified synopsis about the depicted violence, the other half were given a less justified synopsis. Then all the subjects responded to a questionnaire containing two items testing the attitude toward the confederate. Results indicated

that the justification manipulation had no effect on the responses of noninsulted subjects. Only among those insulted subjects who did not state their appraisal of the insulting confederate before seeing the film, and only on one of the two attitude items, did the justified aggression synopsis lead to a significantly less favorable response than did the less justified synopsis. For the other item, results were in the same direction but not significant.

Berkowitz, Corwin and Hieronimus (1963), had the same design but included a control group shown a neutral film on canal boats. The insult group exposed to justified aggression expressed significantly more hostility toward the confederate than the control group (on the same item; the other item results were in the same direction but not significant). The unjustified aggression group did not differ from the controls.

In essentially a similar design, Berkowitz (1964b; 1965b) changed the dependent measure of aggression to number and duration of electrical shocks given to the confederate as a means of rating his solution to a problem. The synopsis (justified--less justified) of the violence in the film had no effect on the shocks given by noninsulted subjects. Among insulted subjects, more shock aggression was delivered by subjects who had the justified aggression synopsis than

the less justified synopsis. The greatest aggression was shown by insulted subjects when the confederate was identified as a boxer and they saw the fight film. In the first part of Berkowitz's (1965b) study, employing questionnaire ratings as the hostility measure, results were similar, i.e., the provoked subjects who were shown the aggressive film directed the strongest aggression against their tormentor when he was associated with the film by means of the verbal label "boxer". However, there were also indications that the cue value of the target could elicit aggressive reactions, whether or not the subject had actually seen the aggressive film. That is, even if the subject had not seen the aggressive film, he was likely to direct more shocks toward the person identified as a boxer, since such a designation had an aggressive cue value. Again, these results underline the importance of appropriate aggression-evoking cues in the environment.

The importance of external stimuli in governing the effects of exposure to aggressive film-mediated models is further demonstrated by a series of experiments. Thus Berkowitz and Geen (1966), found that the most aggression (by electric shock) was displayed by angered subjects in the justified film synopsis, when the tormenting confederate was given the same first name as the movie star playing the

boxer in the prize-fight film. Geen and Berkowitz (1966), found that the highest level of aggression was obtained in frustrated subjects when the person shocked was associated by name with the filmed victim rather than the filmed victor. Berkowitz and Geen (1967), found similar results even when the name-mediated association was formed after the film. Berkowitz and Lepage (1967), found that angered men were more aggressive towards their tormentor in the presence of weapons near the shock apparatus than when nonaggressive objects were nearby. Berkowitz (1968), has summarized the results as suggesting that violence in the public media can reduce normed inhibitions to aggression, at least for a short time afterwards, and increase the likelihood that an angered or frustrated person will engage in aggressive behaviour. However, when the depicted aggression is represented as unjustified, or when overt disapproval of fighting is expressed by a companion, there is no enhancement of subsequent aggression.

According to Berkowitz (1969), the general state of arousal produced by the attack or frustration, increases the probability of aggression resulting from observed violence. This arousal "energizes" the latent aggressive responses produced by cues. Indeed, this applies to any kind of arousal. For example, Geen and O'Neal (1969),

found that when subjects were giving shocks to another student under pretext, after having seen either an aggressive or nonaggressive film, the highest level of aggression was shown by subjects who saw the aggressive movie and who had to listen to a loud, continuous noise over earphones (causing arousal) while giving shocks.

Thus, witnessed aggression, rather than lowering the instigation to aggression, as vicarious hostility catharsis maintains, provides stimuli that can elicit aggressive responses in those observers who are ready to attack someone. Berkowitz (1970), reinterprets the evidence presumably indicative of hostility catharsis by proposing that the sight of people being injured aggressively is a reinforcement for those observers who are angry and who have been frequently rewarded for aggression. As a reinforcement, this stimulus might be gratifying, but it is also capable of eliciting further aggression. Several different processes seem to contribute to the increased probability of aggression when, under certain circumstances, people witness aggression: (1) the observer learns something--he can acquire new aggression action patterns imitatively through seeing how the aggressor behaves on the screen, (2) the film violence may lower restraints against aggression, either by showing that aggression pays or by seeming to

legitimize violence, (3) the aggressive movie can stimulate transient aggressive ideas and feelings, and even overt aggressive responses. This is because stimuli that have frequently been associated with a certain type of action are capable of evoking that response on later occasions. If a certain stimulus has been repeatedly connected with aggressive behaviour (e.g., gun), it will be able to elicit aggressive responses from people who are ready to act aggressively. Aggressive behaviour (even words) can also furnish aggression-evoking stimuli. Hence, the sight of people fighting can provide these stimuli. Sometimes the aggressive stimuli can come from a person's own behaviour i.e., even one's own aggressive responses may produce stimuli evoking further aggression. Thus, under certain conditions, an attack on an available target person leads to still stronger aggression, as if the first attack had introduced additional aggression-evoking stimuli. Such a process may be involved in the finding typically obtained with the Buss "aggression machine" procedure; the electric shocks inflicted by provoked men generally increase in intensity over the series of opportunities given them to punish their partner (e.g., Buss, 1963; Geen, 1968). [Buss (1966b), however, suggests that subjects overcome their initial inhibitions to deliver shock and this accounts

for the general increase in intensity over trials].

b. Active vicarious aggression activities

In Freeman's (1962) study, elementary school boys who were rated as motorically active or inactive, were frustrated by withholding a promised reward upon completion of a coding task. Following this, one-third of the subjects told stories to aggression-eliciting projective pictures, one-third spent equal time with a punching bag, and one-third performed neutral activities. Then all subjects performed a second coding task and received the reward. Comparison of performance with the score before frustration was the measure of residual aggression. Results indicated that aggression arousal was reflected in increased aggressive themes in telling stories to the projective pictures (compared to pretext levels). Expressing aggression after arousal led to an overall performance decrement as compared to neutral activities. The aggressive expression stimulated further aggression, thereby decreasing the ability to perform a complex task.

Mallick and McCandless (1966), had third grade children differentially frustrated (high vs. low) by an older confederate who interfered during a task. This was followed by aggressive play, social talk, or a reasonable interpretation of the frustrator's behaviour after which aggression was

measured behaviourally and by like-dislike ratings. Results indicated that although frustration led to heightened aggressive feelings, subsequent aggression behaviour toward inanimate objects (shooting a toy gun at different targets) did not reduce aggression. Consistent with previous studies, aggressive play, without previous frustration, in the presence of a permissive adult, led to an increase in aggressive behaviour. Although reasonable positive interpretation of the frustrating situation had a "cathartic" effect (greater reductions in behavioural aggressive expressions and ratings, cf. Holt, 1970), oddly enough, verbal expressions of aggression toward the frustrator did not reduce aggression directed toward him, but actually increased it (cf. Berkowitz, 1970; Kahn, 1966).

Nighswander and Mayer (1969) also question the vicarious cathartic techniques used in elementary schools where children are provided with the opportunity to aggress verbally, engage in contact sports, shoot toy guns, hit punching bags, etc., in order to vent their most aggressive impulses, especially when angry or frustrated. The research findings suggest that such techniques may tend to increase rather than decrease aggressiveness.

b. L. Berkowitz' cue model of aggression

Berkowitz (1962, 1964a, 1965a, 1970, 1973) has

developed a model of aggressive behaviour emphasizing the importance of aggression-evoking cues. Aggressive reactions are governed by the available target as well as by the events portrayed on the screen. The emotional reaction (anger) resulting from frustration creates only a readiness for aggressive acts. But the aggressive response will not occur, unless there are suitable stimuli associated with the instigator. The strength of the aggressive response made to the appropriate cue is primarily a function of (1) the aggressive cue value of this stimulus, (2) the degree of aggression readiness. Suitable cues may also lead to aggressive behaviour by arousing latent aggressiveness habits, even in the absence of frustration.

Thus, aggressive responses are set into motion by specific aggressive cues. These cues are generally particular objects, such as the instigator, or stimuli associated with these objects. Witnessing an aggressive film provides stimuli which reactivate previously acquired aggressiveness habits (by eliciting latent aggressive responses). This does not occur during exposure to a non-aggressive film. Subsequently, when the aroused subject has an opportunity to aggress against his frustrator, a greater barrage of aggression will be displayed following the aggressive film, since there will be more aggression-

evoking cues in the subject's environment, supplied by the film and the frustrator. The presence of the additional aggressive cues in the environment increases or enforces the likelihood of stronger aggression. Hence, observed violence increases, rather than reduces, subsequent aggressivity and the vicarious catharsis hypothesis would thus seem untenable.

d. Film factors influencing aggressive instigation

In Hoyt's (1967) study, subjects were provoked by an unfairly large number of electric shocks by the confederate. They were then shown a fight film that had four different introductions--vengeance, self-defence, neutral introduction, and a control (no introduction). They then had a chance to shock the confederate on a learning task. Results indicated that the lowest post-film aggression was found in the condition where no justification for the violence was provided. The vengeance group gave the confederate more shocks than the neutral or self-defence groups. Again, it seems that inhibition of aggression results when an angered viewer watches aggressive action that is portrayed as unjustified. On the other hand, aggressive stimulating effects are most evident when the witnessed aggression is seen in a justified context.

Hartmann (1969), used teenage juvenile delinquents as

his subject population, a group differing in social class status than college students. They were either verbally insulted by a confederate (by him expressing derogatory remarks about the subject's performance on a task), or treated in a neutral manner. They were then assigned to one of three film conditions, each film showing two adolescents playing basketball. The neutral film depicted an active but nonaggressive game. The instrumental aggressive film focused on the agent's aggressive behavior. The pain-cues film focused on the victim's pain reactions. The dependent measures were the intensity and duration of shocks the subjects ostensibly administered to the confederate whenever he made errors on a learning task. Results indicated that regardless of the arousal level, subjects who witnessed the modeled aggression behaved more punitively than did subjects who viewed the nonaggressive film. Aroused subjects generally responded more punitively than nonaroused. Specifically, the angered subjects who witnessed the pain-cues film responded more punitively than subjects in the instrumental aggressive film. For nonaroused subjects, this difference was in the reverse direction. The fact that exposure of angered subjects to pain cues augmented punitive behaviour was in accord with Sears, Maccoby and Levin's (1957) theory that if signs of pain and

injury resulting from aggressive behavior have repeatedly been associated with the elimination of frustration, they acquire secondary-reward value. Thus, pain cues serve as positive reinforcers to enhance aggressiveness in angered subjects. Since anger arousal did not significantly increase the punitive behavior of subjects shown the control film, the facilitative effects of anger, Hartmann suggests, seem dependent upon exposure to aggressive cues. The finding that under nonaroused conditions exposure to modeled pain reactions produced less punitiveness than did exposure to instrumental aggressive responses, was explained as due to the arousal of empathy in the viewer which resulted in aggression inhibition. Anger thus seems to raise the threshold for developing emphatic inhibitory responses.

Meyer (1972), had college subjects angered by a confederate by means of electric shocks. Then they saw either a nonviolent film segment, a violent film segment, or no film. The films were represented as either real or fictional, and justified or unjustified. Again, results showed that angered subjects who viewed the justified film violence gave significantly more shocks than angered subjects viewing unjustified real or fictional violence, a nonviolent film, or no film. Thus, the effects of increased aggression demonstrated for angered viewers of justified

fictional violence are also applicable to angered viewers of real film violence. Meyer offers an alternate, simpler explanation to Berkowitz's idea that viewing justified aggression lowers inhibitions. Rather, he argues that justified violence is rewarded (reinforced) by our society in that "villains" are often punished in a violent manner. Therefore, if the subject sees the villain in the film justifiably punished, he may behave violently toward villains in his own environment as a direct result of the film's reinforcing effect. When unjustified violence is depicted, the subject is less aggressive since society negatively reinforces unjustified violence.

Koenig (1972), investigated the relationship between aggression and aggression anxiety, under both high and low frustration conditions. Kindergarten children, after being differentially frustrated, were shown either a justified aggressive film or a nonjustified aggressive film. Results demonstrated that a reduction in aggressive behaviour by subjects in free play, following the film presentation, was directly related to the presence of aggression anxiety. Aggression was exhibited in those instances where aggression anxiety was not operative (justified film), and in direct relation to the degree of frustration. Aggression was significantly inhibited when

aggression anxiety was present in frustrated subjects (non-justified film condition). Thus, the decrease in aggression was not due to drive reduction but to the presence of aggression anxiety and response inhibition.

That the context in which aggression is observed affects the subject's restraints against aggression, and hence his aggressive behavior has been shown by Geen and Stonner (1972). Subsequent attacks against the confederate by means of electric shocks tended to be most intense in angry subjects who had regarded the aggressive movie as revenge and among nonangry subjects who interpreted it as professional violence. The results were attributed to the lowering of inhibitions against aggression by the film. The latter finding was explained as due to the desire of the subject to comply with the experimenter's instructions. That is, the non-angry subject aggresses not out of hostility, but because aggression is instrumental to the attainment of another goal--the experimenter's approval. He experiences a greater reduction in inhibitions against aggression by the example of another person (the winning boxer) aggressing for non-hostile reasons.

The meaning attached to viewing an aggressive episode, as related to subsequent aggressivity, was also studied by Berkowitz and Alioto (1973). Angry university men were

more aggressive (via shocks) toward their tormentor immediately after viewing a movie defined as an aggressive encounter with intent to injure, rather than as a match between professionals doing their business. It seemed that seeing an aggressive encounter resulted in a sensitization to the aggression-evoking stimuli, as well as lowering restraints against aggression (since the explanation given of why the opponent in the film was hurt, justified the aggression he received). In another part of the same study, previously angered subjects displayed the most impulsive aggression if the scene had been introduced as realistic aggression. Viewing the event as fictional aggression, had, they contend, caused the observers to dissociate themselves from the scene, so that aggression-evoking cues were less effective. Thus, it appears that the observer is not a passive responder. He gives meaning to the event and this interpretation, in turn, shapes the scene's stimulus properties, thereby determining what responses are elicited.

Similarly, Geen and Rakosky (1973), had nonangered male subjects view an aggressive film (boxing match) with five different interpretations (revenge, a nonhostile match, a deserved beating, a fictional revenge, no commentary). Subjects who were reminded of the fictional

nature of the movie manifested fewer GSR's (indicating a lower level of arousal) than subjects viewing it in some realistic context. The investigators explain this as suggesting that by ascribing the status of "fiction" to observed aggression, the subject dissociates the violence from his own life setting (cf. Berkowitz, 1962). Aggression which is "not true" may be expected to have less impact on the subject than aggression which has some association with the observer's situation. Thus, a pseudo-cathartic effect (reduction of physiological arousal) can occur. Another alternative explanation is that the other realistic descriptions heightened anxiety over the aggressive communication (i.e., covert aggressive responses due to the aggressive cues resulted in anxiety). Perhaps, they suggest, interpreting an aggressive film as fiction mitigates the anxiety response.

The real vs. fictional dimension of film violence was further supported by Thomas and Tell (1974). Differentially provoked male subjects saw the same violent film presented as either real or fictional. Others saw no film. Aggressive behaviour was then measured by intensity of shocks in a pseudolearning experiment. Results indicated that exposure to real violence in angered subjects yielded significantly more aggression than in the other conditions.

A similar but nonsignificant trend was found in nonangered subjects. They explain these results by the possibly greater disinhibition of aggression following real violent exposure, because it is more generalized to real-life aggressive behaviour than fictional violence. Alternatively, the subject may perceive the aggressive actions as more violent in real rather than fictional film, and hence is exposed to more stimuli associated with aggression. And the possibility remains that exposure to real violence may yield greater arousal than exposure to fictional violence.

Geen (1975), found that the realistic vs. fictional context of film violence affects the degree to which the violence elicits aggression and emotional arousal in observers. Male subjects, differentially provoked, were exposed to a violent film with three explanations. Some were told that it was a real fight, others that it was fictional, and a third group was given no explanation. On a subsequent pseudolearning task, angered subjects who viewed the real fight displayed more aggressive behaviour than all other conditions. In addition, the observation of real violence also sustained mean arterial pressure (a combination of systolic and diastolic blood pressure) at near the level produced by the attack, whereas blood pressure of attacked subjects in the other conditions

declined during the time the fight was observed. Observing real violence was also more arousing as measured by palmer sweat. These results are consistent with Zillmann's excitation-transfer model (Zillmann, 1971; Zillmann and Johnson, 1973), discussed below.

However, Worchel, Hardy, and Hurley (1976), found no differences in subsequent aggressive behaviour as measured on an evaluation questionnaire potentially damaging to the confederate, between subjects viewing a realistic and fictional violent film. Also this study lacked an external arousal manipulation. The films either had commercials or lacked them. Groups viewing the films with commercials, displayed heightened anger and tenseness, and more aggressive behaviour. The greatest aggression was displayed by subjects viewing a violent film (realistic or fictional) interrupted by commercials. They argue that previous findings on real-fictional dichotomy resulted because of the focusing on such qualities. Thus, by focusing on the idea that an aggressive film is fictional or unreal, much of the involvement may have been removed. Their study demonstrated that if subjects are not specifically forced to focus on the staged nature of aggression in films, violent films, even though fictional, will elicit aggression. This is similar to Meyer's (1972) finding (discussed above).

The ultimate outcome of the aggressive film can also influence subsequent aggressivity. In a study by Zillman, Johnson, and Hanrahan (1973), an aggressive film with a happy ending resulted in significantly lower aggressive behavior (as measured by shocks), than the same film without one. The investigators suggest that a happy ending, by relaxing tensions and thus initiating decay of sympathetic arousal, reduces the facilitatory effect of an aggressive film on subsequent aggressiveness. This may be a possible explanation for Feshbach's (1961) cathartic finding, since after reaching a climax the excitation decreased in synchrony with the happy ending (cf. Tannenbaum and Zillmann, 1975, p. 168).

e. Summary

It would seem on the basis of many experiments that exposure to film-mediated aggressive behavior can facilitate and increase subsequent aggressiveness. If, on the other hand, vicarious aggressive behaviour produces feelings of guilt and/or aggression anxiety in the subject, the intensity of aggression may decline, not because of reduced instigation but because of increased restraints.

The Berkowitz' studies suggest that an increase in the likelihood of aggressive activities will occur mainly for aroused subjects when cues associated with the film are

present in the testing situation. [However, the effect is sometimes found for nonangered subjects as well, e.g., Hartmann, 1969; Walters and Llwellyn Thomas, 1963].

The extent to which media violence may instigate such aggressive behaviour has been found to be influenced by factors such as the perceived justification of the observed aggression (e.g., Berkowitz, 1965b; Berkowitz and Rawlings, 1963), the context within which the observed violence takes place--for example, the motives of the aggressor (e.g., Berkowitz and Alioto, 1973; Geen and Stonner, 1972), the degree to which the viewer's victim is associated with the aggressive film (e.g., Berkowitz and Geen, 1966), the final outcome of the aggressive sequence (e.g., Zillman, Johnson, and Hanrahan, 1973), and the degree of real vs. fictional description or interpretation of the film (e.g., Geen, 1975; Geen and Rakosky, 1973).

Nevertheless, the finding that viewing a violent film further elicits aggressive acts, does not necessarily preclude the real possibility of vicarious hostility catharsis. D.L. Singer (1968), believes that a true vicarious catharsis (reduction in aggressive instigation) may indeed take place. The occurrence of an aggressive act can be seen as the product of both motivating and inhibiting tendencies. Thus, viewing justified aggression

is quite likely to lower inhibitions surrounding the expression of subsequent aggression. However, at the same time, aroused subjects may experience a cathartic reduction in aggressive motive strength, and yet may also be more willing to act on the residual motivation. Hence, hostile motive may decrease (catharsis), though there may be an increase in aggressive behaviour. A valid test of the catharsis hypothesis should focus on the residual aggressive motivation, not aggressive behaviour. This, Singer argues, can be done by using a mood checklist, for example. He also suggests that aggression aimed at an extraneous target (the victim in the film, kicking the door in a state of anger, etc.) might fail to have a cathartic effect, not because the catharsis hypothesis is faulty, but because the gradients of displacement and generalization are limited. A somewhat similar point is made by Manning and Taylor (1975), in differentiating between measuring hostile motivation and aggressive responses.

E. Dolf Zillmann's Excitation-Transfer Model

Recent experiments by Zillmann and his co-workers, suggest that, at least in part, the difference in post-experimental aggression is due to the greater physiological excitation (arousal) produced in response to the aggressive film, as compared to the neutral film. In provoked subjects,

this residual excitation from film exposure intensifies the cognitively labeled emotion of anger and the cognitively guided activity of aggression. The increased subsequent aggression after viewing a violent film, as compared to a neutral film, is thus a function of the film's excitatory potential and is independent of the degree of exhibited aggressiveness in the film. Thus, rather than focusing on the categorization of film content (aggressive vs. neutral), Zillmann's work underlies the importance that the resultant physiological excitation of different films plays in subsequent aggressivity.

Zillmann (1971), had subjects angered by a confederate in a learning experiment, similar in procedure to Berkowitz. Then subjects saw one of three films differentiated previously in terms of excitatory potential (in mean blood pressure and sympathetic activation). The films were (a), an erotic, nonaggressive film associated with an excitatory potential above (b), an aggressive film, which in turn had a higher excitatory potential than (c), a nonaggressive film on travel. The films were also differentiated in terms of aggressive cue potential, i.e., the aggressive film portrayed a significantly higher degree of enacted hostility than the other two films (which were virtually identical in terms of aggressive cue potential). Following

exposure, each subject had an opportunity to shock the instigating confederate on a pseudolearning task. The intensity of the shocks was the dependent variable. Results showed that the erotic film condition yielded significantly more intense shock responses than the aggressive film group, which in turn yielded significantly more intense shocks than the neutral film.

Zillmann accounts for these results in terms of his excitation-transfer paradigm and Shachter's (1964, 1970) two-factor theory of emotion. Shachter proposed that an individual interprets his feelings in terms of the environmental cognitions available to him. These cognitions guide him in his assessment of the kind of emotion he is experiencing, whereas the interoceptions of his physiological arousal determine the intensity of that emotion. Zillmann proposes that the time required to adjust cognitively to changes in stimulation differs significantly from the time required to adjust excitationally (distinguishing between rapid, cognition-mediated neural transmission, and the relatively slow humoral processes mediating the excitatory response). The cognitive adjustment thus precedes the excitational adjustment. Stimuli producing slow decaying excitation, will cause this excitation to be carried over into subsequent, and possibly entirely unrelated,

experiences associated with the new situation already adapted to cognitively. The intensity of the subsequent emotional state will then depend on the level of excitation present at the time. This level of excitation is conceptualized as being composed of stimulus-specific arousal and of residual excitation due to incomplete decay. It is this residual excitation that produces an "over-intense" response to subsequent stimuli. Thus, a residual portion of an excitatory response appears to be transferred from a prior to a subsequent state.

The provoked subject can clearly label his feelings toward the tormentor as anger. Exposure to an aggressive film produces some excitation. In the postexposure, the interpersonal situation (in which the provoked subject can retaliate) is reestablished, reinstating the anger label. Because of the residual excitation from the exposure to the aggressive film, the subject feels his anger more intensely, and displays more aggression, than the angered subject following the neutral film exposure (which has less residual excitation). Thus, independent of the degree of aggressiveness manifest in the films, differential effects on aggressive behaviour may result simply from the excitational differences of different films. As a result, depending on the excitatory potential, an aggressive film may have either

a "cathartic" or an "instigatory" effect on subsequent aggression, as compared with a nonaggressive film. Therefore, in Zillmann's (1971) experiment, the nonaggressive, high excitatory, erotic film, intensified the reinstated anger and facilitated subsequent aggressiveness to a greater degree than the less excitatory, aggressive film. The excitational differentiation between the films, of course, confounded with the effect arising from the aggressive cues. Since Zillmann's experiment did not isolate the effect of aggressive cues from that of the excitational residue, the relative contributions of the two factors cannot be isolated in this study.

Zillmann, Katcher, and Milavsky (1972), used physical exercise to place subjects in different states of sympathetic arousal (high vs. low) after they were differentially aggressively instigated (high vs. low) by a confederate. Subsequent aggressive behaviour as measured by intensity of shock ostensibly delivered to the confederate, was found to increase significantly with initial instigation, as well as with residual sympathetic activation from strenuous exercise (bike pedalling) interpolated between the instigation and retaliation. A significant interaction was obtained due to the fact that residual excitation greatly facilitated subsequent aggressiveness in angered subjects,

whereas its effect was negligible under minimal instigation. This latter finding indicates that residual excitation does not indiscriminately energize aggressive behaviour independent of cognitive guidance, (clearly labeled feelings of anger or some other feeling). Only in the condition where the subject, as happens when provoked, labels his feelings as anger is there an intensification of aggressive behaviour due to the residual excitation. Under insufficient provocation the subject will not develop a feeling of anger which can be cognitively reinstated, and the residual excitation will not receive guidance into aggressive behaviour. In this situation the subject can clearly attribute his excitation to the exercise, since the relabeling of the excitatory state is not suggested or demanded by environmental factors.

Zillmann and Johnson (1973), suggest that the claim of an "instigatory" effect (or a "cathartic" effect) of depicted aggression is based on the assumption that the neutral communication, considered as an ideal no treatment control, produces no effect on subsequent aggressive behaviour. But the possibility exists that the neutral film may be an effective treatment. Therefore, a control condition involving no exposure to film would determine a base level against which the effects of exposure to films (aggressive and neutral) could be measured. Thus, in the

absence of a no-film condition, the argument that depicted aggression stimulates (or reduces) subsequent aggressive behaviour can be countered by postulating that the nonaggressive film has an aggression reducing (or aggression enhancing) effect and the aggressive film has a negligible effect.

However, a no-film condition poses a problem, since any attempt to control for the time of exposure produces a behavioural confounding because it potentially alters the motivation to aggress in some way (like any other treatment). Therefore, statements about increments or decrements of aggressiveness caused by exposure to films with aggressive content, can be meaningful only when compared to the effects of exposure to films of other contents, or other equally time-consuming activities, such as reading, etc.

Zillmann and Johnson's (1973) experiment, studied the aggression modifying impact of exposure to films by assessing aggression before versus after exposure. The effect of exposure to a neutral versus an aggressive film differing in excitatory potential (low vs. high) under conditions of both minimal and extreme initial provocation was assessed, relative to a no-exposure condition (in which the level of aggression was assessed immediately after the differential provocation). Results indicated that under minimal provocation, the film conditions did not have a

differential effect on aggressive behaviour (intensity and duration of shock to the confederate). Results proved different, however, for the extreme provocation condition. In comparison to the no-exposure condition, exposure to the aggressive film failed to increase or decrease subsequent aggressiveness (there was an insignificant reduction). Exposure to the neutral film, however, reduced subsequent aggression significantly.

Thus, compared to the no-exposure condition, aggression after exposure to the aggressive film failed to exhibit an increase in aggressive behavior in angered subjects. Nevertheless, the significantly greater amount of aggressive behaviour shown after the exposure to the aggressive film, as compared to the neutral film, in angered subjects, ostensibly replicates previous findings (e.g., the Berkowitz studies). But to attribute this to a facilitatory effect of aggressive films is erroneous. Rather, the inverse seems true: whereas aggressive films maintain aggressiveness, neutral films induce a diminution. Zillmann modified Bandura's attentional-shift theory (Bandura, 1965b) to account for this. According to Bandura, the aggressive film should have resulted in less aggression than the neutral film since it was found to be more absorbing (interesting). But since it did not, Zillmann suggests

that exposure to a film which reiterates the subject's acute motivational state helps sustain the level of physiological excitation for some time. An angered subject's exposure to a communication (film) intervenes into cognitions associated with an acute state of anger and aggressive predispositions. Without such an intervention, the subject's readiness to engage in aggression lingers on for some time, since he continues to entertain the arousal-maintaining cognitions. Exposure to communication disrupts these arousal-maintaining cognitions. But "communications involving contents which relate to the individual's acute emotional state, potentially reiterate arousal-maintaining cognitions" (Zillmann and Johnson, 1973, p. 265). Hence, the aggressive film is expected to reintroduce the annoyance of the instigational experience and associated feelings of hostility toward antagonists, and is not expected to take the angered subject's mind off the disturbing incident. Zillmann assumes that the likelihood of reiteration of arousal-maintaining cognitions is a function of the frequency and degree of aggressive episodes in the film. Neutral films, which fail to reiterate salient cognitions, are relatively more successful in intervening and disrupting arousal-maintaining cognitions.

However, Zillmann also offers an alternative explanation

based on his excitation-transfer theory. Instead of a differential reiteration of arousal-maintaining cognitions made by the films differing in depicted aggression, he suggests an additive combination of residual and pertinent excitation to account for the results. As will be recalled, the aggressive film had a significantly higher excitatory potential than the neutral film. If it is assumed that the substantial excitatory activation resulting from the provocation did not completely subside during exposure to the films, the excitation gradients of each of the two films added unto this hypothetical decay gradient would yield the excitatory differentiation between the various conditions. Thus, the sum of the resultant levels of excitation would be higher in the aggressive film condition than in the neutral film condition and yield the obtained results in angered subjects. The nonangered subject, on the other hand, due to the unavailability of environmental cues, does not interpret any experienced arousal (due to the excitatory potential of the film) as anger which could be reinstated at a later time in the retaliatory period.

Additional support for the excitation-transfer model was found in a number of subsequent studies. Thus, Zillmann and Bryant (1974) found that the presence of excitatory residues at the time subjects were provoked,

enhanced subsequent aggressive behaviour after the residues had decayed. Here, unlike the previous studies, the subjects were first placed into differential states of arousal, then differentially provoked, and later, after excitatory residues from the tasks had subsided, provided with the opportunity to retaliate. Rather than directly energizing aggressive behaviour the excitatory residues intensified the emotional experience of anger and strengthened the predisposition to aggress, hence leading to increased aggression. Other supporting studies include Zillmann, Hoyt, and Day (1974), and Zillmann, Johnson, and Day (1974).

Although, generally, provocation is necessary to demonstrate a facilitation of aggression following violent film exposure, Doob and Climie (1972) showed that an increase in arousal from the film itself, even in the absence of prior arousal by instigation, influences level of aggressivity. Subjects were shown either an aggressive or nonaggressive film (the former was intuitively assumed to be more arousing). The dependent variables (either shocks to a confederate on a learning task or performance on a digit symbol test) were measured either immediately after viewing the film (actual delay was six minutes) or after a delay period of 20 minutes during which the subject

was given a visual acuity test. Results showed that the subjects gave the longest shocks and did best on the digit symbol test (because moderate arousal facilitates performance) immediately after viewing the aggressive film. Thus, films do differentially affect the subject's state of arousal, and this arousal tends to dissipate over time. This dissipation was explained by either the changes in levels of arousal over time, or due to Bandura's (1965b) attentional-shift theory due to the delay task of visual acuity. As they state, the trouble with a delay group is that "there is no way of manipulating 'delay' independent of other factors" (p. 140).

Also Zillmann's idea of an aggressive movie perpetuating arousal-maintaining conditions was supported by Doob and Kirshenbaum (1973). Frustrated subjects who watched an aggressive movie showed more subsequent arousal (blood pressure and heart rate) than frustrated subjects who did nothing for a similar period of time, (although they also found that the effects of frustration and aggressive films on arousal are additive). However, in their study, the aggressive and nonaggressive film were differentiated in terms of excitatory potential so the effects of aggressive cues cannot be isolated.

Geen (1975), also supports the excitation-transfer

model. Blood pressure in angered male subjects was found to remain elevated during observation of "realistic" aggression, yet abated during the "fictional" aggressive film. The resultant higher arousal led to stronger subsequent aggression.

#### Summary

Zillmann's two-factor model of excitation transfer (containing both cognitive and arousal factors), dealing with the effects of communication on aggressive behaviour is discussed by Tannenbaum and Zillmann (1975). Essentially three processes occur: (1) provocation which yields an elevation in physiological excitation. The environmental cues help the subject label his emotional state as anger and he engages in cognitive activities related to subsequent aggressive behaviour. There must be a cognitive predisposition to aggress against a specific target. The end of this phase results in aggression-disposing and target-specifying cognitions, which, because of their relative stability, can be again reinstated or revived after exposure to the communication; (2) arousal from the film exposure; (3) misattribution of the film induced arousal to the reinstated feelings of anger and aggressiveness during the retaliatory period. The reinstated predisposition to aggress guides, and the arousal intensifies, aggressive

responses. Thus, the intensity of the aggressive response is determined by the arousal that he can attribute to his state of anger. However, when aggression is not thus predisposed (lack of provocation), aggressive behaviour would not normally be called for, independent of the magnitude of prevailing arousal due to film exposure.

Nevertheless, because these studies used films that differed in excitatory potential and aggressive cues, the effects of the latter independent of the former, cannot be isolated. But, Zillmann believes, the aggressive cues in the film may raise the probability of aggressive behaviour in the hierarchy of possible responses. Thus, Berkowitz' cue-model of aggression is not necessarily incompatible with the excitation-transferral model. In the absence of intervention, the angry subject presumably engages in emotionally-disturbing cognitions which perpetuate his state of arousal. This readiness to engage in aggressive activity can be lowered by distraction in line with Bandura's (1965b) attentional-shift theory. However, when the film involves content relating to the angered subject's emotional state, the film can have a reverse effect, i.e., it can reiterate arousal-maintaining cognitions. This reintroduces the annoyance of the earlier instigational experience with its hostile feelings toward the antagonist.

Presumably, the likelihood of such reiteration taking place is a function of such factors as the frequency, vividness, and explicitness of the depicted aggressive actions. If valid, this may be the mechanism by which aggressive cues in a film sustain aggression. Compared to a nonaggressive film, it would seem that the aggressive cues facilitated or increased subsequent aggression, in line with Berkowitz' theory, although the nonaggressive film reduced aggression due to its distracting influence on arousal-maintaining cognitions (in line with Bandura's reasoning).

However, the excitation-transfer model does not necessarily preclude the possibility of vicarious hostility catharsis. Films used in previous studies may have resulted in a "catharsis" or "instigation" because of differential excitatory potential and not because of their content. It is the content element that is crucial to the vicarious hostility catharsis hypothesis. Specifically, aggressive cues should be focused on independently of all other possible contaminating factors.

#### F. The Direct Hostility Catharsis Hypothesis

A number of studies on catharsis have differed from the previous ones in that, instead of an interpolated vicarious aggressive activity following provocation, the provoking agent is retaliated against either by the subject

or someone else, and is often depicted as hurt. This aggression is then followed by assessment of residual hostility or aggressiveness, and this is compared with that of provoked subjects not given an opportunity to directly retaliate. Doob and Wood (1972), point out that in experiments on film violence, the subjects (angered or not) are typically exposed to a film where the aggression is unrelated to the setting in which the subject finds himself. But it is different in experiments where the person being hurt is the person with whom the subject has interacted in the first part of the experiment. The paradigms are different and therefore there is no good reason to expect the same results.

I. Evidence for direct hostility catharsis

a. Aggression reduction following aggressive behaviour

Bramel, Taub, and Blum (1968), revised the catharsis formulation. According to them, it is not the observation of aggressive attacks that results in catharsis. Rather, it is the perception of the tragic results of aggression that produces catharsis. Thus, the aggressiveness of angered persons should be reduced when they witness the horrific stimuli associated with the aftermath of violence (injury, pain, suffering, etc.).

In Bramel, Taub, and Blum's (1968) study, male college

subjects were differentially insulted (high vs. low) by a confederate on a test of clinical insight. They then listened to one of three tape recordings of the confederate undergoing a drug experiment which had him sound as if he was in a state of euphoria, or misery and pain, or in a nonemotional neutrality. During the tape session, each subject made ratings of his own feelings (happiness, interest, involvement, liking for the drugged person, and his feelings and honesty). After the tape, each subject answered a final rating questionnaire of the confederate which ostensibly was to be given to the department to evaluate student research assistants. The investigators purposely chose the suffering of the confederate on the tape as something that occurred in the past so as to eliminate guilt or aggression anxiety in the subject. Results indicated that insulted subjects disliked the confederate significantly more than noninsulted subjects during the taped ratings. But most important in terms of their theory, the rated punitiveness of the insulted subjects was reduced (as measured on the final questionnaire) by hearing the confederate suffer, though it was unaffected relative to the neutrality-tape controls, by observing him experience euphoria. Relative to no-insult controls, insulted subjects liked the confederate better when he was on the miserable

side of neutral and less when he was on the euphoric side of neutral. The misery tape was rated as relatively more interesting than the euphoric tape in the insulted subjects (since it is assumed that insulted subjects desire to see the confederate suffer and do not want to observe him enjoying himself, hence they would have more interest in the misery tape).

The fact that the subject's desire to punish the antagonist was reduced by the perception of him undergoing an experience of extreme suffering, seems to bear out the revised catharsis theory of Bramel et al. (1968). Nevertheless, the possibility remains that witnessing a tormentor suffer can evoke emphatic and inhibitory processes in angered subjects, and therefore no real catharsis occurs (i.e., the purging of aggressive impulses). Thus, Goranson (1970), for example, suggests that Bramel's et al. results can be more easily interpreted as a result of an inhibitory process. Exposure to cues of the witnessed suffering may have sensitized subjects to the possible serious consequences of their own punitive behavior. Indeed, Buss (1966a, 1966b), reported that under conditions where aggressors have not been subjected to prior anger arousal from the victim, exposure to pain and suffering of this subject is quite effective in inhibiting subsequent

aggressiveness. Thus, reductions in aggressive responding, even in nonaroused subjects, followed exposure to pain cues.

Doob (1970) gave students, who were differentially annoyed by a confederate on a personality test, a chance to test him on a learning task. Instructions varied so that for one-half the subjects, the confederate lost some or all the money he was to receive as payment for participating in the experiment. In this case, each subject acted as an assistant to the experimenter. The confederate did not suffer for the other one-half of the subjects. After this, all subjects were given an opportunity to administer shocks to the confederate on a pseudocreativity task. Results indicated that subjects in the annoy conditions gave shorter shocks when the confederate had previously lost money (i.e., when he "suffered"). Doob concluded that the catharsis effect is possible under such highly specified conditions. In this case, catharsis occurred when the consistency effect was removed, i.e., the subjects did not feel the pressure to be consistent. Thus, after hurting him once during the catharsis period (by taking his money), they did not feel the need to aggress again when given an additional opportunity since, in this experiment, the similarity between the catharsis activity and the dependent measure are minimal. However, the results may

again be interpreted as the work of inhibitory processes evoked in angered subjects. Although nonannoyed subjects did not show a decrease in punitiveness following the "suffering" of the confederate, compared to nonannoyed controls, it can be argued that their sensitivity to the confederate's "suffering" was minimal since they were not primed for aggressive behavior. This is especially so, since the confederate did not manifest any personal pain upon losing money and thus inhibitive cues were minimal. Also, his losing money was done in the context of an experiment, and the money he lost was the promised money in participating, not personal money.

In a subsequent experiment, Doob and Wood (1972), attempted to compare the effect of having the annoying person get hurt by the subject or by another person. Subjects were either verbally annoyed by the confederate or left alone. One-third were then given a chance to shock the confederate on a learning task; one-third watched the experimenter give shocks to the confederate; and for the latter one-third the confederate did not get hurt. All subjects then had a chance to administer shocks to her. Results indicated that for annoyed subjects, the confederate getting hurt decreased the number of shocks she was subsequently given. For nonannoyed subjects, having the

confederate get hurt increased the number of shocks she was given. Doob argues that the results cannot be explained as due to inhibitory guilt feelings in the annoyed condition where the confederate got hurt, since a comparable result should have occurred in the nonannoyed condition (i.e., a decrease in aggression in watching the confederate get hurt).

However Geen, Stonner, and Shope (1975), point out that a possible explanation for Doob and Wood's results is the increased restraints against aggressing in the subjects showing reduced aggression, since the confederate was a female. Buss (1966a), has shown that both male and female subjects, and especially females, tend to reduce the intensity of attacks on a female victim when they suspect to have hurt her. Also, in this as well as in his previous experiment (Doob, 1970), the confederate aroused the subjects to attack by verbal means and retaliation was by physical means (shock). The subject may have thought that shocking once was enough. A possible reason as to why nonannoyed subjects showed a lessening of restraints and more aggressiveness, may be due to the desire of the subject to comply with the instructions. He aggresses, not out of hostility, but because aggression is instrumental in the attainment of the experimenter's approval. He experiences

a reduction in inhibitions against aggression by the example of the confederate, or even himself, aggressing for nonhostile reasons (cf. Geen and Stonner, 1972).

Konecni and Doob (1972), carried the design one step further by adding another condition--the annoyed subjects had an opportunity to hurt another "scapegoat" (a harmless stranger), before getting a chance to behave aggressively toward the annoyer. Results indicated that subjects who experienced catharsis by giving shocks to the frustrator, gave him significantly fewer shocks than did those subjects who were annoyed and not given the opportunity for cathartic activity. More crucial, however, seems to be the finding that catharsis may be experienced through displaced aggression. Thus, annoyed subjects who shocked the innocent scapegoat rather than the frustrator, later gave the frustrator significantly fewer shocks, than did subjects who had no prior opportunity to express aggression. Annoyed subjects not given an opportunity to experience catharsis (either against their frustrator or the scapegoat), subsequently gave far more shocks to the scapegoat, as compared to the number of shocks given after experiencing catharsis. Also, when no catharsis preceded the act of aggression, the scapegoat was given almost as many shocks by annoyed subjects, as was the frustrator himself. This, they claim,

supports the notion of hostility catharsis through displaced aggression.

However, the possibility of increased restraints due to the elicitation of inhibitory tendencies cannot be ruled out as an alternative explanation. Thus, annoyed subjects given the opportunity to aggress against their tormentor or a scapegoat, subsequently may have reduced their level of aggression because of guilt, aggression anxiety, and/or empathy. Those subjects not given the opportunity to aggress following provocation and who subsequently showed higher levels of aggressivity, may have done so because of the increased frustration following the disruption of what Berkowitz (1964a) calls a "completion tendency" (cf. Thibaut and Coules, 1952). The idea of a "completion tendency" is discussed shortly.

As to why the scapegoat in Konecni and Doob's study received almost as many shocks as the frustrator in the noncathartic conditions seems to contradict Hokanson and Burgess' (1962) finding (although their study dealt with physiological tension reduction, and hence is somewhat of a different paradigm. This will be discussed later). Nevertheless, the results may possibly be explained as due to the heightened frustration following the disruption of a completion tendency, the demand characteristics of the

situation, and the possibility that the scapegoat may have lain within the gradient of stimulus generalization.

Baron (1971a), had male subjects differentially angered by a confederate and then provided them with an opportunity to aggress against him by means of shock. On the occasions when they shocked the confederate, they were exposed to information concerning his degree of pain and suffering. Results indicated that such feedback was highly effective in inhibiting further attacks against the confederate under both conditions of arousal. Baron pointed out that this offers no support for the view that the suffering of one's enemy is rewarding and tends to facilitate further aggression against him. He suggested that the results were possibly due to the high degree of aggressor-victim similarity, since both the confederate and the subject were college students, and this may have facilitated the occurrence of emphatic arousal which inhibited further aggression.

In a subsequent study, Baron (1971b) attempted to manipulate the aggressor-victim degree of similarity. Results indicated that signs of pain and suffering on the part of the victim produced significant decrements in strength of attacks (shocks) against the confederate, both in the absence and presence of prior anger arousal (by shock

on an evaluation task). Feedback from the victim produced significant decrements in aggression, even under conditions where the degree of similarity between the aggressor and victim appeared low. Baron suggested that pain cues from a suffering victim may have strong aggression-inhibiting effects even under conditions which would be unfavorable to occurrence of emphatic arousal. Clearly, the results are not attributable to the classical catharsis model. Using verbal assault, rather than shocks, similar results were found by Wheeler and Cagguila (1966). The target of hostility actually seemed to have been slightly hurt by a verbal assault, delivered by someone other than the angered subject. Angered subjects' subsequent aggressiveness toward him decreased relative to the appropriate control, but not significantly so.

Similar results are found in studies on direct aggression, even when there is no feedback concerning the tormentor's suffering. Pepitone and Reichling (1955), found that subjects who felt free to express aggression toward an annoying experimenter subsequently became more positive towards him. The investigators angered all subjects and then created conditions either facilitating or inhibiting the occurrence of overt aggression. High-liking groups which had expressed a reliably greater

volume of aggression towards the instigator, rated him significantly more favorably at the conclusion of the experiment than low-liking groups. Berkowitz (1958), suggests that it is possible that the relatively strong hostility expressed by members of the high-liking groups had evoked strong guilt feelings or aggression anxiety. These feelings could have inhibited the later aggressive responses and produced favorable ratings of the instigator. Pepitone and Reichling also suggest that the restraints against aggressive behaviour felt by the members of the low-liking groups could have added to the hostility-producing frustration.

Rosenbaum and de Charms (1960), found a reduction in hostility for subjects with low self-esteem, in situations in which the subject himself was allowed to respond after provocation, and in which he merely observed someone else berate his tormentor (which he would ordinarily do himself). Again the issue of guilt and aggression anxiety offer an alternative explanation to that of hostility catharsis.

Nisenson (1972), had adolescents classified according to three levels of extrapuniveness based on their Rosenzweig Picture-Frustration scores. After reading an anger-provoking communication, one-half of the subjects from each level were permitted direct written retaliation

(catharsis), while the other half were denied retaliation (non-catharsis). Results showed that cathartic subjects were significantly less hostile towards their instigator on an attitude scale, than noncathartic subjects. But, he points out, this does not necessarily mean that catharsis occurred since the noncathartic subjects were subjected to greater provocation by additional material in the communication. Also, perhaps the generalized activity of writing behaviour in the catharsis condition may have served a "cathartic" role. Indeed, a previous study (Nisenson, 1970), showed that insulted subjects permitted simply to write about an unrelated theme were no more aggressive than the catharsis subjects who retaliated in writing to the instigator.

b. Tension reduction following aggressive behaviour  
Berkowitz (1962, ch. 8 ; Berkowitz, Green and Macaulay, 1962), maintains that much of what is commonly meant by the term "catharsis" can be understood as a special case of a "completion tendency". An activity will tend to continue until the activity goal is reached. Preventing the organism from reaching this goal can be a source of disturbance. Inflicting injury on the intended target is the goal completing the aggressive response sequence. As long as a person is instigated to aggress, he does not obtain

"completion" until he sees that he or someone else has injured the target. This is obviously referring to direct, not vicarious or symbolic, catharsis.

Thus, a person is frustrated when an ongoing response sequence is blocked. By attacking his frustrator, he may obtain some tension release which, indeed, can be pleasurable. But it is problematic whether, as a result of this tension reduction, the overt hostility will necessarily lessen the likelihood of any further aggression against this frustrator. Instead, an aggressiveness habit may develop (cf. Berkowitz, 1964a). This pseudo-catharsis, in terms of tension reduction (not aggression reduction), is thus possible primarily if the source of frustration is attacked or injured.

Thus, tension reduction may or may not be associated with aggression reduction. In any case, tension reduction does not mean that some sort of diminution of aggressive impulses has occurred (Berkowitz, 1970). The aggressive impulses may still be there, only they may be inhibited from further expression. However, the tension reduction, experienced primarily as a result of terminating a "completion tendency" by aggressing against a frustrator, is really a pseudo-cathartic effect, having little to do with the reduction of the probability of subsequent

aggressive display.

The idea that preventing the completion of an aggressive response sequence heightens the frustration in a provoked subject was demonstrated by Berkowitz (1964a). Male subjects were insulted by a confederate (with shocks during a problem evaluation). One-half were led to think that they would have an opportunity to attack the confederate by means of electric shocks (by evaluating his performance on a subsequent task). However, only one-half of the subjects expecting to shock the confederate were allowed to do so, and one-half of those not anticipating this aggression opportunity were required to shock the confederate. After this, all subjects were required to shock the confederate as a final evaluation of his performance on a problem. Results showed that the angry men had been frustrated if they had not been able to shock their tormentor as they had expected to do. The greatest punishment was given by those subjects who had previously thought they would be able to get even with the anger instigator and could not satisfy their aggressive expectation. They tended to experience a fairly strong tension reduction when they finally were permitted to aggress (as measured on mood-scale ratings). Thus, failure to hurt an intended victim as one had expected (interference with the

aggressive response sequence) may be quite frustrating. As a result, Berkowitz argues that preventing completion of the activated sequence heightens the arousal state, and this both increases the strength of any subsequent aggressive responses and raises the level of tension experienced by the person. Completion of the aggressive sequence by inflicting injury, often leads, in the absence of guilt or anxiety, to a pleasurable reduction in tension. Essentially the same results were found by Berkowitz (1966).

In Thibaut and Coules' (1952) experiment, male college subjects provoked by an insulting message from a peer and then given an opportunity to communicate back to him, had less residual hostility toward the instigator at the end of the session than did a similarly angered group. But these investigators are aware that this is not evidence of hostility catharsis, because the differences between the two groups was due to a frustration-induced rise in hostility in the no-communication group. In a second experiment, every aroused subject was permitted to reply to the instigator, but the men in one group were interrupted for three minutes before they could avail themselves of this chance. Results indicated that the people who had to wait before replying sent a reliably greater volume of aggression to the instigator than did subjects responding more rapidly

to the provocation, even though the instigator was not responsible for the interruption. This confirms Berkowitz's (1964a) contention that if the aggressive sequence set into operation is prevented from completion, internal tension is induced which is channeled into whatever response happens to be underway at the time. Hence, the blocking of aggressive reaction increases the predisposition to further aggression. Again the notion of terminating a "completion tendency" as tension reducing and pseudo-cathartic, is shown in this study.

Worchel (1957), studied the effect of different "cathartic" techniques on the relief of hostility feelings. Subjects were insulted during the administration of a bogus intelligence test, and then were divided into different "cathartic" sessions in which they could do one of the following: express criticism of the test, describe their reactions to a neutral assistant, evaluate a campus irritation, discuss a neutral topic (control), or not say anything. Following this, they were compared on a pre- and post-treatment digit symbol test, and on an incidental recall test. Results indicated that after aggressing against the frustrating experimenter either directly to him or indirectly to his assistant, subjects performed significantly better on the digit symbol test than insulted

subjects not given the opportunity for "catharsis". Worche1 assumes that the performance of the latter subjects was disrupted by their arousal hostility and anxiety, while these interfering emotional states were dispelled in the "cathartic" treatment. Berkowitz (1958), however, speculates whether the blocking of aggressive responses in the noncatharsis conditions was one of the frustrations interfering with effective performance. If so, the performance difference might be due to this latter type of frustration predominantly. At any rate, the reduction of performance-disruptive emotional states (tension) following the expression of hostility does not necessarily mean that the instigation to aggression also was reduced (true catharsis).

Hokanson and his colleagues were among the few investigators who studied the physiology of catharsis. Hokanson and Shetler (1961), differentially frustrated undergraduate students by disrupting them on a task. The frustration was performed by either a high status instigator (introduced as a visiting professor), or by a low status instigator (a young student). Then the subjects had a subsequent opportunity, or no opportunity, to aggress physically (via electric shocks) against the frustrator. Systolic blood pressure was measured before and after the frustration manipulation, and after the expression of aggression. They

found that frustration led to significantly greater systolic increases than the no frustration-control condition. Frustrated subjects given the opportunity to aggress against the low status experimenter, manifested a return of blood pressure to prefrustration levels, not significantly different from that of nonfrustrated subjects. Those given no opportunity to aggress against the low status instigator, manifested significantly greater systolic elevations at the conclusion of the experiment than all other groups. Subjects frustrated by the high status experimenter manifested a return of blood pressure to prefrustration levels, whether or not they had the opportunity to aggress. They explain the latter finding as due to withdrawal responses elicited by the high status instigator.

Hokanson and Burgess (1962), had college students undergo a frustrating (task-disruption) or a nonfrustrating experience. They were then placed in one of four aggression conditions: physical, verbal, fantasy, or noaggression. They measured each type of aggression in systolic blood pressure and heart rate. Results indicated that frustrated subjects given an opportunity to physically or verbally aggress against the frustrator, manifested returns on both physiological measures to the levels of the low frustration control subjects. Frustrated subjects in the

fantasy and no-aggression conditions exhibited significantly elevated systolic pressures and heart rates at the post-aggression recording. Thus, it would seem that expression of physical or verbal aggression towards a frustrator tends to reduce general, physiological arousal.

In Hokanson, Burgess, and Cohen's (1963) study, college students were differentially frustrated (high vs. low) and then had the opportunity to express physical aggression toward objects varying in similarity to the frustrator (e.g., assistant, psychology student, undergraduate student, and no-aggression control condition). Postaggression systolic blood pressure elevation relative to prefrustration base level was the primary dependent measure. Results indicated that among frustrated subjects, the expression of aggression directly to the frustrator resulted in a significant degree of physiological "tension" reduction relative to a no-aggression control group, whereas the same amount of aggression expressed to substitute targets did not significantly reduce blood pressure.

Similarly, Baker and Schaie (1969), supported Berkowitz's (1965a) contention that physiological arousal is reduced, when overt modes of counteraggression occur, only to the extent that the subject perceives injury to the instigator because of the "completion" of an activated

aggression response tendency. Regardless of whether the frustrated subject or someone else counteraggressed, what was crucial seemed to be the perception by the subject of the instigator being injured. Again systolic blood pressure seemed the most sensitive indicator of this tension reduction. Of particular interest is that the covert counteraggression of writing a response to a TAT card (8 BM) depicting aggressive content a card used in Feshbach's (1955) study purportedly proving the vicarious hostility catharsis hypothesis, failed to demonstrate a significant lowering of blood pressure. Arousal was maintained because there was no completion of the aggression action tendency.

Gambaro and Rabin (1969), found diastolic blood pressure reduced significantly when angered subjects were allowed to aggress against their instigator. Tension reduction occurred in the direct aggression mode regardless of whether or not subjects felt high guilt about aggression. But in the indirect aggression mode (i.e., against the experimenter rather than the tormenting-confederate) there was tension reduction only if the subject felt low guilt about aggression. The investigators question whether this bears out the catharsis hypothesis--a decreased likelihood in aggressive behavior--since tension reduction may act as

a reinforcer which theoretically could increase the likelihood of further aggression in the future.

Schill (1972), also showed that frustrated subjects, after filling out an evaluation questionnaire on the frustrator which could potentially hurt him, manifested a significant diastolic decrease. Frustrated, low guilt subjects, in particular, showed a significantly greater diastolic decrease after answering the evaluation form.

Berkowitz, Green, and Macaulay (1962), showed that the angered subject does not have to hurt the frustrator himself in order to experience the tension reduction. They found that angered subjects reported feeling better after hearing that their tormentor had performed poorly than after hearing that he had performed well on a task.

Thus, experimentally produced frustration consistently resulted in increased physiological arousal, systolic blood pressure was more often found to be reliable than diastolic blood pressure as an indicator of this arousal, and the most direct physical and verbal expression of aggression towards the frustrator consistently resulted in a return of systolic elevations to prefrustration levels. Such findings have been interpreted by Berkowitz (1965a), to mean that an individual in whom an aggressive response sequence has been activated, achieves "completion" of this response

tendency and a resulting tension reduction when he believes the instigator has been injured, regardless of the form of aggression (physical or verbal), and the agent of aggression (himself or another person).

An experiment by Stone and Hokanson (1969), suggests the cause of the decline in vascular response. Rather than being indicative of an aggressive "energy" discharge, the physiological tension reduction stems from prior rewarding experiences, i.e., the rapid drop in blood pressure following aggression comes about to the extent that the person had previously learned that injuring his frustrators is rewarding and gratifying. Thus, when one group of subjects was rewarded for reacting nonaggressively to attacks made on them, they later displayed the "cathartic-like" decrease in vascular response only after behaving in a friendly, rather than hostile fashion.

#### c. Summary

A number of studies seem to suggest the validity of the direct hostility catharsis hypothesis by showing a reduction in aggressivity following aggressive display against a frustrator. This reduction in subsequent hostility was found to occur on both rating questionnaires and on physical aggression via shocks following a range of "cathartic" activities primarily aimed at hurting the

instigator (verbally or physically) directly or indirectly (by having someone else hurt him). Although purportedly supporting the revised catharsis formulation, these studies can alternatively be explained without recourse to the "purging" of aggressive "energy". Thus, the results can be attributed to inhibitory processes evoked by feelings of empathy, guilt, and/or aggression anxiety following expression of aggression.

Indeed, Bandura (1973b), suggests that under certain conditions, expression of aggression can decrease its incidence, although the reduction effects do not occur through the drainage of aggressive drive forces. Thus, (1) aggressive displays may so intimidate the antagonists that they cease to behave in provocative ways, (2) to the extent that verbalized resentment clarifies matters, it can diminish autistically produced aggression (a similar point made by Holt, 1970), (3) behaving aggressively can arouse fear and self-censure over the injurious consequences of one's actions, and hence have reductive effects through inhibitory processes.

However, the evidence seems unequivocal regarding physiological "catharsis", or "tension" reduction. This "tension" reduction clearly occurs when the angered subject is given the opportunity to physically or verbally retaliate

against his tormentor. Systolic and, in a fewer number of studies, diastolic blood pressure seem to be the most sensitive indicators. But the relation between "tension" reduction and aggression reduction is less clear cut. Berkowitz (1970, 1973) in challenging the catharsis hypothesis on theoretical grounds, agrees that the pseudo-cathartic effect of "tension" reduction, following the completion of an aggressive response sequence, occurs and is subjectively experienced as pleasure. Although this reduction in aggressive arousal represents a termination of an aversive state, it is not at all obvious why such a reduction should reduce the probability of the occurrence of the aggressive response that precedes it. On the contrary, it can be argued that lowered aggression arousal may actually reinforce aggressive behaviour.

An angered person is frustrated if he cannot hurt the individual who had provoked him. Since frustration is aversive, the thwarted subject might experience unpleasant feelings of tension which is lessened by direct or indirect attacks upon the anger instigator. Tension reduction, however, is not the same as saying that the probability to further aggress has diminished, "purged", or "drained off", by the expression of hostility.

It can be assumed that the physiological excitation

resulting from provocation or frustration is subjectively experienced as anger or hostility, because of the environmental cues available to the aroused subject, in line with Schachter (1970), and Tannenbaum and Zillmann (1975). Depending on the inhibitory and disinhibitory processes operating on the aroused individual, the emotional response of hostility can easily generate an aggressive disposition which achieves "completion" when the aggressive response sequence ends in the retaliation against the frustrator. The resulting physiological "catharsis" can then be seen as a reduction in the emotional arousal level of anger or hostility. The possibility then remains that a decrease in hostile motive may or may not mean a reduction in the probability of subsequent aggressivity.

Of course, the term "tension" may mean more than the physiological excitation and the emotional response of hostility. It can include such factors as anxiety and guilt which may arise simultaneously with the hostility or as a response to it. Thus, a term such as "tension" is not really definitive but is generally used to connote an unpleasant, aversive state, marked by autonomic arousal.

## II. Evidence against direct hostility catharsis

### a. Aggression increase following aggressive behaviour

There are a number of studies showing a countercathartic

effect following expression of hostility or aggressive behaviour against a frustrator. That is, instead of a reduction in aggression, an increase is found after the annoyed subject is given an opportunity to aggress against his tormentor.

De Charms and Wilkins (1963), demonstrated that hostile verbal responses increase rather than decrease the probability of further hostile verbal responses. Subjects participated in simulated interaction in the course of which they were verbally attacked. Results indicated (with a before-after measure) increased hostility in the subjects at the end of the experiment. This increase was a positive function of the number of hostile statements made to the attacker after the attack. A similar increase in hostility was found when a third party made the attack against the instigator. However, in this experiment the subject received no information that his hostility succeeded in either hurting or even reaching his tormentor. The investigators claim that hostility could be perceived by the subject as instrumental behaviour intended to change the attacker's behaviour and reduce the threat of further attack. Since the subject receives no information that his instrumental behaviour has succeeded, it appears that under these conditions, he increases the intensity of hostility as

would be predicted when an instrumental act is unsuccessful. They predict that if the hostile behavior were successful in changing the threatening stimulus, such behavior would decrease in the specific situation since the stimulus conditions have changed, but when another similar threatening stimulus would present itself, the probability of hostile behavior should increase because of the past success or reinforcement.

Holmes (1963), compared the catharsis hypothesis with inhibition hypotheses in those instances where a decrease in aggressive output took place. Individual college subjects were frustrated by a confederate. The hostility-aroused subjects then had varying opportunities to retaliate against the confederate. In general, subjects who retaliated directly against the confederate later showed an increase in aggressive output. Immediately after the initial retaliation, these subjects reported feeling tense. An experimental manipulation succeeded in arousing feelings of guilt in one group of aroused subjects who had retaliated against the confederate. These subjects sharply reduced the frequency and magnitude of direct aggressive responses. Two other groups of subjects displayed a decrease in aggressive output. Examination of the data suggested that guilt or aggression anxiety was responsible

for the decrease. Holmes suggests that in our culture, individuals customarily react with feelings or anticipation of guilt when they respond aggressively. When they fail to receive guilt-producing feedback, they become less inhibited and increase their aggressive output. When they do receive guilt-producing feedback, they become more inhibited and decrease their aggressive output.

Mallick and McCandless (1966), had third-grade subjects differentially frustrated during a task by an older confederate. Among other things, they found verbal expressions of aggression (on like-dislike ratings) did not reduce aggression directed toward him, but actually increased it (as measured behaviorally and by like-dislike ratings). It may be assumed, of course, that such young children are still not fully socialized and consequently fail to develop adequate inhibitions as a result of guilt or aggression anxiety. The finding also supports Berkowitz's (1970) contention that aggressive behaviour and/or words can furnish aggression-evoking stimuli, even when the stimuli come from a person's own behaviour. As a result, under certain conditions, an attack on a target person can lead to still stronger aggression.

- b. Aggression increase and tension reduction  
following aggressive behaviour

Kahn (1966), had male subjects angered by a confederate

during a task. They were then assigned to either a catharsis or noncatharsis condition. The catharsis condition consisted of telling a second neutral experimenter what they had experienced and how they felt about it. Guilt feelings were minimized by having the neutral experimenter praise each subject in confiding to him. Each subject was also told that the confederate's nasty behavior would be reprimanded by his supervisor. Control subjects had no opportunity to discuss the situation. Physiological measures (diastolic and systolic blood pressure) were taken every two minutes, as well as a polygraph on heart rate, PGR and skin conductance, temperature and muscle tension. Finally, each subject anonymously answered a rating questionnaire, purporting to be from the dean's office, for the purpose of evaluating undergraduates (the confederate) in research projects. Results indicated that catharsis subjects disliked their annoyer significantly more than controls, and showed a slower rate of physiological recovery (except for blood pressure). That is, verbal aggression was followed by both reduced arterial pressure and high degree of verbal hostility. Kahn explained these results in terms of dissonance theory. Once the subject had counteraggressed against the confederate by discussing how he felt about him to the experimenter, the cognition

of this action was dissonant with the thought that perhaps the confederate was not such a bad person and that the subject was not really very angry with him. That is, the subject was simply acting in a consistent manner--after aggressing once, when given an additional opportunity, he aggressed again. However, as an alternative explanation, it can be suggested that expressing his feelings to the neutral experimenter may have furnished aggression-evoking stimuli (Berkowitz, 1970), which led to the differential results. Also, it should be noted that anger was not directly expressed to the instigator during the catharsis period, but to a neutral accomplice who promised that the confederate would be reprimanded. Thus, the subject had additional reinforcement to view the confederate as really deserving of punishment.

Wells (1970), investigated three responses to frustration: counteraggression against the frustrator, having no opportunity to aggress following frustration, and a discussion of frustration. Male subjects were differentially frustrated (high vs. low) and then allowed one of the three responses to frustration. Repeated measures of systolic blood pressure were taken before and after frustration and after the response to frustration. Also, aggression scores were taken, before and after the

experimental procedures. The results replicated Hokanson's major findings. In addition, the discussion of frustration was found to be as effective as counteraggression in reducing frustration-produced tensions (cf. Holt, 1970). However, insofar as subsequent aggressiveness was concerned, counteraggression was found to increase it, while the discussion of frustration produced no change in it. Thus, physiological "catharsis" does not necessarily mean a lowered instigation to aggress. Indeed, despite lowered arousal there was a facilitation to aggression following aggressive behaviour. Results, of course, may also be interpreted in terms of consistency pressures operating on the subject who counteraggressed, weakening of restraints, and the aggression-evoking stimuli furnished as a result of the aggressive behaviour which led to further aggression.

Comparable results were found by Geen, Stonner, and Shope (1975), who further investigated the facilitation of aggression by aggressive behaviour. Male subjects were either attacked or treated in a neutral fashion by a confederate (by means of electric shock). Following this, they were placed in a maze learning task in which one-third of the subjects were given the opportunity to shock the confederate; one-third observed the experimenter shock the confederate, and one-third waited for an equal period of time.

Finally, all subjects had a chance to shock the confederate on a contrived learning task. The dependent measures used were shock intensity, blood pressure (before and after instigation, after the catharsis period, and after the retaliation), and a rating questionnaire on the subject's mood and evaluation of the experiment and the confederate. Results were clearly nonsupportive for the aggression catharsis hypothesis. Indeed, the opposite was found. The attacked subjects who shocked the confederate on the maze task delivered shocks of greater intensity on the pseudo-learning task than in the other two conditions, and also experienced a greater reduction in diastolic blood pressure. They also expressed significantly greater dislike for the confederate than in the condition where the experimenter shocked the confederate, and slightly more dislike than in the condition where the confederate was not shocked at all. Thus, in verbally expressed hostility, as in physical aggression, subjects were more intense after aggressing than after not aggressing. Aggressive behaviour on the final pseudo-learning task was followed by a reduction in blood pressure for all three groups of attacked subjects, though there was a decrease in blood pressure following the maze task in which subjects shocked the confederate, whereas there was a decrease in the other two groups

following aggression in the final task (in which they aggressed for the first time).

The finding that reduced arousal in the subjects who aggressed was followed by an increase in aggression casts doubt on the simple cause-effect assumption, i.e., instigation produces aggression arousal, which motivates an aggressive response, which in turn reduces arousal. Like Berkowitz (1970) suggests, lowered aggression arousal may actually reinforce aggression. Although physiological "catharsis" does follow aggression, the cardiovascular change is associated with relatively strong aggressiveness. Geen et al. offer two explanations for this phenomenon: (1) aggression by lowering arousal causes the subject to feel at ease and weakens restraints against further violence; (2) subjects who have aggressed once against the confederate felt compelled to behave consistently by attacking him, so as to justify their previous act and maintain consistency. Also Berkowitz's (1970) suggestion seems to fit here, i.e., one's own aggressive behaviour can furnish aggression-evoking stimuli leading to further aggression.

#### c. Summary

In the absence of feedback producing guilt or aggression-anxiety, it seems that aggression can lead to even

further aggression against the same tormentor, a finding contradicting the direct hostility catharsis hypothesis.

The relation between "tension" reduction and aggression reduction seems further clarified in these studies. Thus, although physiological "tension" reduction follows direct expression of hostility against a frustrator, aggression reduction does not necessarily follow. Indeed, a facilitation effect occurs, leading toward an increase in subsequent aggression following the tension reduction associated with the prior aggression. This pseudo-cathartic effect is at variance with the classical understanding of the hostility catharsis hypothesis, and seems to bear out Berkowitz's (1970, 1973) contention that lowered aggression arousal may actually reinforce aggressive behaviour.

Other factors involved in the facilitation effect of prior aggression on subsequent aggressive display seem to be: (1) consistency pressures, i.e., once the annoyed subject has aggressed, he feels the need to justify this aggression with further aggression, so as to reduce dissonance; (2) the aggressive behaviour can provide aggression-evoking stimuli which activate previously acquired aggressiveness habits, leading to an increase in subsequent aggression; (3) "tension" reduction following aggression

may weaken restraints against further aggressing by inducing a more relaxed attitude toward violent behaviour.

Once again, it can be assumed that the physiological arousal resulting from the provocation is subjectively experienced as hostility or anger and this leads to aggression-disposing, target-specifying cognitions. Consequently, completing the aggression response sequence by aggressing against the frustrator leads to lowered arousal or hostile motive ("tension" reduction), a feeling of pleasure or satisfaction. However, this tension reduction is not the same as aggression reduction, since clearly, subsequent aggressive behaviour may be facilitated.

An underlying assumption is that the "tension" experienced as a result of physiological arousal due to provocation, phenomenologically consists of, at least, the emotional expression of anger or hostility (cf. Shachter, 1964, 1970). It may also consist of guilt, anxiety or depression which may be a reaction to the provocation or to the hostility. The possibility thus remains that a decrease in hostile motivation or aggression arousal does not necessarily lead to a reduction in subsequent aggressive behaviour.

### G. Synthesis of the literature

The vicarious hostility catharsis hypothesis refers to the idea that individuals can work out their aggressive tendencies through vicarious aggressive experiences, such as, for example, viewing media violence (Dollard, Doob, Miller, etc, 1964; Freud, 1933/1965). The result is a reduction in the instigation to aggress and a diminution in the probability of subsequent aggressive behaviour. While the majority of studies, not involving prior arousal of anger in subjects, have failed to substantiate the hypothesis, showing instead an increase in subsequent aggressiveness (e.g., Bandura 1965 a; Liebert and Brown, 1972; Walters and Thomas, 1963), a number of studies on instigated subjects have purportedly shown evidence of a vicarious reduction (e.g., Feshbach, 1955, 1961, 1972; Manning and Taylor, 1975). However, such support has been explained as being due to inhibitory factors caused by the arousal of aggression anxiety and/or guilt in viewing violence, rather than a "purging" of aggressive drive (e.g., Gornson, 1969). Indeed, a majority of studies on instigated subjects have shown that, in the absence of aggression anxiety and/or guilt, exposure to media violence is countercathartic, i.e., observation of violence increases rather than decreases, subsequent aggressiveness (e.g., Weiss, 1970).

One model explaining the increase in aggression following exposure to media violence has been advanced by Berkowitz (1965,

1970, 1973), emphasizing the importance of aggression-evoking cues. The aggressive events in a violent movie elicit implicit aggressive reactions. A non-aggressive film, however, provides few, if any, aggression-evoking cues, and hence does not reactivate previously acquired aggressiveness habits. The presence of the additional aggressive cues in the environment following aggressive film exposure facilitates subsequent aggressive behaviour by increasing or enforcing the likelihood of stronger aggression in instigated subjects. This conditioning model stresses the differentiation in aggressive cue we potential between an aggressive and non-aggressive film as being the primary determinant in subsequent aggressive display.

An alternative model explaining the findings on exposure to media violence has been suggested by Zillmann's excitation-transfer paradigm (Tannenbaum and Zillman, 1975). Here, the determining factor in differences in post-experimental aggression is due to the greater physiological excitation produced in response to viewing one film as compared to another. In provoked subjects, the residual excitation from film exposure intensifies the cognitively labeled emotion of anger and the aggressive response. If a greater amount of residual excitation

is found in an aggressive film as compared to a non-aggressive film, an "over-intense" aggressive response will result in the former condition. Thus, rather than focusing on the categorization of film content (aggressive vs. non-aggressive), Zillmann (1971, Zillman and Johnson, 1973) underlines the importance of differential excitatory potential in films. Previous studies failed to control the films on this dimension, and hence resulted in either a "cathartic" or "instigatory" consequence.

It has been suggested that the vicarious hostility catharsis hypothesis refers to a decrease in the emotion of hostility (aggressive motive or hostile motivation) and not necessarily in aggressive behaviour. Thus, D.L. Singer (1968), argues that the occurrence of an aggressive act consists of both motivating and inhibiting tendencies. Viewing a justified aggressive film may lower inhibitions against aggressive display in an angered subject, but simultaneously there may be a cathartic reduction in aggressive motive strength. The subject may be more willing to display aggression based on this residual motivation. Indeed, Manning and Taylor (1975), found a greater reduction in hostility following aggressive film exposure as compared to a neutral film, in provoked subjects

(although no differences in aggressive behaviour were found). Because aggression is not a single phenomenon but is divisible into several component parts, Feshbach (1964), suggests that diverse measures of aggression be used to adequately assess cathartic or other effects of exposure to film violence. Studies on direct hostility catharsis, where, instead of an interpolated vicarious aggressive activity following provocation, the provoking agent is retaliated against either by the subject or someone else and then an assessment of residual aggressiveness is made, have shown a decrease in physiological arousal and a subsequent increase in aggressive behaviour (e.g., Geen, Stonner, and Shope 1975; Kahn, 1966; Wells, 1970), thus indicating a pragmatic discrimination between emotional-physiological arousal and aggressive behaviour.

J. Singer (1966, 1971), and Bandura (1965b, 1973), both independently offer models that involve a reduction in emotional arousal level rather than aggressive behaviour in studies on film violence. Singer (1971), argues that an angered person is distracted from aggressive intent by watching a film. Hence, the change in his focus of attention reduces his emotional arousal level or mood. Differentiation in interest, absorption,

or distraction between aggressive and non-aggressive films can lead to differentiated emotional arousal levels, either supporting or failing to support the vicarious hostility catharsis hypothesis. Presumably, the greater the distraction, the greater the amount of reduction in emotional arousal.

Bandura (1965b, 1973), suggests that a reduction in emotional arousal level occurs because the self-generated stimulation of arousal following instigation, is disrupted by the new activity (film viewing). This reduction is a consequence of attentional shifts and Bandura expects a similar reduction in getting involved in other absorbing activities containing few, if any, aggressive stimuli. Thus, emotional reduction occurs not because of the "purging" of aggressive drive but because of the distraction - attentional shift potential of the activity engaged in following provocation regardless of whether the activity is aggressive or not. Theoretically, therefore, films differentiated in aggressive-cue potential that do not differ in distraction-attentional shift potential should lead to similar reductions in emotional arousal (i.e., hostile motive). On the other hand, a quasis-cathartic effect can be found for hostile motive or aggression arousal, if the aggressive film has a greater distraction-attentional

shift potential than the non-aggressive film.

Watt and Krull (1977), have proposed three models that account for the experimental data on the effects of viewing media violence on subsequent aggressive behaviour: (1) Catharsis Model - a reduction in aggressive drive due to vicarious participation in acts of violence; (2) Facilitation Model- violent content in the media facilitates the appearance of aggressive behaviour, either through learning-modelling (Bandura), legitimization, or a "cueing" process (Berkowitz); (3) Arousal Model-emotionally - conditioned stimuli (e.g., erotic, violent) evoke varying degrees of generalized emotional arousal which acts as a drive energizing subsequent behaviour (Zillmann).

A fourth model, based on Singer and Bandura's distraction - attentional shift effect of an interpolated activity on subsequent emotional arousal in angered subjects, is suggested here, although this model deals with hostile motivation rather than aggressive behaviour.

## CHAPTER II

### STATEMENT OF THE PROBLEM AND HYPOTHESES

#### a. Difficulties with Previous Studies

Since it is obviously much harder, if not impossible, to control for the private fantasies of individuals and thereby demonstrate a cathartic or instigational effect of aggressive fantasy, this study focuses on externally "packaged" fantasies, namely film viewing. Such structured fantasies can theoretically be controlled in all the salient variables found to influence reaction to film exposure.

No previous study comparing the effects of viewing an aggressive film with a non-aggressive film has simply focused on the aggressive cues in the aggressive film to the exclusion of all other significant variables possibly contaminating post-experimental aggressivity. Any increase or decrease in subsequent aggression found in previous studies could alternatively be explained by such variables without vitiating the likelihood of vicarious hostility catharsis. Specifically, the variables are (1) the degree of aggression anxiety and/or guilt evoked by the aggressive film; (2) the distraction-attentional shift potential of the films and (3) the excitatory potential of the films.

Other, relatively less potent factors to consider are: the personal attractiveness of the cast and other media stimuli (e.g., color vs. black and white, musical background etc.); the degree of fictionality of the films; and the emotional conclusion of the film (happy, tearful etc.).

All these variables are amenable to control. Aggression anxiety and/or guilt has been largely obviated by introducing a synopsis justifying the aggression depicted in the film, implying that the victim deserves the beating (e.g., Berkowitz and Rawlings, 1963; Hoyt, 1967). A justified aggression interpretation of the film also leads to the greatest arousal (e.g., Geen and Rakosky, 1973) and elicits more aggression in angered subjects than when it is viewed as unjustified (e.g., Berkowitz and Geen, 1967; Meyer, 1972). The distraction-attentional shift potential can be controlled by matching the aggressive and non-aggressive films in terms of their interest and involvement, so that they do not differ significantly on this dimension (Bandura, 1965b, 1973b; Singer, 1971, 1975). Similarly, the excitatory potential of the films can be controlled by matching the physiological excitation generated by the films (e.g., Zillmann, 1971), so that they do not differ significantly on this dimension also.

The physical attractiveness of the cast in a film, as well as that of the confederate may be a significant source

of variance in assessing post-experimental aggressivity, although little work has been done in this area (see Bercheid and Walster, 1974). Nevertheless, a greater similarity between an aggressive and non-aggressive "packaged" fantasy can be structured by having the same cast act within a field containing the same stimuli. Although there is some evidence showing that, in angered subjects, an aggressive film labeled as "real" results in more subsequent aggression than one labeled as "fictional" (e.g., Geen, 1975), no study has investigated the comparison of this dimension within the non-aggressive film. It would seem that simply not focusing on this dimension by drawing it to the attention of the subject, a sufficient comparison can be made, regardless of whether some subjects interpret the films as fictional or real (cf. Worchel, Hardy, and Hurley, 1976). Also a happy vs. unhappy ending resulting in differential subsequent aggressivity (e.g., Zillmann et al., 1973) can be controlled by preventing closure in both films.

Some studies on film exposure and aggression have lacked consistency between the instigation mode and retaliation mode, i.e., subjects were instigated verbally and given the opportunity, after the interpolated fantasy task, to retaliate physically, via shocks. These two modes of aggressive behaviour may not be equivalent. Indeed, a

subject may feel more inhibited expressing aggression physically after being verbally rather than physically, instigated (cf. Geen, Stonner, and Shope, 1975). Singer (1971), pointed out that the large majority of studies have used college subjects, generally a middle socio-economic class. Unlike lower class subjects who are relatively more prone to display anger physically, college students more often express and settle their frustrations verbally. Hence, it can be assumed that instigation and aggression expressed verbally is more in line with college students' socialization. Similarly, it is suggested that the aggression displayed in the fantasy activity, to be more true to their life style, as well as providing a stronger association between the conditions of verbal instigation and retaliation, should be verbal. In addition, viewing verbal aggression has been found (just like in physical aggression) to lead viewers to behave more aggressively (Meyer, 1972b). His study followed the Berkowitz paradigm, only a television segment showing verbal aggression (verbal attack and heated argument) rather than physical aggression was used. The results paralleled those of Berkowitz. Thus, a full consistency between instigation, fantasy, and retaliation can be achieved.

By controlling for all these variables, this investigation has attempted to produce two externally "packaged"

fantasies, an aggressive and a non-aggressive film, that differ from each other significantly only in aggressive cue content. Thus, by participating in a vicarious aggressive experience as depicted in the aggressive film, subsequent aggressivity can then be assessed, compared with the non-aggressive film condition, to determine whether any catharsis has occurred.

b. Hostility as emotion, affect or mood vs.  
aggressive behaviour

Another source of confusion in the vicarious catharsis literature often seems to lie in a failure to distinguish hostile motivation from aggressive behaviour. The majority of studies focus on aggressive behaviour, mainly via evaluation questionnaires or electrical shocks. A few studies measuring residual hostility do seem provocative in their results (e.g., Manning and Taylor, 1975; Singer, 1968), and suggest a possible difference between hostile motive and aggressive response.

Furthermore, the terms used to define the cathartic effect reflect this obscurity. Thus, statements such as "reduction in the instigation to aggress", or in "aggressive inclination", "aggressive arousal", "aggressive impulses", or "aggressive motivation", seem to refer primarily to anger or hostility rather than aggressive behaviour,

whereas the latter is referred to in such statements "reduction in the probability of further aggression".

Also, studies on direct hostility catharsis, in which there was a decrease in physiological arousal following an aggressive response in angered subjects, and an increase in subsequent aggressive behaviour, strongly indicate that a pragmatic discrimination is possible between emotional arousal and aggressive behaviour (e.g., Geen, Stonner, and Shope, 1975; Kahn, 1966; Wells, 1970). Indeed, these studies challenge the simple cause-effect assumption, i.e., the notion that instigation results in aggression arousal which motivates an aggressive response, which in turn reduces aggression arousal and reduces the strength of the subsequent aggressive response. Nevertheless, on the basis of these studies one cannot deduce that a reduction in physiological arousal is equivalent to a reduction in the phenomenological experience of the emotion of hostility or anger. This is so, not only because physiological arousal is only a correlate of hostility resulting from instigation (e.g., the Hokanson studies), but also because of the frequently reported lack of agreement among response indices such as physiological arousal and psychological anger (e.g., Lazarus, Averill, and Opton, 1970). Furthermore, Schachter's two-factor theory on emotion (e.g., Schachter and Singer, 1962) helps to clarify the

difference between arousal and emotion. Schachter posits two largely independent elements contributing to any particular emotion--physiological arousal and a cognition appropriate to this state of arousal that depends on the situational context of the individual. If it is assumed that the physiological arousal following provocation is interpreted by the subject as anger or hostility, a reduction in arousal following aggressive behaviour may not necessarily mean a reduction in the emotion inducing cognition of anger--unless the subject was extremely sensitive to changes in his interoceptive environment. Indeed, the subject may claim to be as angry as before the arousal reduction, simply because of emotion-inducing cognitions, although a differentiated arousal state may yield differences in subsequent aggressive responses due to differential excitational intensification (e.g., the Zillmann studies). However, assuming a high correlation between physiological arousal following provocation and the subjective experience of anger, these studies at least suggest the possibility that a reduction in emotional arousal does not compel a reduction in aggressive behaviour.

Hostility or anger can be conceptualized as an emotion, an affect, or a mood. It is beyond the purpose of this study to explore the difficulties inherent in defining emotions, which include the lack of a single

criterion, or even a group of criteria, for their identification, the tremendous complexity and limited understanding of the anatomical and physiological mechanisms involved, and the confused terminology itself (Delgado, 1973). As Lazarus et al. (1970) states, to speak of an emotion as though it were a unitary phenomenon is only a conceptual convenience. According to Lazarus, an emotion may be subdivided into many component reactions, which occur concurrently and sequentially and which are often poorly correlated. Thus, the emotion of anger may be characterized by its own specific pattern of response, which includes physiological, motor-behavioural, and cognitive-subjective components. Not all aggression, however, can be described as angry. What is important to realize is that "each emotion involves its own particular kind of appraisal, its own particular kinds of action tendencies, and hence its own particular constellation of physiological changes which are part of the mobilization to action, whether or not these action tendencies are actually expressed or inhibited" (Lazarus, Averill, and Opton, 1970, p. 218). In other words, the individual may be angry but not necessarily express it in aggressive behaviour. Brady (1970) too, makes a distinction between what he calls "emotional behaviour" and "feelings". Emotional behaviour involves effective

interactions, the primary consequences of which appear to change the organism's relationship to its external environment, whereas feelings refer to interactions localizable principally within the reacting organism.

Tomkins (1970), believes anger is an affect. Affects are seen as primary human motives which operate even in the absence of drives (regarded as signals amplified by affects). An affect is an innately patterned response, activated by some general characteristic of neural stimulation, common to both internal and external stimuli. The density of neural firing or stimulation, i.e., the number of neural firings per unit time, account for differences in affect activation. Anger is seen as being due to a high constant level of stimulation, which deviates in excess of an optimal level of firing. A suddenly reduced density of stimulation is rewarding. Thus, it is conceivable that in retaliating, the instigated subject reduces his density of stimulation and feels less angry. This is rewarding but does not mean that the tendency to further aggress has been reduced (cf. Berkowitz, 1970). A similar reduction in density of neural stimulation (although perhaps not as dramatic) may result in watching an interesting film.

Nowlis (1970), conceives of hostility as a mood. Mood is seen as a temporary disposition toward a broad

set of behavioural and private events. A change in mood refers to a change in which the individual is disposed to respond to the world. Some dimensions of mood are affective (e.g., anxiety), others are not (e.g., active). What is important here, however, is that "since mood is a disposition, most of the behavioural items toward which one is temporarily disposed may not occur unless strengthened by prompts, probes or other events" (Nowlis, 1970; p. 264). Again, the important distinction between hostility and aggressive behaviour is underlined.

Even the term "aggressive behaviour" is scientifically inaccurate because it is too imprecise. There are many forms of aggressive behaviour and, as Montagu (1976) states, "to speak of 'aggressive behaviour' as if it were a single phenomenon is to be guilty of a misleading oversimplification" (p. 15). Some investigators (e.g., Berkowitz, 1962; Feshbach, 1964) have differentiated between "instrumental" aggression, directed toward the achievement of non-aggressive goals, and "hostile" aggression--the desire to hurt or inflict suffering. Feshbach (1964), sees the latter as corresponding to the aggressive drive, but rather than innate (as in Freudian psychoanalysis, or in a modified instinct form as in Frustration-Aggression theory) it is acquired by the pairing of the infliction of injury with counteraggression. This pairing is reinforced by

cultural norms which value retaliation as the appropriate response for injury. The aggressive drive, whose goal response is injury to some object or person, is regarded as equivalent to hostility and hostile impulse (agreeing with Buss, 1961). The anger-hostile impulse is elicited by a variety of events broadly termed frustration, which includes verbal and physical attacks, threats to self-esteem, etc. [In a subsequent paper, Feshbach (1971), further distinguishes anger from aggressive drive, the former being characterized by autonomic changes and heightened motoric activity. Although by maturity anger has become closely associated with aggressive drive, i.e., the motive to inflict injury, these response modes can still occur independently. Thus, one can obtain satisfaction from the infliction of injury without being angry, and one can be angry without wishing to injure the provoking agent].

Nevertheless whether or not the concept of aggressive drive is synonymous with anger/hostility, Feshbach (1964), believes that the aggressive drive may indeed be reduced by an aggressive act, but this effect may be obscured by reinforcement of the aggressive response, by lowered inhibitions, and by influences such as dislike induced by cognitive dissonance, so that some measures of aggression may actually reflect an increment in aggressive

behaviour. Because aggression is not a single phenomenon, but may be divided into several component parts (e.g., instrumental, hostile, expressive) further obscured by inhibitory factors, Feshbach (1964), argues that diverse measures of aggression differentially responsive to these various processes should be used to evaluate the cathartic effects of a vicarious or direct aggressive response upon drive strength.

This study uses two diverse measures, a mood scale and an evaluation questionnaire, which assess residual hostility and aggressive (hostile) behaviour respectively. Hostility can be viewed as an emotional response resulting from a situation appraised as anger inducing (cf. Manning and Taylor, 1975), a temporary disposition toward aggressive behaviour. It can be seen as a measure of motive strength. The evaluation questionnaire measures post-experimental aggressive behaviour directed at the instigator (confederate) and potentially harmful or injurious. In this sense, it is an estimate of "hostile" aggression, i.e., the desire to hurt or inflict suffering. These may be differentially responsive and help clarify the possibility of vicarious hostility catharsis as occurring through film exposure to aggressive cues.

### c. Hypotheses

Evidence from studies on direct hostility catharsis seems to support the idea that expressing aggression against a frustrator produces physiological "catharsis" (reduced arterial pressure). Because of the frustration and anger experienced by being provoked, the expression of aggression leads to a reduction in aggressive arousal, a termination of an aversive state. But this physiological "catharsis" resulting from retaliation does not mean, of course, that the probability to further aggress has diminished, an idea central to the hostility catharsis hypothesis. Indeed, a number of studies have found an increase rather than reduction in subsequent aggression against the frustrator, following the retaliatory period. This occurs both in verbally expressed aggression and in physical aggression.

The physiological arousal resulting from the provocation, it is assumed, is interpreted as anger or hostility (Schachter, 1964, 1970). Phenomenologically, the arousal is experienced as the emotion of hostility which leads to aggression-disposing, target-specifying cognitions. Hence, completing the aggressive response sequence by aggressing against the frustrator, leads to lowered arousal or hostile motive. However, this decrease in hostile motivation or aggression arousal does not necessarily lead to a reduction in subsequent aggressive behaviour.

One objective of this study is to help clarify the possible differentiation between aggressive behaviour and the emotion of hostility in relation to the vicarious hostility catharsis hypothesis. For this, two diverse measures are used: an evaluation questionnaire which measures post-experimental aggressive behaviour directed at the instigator, and a mood scale assessing residual hostility (anger arousal).

This experiment investigates the vicarious hostility catharsis hypothesis by creating two externally "packaged" fantasies in the form of two films, that do not differ significantly in (a) their distraction-attentional shift potential, and (b) their excitatory potential. Furthermore, all other factors influencing aggression are largely controlled: the aggression anxiety and/or guilt generated by the aggressive film; the personal attractiveness of the cast and background environment; the conclusion of the films; the consistency between the modes of instigation, fantasy, and retaliation. The films differ significantly only in aggressive cue content, i.e., the aggressive film has significantly more aggression in it than the non-aggressive film. In addition, the dependent measures used assess aggressive behaviour and hostile motive separately, since these may be controlled by different eliciting and reinforcing stimuli.

Subjects are differentially verbally instigated (insulted) during a bogus verbal aptitude test subsequent to which they view either the aggressive or non-aggressive film segment. Following this, aggressive behaviour and residual hostility are assessed by the dependent measures. All other things being equal, for the purposes of this study, a catharsis effect refers to a significant reduction in either aggressive behaviour or hostility (or both), following the exposure to the aggressive film as compared to the non-aggressive film. A no-exposure control group is included to assess aggressivity immediately after instigation. In comparison with this non-exposure control group, the question of whether viewing an aggressive film vs. a non-aggressive film, makes the instigated viewer more likely or less likely to express aggressive behaviour and/or increase in hostile motive, can be answered.

For angered subjects, different predictions follow the different hypotheses:

- 1) Vicarious Hostility Catharsis Hypothesis.

According to this rationale, post-experimental aggressivity, as measured by both the evaluation questionnaire assessing aggressive behaviour and the mood check list assessing hostility, should be significantly less following exposure to the aggressive film as compared to the non-aggressive film.

The significant difference between these two film conditions would be evidence for the vicarious cathartic effect, i.e., reduced aggressivity following exposure to a vicarious aggressive experience.

The difference in aggressivity (aggressive behaviour and hostility) between the no-exposure control condition and the non-aggressive film condition should be negligible, since the instigation to aggress is presumably not "drained" by the non-aggressive film.

2) Distraction-Attentional Shift Hypothesis.

This hypothesis, formulated separately by Singer (1971), and Bandura (1965b, 1973b), predicts that because both the aggressive and non-aggressive films do not significantly differ in interest and involvement, the residual hostility as measured by the mood check list, should not differ significantly in these film conditions. Both films should equally serve to distract an angered person from dwelling on his anger, and to the same extent change his mood or emotional arousal level (hostility).

Both Singer and Bandura refer to changes in emotional arousal, not aggressive behaviour. Thus, whether an equal reduction in hostile mood results in an equivalent reduction in subsequent aggressive behaviour as measured by the evaluation questionnaire, cannot be predicted on the basis of this

hypothesis. However, assuming equal amounts of residual emotional arousal to "energize" subsequent aggressive behaviour, and barring Bandura's notion of imitatory or disinhibitory effects of the aggressive film, there should be no difference between the film conditions in aggressive behaviour as measured by the evaluation questionnaire.

Because no distraction, and hence no change in emotional arousal, occurs in the no-exposure control condition, there should be considerably more aggressive behaviour and hostility in this condition than in the aggressive and non-aggressive film conditions.

3) Zillmann's Modified Attentional Shift Hypothesis. According to Zillmann's (Tannenbaum & Zillmann's 1975, Zillmann's & Johnson, 1973), the significantly greater number of aggressive cues in the aggressive film than in the non-aggressive film, reiterate a relatively greater amount of arousal-maintaining cognitions. This reintroduces the anger of the earlier provocation to a greater degree than do the significantly fewer aggressive cues in the non-aggressive film. Therefore, there should be significantly more hostility as measured on the mood check list following exposure to the aggressive film than to the non-aggressive film.

This differential arousal between the aggressive and non-aggressive film conditions, due to the greater amount of arousal-maintaining cognitions generated by the aggressive

film's aggressive cues, differentially intensifies subsequent aggressive responses. Thus, aggressive behaviour as measured by the evaluation questionnaire should be significantly greater in the aggressive film condition than in the non-aggressive film condition.

It is difficult to predict the degree of aggressive behaviour and hostility in the no-exposure control condition. It may or may not contain significantly more aggressivity than the aggressive film condition. The latter's likelihood of reiteration of arousal maintaining cognitions, and hence degree of subsequent aggressivity (aggressive behaviour and hostility), is presumably a function of such factors as the frequency, vividness, and the degree of explicitness of the depicted aggressive actions. Because these factors are not quantified, the magnitude of the difference in aggressivity between the no-exposure control and aggressive film conditions cannot be known. However, both of these conditions should show significantly more aggressivity than the non-aggressive film condition.

#### 4) Berkowitz Cue Model.

According to Berkowitz (1962, 1969), because of the additional aggressive cues provided by the aggressive film, aggressive behaviour as measured by the evaluation questionnaire should be significantly greater in the aggressive film condition

than the non-aggressive film and the no-exposure control conditions. The difference in amount of aggressive behaviour between the latter two conditions should be negligible, since it is implied that the strength of the aggressive response sequence following provocation, remains the same for both. Presumably the degree of aggressive arousal (hostility) is the same for all conditions and hence no significant differences are predicted between the three conditions on the mood check list measuring hostility.

Nevertheless, Berkowitz (1962), admits the possibility that the instigation to aggression, i.e., hostility, may well subside in both film conditions by taking the subjects' minds off the injuries done to them. However, even assuming that there is an equal reduction in anger/hostility (as in the Distraction-Attentional Shift Hypothesis) the previously acquired aggressiveness habits, or the latent aggressive responses, evoked by the aggressive cues in the aggressive film condition (Berkowitz, 1965a), should lead to more aggressive behaviour (as measured by the evaluation questionnaire) than in the non-aggressive film condition.

Thus, according to Berkowitz it is possible to have equal reductions in hostility in the aggressive and non-aggressive film conditions. This reduced arousal, however, does not lead to similar subsequent aggressive behaviour.

The aggressive film condition should show significantly more aggressive behaviour than the non-aggressive film condition because of the greater amount of aggression-evoking cues in the former condition. However, the lower arousal of the film conditions should result in (or "energize") considerably less aggressive behaviour than in the high arousal, no-exposure control group.

The above four hypotheses and the predictions that followed all deal with angered subjects. Non-angered conditions are used in this study to determine whether: (a) the instigating script is effective in provoking subjects; (b) the aggressive film leads to greater aggressivity (aggressive behaviour or hostility) due to imitation or disinhibitory effects without arousal. It is predicted that:

- 1) There will be significantly more post-experimental aggressivity shown in the angered as compared with the non-angered groups. This will validate the effectiveness of the instigating script, particularly in the comparison between the differentially instigated no-exposure control groups;

- 2) There will be no significant differences in post-experimental aggressivity between all non-angered conditions. No imitation or disinhibitory effect should result because of the dissimilarity between the aggression depicted in the aggressive film and that of the subjects situation in the experiment (Bandura, 1973a).

In addition, a measure of tension (anxiety plus depression) is taken following each treatment condition. This is used to determine whether: (a) the aggressive film produced more anxiety and therefore possibly inhibited subsequent aggressive expression on the evaluation questionnaire (cf., Goranson, 1969). If found, the mood check list measuring hostility may be considered less contaminated by inhibitory anxiety, since in answering it, the subject only states his degree of anger without having to injure the instigator. Whereas on the evaluation questionnaire assessing aggressive behaviour, the guilt-evoked subject may vacillate over the "rightness" of retaliation, this is tremendously diminished in answering the mood check list reflecting hostility (cf., Manning & Taylor, 1975); (b) the "cathartic" effect is found for tension, rather than aggressivity.

Because a justified synopsis reduces aggression anxiety and/or guilt, it is predicted that:

- (1) There will be no significant differences in post-experimental tension in all angered conditions.
- (2) There will be no significant differences in post-experimental tension in all non-angered conditions.

d. Outline of the total experiment.

The first part of the experiment (pretest) consisted of selecting two film segments that did not differ significantly

in their distraction-attentional shift potential (interest) and in their excitatory potential, yet differed significantly in their aggressive content. Four short films were produced, from which two were selected as fulfilling these requirements. These two film segments, hereby called the aggressive and non-aggressive films, were then used in the main experiment.

The main experiment consisted of studying the effects of viewing these films in angered and non-angered subjects on subsequent aggressivity. Aggressivity was measured by an evaluation questionnaire assessing aggressive behaviour, and a mood check list assessing hostility. Subjects were differentially verbally insulted (angered vs. non-angered) by a confederate and then were shown either the aggressive or non-aggressive film segment, after which they completed either the evaluation questionnaire or the mood check list. A no-exposure control condition in which subjects immediately filled out the rating scales following differential provocation, was also used.

## CHAPTER III

### PRETEST: METHOD AND PROCEDURES

#### Overview

The purpose of the pretest was to select two films that were significantly different in their aggressive cue potential and not significantly different in their distraction-attentional shift and excitatory potentials. Subjects viewed four specially constructed film segments and each film was rated on a film evaluation questionnaire from which the aggression and distraction-attentional shift potential scores were derived. Excitatory potential, that is, the degree of physiological excitation produced by each film, was assessed by measuring changes in systolic and diastolic blood pressure, and changes in heart rate. The procedure used resembles that of Zillmann (1971).

#### Materials

Two students (a male and a female) from the Theatre Arts Department of the University of Ottawa volunteered to act out certain skits which were filmed on black-white videotape. Altogether four different scenes were filmed. These were intuitively judged to be interesting and one of them was deliberately planned to be the aggressive film

segment. This film was then compared with the other three on the various dimensions so as to maximize the likelihood of getting it and at least one of the other films not significantly different on these dimensions. The films selected were: 1) an aggressive film in which a couple engages in an angry, verbal fight following the wife's discovery that the husband is unfaithful; 2) a film (called "Fired") in which the husband tells his wife about losing his job, whereupon the wife enthusiastically encourages him about the new possibilities awaiting them both in the future, much against his pessimism; 3) a film (called "Pregnant") in which the girlfriend reveals to her boyfriend that she is pregnant and they discuss various solutions to deal with this crisis; 4) a film (called "Casanova") in which an awkward playboy attempts to set up a date with the lady sitting next to him in the dentist's waiting room. All films were clipped at the end of six minutes and five seconds, and thus gave the impression of incompleteness, eliminating any emotional closure in the plot.

### Subjects

Forty-five subjects (25 males, 20 females) from the English section in Introductory Psychology at the University of Ottawa participated in this part of the study. The mean

age was 23.8 years, with a standard deviation of 5.3. These subjects were randomly chosen from a larger pool of subjects who responded to an invitation by the experimenter to volunteer for the study. Each subject was seen individually for approximately one hour, and as remuneration, received points toward the final mark.

#### Apparatus

The videotaped films were screened on a 9 inch Sony monitor.

To determine the excitatory potential of each film, the following instruments were used: 1) a standard mercury manometer, a brachial artery cuff, and a stethoscope to measure systolic and diastolic blood pressures at intermittent intervals. Diastolic blood pressure was read as the pressure at which the Korotkoff's sounds became imperceptible; 2) an A.R. Vetter FM tape recorder (Model A) was used to take readings of heart rate in beats per 20 second intervals. The tape travelled at a speed of  $1 \frac{7}{8}$  inches per second. The leads for heart rate was connected to a heart rate two digital pulse converter which is an electrophysiological amplifier of the heart rate signal (QSR wave).

## Procedure

The study was introduced as one of reactions of viewers to films. Specifically, subjects were told that different reaction modes--physiological and psychological--would be assessed to determine whether there is a large agreement between them in the hope of thereby establishing rating scales that truly reflect an audience's reaction to films. This was described as a potentially great benefit to society, since the public would not have to rely on professional critics to subjectively evaluate films, pointing out the oft disparity between their tastes and that of the public.

Each subject (S) was exposed to all four films, but to control for possible order effects, the sequential arrangement of the films was systematically varied from one S to the other. Every film occurred equally often in every ordinal position.

Each S was tested individually, sitting three feet away from a 9 inch Sony monitor. The experimenter (E) attached the necessary silver-plated electrodes to the wrists and to the left ankle to measure heart rate. Beekman electrode paste was applied to act as an interface between each electrode and S's skin. The artery cuff

was attached to S's right arm, which rested comfortably on the arm rest of the sofa. The S was assured that no harm would result from the apparatus, and was asked to sit back and relax. After five minutes, during which the heart rate apparatus was calibrated and the cuff inflated once to let S know how it felt, E announced the content of the film to be shown first, by giving a brief synopsis. Then the film segment was played on the monitor. Blood pressure readings were taken 60 sec before the beginning of the film (after the synopsis), 60 sec before the end of the film, and immediately after the end of the film. Heart rate was continuously recorded on tape in beats per 20 sec. One minute after the film ended, S was given time to relax for ten minutes, several minutes of which were spent answering the film evaluation questionnaire assessing interest and aggression. After 10 min, a synopsis of the film to follow was announced and the film was screened. This cycle was repeated for all four films.

#### Dependent Measures

##### (a) Film evaluation questionnaire.

This specially prepared rating scale was used to assess the aggressive cue potential and the distraction-attentional

shift potential of each film. No standard scale has been developed to measure these dimensions. Generally, these dimensions are determined by asking the subject to rate each film on items that appear to have content validity in terms of measuring the respective dimensions (e.g., Worchel, Hardy & Hurley, 1976). In this study, a similar procedure was involved in composing the film evaluation questionnaire. Items were constructed that *a priori* appeared to measure the aggressive cue potential and the distraction-attentional shift potential of each film.

The rating scale was given each S after viewing a film. The questions were in varied order for each questionnaire so as to reduce response set. An example of a questionnaire is given in Appendix 1. Specifically, two scores were derived from it:

(1) Total Aggression - consisting of items assessing verbal aggression (no. 3), physical aggression (no. 6), and hostile, angry mood (no. 10). Each item had four alternative choices, allowing 1 point for a very aggressive choice and 4 points for no aggression. The combined score of these items yielded an estimate of the aggressive cue potential of each film.

(2) Total Interest - consisting of items assessing interest (no. 1), excitement (no. 4), involvement - the desire to continue watching the film for another 5 minutes (no. 7), and enjoyment (item 9). Each item had seven alternative choices placed between adjectival antonyms, allowing 1 point for a highly positive response and 7 points for a highly negative response. The sum of scores on these items (Total Interest) yielded an estimate of the distraction-attentional shift potential of each film. Although this potential refers to the degree of interest and involvement of the film, these four items were used to get a direct and comprehensive measure of film absorption.

The other items interspersed between these were buffer items, such as quality of camera work and acting.

(b) Physiological measures.

The excitatory potential of each film was determined by measuring blood pressure and heart rate changes generated by film exposure. Zillmann's (1971), excitation transfer model differentiates between rapid cognition-mediated neural transmission and the relatively slower humoral processes mediating the excitatory response. Humorally controlled physiological reactions, such as blood pressure elevation, have a relatively slow decay of excitation. The differential

excitation generated by different films carries over into the subsequent retaliatory period and accounts for the differentiated intensity of the cognitively appraised emotional state and aggressive response. Heart rate, primarily a neurally controlled response, adjusts relatively rapidly to changes in stimulation and hence is not a good index of excitation. It is used to ensure that it does not run counter to the humorally controlled response of blood pressure elevation.

Excitatory changes were determined as the difference between S's base line of excitation prior to film exposure, and his excitation at the end of the film. For the particular dependent measures, this difference is defined as follows:

(1) Systolic and diastolic blood pressures. The base-level measure was taken 60 sec. before the film began. The final level was the arithmetic mean of the reading taken 60 sec before termination and immediately following the film.

(2) Heart rate (HR). The base level was determined as the beats per 20 sec during the 20 sec period preceding the start of the film. The final level was the arithmetic mean of the reading taken from -20 to 0 sec, and from 0 to 20 sec, relative to the film's ending.

Two additional composite measures were determined:

(3) Mean blood pressure (MBP).

$MBP = BP \text{ diastolic} + \frac{2}{3} (BP \text{ systolic} - BP \text{ diastolic}).$

(4) Sympathetic activation (SA)

$SA = HR \{BP \text{ diastolic} + \frac{2}{3} (BP \text{ systolic} - BP \text{ diastolic})\}.$

## CHAPTER IV

### RESULTS OF PRETEST

Because this study manipulates the aggressive cue variable to the exclusion of other factors, it is important that the two films chosen from the four do not differ significantly in their distraction-attentional shift potential (Total Interest), and in their measures of excitatory potential. The two films should be differentiated only along the dimension of aggressive content (Total Aggression). Thus, for the purposes of the main experiment investigating the vicarious catharsis hypothesis, the two films will differ on aggression and not on the other dimensions suggested to influence post-exposure aggressivity.

#### A. Film Evaluation Questionnaire

##### a. Aggressive-cue potential of the films.

The film evaluation questionnaire yielded a score assessing the magnitude of aggression displayed in each of the four films. This was necessary in order to see whether, in fact, the *a priori* judged aggressive film was significantly

more aggressive than the others, and on what mode(s) of aggression it differed. The latter was determined by isolating the three items that comprised the Total Aggression measure, namely (i) verbal aggression, (ii) angry mood, and (iii) physical aggression. Because of the possibility that evaluation of aggression could differ between the sexes, separate scores were computed for males and females. Table 1 shows the mean scores and standard deviations of the Total Aggression score (both sexes combined) and the three subscores (sexes divided). As can be seen from the Total Aggression score, the least aggression was seen in "Fired", and the most in the *a priori* constructed aggressive film.

The Total Aggression scores were subjected to a two-way analysis of variance with repeated measures, with sex and film as the two independent factors. The results are presented in Table 2. No significant main effect was found for sex. However, there was a significant main effect for the film variable, indicating that films were differentiated in aggressive cue potential. No interaction was shown.

In order to determine between which film conditions the significance occurred, post-hoc analyses of mean contrasts

TABLE 1

Mean Scores and Standard Deviations of the Three Items  
Expressing Aggression for the Four Films

| Group<br>(Total $S_s=45$ )                          | Total<br>Aggression<br>(all 3 items) | (i)<br>Verbal<br>Aggression S.D. | (ii)<br>Angry<br>Mood S.D. | (iii)<br>Physical<br>Aggression S.D. |
|-----------------------------------------------------|--------------------------------------|----------------------------------|----------------------------|--------------------------------------|
| I Aggressive Film<br>Males (N=25)<br>Females (N=20) | 2.18                                 | 1.36                             |                            |                                      |
|                                                     |                                      | 1.44                             | .58                        | .79                                  |
|                                                     |                                      | 1.75                             | .85                        | .49                                  |
| II "Fired"<br>Males (N=25)<br>Females (N=20)        | 3.59                                 | 1.38                             |                            |                                      |
|                                                     |                                      | 3.40                             | .91                        | .82                                  |
|                                                     |                                      | 3.50                             | .83                        | .55                                  |
| III "Pregnant"<br>Males (N=25)<br>Females (N=20)    | 3.27                                 | 1.59                             |                            |                                      |
|                                                     |                                      | 3.00                             | .87                        | .88                                  |
|                                                     |                                      | 3.20                             | .89                        | .88                                  |
| IV "Casanova"<br>Males (N=25)<br>Females (N=20)     | 3.50                                 | 1.68                             |                            |                                      |
|                                                     |                                      | 3.00                             | 1.15                       | .99                                  |
|                                                     |                                      | 3.50                             | .76                        | .67                                  |

TABLE 2  
Summary of Two-Way Analysis of Variance with Repeated  
Measures on Film Factor for Total Aggression

| Source of variation | <u>SS</u> | <u>df</u> | <u>MS</u> | <u>F</u> | <u>p</u> |
|---------------------|-----------|-----------|-----------|----------|----------|
| Between subjects    |           |           |           |          |          |
| Sex                 | 14.694    | 1         | 14.694    | 2.221    | <0.143   |
| Error               | 284.448   | 43        | 6.615     | -        | -        |
| Within subjects     |           |           |           |          |          |
| Film                | 505.535   | 3         | 168.511   | 121.680  | <0.001*  |
| Film x Sex          | 3.005     | 3         | 1.001     | 0.723    | <0.540   |
| Error               | 178.649   | 129       | 1.384     | -        | -        |

\* asterisk denotes significance.

using the Scheffé method were computed. The results of the mean contrasts between the four films are presented in Table 3. As can be seen, the *a priori* judged aggressive film segment was in fact significantly more aggressive than any of the other film segments.

Separate analyses of variance were done on the three subscores comprising Total Aggression to determine which mode(s) of aggression was responsible for the greatest differentiation between the films. It was found that significant differences between the films was due to differences in verbal aggression ( $F = 42.63, p < .001$ ) and angry mood ( $F = 169.56, p < .001$ ), and not to physical aggression ( $F = 1.02, p < .384$ ).

Thus, for the purposes of this study, the differentiation in the index of aggression between the films was borne out. The aggressive film, constructed with the intention of being aggressive, differed significantly in aggressive cue potential from the other films, in terms of verbal aggression and angry mood.

b. Distraction-attentional shift potential.

To test for the distraction-attentional shift potential of the four films, Ss' scores were tabulated from the

TABLE 3  
Scheffé Post-Hoc Analyses of Mean Contrasts  
Between Film Conditions on Total Aggression Score

| Contrast                     | $\hat{\Psi}$ | $\hat{\sigma}_{\hat{\Psi}}$ | $\hat{\Psi}/\hat{\sigma}_{\hat{\Psi}}$ |
|------------------------------|--------------|-----------------------------|----------------------------------------|
| Aggressive vs. "Fired        | 4.25         | .2482                       | 17.123**                               |
| Aggressive vs.<br>"Pregnant" | 3.29         |                             | 13.255**                               |
| Aggressive vs.<br>"Casanova" | 3.96         |                             | 15.955**                               |
| "Fired" vs. "Pregnant"       | 0.96         |                             | 3.868**                                |
| "Fired" vs. "Casanova"       | 0.29         |                             | 1.168                                  |
| "Pregnant" vs.<br>"Casanova" | 0.67         |                             | 2.699                                  |

\*\*p < .01

evaluation questionnaire on each item reflecting such potential. A Total Interest score was derived, which consisted of the sum of the items measuring (i) interest, (ii) excitement, (iii) involvement, and (iv) enjoyment. Because of the possibility that differential responses to different film contents could depend on one's gender, the scores were divided according to sex. Table 4 shows the mean scores and standard deviations of the Total Interest score (sexes combined) and the subscores (sexes divided). As can be seen on the Total Interest score, it seemed that "Casanova" (film 4) was deemed most interesting and "Fired" (film 2) least interesting.

The Total Interest scores were subjected to a two-way analysis of variance with repeated measures, with sex and film as the two independent factors. The results are presented in Table 5. No significant main effect was found for sex. There was, however, a significant main effect for the film variable, indicating that the films were differentiated in distraction-attentional shift potential. No interaction between the two factors was found.

In order to determine between which film conditions the significance occurred, post-hoc analyses of mean contrasts

TABLE 4

Mean Scores and Standard Deviations of the Four  
Items Expressing Total Interest for the Four Films

| Group<br>(Total Ss=45) | Total<br>Interest<br>(all 4 items) | S.D. | (i)      |      | (ii)            |      | (iii)            |      | (iv)           |      |
|------------------------|------------------------------------|------|----------|------|-----------------|------|------------------|------|----------------|------|
|                        |                                    |      | interest | S.D. | excite-<br>ment | S.D. | involve-<br>ment | S.D. | enjoy-<br>ment | S.D. |
| I Aggressive<br>Film   | 3.91                               | 1.69 |          |      |                 |      |                  |      |                |      |
| Males (N=25)           |                                    |      | 3.40     | 1.63 | 3.63            | 1.60 | 4.08             | 1.86 | 4.04           | 1.64 |
| Females (N=20)         |                                    |      | 3.50     | 1.70 | 4.04            | 1.73 | 4.29             | 1.94 | 4.34           | 1.30 |
| II "Fired"             | 4.38                               | 1.79 |          |      |                 |      |                  |      |                |      |
| Males (N=25)           |                                    |      | 3.95     | 1.92 | 4.52            | 1.66 | 4.75             | 2.06 | 4.28           | 1.81 |
| Females (N=20)         |                                    |      | 4.00     | 1.94 | 4.84            | 1.56 | 4.70             | 1.86 | 4.00           | 1.25 |
| III "Pregnant"         | 3.80                               | 1.69 |          |      |                 |      |                  |      |                |      |
| Males (N=25)           |                                    |      | 3.36     | 1.82 | 4.40            | 1.41 | 4.12             | 1.69 | 3.67           | 1.54 |
| Females (N=20)         |                                    |      | 3.04     | 1.93 | 3.95            | 1.63 | 3.90             | 3.26 | 3.90           | 1.52 |
| IV "Casanova"          | 3.15                               | 1.60 |          |      |                 |      |                  |      |                |      |
| Males (N=25)           |                                    |      | 2.52     | 1.29 | 3.36            | .99  | 3.92             | 1.82 | 2.64           | 1.04 |
| Females (N=20)         |                                    |      | 2.65     | 1.56 | 3.34            | 1.42 | 4.00             | 2.18 | 2.85           | 1.75 |

TABLE 5

Summary of Two-Way Analysis of Variance with  
Repeated Measures on Film Factor for Total Interest

| Source of variation | <u>SS</u> | <u>df</u> | <u>MS</u> | <u>F</u> | <u>p</u> |
|---------------------|-----------|-----------|-----------|----------|----------|
| Between subjects    |           |           |           |          |          |
| Sex                 | 0.284     | 1         | 0.284     | 0.004    | <0.949   |
| Error               | 2913.354  | 43        | 67.752    | -        | -        |
| Within subjects     |           |           |           |          |          |
| Film                | 589.892   | 3         | 196.630   | 9.017    | <0.001*  |
| Film x Sex          | 18.161    | 3         | 6.053     | 0.277    | <0.841   |
| Error               | 2812.845  | 129       | 21.804    | -        | -        |

\* asterisk denotes significance.

using the Scheffé method were computed. The results of the mean contrasts between the four films are presented in Table 6. As can be seen, there were significant differences in distraction-attentional shift potential between some of the films. However, for the purposes of this study, it is essential that no significant difference in distraction-attentional shift potential occur between the aggressive film and non-aggressive film used in the main experiment. Since no significant difference on this dimension was found in comparing the Aggressive vs. "Fired" and Aggressive vs. "Pregnant" film segments, either one of these non-aggressive films ("Fired" or "Pregnant") can be selected as fulfilling the appropriate condition. The film segment "Casanova" cannot be used as the non-aggressive film because it significantly differed from the aggressive film in the distraction-attentional shift potential.

The only remaining requirement was to rule out any significant difference in excitatory potential between the aggressive film segment and either "Fired" or "Pregnant".

#### B. Physiological Measures: Excitatory Potential

##### a. Blood pressure changes.

To test for the excitatory potential of the four films, Ss' changes in blood pressure were recording for all film

TABLE 6  
Scheffé Post-Hoc Analyses of Mean Contrasts  
Between Film Conditions on Total Interest Score

| Contrast                     | $\hat{\psi}$ | $\hat{\sigma}_{\hat{\psi}}$ | $\hat{\psi}/\hat{\sigma}_{\hat{\psi}}$ |
|------------------------------|--------------|-----------------------------|----------------------------------------|
| Aggressive vs. "Fired"       | 1.91         | 0.984                       | 1.940                                  |
| Aggressive vs.<br>"Pregnant" | 0.40         |                             | 0.406                                  |
| Aggressive vs.<br>"Casanova" | 3.18         |                             | 3.231**                                |
| "Fired" vs. "Pregnant"       | 2.31         |                             | 2.347                                  |
| "Fired" vs. "Casanova"       | 5.09         |                             | 5.130**                                |
| "Pregnant" vs.<br>"Casanova" | 2.78         |                             | 2.824*                                 |

\*  $p < .05$

\*\*  $p < .01$

conditions. Three measures were derived: (i) systolic changes, (ii) diastolic changes, (iii) and mean blood pressure changes. Again, because of the possibility of sex differences in film reaction, scores were computed for the sexes separately. Mean changes and standard deviations in blood pressure are presented in Table 7, for all three measures with sexes divided. The correlations of these measures are shown in Table 8.

A two-way multivariate analysis of variance with repeated measures was computed using the three dependent measures, with sex and film being the independent factors. The results are found in Table 9. Although there was a trend toward significance for the sex and film variables ( $p < .055$  and  $p < .09$  respectively), no significant differences were found between the conditions on these measures.

b. Heart rate and sympathetic activation

Zillman (1971), states that heart rate, a primarily neurally controlled response cannot be considered a sensitive index of the largely humourally controlled, relatively slow decay of excitation as found in blood pressure. Heart rate is expected to adjust relatively rapidly to changes in stimulation and return to normal in a few seconds following acceleration due to film exposure. He use heart rate to ensure that

TABLE 7

Mean Changes and Standard Deviations in the Physiological  
Responses of Systolic, Diastolic, and Mean Blood Pressure  
for the Four Films

| Group<br>(Total $\bar{S}_s=45$ ) | Systolic<br>Blood Pressure |       | Diastolic<br>Blood Pressure |       | Mean<br>Blood Pressure |       |
|----------------------------------|----------------------------|-------|-----------------------------|-------|------------------------|-------|
|                                  |                            | S.D.  |                             | S.D.  |                        | S.D.  |
| I Aggressive Film                |                            |       |                             |       |                        |       |
| Males (N=25)                     | -1.120                     | 4.126 | -0.400                      | 3.188 | -0.558                 | 3.486 |
| Females (N=20)                   | -0.900                     | 3.307 | -0.200                      | 2.627 | -0.250                 | 2.651 |
| II "Fired"                       |                            |       |                             |       |                        |       |
| Males (N=25)                     | -0.360                     | 3.160 | -1.280                      | 2.776 | -0.158                 | 2.721 |
| Females (N=20)                   | -2.099                     | 3.905 | -1.000                      | 2.714 | -1.167                 | 3.143 |
| III "Pregnant"                   |                            |       |                             |       |                        |       |
| Males (N=25)                     | 0.160                      | 3.531 | 0.840                       | 2.511 | 0.386                  | 2.526 |
| Females (N=20)                   | -2.299                     | 2.792 | -1.349                      | 3.133 | -1.983                 | 2.584 |
| IV "Casanova"                    |                            |       |                             |       |                        |       |
| Males (N=25)                     | 1.280                      | 4.860 | 1.120                       | 3.632 | 1.225                  | 4.008 |
| Females (N=20)                   | -1.000                     | 4.103 | 0.150                       | 3.498 | -0.618                 | 3.677 |

NOTE: All blood pressure changes are in millimeters of mercury.

TABLE 8

Correlation Matrix of the Three Variables Reflecting  
Mean Changes in Blood Pressure for Films

|                     | (i)<br>systolic b.p. | (ii)<br>diastolic b.p. | (iii)<br>mean b.p. |
|---------------------|----------------------|------------------------|--------------------|
| (i) systolic b.p.   | -                    |                        |                    |
| (ii) diastolic b.p. | 0.394                | -                      |                    |
| (iii) mean b.p.     | 0.839                | 0.644                  | -                  |

TABLE 9  
 Summary of Multivariate Analysis of Variance Results  
 for the Sex-Film Treatment Design with Three Dependent  
 Variables Reflecting Physiological Blood Pressure Changes

| Source of Variation | ndf           | F      | p       |
|---------------------|---------------|--------|---------|
| Sex                 | 3 and 170     | 2.584  | < 0.055 |
| Film                | 9 and 413.885 | 1.6547 | < 0.098 |
| Interaction         | 9 and 413.885 | 0.8223 | < 0.595 |

it did not run counter to the predominantly humourally controlled, and thus more relevant for the excitation-transfer model, excitatory reactions of blood pressure changes.

Twelve Ss' (4 males, 8 females) heart rate responses were monitored during the viewing of each film. The correlations between heart rate and systolic, diastolic, and mean blood pressure were all positive but small (0.11, 0.35 and 0.22 respectively). Hence it was in the same direction as changes in blood pressure.

The data on sympathetic activation was checked for homogeneity of variance. It showed that the variances were homogenous ( $F_{\max} = 1.389$ , df 4,11). The correlation between sympathetic activation and heart rate was positive, but small (0.147).

Table 10 presents a one-way multivariate analysis of variance with repeated measures on the heart rate and sympathetic activation data. There was no significant difference on these measures between all film conditions.

### c. Conclusion

The purpose of this pretest was to isolate two films that significantly differed in aggressive content, but were not significantly different in their distraction-attentional

TABLE 10  
 One-Way Multivariate Analysis of Variance Showing Mean Changes  
 of Dependent Variables (Heart Rate and Sympathetic Activation)  
 Under Four Film Conditions

| Treatment Level             | Variable   |                        | F ratio |
|-----------------------------|------------|------------------------|---------|
|                             | Heart Rate | Sympathetic Activation |         |
| I Aggressive Film<br>(N=12) | -0.964     | 6.441                  |         |
| II "Fired"<br>(N=12)        | -2.085     | 1.201                  |         |
| III "Pregnant"<br>(N=12)    | -1.835     | -0.596                 |         |
| IV "Casanova"<br>(N=12)     | -1.459     | 5.95                   |         |
| Overall<br>(N=48)           | -1.586     | 3.249                  | 0.661   |

$F = .05$  ( $df = 6, 86$ ) = 2.17

NOTE: Heart-rate changes are in beats per 20 sec.

shift potential and in their excitatory potential. The aggressive film segment differed significantly in terms of verbal aggression and angry mood from both film segments labeled "Fired" and "Pregnant". None of these three films differed significantly in terms of their distraction-attentional shift potential or in their excitatory potential.

The problem left was to choose between "Fired" and "Pregnant" as the nonaggressive film segment to be used in the main experiment. Univariate analysis of variance on each physiological measure showed that there was a significant sex difference in systolic pressure ( $F = 7.547$ ,  $p < .006$ ). This significance was found in the "Pregnant" film segment (as well as in "Casanova") and not in the other films. There was also a significant main effect for sex in mean blood pressure ( $F = 6.734$ ,  $p < .01$ ), found in the "Pregnant" film only. In terms of blood pressure changes, Zillmann (1971) found systolic and mean blood pressure to be better measures of physiological arousal than diastolic. Hence, "Fired" was chosen as the nonaggressive film, because it, like the aggressive film, had greater internal consistency vis à vis reaction by males and females.

## CHAPTER V

### MAIN EXPERIMENT

#### Introduction

Previous studies on the vicarious hostility catharsis hypothesis in which films were used did not control for the distraction-attentional shift potential and excitatory potential of the films. Because these factors have been suggested as influencing post-exposure aggressivity, it is essential to the vicarious hostility catharsis hypothesis that primary focus should center around the aggressive cue potential of the films, to the exclusion of such factors. With regard to this, the present study uses two films, an aggressive and non-aggressive film, that differ significantly only in aggressive content. Thus, whether a reduction in aggressivity follows aggressive film exposure vis à vis non-aggressive film exposure as predicted by the vicarious hostility catharsis hypothesis, or whether other possibilities result as predicted by other hypotheses, can be more adequately clarified.

The main experiment involved differentially instigating subjects (by verbal insult) so that half were angered and

half non-angered. The angered condition ensures some aggressive arousal and is needed according to the revised vicarious catharsis hypothesis (e.g., Bramel, Taub, & Blum, 1968). Following differential arousal, subjects viewed either the aggressive or non-aggressive film segment, and then answered the forms assessing aggressivity (aggressive behaviour or hostile motive). A no-exposure control group answered the forms assessing aggressivity immediately after differential instigation.

#### Subjects

Three hundred and sixty subjects<sup>1</sup> (180 males, 180 females) from undergraduate classes in the English section of psychology and sociology at the University of Ottawa participated in the experiment. The mean age was 24.2 years (S.D. = 5.5 ). Subjects were seen during their regular classes and hence tested in groups. Permission for class use was obtained by the various professors. Students were asked to participate, although those who wished could leave. Remuneration in terms of points toward the final mark was given to every participant.

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<sup>1</sup>These were the final subjects chosen after discarding those who incompleted the forms, were part of the pretest, had participated in a previous class, or who guessed that the confederate's instigating script was fake. In addition, subjects were not used when breakdown of equipment occurred. To get equal numbers per cell, some subjects were eliminated randomly.

### Materials

Two films, an aggressive film and a non-aggressive film, previously differentiated on their aggressive-cue content were used. These films served as the fantasy medium through which a cathartic effect could be evaluated. They were shown on a 19 inch Sony monitor, being played through a Sony video-tape recorder.

In addition, forms containing the dependent measures were constructed and handed out to each S before film exposure. Each form contained two sections, sealed off from each other so as to prevent students from looking ahead to see what was on them. The first section of each form contained the bogus verbal aptitude test which served as an aid in differentially instigating (insulting) the subjects. The second section contained either one of the dependent measures, i.e., the evaluation questionnaire ("Dean's Survey") or the mood check list. A copy of the forms containing the evaluation questionnaire and mood check list are found in Appendix 2 and Appendix 3 respectively.

### Independent Measures

Two independent variables were employed in this experiment (1) instigation (insult conditions), i.e., subjects were either angered or not. Differential provocation was done

through an instigating script after Ss attempted to complete the bogus verbal aptitude test; (2) film conditions (no film, aggressive film, non-aggressive film).

#### Dependent Variables

Three dependent variables were used: (1) an evaluation questionnaire assessing aggressive behaviour directed against the confederate; (2) a mood check list assessing hostility and (3) tension.

Because of the possibility that aggressive behaviour and hostile motive (anger arousal) can be differentiated conceptually, this study uses both measures in an attempt to further clarify the catharsis hypothesis.

The evaluation questionnaire can be seen as reflecting verbal aggression. Aggression, in this case, is defined as behaviour whose goal is injury to some person or object (Buss, 1961; Kaufmann, 1965). The evaluation questionnaire gives the subject the opportunity to hurt the instigator by rating him unfavorably. Although Bandura (1965 b), contends that verbal responses to questionnaires, unlike measures of overt physical aggression, are subject to social desirability response sets, nevertheless, even measures of overt physical aggression, such as use of electric shocks, are subject to criticism. Thus, Singer (1971), questions whether the delivery of shocks is really analogous to an act of overt

aggression. The whole situation has a game like quality since the subject believes that the experimental context should not allow him to seriously harm anyone. Furthermore, the one to one situation in using shock is influenced by strong demand characteristics.

Leibowitz (1968), suggests that aggression can be roughly divisible into two basic modes of expression, verbal and physical, which are somewhat orthogonal. Both of these modes may be measured behaviourally as well as by self-report. Verbal behaviour directed at the intended object that can produce injury in a psychological sense, can be termed aggressive behaviour (Weiss, 1970). There is a good deal of consistency among different behavioural measures of aggression (Goranson, 1970), and evaluation questionnaires such as the one used in this study, are recommended by Tannenbaum and Zillman (1975), as being both economical and valid. The evaluation questionnaire, therefore, can be seen as a verbal-behavioural measure of aggression, a reflection of the desire to hurt and inflict suffering.

The mood check list, measuring hostility, is a self-report measure and can be seen as reflecting anger or aggressive arousal. Hostility is viewed as an emotional

response resulting from a situation appraised as anger-inducing (Manning & Taylor, 1975). It can be seen as a measure of motive strength, a temporary disposition toward aggressive behaviour. It is used here because one can distinguish between aggressive acts and emotional arousal experienced as anger (e.g., Bandura, 1973 a). Aggressive behaviour does not necessarily presuppose underlying anger or emotional arousal, nor does emotional arousal experienced as hostility, necessarily lead to aggressive behaviour. Hostility is only a preparedness for aggressive action associated with a temporarily heightened physiological state (cf., Buss, 1961). Both aggressive behaviour as measured by the evaluation questionnaire, and hostility as measured by the mood check list, may be differentially responsive to the effects of viewing films of differential aggressive content.

1) Evaluation questionnaire. This assessed the attitude or verbal aggression directed against the confederate and thus served as the measure for 'hostile' aggression, i.e., the desire to hurt. Such evaluation questionnaires have been used in many previous studies (e.g., Feshbach, 1955; Fishman, 1965; Schill, 1972). The one use here was a modification of Feshbach's. It consisted of

10 questions, each with seven alternative answers placed between adjectival antonyms. By using a weighted scoring system for responses, allowing 1 point for a highly approving response and 7 points for strong disapproval, four separate scores were obtained for each S:

- i) A total score derived from 9 items (except item 2) expressing general aggression.  
This in turn was composed of --
- ii) Aggression toward the experimenter (the confederate), derived from the scores of 3 items (nos. 1, 4, 7)
- iii) Aggression toward the experiment, derived from scores on 3 items (nos. 8, 9, 10), and
- iv) A measure of friendliness (sum of item nos. 3, 5, 6). Item no. 2 assessing emotionality was dropped from analysis because of its dubious interpretation.

These scores thus indicated a S's expressed feelings of hostility toward the confederate, and the experimental procedure.

The introduction to the evaluation questionnaire stated that it would be used by the Dean to rate and grade the

student and his research. Hence, it was potentially injurious to the confederate, and served as the measure of aggressive behaviour. An example of the questionnaire is provided in Appendix 2.

2) Mood check list. This was a short form of the Nowlis-Green Mood Adjective Check List (Nowlis, 1965), used in previous studies (e.g., Dworkin and Efran, 1967; Singer, 1968). It consisted of 20 words concerning mood. Ss were instructed to indicate how they felt by responding to each word on a 4-point continuum from no (definitely do not feel this way at the moment) to yy (definitely feel this way at the moment). Two cluster scores were derived from this measure:

- i) Hostility score -- consisting of the sum of the responses to 10 words (angry, defiant, fed up, resentful, vengeful, furious, annoyed, rebellious, destructive, grouchy, ready to fight).
- ii) Tension score -- consisting of the sum of two subscores.
  - a) Anxiety -- containing 5 items (ashamed, clutched up, shocked, startled, tense) and
  - b) Depression -- containing 4 items (blue, insecure, lonely, uncertain).

Singer (1968) used the sum of the anxiety and depression scores as a measure of tension and found a correlation of .55 between them.

Mood is defined by Nowlis (1970), as a temporary disposition toward a broad set of behavioural and private events. The hostility score thus refers to mood and not aggressive behaviour. Furthermore, Lazarus, Speisman et al. (1962), found that the variable of anxiety on this check list was most responsive in indicating stress to film viewing. Depression was somewhat less responsive. The Nowlis Check List, in addition, showed the effects of the stressor film in the same direction as did physiological indices such as heart rate and skin resistance. Although correlations were small, the mood check list and physiological responses were all in the expected direction in Ss viewing a stressor film. Clearly, it does overlap with autonomic nervous system reactivity. Tension was used as a measure to see whether the provocation, or viewing the aggressive film was stressful and if a "catharsis" found was actually due to tension reduction, rather than aggression reduction. The words were intermingled to further help conceal the purpose of the study. An example of the mood check list is found in Appendix 3.

Each S responded either to the mood check list or the evaluation questionnaire. This was done because previous studies (e.g., Berkowitz and Rawlings, 1963; Singer, 1968) have shown that the initial interposed check list or questionnaire automatically modifies motives and feelings, and hence contaminates the results of the subsequent check list.

#### Procedure

The experiment ran for approximately 20 minutes, Ss being tested in their classes. A theatre arts student was hired as a confederate (C) by the experimenter (E), recommended as a superb actor by his professor. A confederate was needed in the study for several reasons. To reduce experimenter-bias effects, he did not know which class was to be shown the aggressive or non-aggressive film. Also, the instigating script involved angering the Ss by verbal insult, and this required someone with effective acting ability. And as the study was introduced as consisting of two independent experiments, ran by separate investigators, both C and E were needed.

After entering the classroom, C handed out the forms to all the subjects, each S receiving a form containing the

bogus verbal aptitude test followed by either the evaluation questionnaire or mood check list. While he was doing that, E set up the videotape equipment for the film to be shown.

The study was introduced by E as being composed of two independent parts, put together for reasons of economy. It was mentioned that because it was toward the end of the academic year, professors were reluctant to give up class time for experiments, and so both studies were put together to minimize class disruption. He then asked C whether he was ready to begin his study and take over, whereupon C came forward while E receded.

Subjects in the insult conditions were subjected to a number of critical and unwarranted remarks to arouse anger, a credibly sounding combination of a procedure used often in previous studies (e.g., Berkowitz and Rawlings, 1963; Feshbach, 1955; Leak, 1974). The script used here was a modified version of the Feshbach one. The C acted in an authoritarian, arrogant manner and quickly dismissed any questions. He challenged the Ss' academic motivation, emotional maturity, intelligence and honour by using the following introduction:

All right -- let's have it quiet! We  
don't have all day! Does everyone have a  
booklet? O.K. -- Don't open it until I say so.

The study in which you're participating is part of my research project in education. You'll be doing several things for the next 15-20 minutes. The first activity will consist of a verbal aptitude test I'm constructing which will replace the older, longer tests. It takes 5 minutes to do. You are going to be included as part of the norms. Now, you probably don't know what the means and I don't have the time nor the desire to explain it.

Now I realize you people have few academic interests outside your concern for grades. This probably means that few of you have the perspective for appreciating either the nature or importance of the tests I am about to administer. However, if you will try to look beyond your limited horizons, your co-operation will be useful. In other words, what I'm asking is that you act like adults rather than adolescents.

All the booklets will be collected at the end of the period. Oh, yes -- there is one additional item I would like to call your attention to. As the results of the tests are anonymous, there is absolutely no point in any of you cheating or copying.

O.K. Open the booklet by unhinging the first stapled sheet. Write your age and sex on top. (Wait 10 sec). All right -- now I'll read the instructions for you. (Read the instructions for the verbal aptitude test to make sure Ss understand).

(After 5 min.) O.K. Stop wherever you are! Put your pens down! It's over -- I said stop! Now we'll go on to the next thing. Oh, by the way -- how many of you managed to finish the test? (Waits for a show of hands and shakes head in dismay at the few hands raised). Incredible! I gave this same test to students at a western university and most of them were able to finish the test. Hmm -- I wonder what that says about the intelligence level of students at this university?

O.K. Now you can rest for a few minutes, while you view a film -- which is a separate study carried out by Mr. \_\_\_\_\_ (E).

Subjects in the noninsult conditions were greeted warmly, treated with respect, and given the following<sup>1</sup> neutral introduction by C:

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<sup>1</sup> N.B. The "neutral" introduction was in fact quite ingratiating to strongly contrast it from the instigating script.

Allow me first to introduce myself. My name is \_\_\_\_\_ from the Dept. of Education. The study in which you're participating is part of my research project in education. You'll be doing several things for the next 15-20 min.

The first activity will consist of a verbal aptitude test I'm attempting to develop. I hope to establish norms for it and in that respect your participation is really appreciated. The verbal aptitude test lasts 5 min. I realize it's very hard and most people do not finish it in time. But don't let that bother you or concern you at all. Just try your best.

O.K. -- you may now open your booklets by unhinging the first stapled page. Please write your age and sex.

Now let us go over the instructions together so everything will be clear (Reads the instructions). Does everyone understand what to do?

O.K. you may begin and good luck.

(After 5 min.) O.K. -- please stop writing. Time's up. Please put your pens down. By the way, how many managed to finish the test? (Waits

for a show of hands). Well, as I said before, don't worry if you didn't complete it. Most people don't even get through half of it. I myself couldn't finish it in time either.

O.K. Now I'll let you rest for a few minutes. You'll get to see a film -- actually a separate study by Mr. \_\_\_\_\_ (E).

E stepped forward and explained to the class that he was interested in their reactions to the film segment they were about to see, since other classes were being shown other segments. E stated that he was particularly interested in the details they could remember after a few days, and so asked them to put their telephone numbers, not their names, on the booklets handed out by C. He stated that he would get their telephone numbers from off the booklets and would call them within three to five days to ask them certain questions on the film.

Then, either the aggressive film or nonaggressive was screened following a synopsis describing the film. Subjects viewing the aggressive film were given a "justified" synopsis which implied that the husband deserved his wife's fury. This has been found to reduce aggression anxiety and/or guilt associated with viewing film violence (e.g.,

Berkowitz and Geen, 1967; Meyer, 1972). Each synopsis was identical to the one used in the pretest condition. The aggressive synopsis and the nonaggressive synopsis are respectively given in Appendix 4 and Appendix 5.

After viewing the film, E thanked the class and let C take over for the remainder of the time. Ss in the no-exposure control conditions proceeded immediately after the differential provocation to answer the evaluation questionnaire or mood check list. Before filling out this part, C gave the following instructions:

O.K. -- now for the final part. Unhinge the stapled sheet and start answering the items. Some of you have a mood check list to answer. I am also trying to get norms for it. Others have the Dean's Survey which goes to the Dean. Because of time limitations you either got one or the other. Please read the instructions and go ahead. It should only take a few minutes to answer them.

After completing this final part, the booklets were collected and Ss debriefed about the true nature of the study. They were asked to maintain secrecy until the full study ended.

The confederate introduced himself as a student in education rather than psychology. This was done in order to increase the camouflage of the experiment, since psychology may evoke feelings of suspicion and guardedness.

The no-exposure control group immediately answered the dependent measures without waiting for the time allowed for film exposure (6 min 5 sec). As Zillmann states (e.g., Zillmann & Johnson, 1973), a no-film condition always poses a problem because any attempt to control for the time of film exposure introduces a behavioural confounding since it potentially alters the motivation to aggress in some way. An intended "nontreatment" has proven to be a rather powerful treatment in a previous unpublished study (quoted by Zillmann & Johnson, 1973). The inclusion of a no-exposure control group which fails to control for time but eliminates behavioural confoundings, has both pragmatic and theoretical justification. Pragmatically, it can answer such questions as whether an angered person is more likely to express his hostility after viewing an aggressive film than after just being frustrated. Theoretically, it can be utilized as a background against which cathartic or instigational effects of film exposure can

be measured. Specifically, many studies imply that the nonaggressive film is equivalent to a no-film condition, and that the level of aggressivity subsequent to the viewing of a nonaggressive film remains unchanged following frustration. By including a no-exposure control condition that yields immediate post-frustration aggressivity, such questions can be clarified. In addition, the central focus of this study deals with externally structured fantasy that has been controlled for on crucial variables. Another task within a different mode of activity (e.g., reading, relaxing, etc.), would not have served a useful purpose since little control would have been exerted on its dimensions. As Doob and Climie (1972) state, "there is no way of manipulating 'delay' independent of other factors".

## CHAPTER VI

### RESULTS OF MAIN EXPERIMENT

#### Introduction

The main purpose of this study is to investigate the vicarious hostility catharsis hypothesis by using an aggressive film as the cathartic medium. Differentially instigated Ss viewed an aggressive film, a non-aggressive film, or saw no film. They then completed the dependent measures assessing aggressive behaviour (evaluation questionnaire) or hostility (mood check list). A measure of tension was also gathered. A cathartic effect refers to a significant reduction in post-exposure aggressivity, (whether in aggressive behaviour, hostility or both) in the instigated aggressive film condition as compared to the instigated non aggressive and instigated no-exposure control conditions. The results are broken down in terms of the dependent variables. Thus, the effects of the independent variables (differential instigation and film conditions) can be appraised with regard to aggressive behaviour and hostility.

#### A. Evaluation Questionnaire Assessing Aggressive Behaviour

Three separate measures were derived from this questionnaire, namely - (i) personal aggression toward C, (ii) aggression toward the experiment, and (iii) measure of C's friendliness (an indicator of C's personality). Because males have been found to express more aggression than females (Anastasi, 1966; Maccoby & Jacklin, 1974), the results were broken down by sex. Table 11 shows the mean scores and standard deviations of the three measures.

These measures can be viewed as dependent and correlated. Table 12 shows the correlations between them. Therefore, a multivariate analysis of variance was done, allowing for the simultaneous observation of each treatment on all criteria. Table 13 presents the results of a three-way multivariate analysis of variance, with sex, instigation and film as the three independent factors. As can be seen, both instigation and film conditions were significant. In addition there was a significant interaction effect between instigation and film. Using the mean scores on total aggression (the sum of the three subscales), Figure 1 shows that this interaction is ordinal.

TABLE 11

Mean Scores and Standard Deviations of the Three Subscales  
Expressing Aggressive Evaluation (Attitude)

| Group<br>(Total $S_s=180$ )                                      | Personal<br>Aggression<br>Toward $\bar{C}$ | S.D.           | Aggressive<br>Evaluation<br>of Experiment | S.D.           | Measure of<br>Friendliness<br>of $\bar{C}$ | S.D.           |
|------------------------------------------------------------------|--------------------------------------------|----------------|-------------------------------------------|----------------|--------------------------------------------|----------------|
| I Instigated No-exposure<br>Males (N=15)<br>Females (N=15)       | 14.733<br>15.866                           | 3.127<br>2.445 | 16.000<br>16.266                          | 3.707<br>3.514 | 16.000<br>16.599                           | 2.751<br>2.922 |
| II Instigated-Aggressive Film<br>Males (N=15)<br>Females (N=15)  | 13.066<br>11.266                           | 3.081<br>3.081 | 14.066<br>13.533                          | 2.963<br>2.899 | 14.400<br>14.866                           | 3.355<br>2.669 |
| III Instigated Nonaggressive<br>Males (N=15)<br>Females (N=15)   | 9.933<br>12.400                            | 3.058<br>2.667 | 13.000<br>12.133                          | 3.644<br>3.377 | 13.066<br>13.600                           | 3.473<br>2.197 |
| IV Noninstigated No-exposure<br>Males (N=15)<br>Females (N=15)   | 8.466<br>8.800                             | 2.559<br>2.007 | 10.466<br>9.733                           | 3.020<br>1.907 | 8.133<br>8.266                             | 1.922<br>2.711 |
| V Noninstigated-Aggressive<br>Males (N=15)<br>Females (N=15)     | 8.400<br>8.200                             | 2.472<br>1.859 | 10.733<br>10.866                          | 2.120<br>1.641 | 8.666<br>9.133                             | 2.023<br>2.166 |
| VI Noninstigated Nonaggressive<br>Males (N=15)<br>Females (N=15) | 8.666<br>7.800                             | 2.894<br>1.612 | 10.466<br>10.000                          | 3.313<br>1.889 | 9.266<br>9.533                             | 2.344<br>1.884 |

TABLE 12

Correlation Matrix of the Three Subscales (Dependent Variables)  
Measuring Aggressive Evaluation

|                                   | (i)<br>Aggression<br>toward C | (ii)<br>Aggression<br>toward experiment | (iii)<br>Measure of<br>friendliness |
|-----------------------------------|-------------------------------|-----------------------------------------|-------------------------------------|
| (i) Aggression toward <u>C</u>    | -                             |                                         |                                     |
| (ii) Aggression toward experiment | 0.509                         | -                                       |                                     |
| (iii) Measure of friendliness     | 0.478                         | 0.427                                   | -                                   |

TABLE 13  
 Summary of Multivariate Analysis of Variance Results for  
 Three Dependent Variables Comprising the Evaluation Questionnaire

| Source of Variation      | ndf       | F        |
|--------------------------|-----------|----------|
| Sex                      | 3 and 166 | 1.2399   |
| Instigation              | 3 and 166 | 85.2177* |
| Film                     | 6 and 322 | 4.3433*  |
| Sex x Instigation        | 3 and 166 | 0.5755   |
| Sex x Film               | 6 and 332 | 1.3416   |
| Instigation x Film       | 6 and 332 | 4.3446*  |
| Sex x Instigation x Film | 6 and 332 | 1.6573   |

\* Significant at  $p < .001$

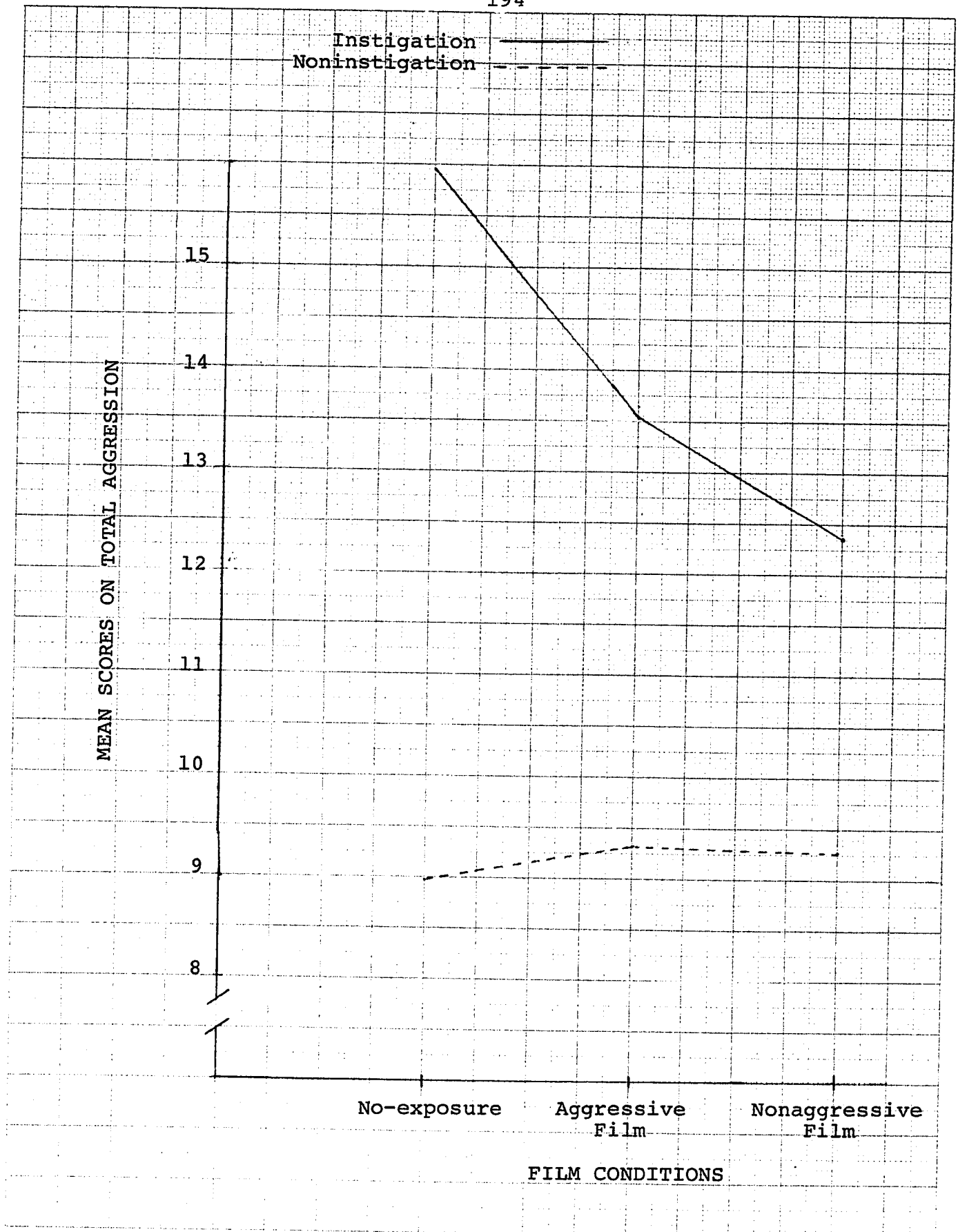


FIGURE 1. Ordinal interaction effect of Instigation - 10 MM/CM  
Film variables using mean scores on Total Aggression.

Post-hoc analyses of mean contrasts between instigation conditions and within each of the three measures of aggression was done to determine where significance lay. The formula used for the contrasts is as follows (Fu, 1975, p. 103; Timm, 1973, p. 54-56).

$$\hat{\Psi} \pm \hat{\sigma}_{\hat{\Psi}} \sqrt{\frac{(N_1 + N_2 - 2)p}{N_1 + N_2 - p - 1} \cdot \frac{(1 - \alpha)}{(P, N_1 + N_2 - p - 1)}}$$

where:  $\hat{\Psi}$  is an estimate of  $(\mu_1 - \mu_2)$ , and

$\mu_1$  and  $\mu_2$  are estimated by the group means;

$\hat{\sigma}_{\hat{\Psi}}$  is estimated by  $\sqrt{\frac{N_1 + N_2}{N_1 N_2} S^2}$

$N_1$  and  $N_2$  are the sample sizes for groups 1 and 2;

$p$  is the number of dependent variables;

$S^2$  is the sample variance.

The results are presented in Table 14A. Results show that the instigated groups were significantly more aggressive than the non-instigated groups. In particular, the instigated script was found to be quite effective in provoking Ss, since there was significantly more post-experimental aggression on all three measures in the instigated no-exposure group as

TABLE 14A

Post-hoc Analyses of Mean Contrasts Between Instigation  
Conditions Within Each of the Three Dependent Variables Comprising  
the Evaluation Questionnaire

| Contrast                          | $\hat{\psi}$ | $\hat{\sigma}_{\hat{\psi}} \sqrt{\frac{(N_1 + N_2 - 2)p}{N_1 + N_2 - p - 1} \left[ \frac{(1-\alpha)}{(p, N_1 + N_2 - p - 1)} \right]}$ | Confidence Interval<br>Lower Limit | Upper Limit | Sig-<br>nifi-<br>cance |
|-----------------------------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-------------|------------------------|
| I Instigated No-exposure<br>vs.   |              |                                                                                                                                        |                                    |             |                        |
| Noninstigated No-exposure         |              |                                                                                                                                        |                                    |             |                        |
| (i) Aggression toward C           | 6.670        | 3.164                                                                                                                                  | 3.506                              | 9.834       | *                      |
| (ii) Aggression toward experiment | 6.135        | 3.272                                                                                                                                  | 2.863                              | 9.407       | *                      |
| (iii) Measure of friendliness     | 8.110        | 3.600                                                                                                                                  | 4.510                              | 11.710      | *                      |
| II Instigated Aggressive<br>vs.   |              |                                                                                                                                        |                                    |             |                        |
| Noninstigated Aggressive          |              |                                                                                                                                        |                                    |             |                        |
| (i) Aggression toward C           | 3.86         | 2.505                                                                                                                                  | 1.355                              | 6.365       | *                      |
| (ii) Aggression toward experiment | 3.01         | 2.148                                                                                                                                  | 0.862                              | 5.158       | *                      |
| (iii) Measure of friendliness     | 5.74         | 3.102                                                                                                                                  | 2.638                              | 8.842       | *                      |

TABLE 14A  
(continued)

|                                      |      |       |       |      |         |
|--------------------------------------|------|-------|-------|------|---------|
| III Instigated Nonaggressive<br>vs.  |      |       |       |      |         |
| Noninstigated Nonaggressive          |      |       |       |      |         |
| (i) Aggression toward C              | 2.93 | 2.33  | 0.60  | 5.26 | *       |
| (ii) Aggression toward<br>experiment | 2.33 | 2.48  | -0.15 | 4.81 | p < .10 |
| (iii) Measure of friendli-<br>ness   | 3.94 | 2.403 | 1.537 | 6.34 | *       |

For all contrasts,  $\alpha = 0.05$ ;

\* asterisk denotes a significant p value

compared with the noninstigated no-exposure group. There was also a significant difference on all three measures in post-experimental aggressivity between the instigated-aggressive and noninstigated-aggressive group. Significant differences between the instigated non-aggressive group and noninstigated nonaggressive group were found on two measures (aggression toward C and measure of friendliness). There was a strong trend toward significance ( $p < .10$ ) on the other measure (aggression toward the experiment). In general, it seemed that neither of the two films (the aggressive and nonaggressive) reduced the Ss' aggressivity in the instigated conditions to that of their corresponding noninstigated groups.

Subsequent post-hoc analyses were done to see between which film conditions significance occurred on the three measures. The results are presented in Table 14B. As can be seen, there was a significant difference on all three measures of aggressivity between the instigated no-exposure and instigated nonaggressive film conditions. No significant differences were found between the no-exposure and aggressive groups in the instigated conditions except on the measure of aggression against C. There were also no significant differences between the aggressive and non-aggressive groups in the instigated conditions on all three

TABLE 14B

Post-hoc Analyses of Mean Contrasts Between Film Conditions Within  
Each of the Three Dependent Variables Comprising  
the Evaluation Questionnaire

| Contrast                          | $\hat{\psi}$ | $\frac{\hat{\psi} \sqrt{(N_1 + N_2 - 2)p}}{\sqrt{\frac{N_1 + N_2 - p - 1}{(p, N_1 + N_2 - p - 1)}}}$ | Confidence Interval | Sig-<br>nifi-<br>cance |
|-----------------------------------|--------------|------------------------------------------------------------------------------------------------------|---------------------|------------------------|
| <u>Instigated</u>                 |              |                                                                                                      |                     |                        |
| No-exposure vs. Aggressive        |              |                                                                                                      |                     |                        |
| (i) Aggression toward C           | 3.14         | 2.54                                                                                                 | 0.60                | 5.68                   |
| (ii) Aggression toward experiment | 2.47         | 2.59                                                                                                 | -0.12               | 5.06                   |
| (iii) Measure of friendliness     | 1.67         | 2.50                                                                                                 | -0.83               | 4.17                   |
| 199                               |              |                                                                                                      |                     |                        |
| No-exposure vs. Nonaggressive     |              |                                                                                                      |                     |                        |
| (i) Aggression toward C           | 4.14         | 2.72                                                                                                 | 1.42                | 6.86                   |
| (ii) Aggression toward experiment | 3.67         | 2.97                                                                                                 | 0.70                | 6.64                   |
| (iii) Measure of friendliness     | 2.94         | 2.44                                                                                                 | 0.50                | 5.38                   |
| * * *                             |              |                                                                                                      |                     |                        |
| Aggressive vs. Nonaggressive      |              |                                                                                                      |                     |                        |
| (i) Aggression toward C           | 1.00         | 2.37                                                                                                 | -1.37               | 3.37                   |
| (ii) Aggression toward experiment | 1.24         | 2.44                                                                                                 | -1.20               | 3.68                   |
| (iii) Measure of friendliness     | 1.30         | 2.49                                                                                                 | -1.19               | 3.79                   |

TABLE 14B  
(continued)

|                                   |      |      |       |      |
|-----------------------------------|------|------|-------|------|
| <u>Noninstigated</u>              |      |      |       |      |
| No-exposure vs. Aggressive        |      |      |       |      |
| (i) Aggression toward C           | 0.33 | 1.68 | -1.53 | 2.01 |
| (ii) Aggression toward experiment | 0.69 | 1.68 | -0.99 | 2.37 |
| (iii) Measure of friendliness     | 0.69 | 1.64 | -0.95 | 2.33 |
| No-exposure vs. Nonaggressive     |      |      |       |      |
| (i) Aggression toward C           | 0.40 | 1.73 | -1.33 | 2.13 |
| (ii) Aggression toward experiment | 0.14 | 1.94 | -1.80 | 2.08 |
| (iii) Measure of friendliness     | 1.20 | 1.69 | -0.49 | 2.89 |
| Aggressive vs. Nonaggressive      |      |      |       |      |
| (i) Aggression toward C           | 0.07 | 1.68 | -1.59 | 1.75 |
| (ii) Aggression toward experiment | 0.50 | 1.73 | -1.23 | 2.23 |
| (iii) Measure of friendliness     | 0.50 | 1.57 | -1.02 | 2.07 |

For all contrasts,  $\alpha = 0.05$ ;

\* asterisk denotes a significant p value

measures of aggressivity. In the noninstigated groups there were no significant differences on all three measures between any of the film conditions.

It would thus seem that the film conditions in the instigated groups did have a differential effect on subsequent aggressivity, whereas there were no differential effects in the noninstigated groups. In general, although significantly more post-experimental aggressivity was shown in the instigated groups as compared with the non-instigated groups, in the provoked Ss the no-exposure control condition exhibited the highest subsequent aggression, followed by the aggressive film conditions (with no significant difference between them except on the measure of aggression toward C), which in turn was followed by the nonaggressive film condition (with no significant difference between it and the aggressive film condition, but significantly lower than the no-exposure control condition). Thus, the aggressive film condition seemed to be in between the no-exposure control and non-aggressive film conditions in terms of post-experimental aggressive level. The results are shown graphically in Figure 2.

The correlations among the three measures derived from the evaluation questionnaire leave the greater part of the variance between any two measures largely unaccounted for. As a result, separate univariate analyses were done on each measure to see if such an approach would change the findings obtained through the multivariate design. A 2x2x3 analysis of variance design was computed for each measure with sex, instigation, and film as the independent factors.

For the measure assessing attitude toward C, a significant main effect was found for instigation and film ( $F = 132.13$ ,  $p < .001$ , and  $F = 12.28$ ,  $p < .01$  respectively). There was also a significant interaction effect between instigation and film ( $F = 8.25$ ,  $p < .01$ ) and between sex, instigation and film ( $F = 3.33$ ,  $p < .05$ ). Post-hoc analyses revealed that there was a significant difference in the instigated conditions between the no-exposure and non-aggressive groups. For males, however, a significant difference occurred between the aggressive and non-aggressive film groups. The difference between the no-exposure group differed significantly from both the aggressive and non-aggressive groups. The latter two groups did not differ from each other. Thus, it would seem that the aggressive film facilitated aggression against C in insulted males, but did not do so for females.

For the measure assessing attitude toward the experiment, a significant main effect was found for instigation and film ( $F = 76.98$ ,  $p < .001$ , and  $F = 5.48$ ,  $p < .005$  respectively), as well as a significant interaction effect between instigation and film ( $F = 7.23$ ,  $p < .01$ ). Post-hoc analyses revealed that the results paralleled that of the multivariate design. That is, in the instigated conditions, the no-exposure control significantly differed from the non-aggressive film group. The aggressive film group lay in between the no-exposure and non-aggressive groups, not differing significantly from either.

Regarding the measure assessing degree of friendliness of the confederate, a significant main effect was found for the factor of instigation ( $F = 235.92$ ,  $p < .001$ ), as well as a significant interaction effect between instigation and film ( $F = 9.79$ ,  $p < .01$ ). Post-hoc analyses revealed that in the instigated conditions, a significant difference was found only between the no-exposure control and non-aggressive film groups, corresponding to the multivariate findings.

In general, the overall results seem to suggest that, in the instigated conditions, with respect to the no-exposure control, the non-aggressive film group significantly lowered subsequent aggressive display, whereas the aggressive film group did not. The finding that angered males in the aggressive

film group displayed significantly more aggression against C as compared to females, may suggest that direct aggressive behaviour is easier for males because of sex-role expectations (e.g., Leventhal, Schemberg, and Schoelandt, 1968) and corresponds to other findings (e.g., Maccoby and Jacklin, 1974).

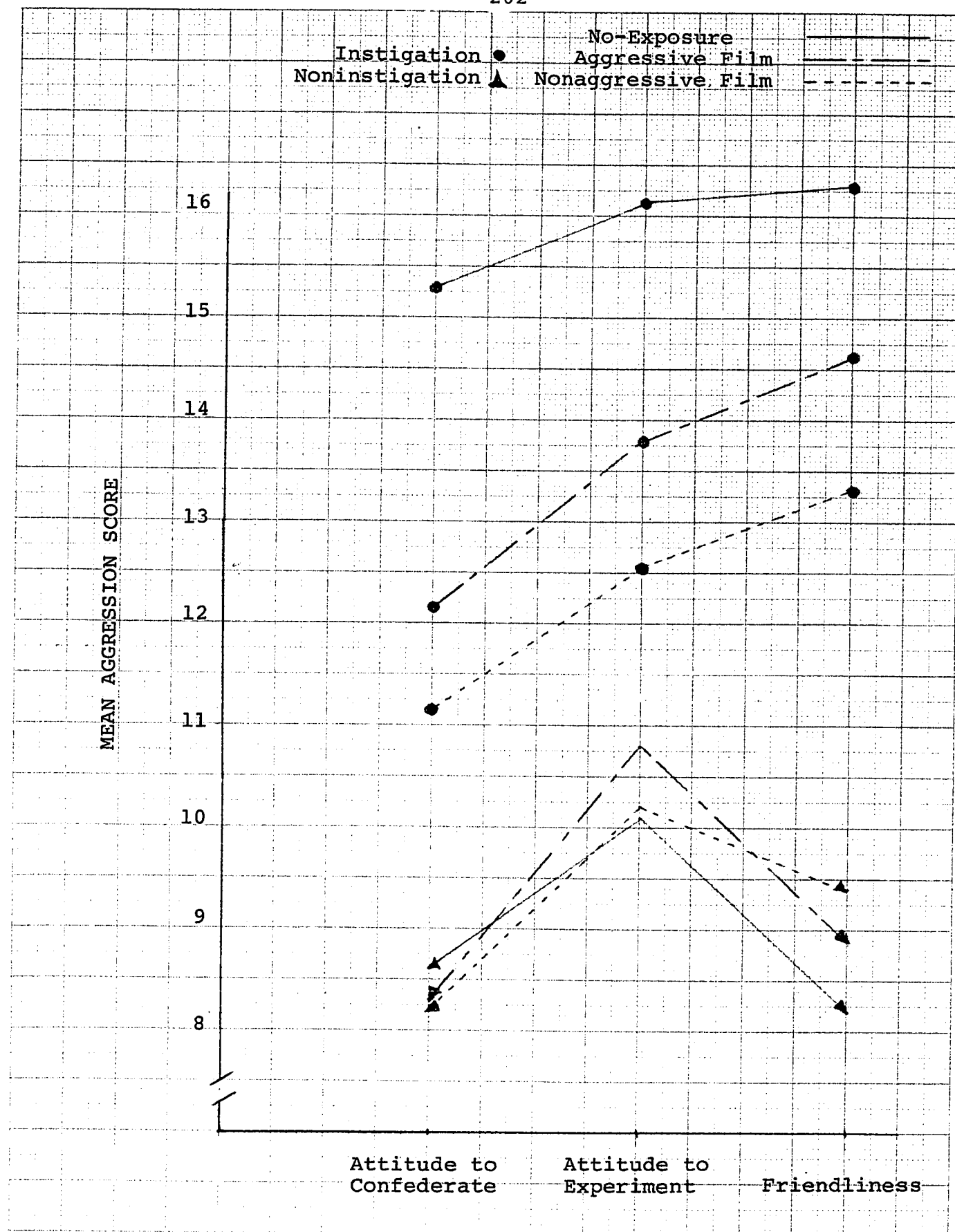


FIGURE 2. Mean aggression scores on the three subscales comprising the evaluation questionnaire assessing verbal aggression.

## B. Mood Check List

### a. Hostility

The hostility score derived from the mood check list asks the S to rate how he feels at the moment and is not a measure of aggressive behaviour against someone (e.g., the confederate, the experiment, or the personality of the confederate). Unlike displaying aggression against someone and thereby potentially harming him, it would seem that fewer conflicts are involved in rating hostility. This is largely so because the S does not hurt anyone and thus avoids the evocation of inhibitions concerning violence. The hostility measure can thus be seen as reflecting aggressive motive or aggressive arousal.

Table 15 shows the mean scores and standard deviations of the hostility measure, divided according to sex. A three-way analysis of variance design was computed on the data with sex, instigation and film as the three independent variables. The results are presented in Table 16A. As can be seen, there was a significant main effect for the factor of instigation, as well as a significant interaction effect between instigation and film. There was a trend toward significance on the sex variable ( $p < .10$ ), and no significance for the main effect of film.

TABLE 15

Mean Scores and Standard Deviations of Hostility (Hostile Mood)  
in Both Instigated--Noninstigated and Film Conditions

| Group<br>(Total $SS=180$ )                                       | Hostility      | S.D.           |
|------------------------------------------------------------------|----------------|----------------|
| I Instigated No-exposure<br>Males (N=15)<br>Females (N=15)       | 20.60<br>17.73 | 9.214<br>7.131 |
| II Instigated-Aggressive<br>Males (N=15)<br>Females (N=15)       | 16.33<br>14.46 | 5.664<br>2.679 |
| III Instigated Nonaggressive<br>Males (N=15)<br>Females (N=15)   | 16.66<br>14.60 | 5.448<br>3.878 |
| IV Noninstigated No-exposure<br>Males (N=15)<br>Females (N=15)   | 13.20<br>13.20 | 3.727<br>2.663 |
| V Noninstigated-Aggressive<br>Males (N=15)<br>Females (N=15)     | 16.33<br>14.60 | 4.948<br>4.557 |
| VI Noninstigated Nonaggre-sive<br>Males (N=15)<br>Females (N=15) | 13.93<br>13.40 | 2.489<br>2.893 |

TABLE 16A  
Summary of Analysis of Variance of Hostility Scores for  
Instigated-Noninstigated and Film Conditions

| Source of Variation         | <u>SS</u> | <u>df</u> | <u>ms</u> | <u>F</u> | <u>p</u> |
|-----------------------------|-----------|-----------|-----------|----------|----------|
| Total                       | 5315.758  | 179       | 29.697    |          |          |
| Sex (A)                     | 102.756   | 1         | 102.756   | 3.829    | < .10    |
| Instigation (B)             | 309.422   | 1         | 309.422   | 11.530   | < .005*  |
| Film (C)                    | 70.544    | 2         | 35.272    | 1.314    |          |
| Sex x Instigation           | 25.689    | 1         | 25.689    | 0.957    |          |
| Sex x Film                  | 2.011     | 2         | 1.006     | 0.037    |          |
| Instigation x Film          | 282.680   | 2         | 141.340   | 5.267    | < .01*   |
| Sex x Film x<br>Instigation | 14.012    | 2         | 7.006     | 0.261    |          |
| Error                       | 4508.641  | 168       | 26.837    |          |          |

\* asterisk denotes significance.

Figure 3 shows that the interaction is disordinal. As a result, a test for simple effects was done to determine where the significant differences occurred (Keith, 1972, p. 151-154). This is presented in Table 16B. As can be seen, there is obviously an important difference between instigation conditions in the no-exposure control groups. A significant difference in hostility occurred between the instigated no-exposure and non-instigated no-exposure groups, the former showing greater hostility. There were no significant differences for the other levels of the film factor between the instigated and non-instigated conditions. A significant effect for the film variable was found within the instigated conditions. Tukey post-hoc comparisons among means for simple main effects revealed that the instigated no-exposure control group showed significantly more hostility than both the instigated aggressive film and instigated non-aggressive film groups.

Thus, the instigating script seemed effective in significantly raising hostile mood, as can be seen in the difference between the no-exposure control groups. However, the data suggest that both films (aggressive and non-aggressive) were equally effective in reducing the level of aggressive arousal in instigated subjects to that of non-instigated subjects.

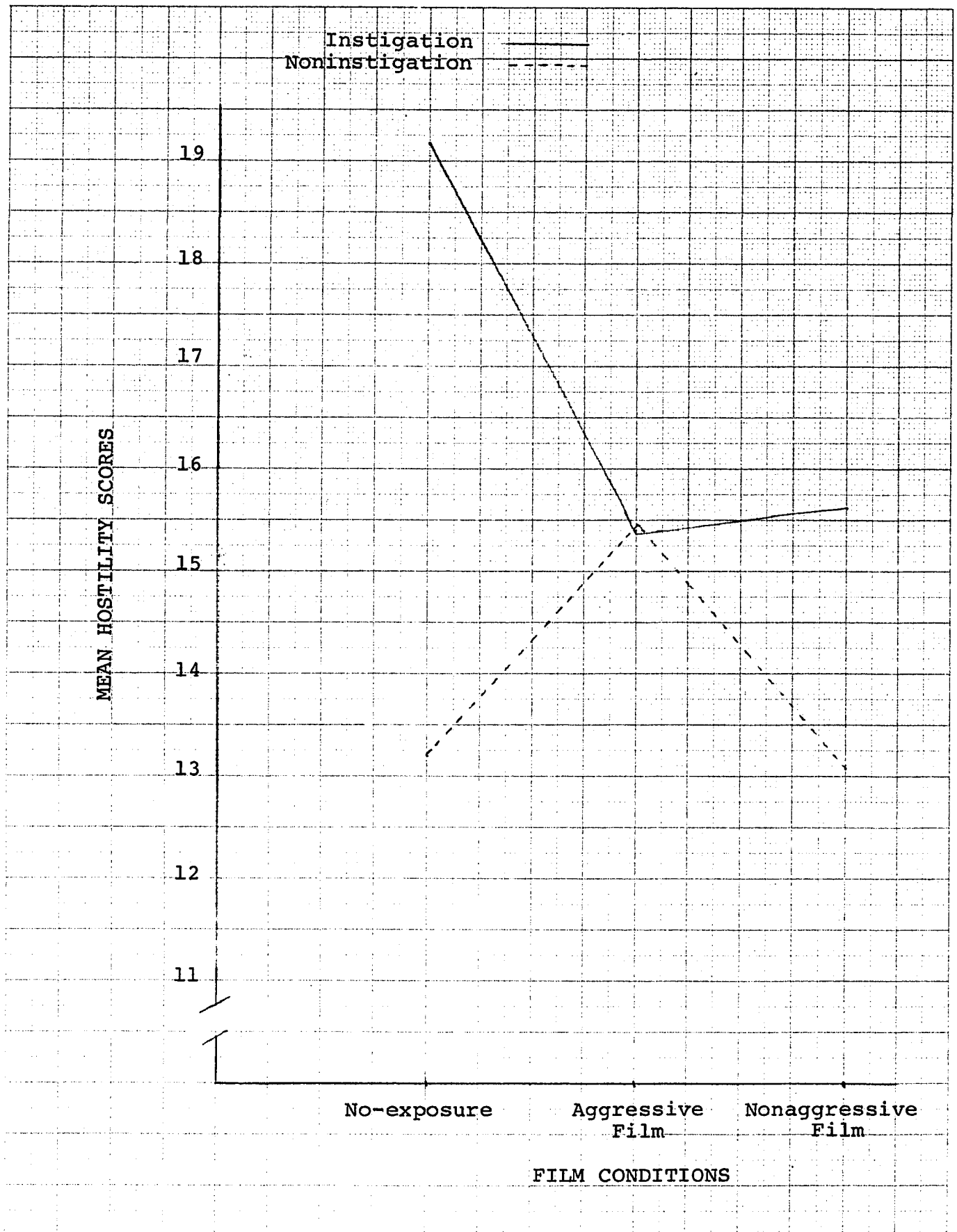


FIGURE 3. Disordinal interaction effect of Instigation and Film variables using mean scores on Hostility.

TABLE 16B  
Analysis of Variance for Simple Effects, Referring  
to Significant Interaction in Table 16A

| Source of Variation         | <u>SS</u> | <u>df</u> | <u>MS</u> | <u>F</u> |
|-----------------------------|-----------|-----------|-----------|----------|
| B at C                      |           |           |           |          |
| B at $c_1$ (no-exposure)    | 534.00    | 1         | 534.00    | 19.897** |
| B at $c_2$ (aggressive)     | 0.10      | 1         | 0.10      | .004     |
| B at $c_3$ (non-aggressive) | 58.00     | 1         | 58.00     | 2.161    |
| C at B                      |           |           |           |          |
| C at $b_1$ (instigated)     | 267.2     | 2         | 133.6     | 4.98*    |
| C at $b_2$ (non-instigated) | 85.9      | 2         | 42.95     | 1.60     |
| Pooled error                |           | 168       | 26.837    |          |

\*\*  $p < .001$

\*  $p < .05$

b. Tension

The tension score derived from the mood check list is composed of two subscores: (i) anxiety and (ii) depression. A measure of tension was used to see whether the effect of instigation or viewing the aggressive film evoked feelings of anxiety and guilt, possibly inhibiting factors on aggressive behaviour as displayed on the evaluation questionnaire. In addition, tension was used to see whether "cathartic" or instigational effects of viewing the aggressive film could be attributed to tension reduction or increase.

Table 17 shows the mean scores and standard deviations of the two subscales, anxiety and depression, broken down by sex. The correlation between them was 0.425. A three-way multivariate analysis of variance was done on the data, with sex, instigation and film as the three independent factors. Results are presented in Table 18. As can be seen, none of the main factors was significant, although there was a trend toward significance in the interaction between sex and instigation ( $p < .10$ ). Hence, it would seem that there was no significant differentiation in tension within any of the instigation and film levels.

TABLE 17

Mean Scores and Standard Deviations of the Two Subscales  
(Anxiety and Depression) Expressing Tension in All  
Instigated and Film Levels

| Group<br>(Total Ss=180)                                          | Tension<br>(sum of i and ii) | (i)<br>anxiety S.D. | (ii)<br>depression S.D.    |                            |
|------------------------------------------------------------------|------------------------------|---------------------|----------------------------|----------------------------|
| I Instigated No-exposure<br>Males (N=15)<br>Females (N=15)       | 13.266<br>13.466             | 3.480<br>3.522      | 7.533 2.559<br>6.933 2.086 | 5.733 2.086<br>6.733 2.153 |
| II Instigated-Aggressive<br>Males (N=15)<br>Females (N=15)       | 12.600<br>12.733             | 3.718<br>3.769      | 7.066 2.016<br>6.400 2.164 | 5.533 2.199<br>6.333 2.319 |
| III Instigated Nonaggressive<br>Males (N=15)<br>Females (N=15)   | 12.600<br>13.200             | 4.563<br>3.820      | 5.733 2.282<br>6.800 2.396 | 6.866 2.799<br>6.400 2.640 |
| IV Noninstigated No-exposure<br>Males (N=15)<br>Females (N=15)   | 12.333<br>11.933             | 3.477<br>3.614      | 6.866 2.386<br>6.800 2.677 | 5.466 1.884<br>5.133 1.597 |
| V Noninstigated Aggressive<br>Males (N=15)<br>Females (N=15)     | 14.600<br>12.600             | 4.881<br>3.960      | 8.000 2.420<br>6.800 2.305 | 6.600 2.746<br>5.800 2.305 |
| VI Noninstigated Nonaggressive<br>Males (N=15)<br>Females (N=15) | 11.466<br>10.200             | 3.113<br>3.949      | 6.133 1.959<br>5.866 1.355 | 5.333 1.447<br>4.933 2.086 |

TABLE 18  
 Summary of Multivariate Analysis of Variance Results for  
 Two Dependent Variables (Anxiety and Depression)  
 Comprising Tension in Instigated Noninstigated  
 and Film Conditions

| Source of Variation      | ndf       | F      | p     |
|--------------------------|-----------|--------|-------|
| Sex                      | 2 and 167 | 1.6738 |       |
| Instigation              | 2 and 167 | 1.3570 |       |
| Film                     | 4 and 334 | 0.9267 |       |
| Sex x Instigation        | 2 and 167 | 2.4657 | < .10 |
| Sex x Film               | 4 and 334 | 0.2663 |       |
| Instigation x Film       | 4 and 334 | 1.1530 |       |
| Sex x Instigation x Film | 4 and 334 | 0.1460 |       |

### c. Volunteer Behaviour

Although all Ss were debriefed about the nature of the experiment, within three to five days after, E called up the instigated Ss who saw either film to ask them whether they would be willing to volunteer for a sequence to the study. It was explained that the true purpose was not fully disclosed to them in class, and they would find out about it after they partook in this last part. The sequence would last 20 minutes and would involve viewing another film. It was felt that their willingness or reluctance to volunteer would be a further measure of aggressive behaviour. Altogether 65 Ss were qualified for this condition, of all those capable of being reached by phone. The data was subjected to a complex chi-square design to see if there were any differences between the conditions. The results are found in Table 19. Chi-square was found to be 2.614, (df=3), indicating no significant difference.

### d. Summary

The purpose of the main experiment was to determine the effects of differential instigation and film conditions on subsequent aggressive behaviour and hostility (emotional arousal).

TABLE 19  
 $\chi^2$  Contingency Table Showing Instigation-Film  
 Conditions and Volunteer Behaviour

|                                               | Volunteer |             |
|-----------------------------------------------|-----------|-------------|
|                                               | No        | Yes         |
| Instigated-aggressive film                    | 4 (2.153) | 16 (17.846) |
| Instigated-nonaggressive film                 | 2 (2.046) | 17 (16.953) |
| Noninstigated-aggressive film <sup>1</sup>    | 1 (1.507) | 14 (13.384) |
| Noninstigated-nonaggressive film <sup>1</sup> | 0 (1.184) | 11 (9.815)  |
|                                               | 7         | 58          |

$$\chi^2_3 = 2.614$$

$$.95 \chi^2_3 = 7.8$$

<sup>1</sup>N.B.: These two groups were contacted approximately 3.5 months after the study ended and hence experienced a longer delay period than the instigated-film groups.

Results with the evaluation questionnaire assessing verbal-behavioural aggression show that: (1) there was a significant difference between the instigated and non-instigated conditions on this measure. The instigated conditions uniformly showed significantly higher post-experimental aggression as measured by the evaluation questionnaire; (2) within the instigated conditions, the greatest aggressive behaviour was found in the no-exposure control condition, followed by the aggressive film condition, which in turn was followed by the non-aggressive film condition; (3) within the instigated conditions, there was a significant difference in aggression between the no-exposure control and non-aggressive film conditions. No significant difference was found between the no-exposure control and aggressive film condition (except on the measure of aggression against C), or between the aggressive and non-aggressive film conditions; (4) within the non-instigated conditions, there were no significant differences in post-experimental aggression between any of the film conditions.

Results with the mood check list assessing hostility indicated that: (1) a significant difference in hostility was found between the instigated no-exposure control condition

and the non-instigated no-exposure control condition, (2) within the instigated conditions, the no-exposure control group showed significantly more hostility than the aggressive film and non-aggressive film groups; (3) there were no significant differences in hostility between any of the other film conditions (aggressive and non-aggressive) in both the instigated and non-instigated groups, nor were there any significant differences between the instigated and non-instigated conditions.

In addition, the measure of tension indicated no significant differences between any of the conditions. Nor were there any significant differences in "volunteer" behaviour between the differentially instigated aggressive and non-aggressive film conditions.

## CHAPTER VII

### DISCUSSION

Central throughout this study is the notion that aggressive behaviour and hostile motive can be differentiated and independently assessed in relation to the consequences of film exposure under aroused conditions. To this end, two dependent measures were used: the evaluation questionnaire assessing verbal-behavioural aggression directed against the confederate and the experiment, and the mood check list reflecting hostility (anger or aggressive arousal).

For the purposes of this study, a cathartic effect referred to a reduction in aggressive behaviour and/or hostile motive following exposure to the aggressive film segment as compared to the non-aggressive film segment. This is so, particularly with respect to instigated subjects, since anger arousal is essential according to many investigators. The results of this study failed to show evidence for the vicarious hostility catharsis hypothesis. Neither aggressive behaviour nor hostility was significantly reduced following the aggressive film exposure in comparison with exposure to the non-aggressive film.

The results seem quite persuasive and are difficult to ascribe to possible contaminating factors found to influence post-experimental aggressivity. Both the justified-aggression synopsis given to the aggressive film condition, as well as the lack of a significant finding in the measure of tension (anxiety and depression), suggest that aggression anxiety and/or guilt played a minimal role in influencing post exposure aggressivity. Nor could the results be influenced to any significant degree by a differentiation in the distraction-attentional shift potential and excitatory potential of the films.

With respect to aggressive behaviour measured by the evaluation questionnaire, no cathartic effect for the aggressive film was found. Instead, an insignificant reduction in aggressive behaviour was found in angered subjects who viewed the aggressive film from those who saw no film but answered the questionnaire immediately after instigation. But, in comparison with the no-exposure control subjects, there was a significant reduction in aggressive behaviour in subjects who viewed the non-aggressive film. Thus, whereas the aggressive film reduced aggressive behaviour insignificantly, the non-aggressive film reduced it significantly, with respect to the no-exposure control group. Again, had a

true vicarious catharsis occurred, the aggressive film condition should have displayed the least post-experimental aggressive behaviour.

Regarding the measure reflecting hostility, a quasi-cathartic effect was observed. Angered subjects reduced their hostility significantly from the no-exposure control group after viewing the aggressive film segment. But so did angered subjects who viewed the non-aggressive film. Nor was there any significant difference in hostility between the aggressive and non-aggressive film groups. Had a true vicarious catharsis occurred, the instigated aggressive film group should have manifested a greater reduction in hostility than all other instigated conditions.

Although it might appear that the results are similar with respect to aggressive behaviour and hostility in angered subjects, this is clearly not the case. There was no significant difference in aggressive behaviour between the aggressive and non-aggressive film conditions. There was also no significant difference in hostility between the aggressive and non-aggressive film conditions. But there the similarity ends. Whereas the reduction in hostility in angered subjects following film exposure reached that of

non-angered subjects, reduction in aggressive behaviour remained significantly higher in the angered subjects as compared to the non-angered. This finding requires some explanation.

The results on the hostility measure are consistent with the Distraction-Attentional Shift Hypothesis of Singer and Bandura. The prediction regarding hostility seems to be borne out in these findings. Because both the aggressive and non-aggressive films did not differ significantly in terms of their distraction-attentional shift potential, they both reduced emotional arousal to the same extent in angered subjects. That is, the diversion offered by the films following provocation resulted in a cessation of self-generated stimulation, an interruption from brooding or mulling over the affront just experienced by the subjects from the instigator. The absorbing, involving films caused a shift in cognitive focus. Hence, the reduction in aggressive arousal was reflected in the hostility measure. This arousal reduction and mood change lowered hostility to that of the non-instigated conditions. However, the problem arises as to why, in the face of equal reductions in hostility to that of non-instigated subjects, a significant difference in aggressive behaviour occurred between the instigated and

non-instigated conditions. If both films were equally effective in lowering emotional arousal level to that of the non-instigated conditions, then supposedly the aggressive behaviour should have paralleled this finding because there was no differentiation in arousal that could have "energized" the aggressive behaviour to manifest such a significant difference as found between the instigated and non-instigated conditions. Obviously, some other process must have contributed to this differentiation.

It is tempting to try to fit the results to Zillmann's Modified-Attentional Shift Hypothesis. In his study (Zillmann & Johnson, 1973), the aggressive film failed to reduce aggressive behaviour significantly in angered subjects, but the non-aggressive film did (as compared with the no-exposure control), a finding similar to this study. But unlike this study, there was also a significant difference between the aggressive and non-aggressive film conditions. However, the aggressive film in Zillmann's study was a very violent depiction of physical aggression, whereas here a relatively less violent film was used. If the intensity of arousal-maintaining cognitions that an aggressive film re-introduces and sustains is a function of such factors as frequency, vividness, and the degree of explicitness of the depicted aggressive actions, then the

relatively attenuated aggressive film used in this study, should reiterate arousal maintaining cognitions to a much smaller degree, and this may result in more aggressive behaviour, albeit not significantly, than that shown by the non-aggressive film, as found in this study.

However, the reiteration of arousal maintaining cognitions should sustain to some degree the anger of the instigation and this should be reflected in a differential hostility score. But in this study, no significant difference in hostility was found between the aggressive and non aggressive film conditions. Of course, one can challenge the sensitivity of the hostility measure. Nevertheless, the fact that it was very responsive to arousal following instigation (as seen in the significant difference in the differentially instigated no-exposure conditions) suggests that it is a good measure of emotional arousal.

Furthermore, even assuming a differentiation in arousal-maintaining cognitions generated by the aggressive and non-aggressive films not indicated on the hostility measure, the question remains as to whether this led to the significant difference in aggressive behaviour between the instigated and non-instigated groups. This may have led to a difference (nonsignificant) in aggressive behaviour between the

aggressive and non-aggressive instigated groups. But the strong significant difference between the differentially instigated groups suggests another process that intensified such a differentiated reaction.

Implied in Berkowitz (1969), is the idea that in the condition of an aroused state, as resulting from provocation, the presence of appropriate aggressive cues in the external environment or in the internal environment (thoughts), increases the probability that an overt aggressive response will take place. Hence more aggressive behaviour is to be expected from the instigated aggressive film condition than the non-aggressive film condition. This was found in this study, albeit the difference was not significant. This could possibly be due to the comparatively weaker aggressive cues used in this study as compared to most other studies. However, the greatest aggressive behaviour was displayed by the no-exposure control group, and it had certainly fewer aggressive cues coupled with it than the aggressive film condition. Why was this so?

Berkowitz (1964a), suggests that the effects of film aggression are a joint function of the viewer's level of internal arousal and the target person's cue properties

which serve as eliciting stimuli. Under low arousal a powerful stimulus is needed to elicit aggressive responses, whereas a weaker stimulus is needed under conditions of high arousal. In this study, the available target, namely the insulting confederate, has the appropriate stimulus qualities that elicit aggression. Under the high arousal condition following immediately upon provocation, the stimulus qualities of the confederate are enough to evoke the greatest amount of aggressive behaviour. This was found. However, as the subject watches the film, there is a decrease in arousal level due the distraction effect of the film. This reduction in hostility (emotional arousal) reaches the level found in non-instigated subjects. Although there is no significant difference in hostility between the aggressive and non-aggressive film groups, because of the significantly more aggressive cues in the aggressive film, more aggressive behaviour is evoked in this condition. This was found. Thus, the residual arousal levels in the aggressive and non-aggressive conditions are not significantly different. Such relatively lower arousal should "energize" less aggressive behaviour than the high arousal associated with the no-exposure control. Any difference in aggressive behaviour could then be explained by a differentiation in the aggressive cue potential of the films.

However, there is one problem not sufficiently explained by Berkowitz's model. If the residual aggressive arousal in instigated subjects in both film conditions reduces to the level of the non-instigated subjects, then why is there a significant difference in aggressive behaviour between the differentially instigated conditions? If the instigation to aggress does not differ between the differentially instigated subjects, what causes such a differentiated intensification of aggressive behaviour? Clearly, it would seem, the residual arousal that remains after viewing the films is not enough to "energize" the subsequent aggressive behaviour in instigated subjects so that it significantly differs from non-instigated subjects. It appears that another process is involved that causes such a differentiation.

The results of the study can possibly be understood this way. The subject is aggressively aroused by the provocation and he engages in aggression-disposing, target specifying cognitions. He would like to retaliate. The instigation to aggression sets up a completion tendency, an aggressive response sequence whose goal is to harm the source of his frustration (cf., Berkowitz, 1964a). Exposure to a film introduces a disruption of these cognitions. The film distracts him from stirring himself up over the unpleasant

experience. As a result, hostility or anger arousal, dissipates very rapidly to that of the non-instigated conditions. Presented with the mood check list assessing hostility, the subject reports how he feels at the moment and the mood reflects the rapid abatement of his emotional arousal. Hence, no significant differences in hostility are found between the differentially instigated film conditions.

However, given the evaluation questionnaire which provides him with the opportunity to retaliate, the anger arousal is reactivated or revived, but, because of dissipation over time, is not as intense as that following immediate provocation and shown in the no-exposure control condition. In the retaliatory period the aggression-disposing, target-specifying cognitions are reinstated. The result leads to a strong barrage of aggressive behaviour, significantly greater than that of the non-instigated conditions. Although the revived aggressive response sequence achieves completion, because of the significantly more aggressive cues found in the aggressive film, more aggressive behaviour follows its exposure as compared to the non-aggressive film.

The dissipation of anger arousal by the distracting functions of films is recognized by Bandura (1973a), Berkowitz (1962, p. 240) and Singer (1971, 1975). The fantasy provided by films affords a delay between impulse and action, and disrupts the cognitions associated with aggression. According to Berkowitz (e.g., Geen and Berkowitz, 1967), aggressive behaviour can be seen as mainly the result of a response to aggressive stimuli, which is energized by the arousal. The reinstated arousal in the retaliatory period is not significantly different between the aggressive and non-aggressive film conditions. The difference in aggression between them can only be explained by their differentiated aggressive cues. The reinstatement of the anger-provoking situation following the differentiated aggressive film conditions leads to the results of this study.

An alternative way of explaining the results involves Zillmann's excitation-transfer paradigm. The assumption is that the two films (aggressive and non-aggressive) differentially reiterated arousal-maintaining cognitions. This differential arousal was not reflected on the hostility measure. In the reinstated situation where the angered

subject has the opportunity to retaliate, the differentiated arousal due to the differential reiteration of arousal-maintaining cognitions between the films, adds onto the reinstated anger arousal, differentially intensifying the emotional experience of anger and energizing differential aggressive behaviour. Only in the instigated situations where the subject labels his arousal as anger which is later reinstated is there intensified aggressive behaviour, significantly greater than in non-instigated conditions.

The finding of no difference in voluntary behaviour between the film conditions in both instigated and noninstigated groups suggests two things -- this may reflect the effects of a delay period which sufficiently removes the antagonism and, as well, it may introduce the pressures of demand characteristics. The angered Ss expressed interest in the study when they were debriefed. Called upon later to volunteer, this interest continued despite the pretext of being told that there was more to the study than was honestly conveyed (hence, this can be looked upon as a source of deception-instigation. Of course, volunteering and actually participating are two separate behaviours. They may have promised one thing because of demand

pressures (especially due to the differential status of researcher vs. undergraduate), but whether this would have been paralleled in actuality is an unanswerable question.

No sex differences were found between any of the conditions (though there was a strong trend on the hostility measure.) Although, generally, males have been found to be more aggressive than females (e.g., Berkowitz, 1962) and the difference seems largely due to sex-role expectations, (Leventhal, Schemberg, and Schoelandt, 1968), the fact that insulted female Ss did not inhibit their aggressive responses to a greater degree than male Ss, points to some of the problems with sex found in previous studies. For example, Pytkowicz et al (1967), found sex to be a significant variable in that the experimental conditions failed to arouse anger in females. In this study, females were clearly aroused by the provocation. No differences between sexes was found, perhaps suggesting that verbal aggression is a mode more comfortable, not only in socialized college students, but, for females particularly.

As expected, no differences were found on any of the measures in the noninstigated conditions. This parallels

a great number of other studies. Although, generally, the more similar the behaviour depicted is to the individual's situation in real life, the greater the probability of it being emulated (Bandura, 1973a), in this study the aggressive film content of a verbal fight between a married couple is quite removed from the Ss' situation in the experiment, and hence diminishes the probability of imitation. Furthermore, no aggressiveness habits were evoked by the aggressive film, since this condition did not result in significantly more aggression in the noninstigated conditions. This was to be expected from middle class college students and well as from the attenuated nature of the aggression depicted. Even if aggressiveness habits were evoked, they did not lead to differentiated aggressive behaviour between the aggressive and nonaggressive films, since according to Berkowitz (1962), appropriate aggression evoking cues were not present.

The measure of tension indicated that there were no significant differences between any of the conditions on tension. Hence, aggression anxiety and/or guilt were not primary motivating variables. Instead, the results can be seen as relatively uninfluenced by inhibitory factors

arising from tension experienced as an aversive state.

It should be clear that the underlying assumption of this study is that viewing "packaged" fantasy has the same psychological function as the active production of fantasy aggression such as that of daydreaming. Perhaps the reason why the vicarious hostility catharsis is so often not confirmed is because the aggression in the film is usually unrelated to the setting in which the S finds himself. The fantasy aggression depicted on the screen should constitute for the viewer a satisfactory equivalent for the aggressive behaviour he would prefer to exhibit (Weiss, 1970). The possibility exists that if the aggressor in the film functions as a surrogate, i.e., the angered S identifies with him and psychologically experiences the aggression as an expression of his own motivation, perhaps a vicarious catharsis of hostility can occur. Also there should be some similarity between the object of fantasy aggression and the instigator. No studies have been done in which the establishment of identification with the aggressor, and a similarity between the real instigator and the object of fantasy aggression were structured. Clearly, this is the direction future studies on the vicarious hostility catharsis seem to lead.

Another important point that emerges from this study is the possibility that diverse measures of aggression may lead to conflicting results. Thus, hostile motive as measured on the mood check list, and aggressive behaviour as measured on the evaluation questionnaire led to different findings, although neither supported the vicarious hostility catharsis hypothesis. Future studies should simultaneously study the phenomenological experience of hostility, aggressive behaviour, and physiological arousal with respect to viewing differentiated aggressive films that do not differ on other major dimensions.

There are several important qualifications about this study that should be borne in mind. The precision with which the two experimental films differed on aggressive cue potential and not on other dimensions can be questioned. For example, Watt and Krull (1977), found that physiological arousal can be content-independent i.e., based on the surprisingness and novelty of the stimuli presented, or on the uncertain sequence of dramatic scenes. This dimension was not controlled for, although Watt and Krull found that level of aggressiveness can be predicted by examining only the form of the program and not only the violent content. Furthermore, in order to determine if observed violence can evoke aggression - facilitating reactions in viewers, a film depicting stronger aggression

may have been necessary. The aggressive scene of a woman harassing a man might have evoked all sorts of ideas in the viewers that had little to do with aggression per se and which might have diluted the aggression-eliciting impact of the event.

Also, it is quite clear that the observer is not a passive responder but gives meaning to the event he sees, and this interpretation determines what responses are elicited (e.g., Berkowitz and Alioto, 1973). There is no assurance that the subjects in the main experiment would react to the two films in the same fashion as the pretest sample. The samples may have differed in other dimensions (e.g., mean I.Q., religion, proportion married, socio-economic status etc.).

Another important point to realize is that this study deals with short term effects and no projection can be made regarding long-term effects. Indeed, there is no study dealing with long-term effects.

The question arises, does viewing T.V. violence cause aggression in society? The question is not easy to answer. In a recent review of this problem, Kaplan and Singer (1976), concluded that T.V. violence has nonsignificant overall effects on aggressive behaviour. They adopted a probabilistic view, considering all the possible influences upon aggression and then determining the contribution of each. The conclusion was

that T.V. violence has very poor predictive value in comparison to other variables such as sex and grades in school.

#### SUMMARY

(a) There were no significant differences in hostile mood between any of the film conditions in both instigated and non-instigated groups. The hostility measure was seen as reflecting aggressive arousal or anger. The result of exposure to films of matches interest, involvement, and absorption, although significantly differing in aggressive cue potential, led to reductions in hostility in instigated subjects, dissipating it to the level of non-instigated subjects. This was seen as evidence for the Distraction-Attentional Shift Hypothesis.

(b) The evaluation questionnaire, reflecting aggressive behaviour expressed verbally, led to significant differences between the instigated and non-instigated groups. The greatest post-experimental aggression in insulted subjects was seen in the no-exposure control group, followed by the aggressive film group, which in turn was followed by the non-aggressive film group. The results can be interpreted by Berkowitz's Aggressive Cue Model, or alternatively, by Zillmann's excitation - transfer paradigm, incorporating reinstated arousal during the retaliation.

(c) The vicarious hostility catharsis hypothesis failed to be supported. In angered subjects, as compared to the no-exposure control, there was a reduction in aggressive behaviour (as measured on the evaluation questionnaire) following film exposure, and this reduction was significant in the non-aggressive film condition. With respect to hostility, a quasi-cathartic effect was observed. That is, although there was a significant reduction in hostility in the instigated aggressive film condition, this was not significantly different than the reduction in the instigated non-aggressive film condition.

(d) The suggestion is made that different measures of aggression are needed to more fully understand the processes involved in testing the effects of viewing films, differing in aggressive content, on subsequent aggressivity. Specifically, hostile motive, aggressive behaviour, and physiological "tension" may be differentially responsive in viewing these films.

## REFERENCES

- ANASTASI, A. Differential psychology, New York: MacMillan Co., 1966, 486-487.
- BAKER, J.W. II, and SCHAE, K.W. Effects of aggressing "alone" or "with another", on physiological and psychological arousal. Journal of Personality and Social Psychology, 1969, 12, 80-86.
- BANDURA, A. Social learning through imitation. In Nebraska Symposium on Motivation, M.R. Jones (ed.), Lincoln: University of Nebraska Press, 1962, 211-269.
- BANDURA, A. What TV violence can do to your child. Look, October 22, 1963, 46-52.
- BANDURA, A. Influences of model's reinforcement contingencies on the acquisition of imitative responses. Journal of Personality and Social Psychology, 1965, 1, 589-595. (a).
- BANDURA, A. Vicarious processes: A case of no-trial learning. In Advances in Experimental Social Psychology, L. Berkowitz (ed.), New York: Academic Press, 1965, vol. 2, 21-28. (b).
- BANDURA, A. Aggression: A social learning analysis, Englewood Cliffs, N.J.: Prentice-Hall, 1973. (a).
- BANDURA, A. Social learning theory of aggression. In The Control of Aggression, J. Knutson (ed.), Chicago: Aldine, 1973, 201-253. (b).
- BANDURA, A., and HUSTON, A.C. Identification as a process of incidental learning. Journal of Abnormal and Social Psychology, 1961, 63, 311-318.
- BANDURA, A., ROSS, D., and ROSS, S.A. Transmission of aggression through imitation of aggressive models. Journal of Abnormal and Social Psychology, 1961, 63, 575-582.
- BANDURA, A., ROSS, D., and ROSS, S.A. Imitation of film-mediated aggressive models. Journal of Abnormal and Social Psychology, 1963, 66, 3-11. (a).
- BANDURA, A., ROSS, D., and ROSS, S.A. Vicarious reinforcement and imitative learning. Journal of Abnormal and Social Psychology, 1963, 67, 601-607. (b).

BANDURA, A., and WALTERS, R. Social learning and personality development. New York: Holt, Rinehart, and Winston, 1963. (a).

BANDURA, A., and WALTERS, R.H. Aggression. In Child Psychology: The Sixty-Second Yearbook of the National Society for the Study of Education, Part I, H.W. Stevenson (ed.), Chicago: The National Society for the Study of Education, 1963, 364-415. (b).

BARON, R.A. Magnitude of victim's pain cues and level of prior anger arousal as determinants of adult aggressive behavior Journal of Personality and Social Psychology, 1971, 17, 236-243. (a).

BARON, R.A. Aggression as a function of magnitude of victim's pain cues, level of prior anger arousal, and aggressor-victim similarity. Journal of Personality and Social Psychology, 1971, 18, 48-54. (b).

BARON, R.A., and BALL, R.L. The aggression-inhibiting influence of nonhostile humor. Journal of Experimental Social Psychology, 1974, 10 (1), 23-33.

BERCHEID, E., and WALSTER, E. Physical attractiveness. In Advances in Experimental Social Psychology, L. Berkowitz (ed.), New York: Academic Press, 1974, vol. 7, 157-215.

BERKOWITZ, L. The expression and reduction of hostility. Psychological Bulletin, 1958, 55, 257-283.

BERKOWITZ, L. Some factors affecting the reduction of overt hostility. Journal of Abnormal and Social Psychology, 1960, 60, 14-21.

BERKOWITZ, L. Aggression: A social psychological analysis, New York: McGraw-Hill Book Co., 1962.

BERKOWITZ, L. Aggressive cues in aggressive behavior and hostility catharsis. Psychological Review, 1964, 71, 104-122. (a).

BERKOWITZ, L. The effects of observing violence. Scientific American, 1964, 210, 35-41. (b).

BERKOWITZ, L. The concept of aggressive drive: Some additional considerations. In Advances in Experimental Social Psychology, L. Berkowitz (ed.), New York: Academic Press, 1965. (a).

BERKOWITZ, L. Some aspects of observed aggression. Journal of Personality and Social Psychology, 1965, 2, 359-369. (b).

BERKOWITZ, L. On not being able to aggress. British Journal of Social and Clinical Psychology, 1966, 5, 130-139.

BERKOWITZ, L. Impulse, aggression and the gun. Psychology Today, 1968, 2, 18-23.

BERKOWITZ, L. The frustration-aggression hypothesis revisited. In Roots of Aggression: A Re-examination of the Frustration-Aggression Hypothesis, L. Berkowitz (ed.), New York: Atherton Press, 1969.

BERKOWITZ, L. Experimental investigations of hostility catharsis. Journal of Consulting and Clinical Psychology, 1970, 35, 1-7.

BERKOWITZ, L. Words and symbols as stimuli to aggressive responses. In The Control of Aggression, J.F. Knutson (ed.), Chicago: Aldine, 1973, 113-145.

BERKOWITZ, L. and ALIOTO, J.T. The meaning of an observed event as a determinant of its aggressive consequences. Journal of Personality and Social Psychology, 1973, 28, 206-217.

BERKOWITZ, L. CORWIN, R., and HEIRONIMUS, M. Film violence and subsequent aggressive tendencies. Public Opinion Quarterly, 1963, 27, 217-229.

BERKOWITZ, L., and GEEN, R.G. Film violence and the cue properties of available targets. Journal of Personality and Social Psychology, 1966, 3, 525-530.

BERKOWITZ, L., GREEN, J.A., and MACCAULEY, J.R. Hostility catharsis and the reduction of emotional tension. Psychiatry, 1962, 25, 23-31.

BERKOWITZ, L., and LePAGE, A. Weapons as aggression-eliciting stimuli. Journal of Personality and Social Psychology, 1967, 7, 202-207.

BERKOWITZ, L., and RAWLINGS, E. Effects of film violence on inhibitions against subsequent aggression. Journal of Abnormal and Social Psychology, 1963, 66, 405-412.

BIBLOW, E. The role of fantasy in the reduction of aggression. Unpublished doctoral dissertation, City University of New York, 1970.

BRADY, J.V. Emotion: some conceptual problems and psychophysiological experiments. In Feelings and Emotions, Magna Arnold (ed.), New York: Academic Press, 1970.

BRAMEL, D., TAUB, B., and BLUM, B. An observer's reaction to the suffering of his enemy. Journal of Personality and Social Psychology, 1968, 8, 384-392.

BRENNER, C. The psychoanalytic concept of aggression. International Journal of Psychoanalysis, 1971, 52 (2), 137-144.

BUSS, A. The psychology of aggression, New York: Wiley, 1961.

BUSS, A.H. Physical aggression in relation to different frustrations. Journal of Abnormal and Social Psychology, 1963, 67, 1-7.

BUSS, A.H. The effect of harm on subsequent aggression Journal of Experimental Research in Personality, 1966, 1, 249-255. (a).

BUSS, A.H. Instrumentality of aggression, feedback and frustration as determinants of physical aggression. Journal of Personality and Social Psychology, 1966, 3, 153-162. (b).

CANADIAN RADIO-TELEVISION & TELECOMMUNICATIONS COMMISSION, Decisions, CRTC 76-395; 76-88, 1976, Ottawa, Canada.

COMSTOCK, G.A., and LINDSEY, G. Television and human behavior: The research horizon, future and present. The Rand Corporation, Santa Monica, Calif., 1975.

DeCHARMS, R., and WILKINS, E.J. Some effects of verbal expression of hostility. Journal of Abnormal and Social Psychology, 1963, 66, 462-470.

DELGADO, J.M.R. Emotions. Introduction to general psychology: a self-selection textbook, second edition. Wm. C. Brown Pub., Dubuque, Iowa, 1973.

DOLLARD, J., DOOB, L., MILLER, N., MOWRER, O., and SEARS, R.R. Frustration and aggression. New Haven: Yale University Press, 1939, 1964.

DOOB, A.N. Catharsis and aggression: the effect of hurting one's enemy. Journal of Experimental Research in Personality, 1970, 4, 291-296.

DOOB, A.N., and CLIMIE, R.J. Delay of measurement and the effects of film violence. Journal of Experimental Social Psychology, 1972, 8, 136-142.

DOOB, A.N., and KIRSHENBAUM, H.M. The effects on arousal of frustration and aggressive films. Journal of Experimental Social Psychology, 1973, 9, 57-64.

DOOB, A.N., and WOOD, L.E. Catharsis and aggression: effects of annoyance and retaliation on aggressive behavior. Journal of Personality and Social Psychology, 1972, 22, 156-162.

DWORKIN, E., and EFRAN, J. The angered: their susceptibility to varieties of humor. Journal of Personality and Social Psychology, 1967, 6, 233-236.

FESHBACH, S. The drive reducing function of fantasy behavior. Journal of Abnormal and Social Psychology, 1955, 50, 3-11.

FESHBACH, S. The catharsis hypothesis and some consequences of interaction with aggressive and neutral play objects. Journal of Personality, 1956, 24, 449-462.

FESHBACH, S. The stimulating versus cathartic effects of a vicarious aggressive activity. Journal of Abnormal and Social Psychology, 1961, 63, 381-385.

FESHBACH, S. The function of aggression and the regulation of aggressive drive. Psychological Review, 1964, 71, 257-272.

FESHBACH, S. Dynamics and morality of violence and aggression: some psychological considerations. American Psychologist, 1971, 26, 281-292.

FESHBACH, S. Reality and fantasy in filmed violence. In Television and Social Behavior, J.P. Murray, E.A. Rubinstein, & G.A. Comstock (eds.), Washington, D.C.: U.S. Government Printing Office, 1972.

FESHBACH, S., and SINGER, R.D. Television and aggression. San Francisco: Josey-Bass, 1971.

FISHMAN, C. Need for approval and the expression of aggression under varying conditions of frustration. Journal of Personality and Social Psychology, 1965, 2, 809-816.

FREEMAN, E.M.H. Effects of aggressive expression after frustration on performance: a test of the catharsis hypothesis. Unpublished doctoral dissertation, Stanford University, 1962.

FREUD, S. New introductory lectures on psycho-analysis. New York: W.W. Norton & Co., 1933.

FREUD, S. Why war? In Collected Papers, J. Strachey (ed.), London: Hogarith Press, 1950, 5, 273-287.

FREUD, S. Formulations regarding two principles in mental functioning. In Collected Papers (Orig. publ. 1911), New York: Basic Books, 1959, 4, 13-21.

FREUD, S. Jokes and their relation to the unconscious. (Ed. & trans. by J. Strachey; orig. publ. 1905), New York: Norton, 1960.

FU, L.L.W. An experimental investigation of the interaction between resultant achievement motivation and experimentally induced probability of succeeding at a task. Unpublished doctoral dissertation, University of Ottawa, 1975, 102-103.

GAMBARD, S., and RABIN, A.I. Diastolic blood pressure responses following direct and displaced aggression after anger arousal in high and low-guilt subjects. Journal of Personality and Social Psychology, 1969, 12, 87-94.

GEEN, R.G. Effects of frustration, attack, and prior training in aggressiveness upon aggressive behavior. Journal of Personality and Social Psychology, 1968, 9, 316-321.

GEEN, R.G. The meaning of observed violence and consequent effects on aggression and emotional arousal. Journal of Research in Personality, 1975, 9, 270-281.

GEEN, R.G., and BERKOWITZ, L. Some conditions facilitating the occurrence of aggression after the observation of violence. Journal of Personality, 1967, 35, 666-676.

GEEN, R.G., and O'NEAL, E.C. Activation of cue-elicited aggression by general arousal. Journal of Personality and Social Psychology, 1969, 11, 289-292.

GEEN, R.G., and RAKOSKY, J.J. Interpretations of observed aggression and their effect on GSR. Journal of Experimental Research in Personality, 1973, 6, 289-292.

GEEN, R.G., and STONNER, D. The context of observed violence: inhibition of aggression through displays of unsuccessful retaliation. Psychonomic Science, 1972, 27 (b), 342-344.

GEEN, R.G., STONNER, D., and SHOPE, G.L. The facilitation of aggression by aggression: evidence against the catharsis hypothesis. Journal of Personality and Social Psychology, 1975, 31 (4), 721-726.

GOLDSTEIN, J.H., and ARMS, R.L. Effects of observing athletic contests on hostility. Sociometry, 1971, 34 (1), 83-90.

GORANSON, R.E. Observed violence and aggressive behavior: the effects of negative outcomes to the observed violence. Unpublished doctoral dissertation, University of Wisconsin, 1969.

GORANSON, R.E. Media violence and aggressive behavior: a review of experimental research. In Advances in Experimental Social Psychology, L. Berkowitz (ed.), 1970, vol. 5, 2-31.

HANRATTY, M.A., O'NEAL, E., and SULZER, J.L. The effect of frustration upon imitation of aggression. Journal of Personality and Social Psychology, 1972, 21, 30-34.

HARTMANN, D. Influence of symbolically modeled instrumental aggression and pain cues on aggressive behavior. Journal of Personality and Social Psychology, 1969, 11, 280-288.

HARTMANN, H., KRIS, E., and LOEWENSTEIN, R.M. Notes on the theory of aggression. In Psychoanalytic Study of the Child, Vol. 3-4, New York: International Universities Press, 1949, 9-36.

HICKS, D. Imitation and retention of film-mediated aggressive peer and adult models. Journal of Personality and Social Psychology, 1965, 2, 97-100.

HICKS, D. Short and long-term retention of affectively varied modeled behavior. Psychonomic Science, 1968, 11, 369-370.

HOKANSON, J.E., and BURGESS, M. The effects of three types of aggression on vascular processes. Journal of Abnormal and Social Psychology, 1962, 64, 446-449.

HOKANSON, J.E., BURGESS, M., and COHEN, M.F. Effects of displaced aggression on systolic blood pressure. Journal of Abnormal and Social Psychology, 1963, 67, 214-218.

HOKANSON, J.E., and SHETLER, S. The effect of overt aggression on physiological arousal level. Journal of Abnormal and Social Psychology, 1961, 63, 446-448.

HOLMES, D.S. An experimental study of catharsis and guilt in aggressive behaviour. Unpublished doctoral dissertation, University of Wisconsin, 1963.

HOLT, R.R. On the interpersonal and intrapersonal consequences of expressing or not expressing anger. Journal of Consulting and Clinical Psychology, 1970, 35 (1), 8-12.

HOYT, J. Vengeance and self-defence as justification for filmed aggression. Unpublished master's thesis, University of Wisconsin, 1967.

KAHN, M. The physiology of catharsis. Journal of Personality and Social Psychology, 1966, 3, 278-286.

\*\*\*

KAUFMANN, H. Definitions and methodology in the study of aggression. Psychological Bulletin, 1965, 64, 351-364.

KEITH, V. Design and analysis in experimentation, University of Ottawa Press, Ottawa, Canada, 1972.

KENNY, D.T. An experimental test of the catharsis theory of aggression. Ann Arbor, Mich.: University Microfilms, 1953.

KLAPPER, J.T. The impact of viewing "aggression": studies and problems of extrapolation. In Violence and the Mass Media, O.N. Larson (ed.), New York: Harper and Row, 1968.

KONECNI, V.J., and DOOB, A.N. Catharsis through displacement of aggression. Journal of Personality and Social Psychology, 1972, 23 (3), 379-387.

LANDY, D., and METEE, D. Evaluation of an aggressor as a function of exposure to cartoon humor. Journal of Personality and Social Psychology, 1969, 12, 66-71.

LARDER, D.L. Effect of aggressive story content on nonverbal play behavior. Psychological Reports, 1962, 11, 14.

\*\*\*

KAPLAN, R.M. and SINGER, R.D. Television violence and viewer aggression: A reexamination of the evidence. Journal of Social Issues, 1976, 32 (4), 35-70.

LARSEN, N.O. Violence in the mass media. New York: Harper & Row, 1968.

LARZARUS, R.S., AVERILL, J.R., and OPTON, E.M. (Jr.). Towards a cognitive theory of emotion. In Feelings and Emotions, Magna Arnold (ed.), New York: Academic Press, 1970, 207-229.

LAZARUS, R.S., SPEISMAN, J.C. MARKOFF, A.M., and DAVISON, L.A. A laboratory study of psychological stress produced by a motion picture film. Psychological Monographs, 1962, 76 (34), 1-31.

LEAK, G.K. Effects of hostility arousal and aggressive humor on catharsis and humor preference. Journal of Personality and Social Psychology, 1974, 30 (6), 736-740.

LEIBOWITZ, G. Comparison of self-report and behavioral techniques of assessing aggression. Journal of Consulting and Clinical Psychology, 1968, 32, 21-25.

LEVENTHAL, D.B., SCHENBERG, K.M. & SCHOELANDT, S.K. Effects of sex role adjustment upon the expression of aggression. Journal of Personality and Social Psychology, 1968, 8, 393-396.

LIEBERT, R.M. and BARON, R.A. Some immediate effects of televised violence on children's behavior. Developmental Psychology, 1972, 6 (3), 469-475.

LIEBERT, R.M., SOBOL, M.D., and DAVIDSON, E.S. Catharsis of aggression among institutionalized boys: fact or artifact? In Television and Social Behavior, Vol. 5, G.A. Comstock, E.A. Rubenstein, & J.P. Murray (eds.), Washington, D.C.: U.S. Government Printing Office, 1972.

LORENZ, K. On aggression. New York: Harcourt, Brace and World, 1966.

LORENZ, K. Lorenz warns: man must know that the horse he is riding may be wild and should be bridled. Psychology Today, Nov. 1974, 82-93.

LOVAAS, O.I. Effect of exposure to symbolic aggression on aggressive behavior. Child Development, 1961, 32, 37-44.

MACCOBY, E.E., and JACKLIN, C.N. The psychology of sex differences, Stanford University Press, 1974.

MADSEN, C. Jr. Nurturance and modeling in preschoolers. Child Development, 1965, 39, 221-236.

MALLICK, S.K., and McCANDLESS, B.R. A study of catharsis of aggression. Journal of Personality and Social Psychology, 1966, 4 (6), 591-596.

MANNING, S.A., and TAYLOR, D.A. Effects of viewed violence and aggression: stimulation and catharsis. Journal of Personality and Social Psychology, 1975, 31 (1), 180-188.

McCLLELAND, D.C. Personality. In Annual Review of Psychology, Vol. 7, P.R. Farnsworth and Q. McNemar (eds.), Stanford: Annual Reviews, 1956.

MEYER, T.P. Effect of justified and unjustified real film violence on aggressive behavior. Journal of Personality and Social Psychology, 1972, 23, 21-29. (a).

MEYER, T.P. The effects of verbally violent film content on aggressive behaviour. AV Communications Review, 1972, 20, 160-169. (b).

MONTAGU, A. The nature of human aggression. New York: Oxford University Press, 1976.

MUSSEN, P., and RUTHERFORD, E. Effects of aggressive cartoons on children's aggressive play. Journal of Abnormal and Social Psychology, 1961, 62, 461-464.

NIGHSWANDER, J.K. and MAYER, G.R. Catharsis: a means of reducing elementary school students' aggressive behaviors? Personnel and Guidance Journal, 1969, 47 (5), 461-466.

NISENSEN, R.A. Aggressive reactions to frustration in relation to the individual level of extrapunitiveness. Unpublished master's thesis, University of Pittsburgh, 1970.

NISENSEN, R.A. Aggressive reactions to frustration in relation to the individual level of extrapunitiveness. Journal of Personality Assessment, 1972, 36, 50-54.

NOWLIS, V. Research with the mood adjective check list. In Affect, Cognition, and Personality, S. Tomkins & C. Izard (eds.). New York: Springer, 1965, 352-389.

NOWLIS, V. Mood: behavior and experience. In Feelings and Emotions, Magna Arnold (ed.), New York: Academic Press, 1970, 261-275.

PATON, R. Fantasy content, daydreaming frequency and reduction of aggression. Unpublished doctoral dissertation, City University of New York, 1972

PEPITONE, A., and REICHLING, G. Group cohesiveness and the expression of hostility. Human Relations, 1959, 8, 327-337.

PYTKOWICZ, A.R., WAGNER, N.N., and SARASON, I.G. An experimental study of the reduction of hostility through fantasy. Journal of Personality and Social Psychology, 1967, 5 (3), 295-303.

RAPAPORT, D. The structure of psychoanalytic theory. Psychological Issues, 1960, 2, (Whole No. 6).

ROSENBAUM, M.E., and DeCHARMS, R. Direct and vicarious reduction of hostility. Journal of Abnormal and Social Psychology, 1960, 60, 105-111.

ROYAL COMMISSION ON VIOLENCE IN THE COMMUNICATIONS INDUSTRY, Interim Report; Toronto, Ontario, 1976.

SCHACTER, S. The interaction of cognitive and physiological determinants of emotional state. In Advances in Experimental Social Psychology, L. Berkowitz (ed.), New York: Academic Press, 1964, vol. 1.

SCHACTER, S. The assumption of identity and peripheralist-centralist controversies in motivation and emotion. In Feelings and Emotions, M.B. Arnold (ed.), New York: Academic Press, 1970.

SCHACTER, S., and SINGER, J.E. Cognitive, social, and physiological determinants of emotional state. Psychological Review, 1962, 69, 379-399.

SCHAFER, R. Requirements for a critique of the theory of catharsis. Journal of Consulting and Clinical Psychology, 1970, 35 (1), 13-17.

SCHILL, T.R. Aggression and blood pressure responses of high- and low-guilt subjects following frustration. Journal of Consulting and Clinical Psychology, 1972, 38 (3), 461.

SCOTT, J.P. Aggression. Chicago, Ill.: Chicago University Press, 1958.

SEARS, R.R., MACCOBY, E.E., and LEVIN, N.H. Patterns of child rearing. Evanston, Ill.: Row & Peterson, 1957.

SINGER, D.L. Aggression arousal, hostile humor, catharsis. Journal of Personality and Social Psychology, Monograph Supplement, 1968, 8 (1), 1-14.

SINGER, J.L. Daydreaming. New York: Random House, 1966, 80-101.

SINGER, J.L. The influence of violence portrayed in T.V. or motion pictures upon overt aggressive behavior. In The Control of Aggression and Violence, J.L. Singer (ed.), New York: Academic Press, 1971, 19-56.

SINGER, J.L. The inner world of daydreaming. New York: Harper & Row Pub., 1975, ch. 5.

SINGER, J.L., and ROWE, R. An experimental study of some relationships between daydreaming and anxiety. Journal of Consulting Psychology, 1962, 26, 446-454.

STONE, L.J., and HOKANSON, J.E. Arousal reduction via self-punitive behavior. Journal of Personality and Social Psychology, 1969, 12, 72-99.

TANNENBAUM, P.H., and ZILLMANN, D. Facilitation of aggression through communication. In Advances in Experimental Social Psychology, L. Berkowitz (ed.), New York: Academic Press, 1975, vol. 8, 149-192.

THIBAUT, J., and COULES, J. The role of communication in the reduction of interpersonal hostility. Journal of Abnormal and Social Psychology, 1952, 47, 770-777.

THOMAS, M.H., and TELL, P.M. Effects of viewing real versus fantasy violence upon interpersonal aggression. Journal of Research in Personality, 1974, 8, 153-160.

TIMM, N.H. Lecture notes on multivariate analysis in educational and psychological research. Berkeley, University of California, 1973, II, 54-56.

TOMKINS, S.S. Affect, imagery, consciousness. New York: Springer, 1962, Vol. 1.

TOMKINS, S.S. Affect as the primary motivational system. In Feelings and Emotions, Magna Arnold (ed.), New York: Academic Press, 1970, 101-110.

U.S. SURGEON GENERAL'S SCIENTIFIC ADVISORY COMMITTEE ON TELEVISION AND SOCIAL BEHAVIOR. Television and Growing Up: The Impact of Televised Violence. Washington, D.C., U.S. Government Printing Office, 1972, 159.

WALTERS, R.H., and BROWN, M. Studies of reinforcement of aggression: III. Transfer of responses to an interpersonal situation. Child Development, 1963, 34, 563-571.

WALTERS, R.H., and THOMAS, E.L. Enhancement of punitiveness by visual and audiovisual displays Canadian Journal of Psychology, 1963, 17, 244-255.

WALTERS, R., THOMAS, E., and ACKER, C. Enhancement of punitive behavior by audio-visual displays. Science, 1962, 136, 872-873.

\*\*\*

WEISS, W. Effects of mass media on communication. In Handbook of Social Psychology, G. Lindzey & E. Aronson (ed.s), Boston: Addison-Wesley Press, 1970, vol. 5, 77-195.

WELLS, A.E. Three responses to frustration and their effects upon subsequent aggressiveness. Unpublished doctoral dissertation, University of Florida, 1970.

WHEELER, L., and CAGGIULA, A.A. The contagion of aggression. Journal of Experimental Social Psychology, 1966, 2, 1-10.

WORCHEL, P. Catharsis and the relief of hostility. Journal of Abnormal and Social Psychology, 1957, 55, 238-243.

WORCHEL, S., HARDY, T.W., and HURLEY, R. The effects of commercial interruption of violent and nonviolent films on viewers' subsequent aggression. Journal of Experimental Social Psychology, 1976, 12 (2), 220-232.

ZILLMANN, D. Excitation transfer in communication-mediated aggressive behavior. Journal of Experimental Social Psychology, 1971, 7, 419-434.

ZILLMANN, D., and BRYANT, J. Effect of residual excitation on the emotional response to provocation and delayed aggressive behavior. Journal of Personality and Social Psychology, 1974, 30 (6), 782-791.

ZILLMANN, D., HOYT, J.L., and DAY, K.D. Strength and duration of the effect of aggressive, violent, and erotic communications on subsequent aggressive behavior. Communication Research, 1974, 1, 286-306.

ZILLMANN, D., and JOHNSON, R.C. Motivated aggressiveness perpetuated by exposure to aggressive films and reduced by exposure to nonaggressive films. Journal of Research in Personality, 1973, 7, 261-276.

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WATT, J.H., and KRULL, R. An examination of three models of television viewing and aggression. Human Communications Research, Vol. 3, No. 2, 1977.

ZILLMANN, D., JOHNSON, R.C., and DAY, K.D. Attribution of apparent, arousal and proficiency of recovery from sympathetic activation affecting excitation transfer to aggressive behavior. Journal of Experimental Social Psychology, 1974, 10, 503-515.

ZILLMANN, D., JOHNSON, R.C., and HANRAHAN, J. Pacifying effect of happy ending of communications involving aggression. Psychological Reports, 1973, 32, 967-970.

ZILLMANN, D., KATCHER, A.H., and MILAVSKY, B. Excitation transfer from physical exercise to subsequent aggressive behavior. Journal of Experimental Social Psychology, 1972, 8, 247-259.

## APPENDIX I

## FILM EVALUATION QUESTIONNAIRE

Please answer the following questions by making a check mark ( ) in the appropriate space.

1. How interesting did you find the scene you just watched?

☐ I found it very interesting  
☐ I found it somewhat interesting  
☐ I found it a little interesting  
☐ I found it neither interesting nor uninteresting  
☐ I found it a little uninteresting  
☐ I found it somewhat uninteresting  
☐ I found it very uninteresting

2. In general I thought that

☐ the female actress performed better  
☐ the male actor performed better  
☐ both performers played equally well  
☐ both performers played equally poorly

3. How much verbal aggression did this scene contain?

☐ very much verbal aggression  
☐ some verbal aggression  
☐ little verbal aggression  
☐ no verbal aggression

4. The scene you just viewed was

☐ very exciting  
☐ somewhat exciting  
☐ a little exciting  
☐ neither exciting or unexciting  
☐ a little unexciting  
☐ somewhat unexciting  
☐ very unexciting

5. How would you rate the camera work?
- ☐ very good  
☐ good  
☐ fair  
☐ poor
6. How much physical aggression did this scene contain?
- ☐ very much physical aggression  
☐ some physical aggression  
☐ little physical aggression  
☐ no physical aggression
7. If you had time, say at home, to watch the next 5 minutes of the scene's continuation, you would
- ☐ definitely watch it  
☐ very probably watch it  
☐ possibly watch it  
☐ I'm not sure  
☐ possibly not watch it  
☐ very probably not watch it  
☐ definitely not watch it
8. What kind of feeling was aroused in you, when you watched the scene?
- |                                     |                                               |
|-------------------------------------|-----------------------------------------------|
| <input type="checkbox"/> anger      | <input type="checkbox"/> frustration          |
| <input type="checkbox"/> fear       | <input type="checkbox"/> humour               |
| <input type="checkbox"/> sorrow     | <input type="checkbox"/> joy                  |
| <input type="checkbox"/> love       | <input type="checkbox"/> sex                  |
| <input type="checkbox"/> no feeling | <input type="checkbox"/> other (Please state) |
9. In your opinion, how enjoyable was this scene to watch?
- ☐ it was very enjoyable  
☐ it was somewhat enjoyable  
☐ it was a little enjoyable  
☐ it was neither enjoyable nor unenjoyable  
☐ it was a little unenjoyable  
☐ it was somewhat unenjoyable  
☐ it was very unenjoyable

10. How much hostile, angry mood was depicted in the scene?

- ☐ very much angry mood
- ☐ some angry mood
- ☐ little angry mood
- ☐ no angry mood

APPENDIX 2

CONTAINING: BOGUS VERBAL APTITUDE TEST  
EVALUATION QUESTIONNAIRE

PLEASE DO NOT  
TURN PAGE UNTIL  
TOLD TO DO SO

AGESEX

## College Verbal Aptitude Index (CVAI)

INSTRUCTIONS: Please match each word in the left column with the word in the right column that most closely approximates it in meaning.

For example, word no. 1 is paltry. Scanning the right column gives the word petty (letter f) as being closest in meaning. Therefore, the letter f is put next to paltry.

You will have 5 minutes to work on this test. Work rapidly and try to answer all items.

- |                 |                       |
|-----------------|-----------------------|
| 1. paltry       | a. liberate           |
| 2. pertinacious | b. redundancy         |
| 3. desultory    | c. timid              |
| 4. miasma       | d. excusable          |
| 5. fealty       | e. censure, discredit |
| 6. eldritch     | f. petty              |
| 7. unctious     | g. obstinate          |
| 8. torpid       | h. courtesy           |
| 9. tautology    | i. sexless            |
| 10. rampacious  | j. loyalty            |
| 11. benighted   | k. curse              |
| 12. intrepid    | l. praise             |
| 13. manumit     | m. ignorant           |
| 14. encomium    | n. greedy             |
| 15. decry       | o. accustom           |
| 16. venial      | p. fearless           |

|     |             |    |                       |
|-----|-------------|----|-----------------------|
| 17. | diffident   | q. | sluggish              |
| 18. | epicene     | r. | insincere earnestness |
| 19. | inure       | s. | aimlessly             |
| 20. | imprecation | t. | ghastly               |
| 21. | comity      | u. | bad environment       |
| 22. | otiose      | v. | noxious               |
| 23. | ersatz      | w. | peaceful              |
| 24. | poltroon    | x. | coward                |
| 25. | halcyon     | y. | inactive              |
| 26. | mephitic    | z. | substitute            |

PLEASE DO NOT  
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## DEAN'S SURVEY (Confidential)

The Dean of the Faculty of Education would like your reactions to graduate students using undergraduates for research purposes. Your assessment is anonymous, so please answer honestly. The Dean will use this information in evaluating and grading the study and the experimenter who conducted it. Your cooperation is greatly appreciated.

1. In your opinion, how competent was the student who conducted the experiment in which you just participated?

(check one)

- ☐ extremely competent
- ☐ very competent
- ☐ fairly competent
- ☐ neither competent nor incompetent
- ☐ somewhat incompetent
- ☐ very incompetent
- ☐ extremely incompetent

2. In your opinion, how emotional was he? (check one)

- ☐ extremely emotional
- ☐ very emotional
- ☐ fairly emotional
- ☐ neither emotional nor unemotional
- ☐ somewhat unemotional
- ☐ very unemotional
- ☐ extremely unemotional

3. In your opinion, how kind was he? (check one)
- ☐ extremely kind
  - ☐ very kind
  - ☐ fairly kind
  - ☐ neither kind nor unkind
  - ☐ somewhat unkind
  - ☐ very unkind
  - ☐ extremely unkind
4. If you were asked by the student who conducted the study in which you just participated to volunteer for another study he was conducting, would you volunteer? (check one)
- ☐ yes, I definitely would volunteer
  - ☐ yes, I probably would volunteer
  - ☐ yes, I might volunteer
  - ☐ I'm not sure
  - ☐ no, I don't think I would volunteer
  - ☐ no, I probably would not volunteer
  - ☐ no, I definitely would not volunteer
5. In your opinion, how sympathetic was he? (check one)
- ☐ extremely sympathetic
  - ☐ very sympathetic
  - ☐ fairly sympathetic
  - ☐ neither sympathetic nor unsympathetic
  - ☐ fairly unsympathetic
  - ☐ very unsympathetic
  - ☐ extremely unsympathetic

6. In your opinion, how friendly was he? (check one)
- ☐ extremely friendly
  - ☐ very friendly
  - ☐ fairly friendly
  - ☐ neither friendly nor unfriendly
  - ☐ fairly unfriendly
  - ☐ very unfriendly
  - ☐ extremely unfriendly
7. What is your reaction now to the student who conducted the experiment in which you just participated--how much do you like or dislike him? (check one)
- ☐ I like him very much
  - ☐ I like him quite a bit
  - ☐ I like him a little
  - ☐ I neither like nor dislike him
  - ☐ I dislike him a little
  - ☐ I dislike him very much
  - ☐ I dislike him intensely
8. How much did you like participating in the study just recently conducted? (check one)
- ☐ I liked it very much
  - ☐ I liked it somewhat
  - ☐ I liked it a little
  - ☐ I was rather indifferent to it
  - ☐ I was a little irritated by it
  - ☐ I was somewhat irritated by it
  - ☐ I was very irritated by it

9. How worthwhile was it to participate in the study just recently conducted? (check one)
- ☐ it was extremely worthwhile
  - ☐ it was very worthwhile
  - ☐ it was somewhat beneficial
  - ☐ I'm not sure
  - ☐ it was somewhat of a waste of time
  - ☐ it was a considerable waste of time
  - ☐ it was a complete waste of time
10. In your opinion, how much of a contribution will this study make to the field of education? (check one)
- ☐ a very large contribution
  - ☐ a fairly large contribution
  - ☐ some contribution, but not very much
  - ☐ I'm not sure
  - ☐ a small contribution
  - ☐ very little contribution
  - ☐ none at all
11. Please state any comments you may have about this study.

APPENDIX 3

CONTAINING: BOGUS VERBAL APTITUDE TEST  
MOOD CHECK LIST

PLEASE DO NOT  
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AGESEX

## College Verbal Aptitude Index (CVAI)

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For example, word no. 1 is paltry. Scanning the right column gives the word petty (letter f) as being closest in meaning. Therefore, the letter f is put next to paltry.

You will have 5 minutes to work on this test. Work rapidly and try to answer all items.

- |                 |                       |
|-----------------|-----------------------|
| 1. paltry       | a. liberate           |
| 2. pertinacious | b. redundancy         |
| 3. desultory    | c. timid              |
| 4. miasma       | d. excusable          |
| 5. fealty       | e. censure, discredit |
| 6. eldritch     | f. petty              |
| 7. unctious     | g. obstinate          |
| 8. torpid       | h. courtesy           |
| 9. tautology    | i. sexless            |
| 10. rampacious  | j. loyalty            |
| 11. benighted   | k. curse              |
| 12. intrepid    | l. praise             |
| 13. manumit     | m. ignorant           |
| 14. encomium    | n. greedy             |
| 15. decry       | o. accustom           |
| 16. venial      | p. fearless           |

- |                 |                          |
|-----------------|--------------------------|
| 17. diffident   | q. sluggish              |
| 18. epicene     | r. insincere earnestness |
| 19. inure       | s. aimlessly             |
| 20. imprecation | t. ghastly               |
| 21. comity      | u. bad environment       |
| 22. otiose      | v. noxious               |
| 23. ersatz      | w. peaceful              |
| 24. poltroon    | x. coward                |
| 25. halcyon     | y. inactive              |
| 26. mephitic    | z. substitute            |

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## Mood Adjective Check List

Each of the following words describes feelings or mood. Please use the list to describe your feelings at the moment you read each word. If the word definitely describes how you feel at the moment you read it, circle the double check (vv) to the right of the word. For example, if the word is relaxed and you are definitely feeling relaxed at the moment, circle the vv as follows:

relaxed vv v ? no (this means you definitely feel relaxed at the moment)

If the word only slightly applies to your feelings at the moment, circle the single check (v).

If the word is not clear to you and you cannot decide whether or not it applies to your feelings at the moment, circle the question mark (?).

If you definitely decide the word does not apply to your feelings at the moment, circle the no.

Work rapidly. Your first reaction is best. Work down the first column, then go to the next. Please mark all words. This should take only a few minutes. Please begin.

|           |    |   |   |    |                   |    |   |   |    |
|-----------|----|---|---|----|-------------------|----|---|---|----|
| angry     | vv | v | ? | no | furious           | vv | v | ? | no |
| ashamed   | vv | v | ? | no | annoyed           | vv | v | ? | no |
| insecure  | vv | v | ? | no | tense             | vv | v | ? | no |
| defiant   | vv | v | ? | no | uncertain         | vv | v | ? | no |
| fed up    | vv | v | ? | no | rebellious        | vv | v | ? | no |
| shocked   | vv | v | ? | no | destructive       | vv | v | ? | no |
| lonely    | vv | v | ? | no | clutched up       | vv | v | ? | no |
| resentful | vv | v | ? | no | grouchy           | vv | v | ? | no |
| vengeful  | vv | v | ? | no | ready to<br>fight | vv | v | ? | no |
| startled  | vv | v | ? | no |                   |    |   |   |    |
| blue      | vv | v | ? | no |                   |    |   |   |    |

## APPENDIX 4

## Synopsis Given on Aggressive Film

You are about to be shown a film segment on this monitor. I would like you to pay attention to the film because I hope to call you within 3-5 days and ask some questions concerning your reactions to the film. Other classes will see other film segments. Please put your telephone numbers on the booklets. Don't put your names down just your telephone numbers. I'll get your numbers from off these booklets later.

Now, the film you are about to see is a scene in a married couple's life. The wife berates her husband for being unfaithful to her because she has found him running around with another woman, neglecting her and his job. In truth, he would like his cake and eat it too. He simply does not realize how much his wife loves him and how he is hurting her.

## APPENDIX 5

## Synopsis Given on Nonaggressive Film

You are about to be shown a film segment on this monitor. I would like you to pay attention to the film because I hope to call you within 3-5 days and ask some questions concerning your reactions to the film. Other classes will see other film segments. Please put your telephone numbers on the booklets. Don't put your names down--just your telephone numbers. I'll get your numbers from off the booklets later.

Now, the film you are about to see is a scene in a married couple's life. The husband has just lost his job and is very down. However, the wife tries to encourage him about the new possibilities now open to them both. Although he is at this point very pessimistic, his wife's optimism persists.