Television Violence and Viewer Aggression: A Reexamination of the Evidence

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Studies of the effects of fantasy violent content in television on aggressive behavior are reviewed and used to assess three positions: (a) an activation view that watching televised fantasy violence causes aggressive behavior, (b) a catharsis view that aggression in some groups may be decreased following the observation of such violence, and (c) a null view that such violence on television has not been demonstrated to have significant effects on aggressive behavior. Studies are discussed with regard to their representativeness in sampling and design. In contrast to earlier reviews which have advocated the activation position, the evidence is here interpreted as supporting the null view.

Does the fantasy violence shown on television cause people to behave more aggressively? Few topics in contemporary psychology are as widely discussed as the relationship between violent content in television and aggressive behavior. Research findings in this area are often cited as evidence to justify the demand for policy decisions concerning television. As such, the topic relates to highly practical and applied issues as well as to theoretical concerns of contemporary social psychology.

Some previous reviews on this topic have supported the view that TV violence is a significant cause of aggressive behavior (Bandura, 1973; Comstock, 1975; Liebert, Neale, & Davidson, 1976).

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1973; Murray, 1973). On the basis of these reviews, there have been calls for restrictions on the broadcasting of televised fantasy violence (Rothenberg, 1975; Sommers, 1976) and there is evidence that such positions have affected broadcast policy (Carter & Strickland, 1975).

It is our argument here that the evidence that TV causes aggression is not strong enough to justify restrictions in programming. Evidence previously believed to support the activating effects of TV violence will be reexamined and compared with field and other studies which tend to show that TV has little or no such effects. We emphasize that this review considers the evidence from a social policy perspective. Some professional organizations and parents groups have used research evidence on the effects of televised fantasy violence on human aggression to justify regulation of the television industry in this regard (Ingelfinger, 1976; Rothenberg, 1975; Sommers, 1976). A major purpose of this paper is to ask whether the contemporary evidence warrants control or censorship of TV on the basis of the current evidence and to question the extent to which certain laboratory experimental studies are relevant to the policy question. As Mahoney (1976) contends, progress in behavioral science has been hindered because psychologists have devoted their major efforts to confirmation and justification of prior theoretical positions. Philosophers of science, however, regard criticism as preferable to justification as a strategy for seeking truth (Popper, 1972). It is in this spirit that we will proceed.

Methodological Issues

The effect of televised violence is, to a significant extent, an applied question. When results of research may be used as the basis for policy decisions, it is particularly important that the studies be designed to yield maximum generalizability, or external validity. External validity is a major concern of all policy relevant research. Evidence has external validity if there is strong correspondence between subject populations, the populations they represent, and the populations to which generalizations are made. Other criteria for external validity include the representativeness of treatment conditions and outcome measures (Cook & Campbell, 1975).

Some years ago Brunswik (1955) questioned the use of systematic experimental designs in psychological research. Systematic research designs often require that behavior be observed in atypical contexts. When building social policy, we want to know
whether television violence causes aggression among members of society, not whether it does so in the laboratory. To make such assessments it is important whether the context in which the behavior is studied is representative of the context to which it is generalized.

Psychological laboratories may not be the most appropriate environments in which to study the influences of television because laboratory environments are not representative of the ecology in which people live. In addition, laboratory measures of aggression correlate poorly with behavioral aggression outside the laboratory. Our position on the ambiguous external validity of much contemporary research on TV and aggression is partly based upon the concept of probabilistic functionalism which originated with Brunswik. Brunswik's methodology was designed to determine the probability that certain behaviors will be expressed. A probabilistic methodology recognizes that behavior can be influenced by many variables. To establish functional relationships between variables one must measure the behavior within an environment which allows all the natural influences to occur. Then one can determine the percentage of variation in an outcome measure attributable to a specific independent variable. This approach is probabilistic because it is used to determine the probability of a response in a natural environment. If we wish to base social policy upon TV and aggression research, we should ask what percentage of variation in aggression (measured in natural contexts) is attributable to television viewing.

Most research on TV and aggression has been conducted in laboratory settings. Laboratory research is useful because it can help establish the possibility of a causal link between variables. For instance, laboratory research may clearly suggest that it is possible for TV to affect aggression. It can not establish the probability that TV affects aggression because other possible influences upon aggressive behavior are systematically ignored. In real life, for instance, there are inhibitory influences operating to restrain aggression while most laboratory studies have carefully eliminated such inhibitory forces.

Some have argued that the naturalness criteria are a hindrance to inquiry and that, for instance, medical research would have been seriously retarded if it had adhered to principles of ecological validity (Bandura, 1973). However, contemporary medical research would not be objectionable to Brunswik. The development of new treatments does involve laboratory experimental in vitro studies to establish possible relationships, but it then also
involves in vivo investigations to determine probable relationships. Laboratory studies can tell us whether it is possible for TV to influence operationally defined aggression. Architects of social policy must also consider whether there is a significant probable connection. To make this determination, they should focus their attention on studies which have external validity. There are specific representativeness criteria which should be met if social research findings are to have external validity.

In reviewing research on TV and aggression, it is important to consider the representativeness of the subject sample, the independent variables, the viewing situation, the testing situation, and the dependent variables. It is also important to note whether (as is often the case) the subjects were frustrated or angered, and what was their cognitive orientation toward the visual material.

**Subjects.** A study should not be criticized for using a specific subject population if generalizations beyond that sample are not made. However, investigators are prone to generalize beyond their samples. To date, most studies in this area have used the available subject populations of preschool-aged children or college sophomores as subjects. Since there is now evidence that some of the observed effects of television may be specific to certain age ranges (Thomas & Drabman, 1975), generalizations of results to other age ranges should be made with care.

A second consideration is the community base from which the sample is drawn. Today almost all American families own at least one television set. It is important, therefore, that the sample be representative of a variety of social classes and ethnic groups if we are to speak of media effects overall. In general, research on the effects of television has not been successful in meeting criteria of representativeness.

**Independent variables: The film.** If generalizations are to be made about the effects of television, then any episode used in the research should be representative of what appears on television. The best procedure has been the use of videotapes of regularly scheduled television shows or the actual viewing of shows as they occur. Only in these cases can one feel assured that the violence depicted is representative of the violence children are viewing on television (Feshbach & Singer, 1971).

Films shown to control groups are also important. Nonviolent but arousing films have been demonstrated to stimulate aggression (Tannenbaum, 1972). If possible, the aggressive content and the control films should be capable of evoking equivalent levels of interest, involvement, and arousal among the subjects (Foulkes,

Viewing. In many studies on television and aggression children are gathered into a room to view a film together. If a few children in these situations begin to get active or excited, these children can stimulate the others to behave more aggressively. This effect has been observed in at least one important experiment (Leyens, Camino, Parke, & Berkowitz, 1975). Campbell and Boruch (1976) refer to this problem as the grouping feedback effect. Once assigned to groups, subjects can be affected either by the treatment or by other members of their group. Subjects influencing one another have the effect of reducing within-group variation and increasing between-group variation. In other words, grouping feedback effects serve to magnify estimates of the treatment effects.

Another issue related to viewing is the representativeness of the duration of exposure. Almost all of the studies on the effects of violence in the mass media involve the showing of a single, violent episode. Unfortunately, these studies can tell us little about the effects of repeated exposure to violent material. Himmelweit (1963) noted that children between the ages of nine and fifteen spend as many hours in front of the television as they do in school. Since many studies claim that children will be more aggressive after a single short exposure to violence, can we assume that the effects of mass exposure will be cumulative? Only a few studies have even attempted adequately to answer such questions (Eron, Huesmann, Lefkowitz, & Walder, 1972; Feshbach & Singer, 1971; Friedrich & Stein, 1973).

Testing. Many studies in the area of mass media violence involve testing almost immediately after viewing. In most, the testing situation is quite removed from the type of settings in which normal interaction with family and peers occurs. Normal restrictions against aggression are frequently absent. In order to increase the generalizability of these experiments, it may be useful to extend testing over a period of time (Doob & Climie, 1972; Kniveton & Stephenson, 1970) and to provide situations in which normal constraints against aggression are present (Feshbach & Singer, 1971). Maximum generalizability is obtained by embedding testing within the context of everyday life. In natural settings there are many factors which may operate to decrease as well as to increase aggression. A few of these factors have been identified in the laboratory. For instance, aggression can be decreased when a victim shows anger in his facial expression (Savitsky, Izard, Kotsch, & Christy, 1974). Baron (1973) has shown that threatened retaliation from a victim will inhibit the expression
of aggression among nonangered subjects.

*Dependent measures of aggression.* Various authors have advanced different definitions of aggression. As Feshbach (1970) points out, "The conflicting results, which are frequently yielded by studies of aggression, are partly due to the ambiguity of the referent of aggression and the use of behaviors that are only superficially related to each other" (pp. 160–161). Most general definitions of aggression refer to behavior which has the potential to harm another person or his property (Freedman, Carlsmith, & Sears, 1974).

The ambiguity of the concept of aggression is illustrated by the poor correlation between different operationally defined measures of aggression. For example, verbal self-ratings of anger or expressions through role playing may not correlate with aggression measures such as shock administration (Liebowitz, 1968). The correlations among behavioral measures of aggression are somewhat better. A number of studies report that many of the behavioral measures of aggression fluctuate in the same manner in response to different experimental treatments (Berkowitz, 1965a, 1965b; Walters & Brown, 1963; Williams, Meyerson, Eron, & Semler, 1967).

The validity of an aggression measure defines the range of inferences we can make on the basis of an observed score. Some commonly applied measures of aggression clearly do not permit generalization beyond the laboratory setting. Most harm intent (Goranson, 1970) measures fit into this category. An example is the use of the Iowa Aggression Machine. In experiments employing such machines, the subject believes he is in a learning experiment and is administering electric shocks to another person whom he cannot observe. Records are made of the intensity and duration of the imagined shocks. Social sanctions against aggression are usually absent. In many cases the subject knows that his victim will not have a chance to retaliate. The subject is actually told to deliver shocks, and the measure is the frequency or magnitude. Since harm intent measures do not show high intercorrelation, it is important to pay attention to which measure of aggression was used when examining experimental results and the conditions under which they are produced. Prediction of the effects of TV viewing from such studies is probably unwarranted.

*Experimentally induced emotions.* An old psychological principle is that frustration can lead to instigation of aggression (Berkowitz, 1968; Dollard, Doob, Miller, Mowrer, & Sears, 1939). In most experiments on the effects of mass media the subjects are first
intentionally frustrated before exposure to film content. This procedure has been used both because some of the experiments have been designed to test a catharsis hypothesis and because modeling of aggression effects in children are enhanced by prior frustration. In real life, a child is not often angered just prior to watching television. Some experimenters have angered half of the subjects and not angered the other half prior to film exposure. In these studies it is not unusual to obtain one result for the angered subjects and another result (usually a nonsignificant one) for the nonangered group (Feshbach, 1961; Hanratty, O'Neal, & Sulzer, 1972; Hartmann, 1969).

Cognitive factors. “Real life” violence is the portrayal of some violent event as it happened or is happening in real life or as it is believed by viewers to have actually occurred—for example, telecasts of riots or newsreels about violence in the Middle East. “Fantasy violence,” by contrast, is violence that has not really happened or is not believed to have occurred. This make-believe violence is the type most often seen by children. Examples are police or detective shows, westerns, or cartoons. An assumption is made that after early childhood the viewer distinguishes between what is real and what is fantasy. Himmelweit (1963) has clearly shown this to be the case, and Feshbach (1972) has emphasized that the distinction is important. He presented a six-minute film of a campus riot to 40 boys and girls who were between 9 and 11 years old. Half of the children were led to believe the film was an NBC newsreel (real life violence); the others were told that the film was made in a movie studio (fantasy). Feshbach’s data showed that the labelling of a sequence of behavior influences the level of aggression observed subsequently. The children who believed that they had observed real life violence used louder noise levels to punish the confederate than those who were told the sequence was not real. Subjects in the fantasy violence group, however, were actually less punitive than children who had not seen any aggressive films.

Berkowitz and Alioto (1973) reported two similar experiments in which college students served as subjects. In both of these experiments, cognitions that the observed violence was real produced increased aggressive responding. Thus, it appears that people respond differently to real life violence than to fantasy. Other studies have found that children will play less constructively after viewing realistically filmed aggression than after watching stylistically filmed aggression (Noble, 1973). This raises even more difficult policy and policy-related questions. Should children be
discouraged from watching news shows? Should news shows be limited in how much violence they portray? Should news shows be limited in number or in the times when they are shown? Should realistic historical portrayals of violence be limited or eliminated?

In sum, systematic study of the effects of real versus fantasy violence has typically shown that the two have different impacts (Berkowitz & Alioto, 1973; Feshbach, 1972; Geen, 1975; Meyer, 1972; Thomas & Tell, 1974). When generalizing the results of research on TV and aggression, we must take the cognitive orientation of the subjects into consideration, i.e., their understanding of the type of violence to which they have been exposed.

**Does Viewing Media Violence Cause Aggressive Behavior?**

Data from recent research studies can be cited as supporting one of three positions on the relationship between viewing violence on television and acting aggressively: (a) an activation view (Bandura, 1965, 1973; Berkowitz, 1970) suggesting that violence on television activates and otherwise induces the viewer to behave more aggressively, (b) a catharsis view (Feshbach, 1961; Feshbach & Singer, 1971) proposing that in specified subgroups of the population the level of aggression may possibly be lowered after viewing violence, and (c) a null position (Himmelweit, Oppenheim, & Vince, 1958; Milgram & Shortland, 1973) finding that violence on television is not demonstrated to have a significant effect on aggressive or antisocial behavior.

The Activation View

The greatest number of experiments purporting to have relevance to the effects of television violence have reported that such portrayal leads to increased aggression.

Activation view I: Social learning and imitation. The imitation version of activation theory has been stated clearly in the writings of Aronfreed (1969), Bandura (1973), Bandura and Walters (1963), and Walters (1968). These authors partly attribute behavioral consequences of viewing violence to learning. There is an important distinction between acquisition and performance of behavior. A behavior is said to be learned by observation without the necessary presence of any reinforcers. Performance of the learned behavior, however, is said to depend upon reinforcers or incentives. If the filmed aggressor is punished for his actions,
the potential aggressive behavior of the audience will be inhibited even if the aggressive behavior has been learned. When the observed aggressor is not punished or when he is rewarded, inhibitions against aggression are lowered and the observer will attack an available target.

Several laboratory experiments support this view. Exemplary of these studies is a laboratory experiment by Bandura, Ross, and Ross (1963b) in which preschool children observed an adult aggressive model who performed either live or on film. A third group watched a film of an aggressive cartoon character. No film was shown to a control group. In the live and film conditions, the adult model attacked a large Bobo-doll while screaming, "Sock him in the nose . . . hit him down . . . throw him in the air . . ." and "pow" (p. 5). Children in the cartoon condition watched "Herman the cat" assault a Bobo-doll as the adult had in the other conditions. The children were then led to another room where they found the Bobo-doll and the instruments the model had used to attack it. Frustration was induced by giving the children some fancy toys to play with and then taking the toys away. The experimenter was present during testing, but she sat in the far corner and avoided any interaction with the children. Children who had observed an aggressive model attack a Bobo-doll were nearly twice as likely to aggress against the doll in an identical or similar manner. A second experiment revealed that the children's aggression was more likely to be expressed when they had observed a model who was rewarded than if they had seen a model who was punished for aggression (Bandura, Ross, & Ross, 1963c). It should be noted that these studies do not measure tendencies to aggress against another child or adult.

For a number of reasons the external validity of the imitation experiments must be questioned. Most importantly, the laboratory setting was quite different from situations encountered by children in their day-to-day lives. First, the live model, film, or cartoon was designed for a study of imitation not a study of TV effects. Although the cartoon sequence may have been similar to television cartoons, the other conditions are not similar to regular programming. Regularly scheduled TV programs rarely feature anything similar to an adult banging around a Bobo-doll while screaming "pow . . . kick him . . . socko. . . ."

Another salient problem with using the imitation studies to predict TV effects concerns the validity of the measure of aggression. Aronfreed (1969) and Feshbach and Singer (1971), among others, have challenged the proposition that hitting a
Bobo-doll (Bandura's measure of aggression) is representative of aggressive behavior. Neither the model nor the imitating child damages the doll. There is no injury to person or property. Hitting a doll in a laboratory environment or playing with "aggressive" toys does not carry the same consequences as, for instance, hitting another child in a school yard environment. The behaviors in these experiments might better be characterized as solitary aggressive play.

Hanratty, Liebert, Morris, and Fernandez (1969) claim that the imitation paradigm is also effective in eliciting aggressive responses toward living targets. Children who had observed a model attack a nonreactive adult dressed as a clown like the Bobo-doll were subsequently more likely to assault the live Bobo. Although the Hanratty et al. results are intriguing, they must be interpreted cautiously. The presence of an adult dressed as a Bobo-doll may not have activated the ordinary social sanctions against aggression. In fact it may have invited a playful "aggressive" response by signaling to the child that the adult would not retaliate against him. Clowns in circuses are often hit with no retaliatory consequences as a sort of fun aggression.

The difference between the Bandura et al. measure of aggression and real destructive behavior is brought home more clearly in a doctoral dissertation by Ross (1972) which examined the effects of aggressive cartoons upon two types of aggressive play. Kindergarten boys and girls were shown either a violent cartoon, a nonviolent cartoon, or no cartoon. Observations of two categories of aggression were recorded separately. One category was normative aggression, such as hitting a Bobo-doll or pounding a hammer. This category describes behavior similar to that observed by Bandura et al. The other category was "transgressive" aggression and involved destructive behaviors like throwing a dart at the Bobo-doll. Although children who had seen violent cartoons scored higher on normative play, there were no differences between groups for transgressive aggression. The models in the cartoons, however, had engaged in inappropriate aggressive behavior. Thus, Ross's data suggest that cartoon modeling may affect aggressive play but it may not influence aggressive behavior.

It is not clear that the imitation of aggression generalizes to other dependent measures of aggression. Leifer and Roberts (1972) attempted to replicate the Bandura et al. experiments using a different measure of aggression (their own response hierarchy). Two statistical tests (ANOVA and Kurskal-Wallis) failed to yield
a statistically significant difference between those exposed to an aggressive and those viewing a control model. It should be noted that the response hierarchy measure used in the Leifer and Roberts study seems to have some external validity because physical aggression scores on this measure correlate relatively well with teacher ratings for “overt aggression in the school environment.”

A British study poses other serious questions for the imitation theory. Knivetom and Stephenson (1970) examined the effects of preexperience within the testing environment upon imitation. They found that the effect of an aggressive model is largely dependent upon the novelty of the testing situation for the children. Analysis of aggressive play revealed that imitation among those who had experience in the testing environment was significantly less than for those who had not previously played in the test environment. Further, after a week's delay, those who had seen an aggressive model demonstrated no more aggressive play than those who were not exposed to any film. These data imply that the effects of modeling can be short lived as well as situation specific.

What would happen if modeling experiments were conducted in an ecology which maintained ordinary social sanctions against aggression? One of the most common components of a young child's environment is an adult or older supervising child who disapproves of fighting behavior. About 50% of violent TV viewing by children occurs in the presence of at least one adult. A study by Hicks (1968) nicely demonstrates the importance of adult presence. Children observed a model similar to that in the Bandura studies with an adult who acted in one of three ways. While one group of subjects watched the model, the adult made negative comments, such as “that's awful” or “he shouldn't do that.” For another group he made positive comments, such as “boy, look at him go.” In a control condition the adult remained silent. In comparison to controls, those who heard the adult make positive comments showed more aggression and those hearing the adult make negative comments showed less aggression. This effect only occurred when the adult was present at the time of testing. When the adult was not present during testing, his prior presence had no effect. De Rath (1963) found that an adult's verbal condemnation of aggression would inhibit a child's aggression and that these effects would generalize if a neutral adult was present during testing. The presence of an adult who disapproves of aggression is representative of a normal social force restraining aggression and can serve as an adequate manipulation to diminish much
of the aggression observed in the imitation studies.

The frustration component of the methodology in imitation studies also seems more important than has been previously noted. For instance, if the children are not frustrated after viewing the model, the imitation effect often does not occur (Hanratty et al., 1972).

There is little question that novel aggressive behaviors can be learned through observation. Experiments on social learning show that imitation is a possible explanation for the acquisition of aggressive responses. However, the imitation performance effects have been chiefly demonstrated with subjects less than six years old, with a measure of aggression involving play with inanimate objects, if the subjects are frustrated after exposure to a model, and where social sanctions against aggression are absent. Consequently it is quite unclear whether aggressive models on TV increase the probability that aggression against people or property will be expressed in natural environments.

Beyond these methodological issues, the link between the theory and policy is not clear. For social learning theory to be taken as a justification for policy, the predictions the theory would make about television drama must be considered. The Bandura et al. (1963a, 1963b) experiments demonstrate that children will imitate a model if the model is rewarded for his or her actions. If we take these findings seriously, then we would predict that a TV character's aggression will only be copied if the model is rewarded for his behavior. If the model is punished for violent behavior, the theory would predict that aggression would not be imitated. Based upon an impressive study of television content, Gerbner and Gross (1976) recently concluded that "television is a world of clarity and simplicity. Rewards and punishments follow quickly and logically and authority always triumphs" (p. 44). Society seems most concerned about violence outside the law. In the world of television, this sort of violence is almost always punished. Thus, social learning theory could be used to argue that TV should inhibit the imitation of criminal aggressive behavior. However, TV does clearly portray that those who have official sanctions, such as police officers and detectives, are rewarded, or at least not punished, for behaving violently. According to social learning theory this would lead to aggressive play in which the child portrays the role of an aggressive law officer.

*Activation view II: Classical conditioning.* Berkowitz (1970) proposed that impulsive responses may become conditioned to situational stimuli in a person's environment. Aggression functions
as a conditioned response to certain situational cues. Berkowitz argues that "portrayed violence in the mass media is associated with other violent scenes the individual had encountered previously—there is a response-mediated stimulus generalization—and these stimuli, in turn, can evoke a range of aggressive responses."

A series of experiments by Berkowitz and his associates relate S-R relationships to filmed violence and aggression. In one study (Berkowitz, 1965b), a confederate who was introduced as a college boxer or as a speech major either insulted or did not insult a group of college students. Half of these students then watched a boxing film and the others watched a nonaggressive control film. When given an opportunity to shock the confederate, more of the insulted subjects showed aggression toward the confederate who had been introduced as a boxer. It was argued that the association between the filmed boxer's aggression and the confederate's identification as a boxer was responsible for these increases in aggression.

Extensions of the Berkowitz (1965b) study showed that subjects would give more shocks to a confederate who bore the same name as one of the filmed boxers (Berkowitz & Geen, 1966), and that even more shocks would be administered to a confederate who bore the same name as the filmed victim rather than the portrayed victor (Geen & Berkowitz, 1966). Another report maintains that provoked men will give more shocks if they are told to identify with the aggressor (Turner & Berkowitz, 1972).

A close inspection of the Berkowitz research program reveals that the "classical conditioning" effect is specific to a very particular set of circumstances. For example, the experimental effect reported in Berkowitz 1965b was based upon a three-way interaction between film conditions, arousal level, and label given to the target. The violent film had an activating effect when the target was a boxer and when the subjects were angered before viewing the film. A violent film apparently has little effect if there is no cue linking the target of aggression to a film. Thus aggression against a speech major is less than aggression against a boxer.

One of the most intriguing aspects of this research is that film violence does not affect nonangered subjects. In fact, a mild (nonsignificant) "catharsis effect" was observed for nonangered subjects in this study. Angered subjects, however, gave more retaliatory shocks after viewing a violent than after seeing a nonviolent film. What has never been clear is whether the violent films activate aggression or whether the neutral films cause greater
decreases in aggressive drive. A paper by Zillman and Johnson (1973) argues in favor of the latter explanation. They demonstrated that the effect of a violent film is to retard the decay of anger and physiological arousal among strongly provoked subjects. Neutral content provides distraction and serves to reduce the physiological excitation which mediates aggression. This interpretation is consistent with data suggesting that distraction reduces anger while discussing provocation maintains anger (Kaplan, 1975). Watching aggressive films may maintain arousal by stimulating aggression-mediating cognitions (Turner & Layton, 1976). The explanation of the activation effects in terms of decreases in the control group seems to account for the Berkowitz data better than an activation theory (Zillman & Johnson, 1973).

Another circumstance qualifying the classical conditioning interpretation is that the activation effect is specific to films in which the violence is labelled as justified. Early in the Berkowitz research program it was noted that a subject's anxiety and guilt about aggression will be aroused by aggressive films. To eliminate the aggression-inhibiting effects of guilt and anxiety, it is essential that a viewer perceive the motivations of a filmed aggressor as justified. When the motives of a film aggressor are not labelled as justified, the violent film has no effect (Berkowitz & Rawlings, 1963; Geen & Stonner, 1974).

In summary, the "classical conditioning" line of research may be interpreted as showing that TV violence may possibly increase aggression if and only if the following three conditions are met: (a) the subjects are angered prior to exposure to television, (b) the violence on television is justified, and (c) there are disinhibitory cues associated with the potential target of aggression.

Beyond these specific restrictions upon the classical conditioning experiments is the question of the meaning of the acts usually called aggression in these studies. In many experiments subjects are provoked and the measure of aggression is the extent to which they believe they are retaliating via a shock machine. But is retaliation equivalent to aggression? A recent series of experiments demonstrated that reciprocation or retaliation is not often perceived as aggression. In three experiments it was found that naive observers do not label subjects in Berkowitz type experiments to be aggressive. Upon reading cases describing actors in the Berkowitz paradigm, subjects only labelled actors to be aggressive when they return more punishment than they had received from a provoker. These studies suggest that laymen are probably not concerned about behaviors which social scientists are willing to
call aggression (Kane, Joseph, & Tedeschi, 1976).

*Activation view III: General arousal version.* A third version of the activation view postulates that televised violence leads to a general form of emotional arousal which in turn increases the probability of an aggressive response. This theory is currently being developed by a variety of investigators (Doob & Clime, 1972; Konecni, 1975; Tannenbaum, 1972; Zillman, 1971; Zillman, Johnson, & Day, 1974). General arousal theory differs from other activation views in the assertion that a variety of arousing communications, rather than the specific portrayal of violence, produces activating effects leading to violence.

Tannenbaum (1972) reported several experiments in support of the theory. These experiments lead soon to a revised model in which cognitive events are postulated to interact with the general arousal to produce aggressive behavior. Of particular interest are a series of studies showing that arousal evoking but nonaggressive films (i.e., erotic and humorous) can activate subsequent aggression. Other studies have shown that arousal produced by physical exercise can enhance aggression if a subject causally misattributes the source of his excitation to a provoker (Zilhnan, Katcher, & Milavsky, 1972).

Tannenbaum also suggests that the viewer's level of arousal will mirror the content of the filmed stimulus. Violent films with happy endings (such as the film used in Feshbach's 1961 study) may produce initial increases in arousal but leave the viewer with his arousal level on the decline. A film clip (such as Berkowitz's) with an unpleasant outcome, an exciting but unhappy conclusion, may leave viewers at a high level of arousal and have an activating effect. Zillman, Johnson, and Hanrahan (1973) showed subjects an aggressive film with either a happy or an unhappy ending. When given a chance to shock a confederate who had annoyed them, those who had witnessed the happy ending gave lower intensity shocks. These results are of practical importance because most TV programs end happily with the "bad guys" caught or punished.

The activation theory suggests that the effect of violent films is to maintain high levels of physiological arousal. Zillman and Johnson (1973) recently reported an experiment in which subjects viewed violent or nonviolent films after experiencing either extreme or minimal provocation. The films had no differential effect for those who had experienced only mild provocation. Those extremely aroused subjects who were exposed to the nonaggressive film became significantly less aggressive (as evaluated by a shock
measure) than the controls. Decreases in autonomic arousal correlated with decreases in aggression, suggesting that arousal mediates aggressive responding. Zillman and Johnson explained their findings in terms of an attentional shift. The neutral film shifts attention away from the annoying event. The attentional shift permits arousal to dissipate so arousal mediated aggression can then decline. Indeed, there is support for this phenomena from other experiments (Kaplan, 1975; Konecni, 1975).

If aggression is mediated by film produced (or maintained) arousal, it is important to ask: How long do the effects last? Doob and Climie (1972) showed subjects either a violent or a neutral film clip and measured their aggression either immediately or after 20 minutes. They found that the aggressive film had an activating effect if the measures were taken immediately after viewing, but little or no effect if the measures were taken 20 minutes after viewing. Thus, arousal produced by aggressive films will quickly diminish, because arousal-mediated activation is usually a short lived phenomena.

Cline, Croft, and Courrier (1973) have given some preliminary evidence that children with extensive exposure to TV may not even be aroused by violence. In their study, Cline et al. used two groups of male children between the ages of 5 and 12. One group had a high exposure to television, having viewed an average of 42 hours weekly. The other group had low exposure, with a mean viewing of only 3.8 hours per week. All subjects were attached to a physiograph and shown five violent and five nonviolent segments from the film, “The Champion.” Results of the study suggested that boys with histories of high exposure to television are less aroused by televised violence. It should be noted that these results may be due to personality differences between the two groups rather than to exposure. For example, boys who are not aroused easily may choose to watch violent television programs more frequently than boys who are easily aroused.

The general arousal approach may be the most promising version of activation theory. It is important to note, however, that it does not attribute an activation effect specifically to violent television content. Rather, it attributes an increase in the probability of aggression to any excitatory stimulus, which can include pornographic films, humorous lectures, physical exercise, or nonviolent TV programs like basketball, rock-and-roll concerts, car races, etc.

Activation view IV: A longitudinal study of TV and aggression.
There is one final activation view which is not based upon a specific behavioral theory. This approach involves a single, but extremely important longitudinal study. A few years ago, Eron et al. (1972) studied the long-term effects of violent television programs on aggressive behavior among children. In their study, they first obtained TV viewing records of third-graders and later, when these same children had reached an average age of 19, again measured TV viewing habits and peer-rated aggression. The data were analyzed using a cross-lagged correlational method, and no correlation was found between aggressive behavior during the third grade and the amount of violence viewed at age 19. Eron et al. did, however, find a significant relationship between the amount of TV violence watched during the third grade and aggressive behavior at age 19 (a correlation coefficient of .31 which accounts for about 9% of the variance). The authors interpreted these results as indicating that violent television viewing during the early years causes aggressive behavior later in life.

Some very serious questions about the data collection and analysis in the Eron et al. study have been raised (Surgeon General's Committee, 1972; Kaplan, 1972; Kay, 1972). One problem is in the use of the peer rating instrument. The questions for the original study were phrased in the present tense, while the questions on the 10-year follow-up peer rating form were phrased in the past tense. In the follow-up, they asked about aggression at a prior time. In reference to old schoolmates, they might have asked, "Who started fights over nothing?" or "Who used to say mean things?" There are a number of reasons why this measure is inadequate for evaluating aggression. First, a person may have had little or no contact with his former classmates. It is possible that an individual was rated by peers he did not interact with frequently.

A more important problem is that the structure of the questions made it impossible to make inferences about aggressive behavior at present. Respondents were asked about their peers' previous behavior but not about their current behavior. Still another problem was the mother's report was used to determine each child's favorite program in the third grade. These reports are incompatible with self-report measures used to make the same assessments in the 10-year follow-up and there is evidence that mothers' reports about TV viewing do not correspond well with those by children (Kay, 1972). Thus the data of the Eron et al. study should be interpreted with considerable caution.

Even if the data are judged acceptable, more serious questions
have been raised about the data analysis. Armor (1976) concluded that the most plausible explanation of the data was contrary to the one reached by the authors. Armor's reanalysis of the original data suggests that it is aggressive behavior which causes viewing of aggressive TV shows (rather than the reverse); however, he states that, "The safest conclusion is simply that the study does not establish a causal link between TV violence and aggression in one direction or another" (p. 90).

The Catharsis View

The Greek word, catharsis, means "purification" or "cleansing" in English (Kaufmann, 1970), and has taken on a much more specific meaning among social scientists. Here catharsis refers to the process through which a person exhibits or observes some emotion and is thereby purged or cleansed of it. The most frequent reference to catharsis is in relation to aggressive behavior. As Berkowitz points out, it is widely believed that vicariously experiencing aggression or hostility makes an angry person less angry and thus reduces his drive to behave aggressively. However, the validity of catharsis leading to lowered hostility and aggression remains very much in question. There have been three versions of catharsis theory which are relevant to the TV and aggression issue.

Catharsis view I: Original version. One of the first experimental studies arguing for a catharsis effect was reported by Feshbach (1961). Insulted and non-insulted college students watched either a violent fight from the movie, "Body and Soul," or a neutral control film about the spread of rumors in a factory. Using paper-and-pencil scales, the subjects were then allowed to evaluate the person who had insulted (or not insulted) them. Ratings for the nonangered subjects did not significantly differ as a function of film content. For the angered group, those who had seen the fight scene showed less punitiveness in their ratings of the insulter than those viewing the neutral scene. Since both groups had been angered, these results were interpreted as showing a reduction of anger as a function of viewing the violent scenes.

An alternative interpretation of these results is that the boxing film made students feel anxious and guilty by arousing self-disapproval of their own hostile feelings. Being influenced by these guilt feelings, the students may have been less willing or able to display much hostility when marking their questionnaires. To test this possibility Berkowitz and Rawlings (1963) showed an aggressive fight film in which a boxer takes a severe beating.
Half the subjects were led to believe the boxer was a villain and that the beating he was taking was justified, thus, it was hypothesized, reducing or preventing guilt over feeling hostility. To the other subjects, the boxer was described as a nice guy and victim of unfortunate circumstances. The rest of the procedure was the same as in the Feshbach (1961) study. Subjects made more punitive ratings of their previous antagonist if they had seen the “justified” aggressive sequence. The interpretation of these data is that viewing unjustified aggression may arouse feelings of anxiety and guilt while watching justified aggression does not. Other similar experiments have supported the same conclusion (Berkowitz, 1965a; Berkowitz, Corwin, & Heironimus, 1963). However, the appeal to guilt or aggression anxiety as explanatory concepts remains an indirect inference. No attempt has been made to measure the possible presence of such feelings.

The most recent study in which a catharsis effect was observed is that of Manning and Taylor (1975). These investigators assigned 40 college males to an instigation condition requiring the solution of difficult anagrams under a constrained time limit while a confederate made harassing remarks. Another 40 men did not experience anger instigation. Half of the subjects then saw an 83-second violent fight scene from the movie, “The Chase” while the other subjects watched a soundless, 77-second film showing four track races. After viewing the films, subjects were further divided and assigned to conditions requiring different measures of hostility and aggression. A catharsis effect was observed in the groups for which a tachistoscopic violence recognition measure was employed. No differences between film conditions were found for groups using an aggression machine measure. In addition to providing limited evidence for the catharsis hypothesis, the Manning and Taylor experiment reaffirms that the results of experiments bearing on TV and aggression are quite dependent upon which outcome measure is utilized.

Catharsis view II: Fantasy version. Feshbach and Singer (1971), in an experimental field study, controlled the television viewing of nine to fifteen-year-old boys attending seven residential schools and institutions. For a period of six weeks, the ethnically heterogeneous group of 625 boys participating in the experiment were required to watch television at least two hours per day. Half watched programs with aggressive content (examples include “Branded,” “Combat,” and “Gunsmoke”), while the other half watched programs with nonaggressive content (“Amateur Hour,” “The Dick Van Dyke Show,” “American Bandstand,” etc.). All
of the programs used in the study were regularly broadcast on television. The outcome measures included ratings by trained observers during the viewing period, and for the week before and the week after viewing. Peer ratings of aggression, personality tests, and attitude scales were also used.

Feshbach and Singer found no evidence that violence on television leads to increases in aggressive behavior. Interestingly, they observed lowered aggression among highly aggressive working-class boys who had been exposed to programs with aggressive content. No reduction effect occurred in the middle-class boys who were less aggressive. The only activation effect was observed for aggressive fantasy among less intelligent, hyperactive boys. For these boys, exposure to violence led to more aggressive fantasy but less aggressive behavior. The authors interpreted their findings as suggesting that aggressive fantasy reduced aggressive drive and controlled aggressive behavior for these boys. More intelligent children are not affected by TV violence, they argued, because they are not dependent on external sources to stimulate fantasy.

In support of this theory, Thomas (1972) reported that TV violence had a cathartic effect for cognitively immature children and no effect for cognitively differentiated children with superior fantasy abilities. Feshbach and Singer (1971) concluded, however, that the chief and conservative interpretation of their overall results is that, for the population to which their results may be generalized, viewing of televised fantasy aggression does not lead to an increase in real life violence.

A common criticism of the Feshbach and Singer study is that a single program depicting fantasy violence ("Batman") was shown to some of the boys who had been assigned to watch nonviolent programs (Bandura, 1973). In order to minimize frustration among subjects, Feshbach and Singer found it necessary to allow some of the control groups to watch "Batman." Since "Batman" was considered a violent content program, the nonaggressive diet was thus minimally contaminated. The catharsis effect still was found when portions of the control group who had seen "Batman" were excluded from the analysis. It also seems unlikely that one aggressive program among 153 nonaggressive shows viewed by the controls could have had any effect.

Equivalence in activity and interest levels must also be considered. Feshbach and Singer could not match programs exactly for interest level. Somewhat greater initial interest in violent shows was reported by the boys. As the study continued, however, each
group developed a greater liking for their particular television diet. Also the activity levels in the experimental and control films were probably not equivalent. There may have been less activation created by the nonaggressive programs. However, if the aggression viewing groups were more activated, an activation rather than a catharsis or null effect should have resulted.

The major problem in interpreting the Feshbach and Singer field study concerns the fact that the aggression scores for some of the aggressive diet groups in the boys' homes were initially higher than those for the groups given the nonviolent diet. This was the sort of unfortunate chance happening described by Campbell and Boruch (1976) as "unhappy randomization." Because of this problem, the observed catharsis effect for these boys may have been due to regression toward the mean. For this reason we feel safest concluding that the Feshbach and Singer study supports a null rather than a catharsis view. Certainly the study shows no support for the theory that viewing of aggressive TV increases real life aggression.

**Catharsis view III: Empathy version.** Another version of the catharsis view emphasizes the outcomes of violent behavior. According to this view, television violence will be followed by lowered aggression when the consequences of the depicted aggression are distasteful to the viewer. The main point of departure from the original catharsis view is that the focus is on the aftermath of violence rather than merely the observation of aggressive attacks.

Hartmann (1969) provides some support for this revised catharsis hypothesis. His subjects were shown a film of a fast-moving but nonviolent basketball game. During the game, two boys began arguing. The argument quickly grew into a one-sided fistfight. For some of the male subjects, the camera focused on the attacker. The picture emphasized his facial expressions, punching fists, kicks, and assaultive verbalizations. Another version of the film focused on the loser of the fight. Subjects viewing this film ("pain cues" film) saw close-ups of the victim's face as he was hit and heard his groans and distressful cries. A control film showed the basketball game without the fight. Prior to the film, subjects were either angered or not angered by overhearing a confederate make either insulting or neutral comments about them. After the film, subjects were allowed to give electric shocks to the confederate in the context of a learning experiment. The catharsis result was only shown for nonangered boys. Relative to those nonangered subjects who had seen the control film,
those viewing the pain cues film administered fewer shocks. Hence, the pain cues film produced a lowering of aggression among nonangered subjects.

A similar experiment by Bramel, Taub, and Blum (1968) emphasized the role of empathy. Male college students heard a taped recording attributed to an experimenter who had just insulted or not insulted them. One group heard the experimenter experiencing a euphoric reaction to a drug, the second group heard a neutral reaction, the third group heard the experimenter suffering miserably. In comparison to the other two groups, those who heard the experimenter suffer were subsequently less punitive when rating the experimenter on verbal scales. Other studies have also shown that when the experimental treatment involves exposing the aggressor to the suffering of the victim of aggressive behavior, the result has typically been a reduction of aggressive behavior (Baron, 1971). However, in some cases when the subjects were strongly angered, the opposite result has been observed (Baron, 1974; Feshbach, Stiles, & Bitter, 1967; Hartmann, 1969).

The version of the catharsis hypothesis just discussed is quite different from the original catharsis view. Decreases in aggression can be attributed to a sensitization to the consequences of violence rather than to a symbolic “draining off” (Goranson, 1970). Although this form of catharsis theory is worthy of more research attention, none of the catharsis theories is capable of systematically explaining the available data on the effects of TV violence.

A few years ago, it seemed that psychologists had rejected the existence of catharsis. It is worth noting that an impressive new line of research has established the reality of a cathartic effect (Konecni, 1975; Konecni & Doob, 1972; Konecni & Ebbesen, 1976). Although not directly relevant to the TV violence issue, these experiments clearly show that giving punishing shocks when angered serves to decrease subsequent arousal-mediated aggression.

The Null or “No Effect” View

Experimental results which do not generally support either the activation theory or the catharsis theory can be classified under the null or no effect view. Supporters of the null view believe that violence on television has nonsignificant effects overall on aggressive behavior. This view does not hold that TV never instigates or lowers aggression, but that the overall effects tend to be nonsignificant. Data favoring the null view fall into two categories. First, there are experiments which did not find an
effect of exposure to television violence on aggression. And second, there are studies which support the null view as well as another view. The latter category is the most applicable to research which employs the use of subject frustration or insult.

Null theory I: "No effect" version. "No effect" outcomes are often overlooked by reviewers. For example, one of the criteria for inclusion of a study in Strauss and Poulos's (1972) annotated bibliography on effects of film aggression was that a statistically significant result must have been obtained. However, there are several laboratory and field experiments which tend to support the "no effect" position. As Greenwald (1975) acknowledges, journals are biased against publishing articles which fail to reject the null hypothesis at the 5% alpha level. As a result, studies which fail to reject the null hypothesis tend to be published in obscure journals or, we suspect, not at all. Nevertheless, we were able to find well-controlled laboratory studies of high quality which have not found a significant association between TV violence and aggression.

In an experiment by Carlisle and Howell (1974), angered and nonangered college students were exposed either to violent scenes from "The Champion" or exciting but nonviolent scenes from "Grand Prix." The design was similar in many ways to the experiments in the Berkowitz research program—the aggressive film was the same, the subjects were told that the aggression was justified, and the same dependent measures were employed (shock and a Mood Adjective Check List). The results revealed that the violent film was no more likely than a nonviolent film to disinhibit aggression among either angry or nonangry subjects.

Most experiments which have not shown an effect of television violence have employed dependent variables other than imitation and shock administration. Although Steuer, Applefield, and Smith (1971) were able to show an activation effect of violent TV upon naturalistic measures of aggression, they used a very small $N$ and the results were only marginally significant ($p < .10$, using a 2-tailed distribution). A close inspection of this study reveals that aggression substantially increased for only two experimental subjects and increased marginally for a third. In contrast, two methodologically sound experiments have failed to demonstrate effects of violent cartoons upon interpersonal aggression among young children in a naturalistic environment (Siegel, 1956; Happekiewicz & Roden, 1971). In another study, no differences in the aggressive content of dreams were shown between adolescent boys who had been exposed to violent or nonviolent
television programs (Foulkes et al., 1972).

Experiments which employed a sophisticated response hierarchy measure of aggression have occasionally supported the "no effect" position (Leifer & Roberts, 1972). For example, Nolan (Note 1) replicated the 1963 Berkowitz and Rawlings experiment using fourth, seventh, and tenth-grade parochial school students as subjects and substituting the response hierarchy as an outcome measure. Viewing justified aggression was not found to influence this measure of aggression.

Another series of experiments which support the null position used an actual act of aggression as an outcome measure (Josephson, Hunsberger, Fullerton, & Altemeyer, Note 2). Aggression in these experiments involved throwing objects at a human target. In these studies, the experimenters were unusually careful to avoid methodological problems common to TV and aggression research: The experiment used real television material, controlled for excitement levels in the films, and sampled children from different age groups, social classes, and sex. A series of three experiments in this program failed to reveal any evidence of a disinhibitory effect of TV violence.

Other support for the null view actually comes from experiments frequently cited as favoring the activation hypothesis. For instance, Lovaas (1961) exposed nursery school children either to a violent or a nonviolent cartoon and then observed their response rate in operating aggressive dolls. Two experiments failed to reveal a significant difference between cartoon viewing groups.

In a third attempt, the children were given the option of operating the machine with the aggressive dolls or another machine without dolls. It was shown that those who were exposed to the aggressive film spent more time operating the aggressive dolls than those who had seen the nonaggressive cartoons; however, the reported significance level for this difference was marginal and did not meet the conventional .05 standard. In sum, only one of the three experiments reported by Lovaas showed some indication of an activation effect.

The experimental-field method has yielded data supporting the null view with a fair degree of consistency (Armor, 1976). The Feshbach and Singer (1971) experiment, extensively discussed above, contributes to the null view. A replication of the study has been completed by a group of independent investigators (Wells, Note 3). These investigators similarly found that prep school students were unaffected by a six-week aggressive television diet relative to students experiencing a nonaggressive diet.

Friedrich and Stein (1973) have also completed an experi-
mental study in a naturalistic setting. While a group of 97 preschool boys and girls attended a summer nursery school, they watched 12 twenty-minute episodes of either aggressive cartoons, neutral programs, or prosocial programs. Several measures of aggression were taken, the most important of which was called "interpersonal aggression." This measure consisted of a combination of physical and verbal aggressive responses and was based upon observations made before, during, and after exposure to TV programs. Although Friedrich and Stein's work has been reviewed by some (Liebert et al., 1973; Murray, 1973) as evidence for an activation theory, a close examination of their data suggests that the study is more appropriately classified under the null heading. As Friedrich and Stein point out, considering all of the children in the experiment, the effects of the three TV treatments were nonsignificant. After failing to observe an effect of TV for the whole sample, the authors divided their sample into groups who initially scored high and those who initially scored low on aggression. There was no effect of TV upon those children who had initially scored high on interpersonal aggression. Following exposure to the television conditions, there was a tendency for all of the groups to regress toward the mean (a regression probably rooted in the imperfection of the measure). Thus, aggression increased for those who initially were rated as low and aggression decreased for those who were initially observed as being high in aggression. For the subjects who had originally scored high in aggression, there was a significantly slighter decrease in aggression if they had been exposed to violent programs than if they had seen neutral or prosocial programs. It is on the basis of this slighter decrease for initially aggressive children, that the authors claimed an activation effect. When Armor (1976) reanalyzed the Friedrich and Stein data, he found that the prosocial group (rather than the aggressive group) exhibited the greatest post-treatment rise in aggression. Armor concluded that these data provide little evidence for an activating effect of violent television content.

In another field experiment, preschool children were assigned to watch either violent ("Batman") or nonviolent ("Gilligan's Island") programs daily over a four-week period. Observations of aggression against persons or objects on the school playground failed to reveal a difference between treatment conditions (Sawin, 1974).

Milgram and Shortland (1973) recently reported a series of eight field experiments, each of which supports the null view. These studies focus on antisocial behavior and not aggression
per se. Each was built around an episode in the TV series, "Medical Center," in which a young man models antisocial behavior by smashing charity boxes and stealing money from them. In some of the episodes the boy was caught and punished, while in others he was not. In addition, there were prosocial versions in which the boy was overcome by moral inspiration which caused him to contribute to (rather than steal from) the charity. Over this series of experiments it was shown that adults who had seen a model engage in antisocial behavior (regardless of outcome) were no more likely to damage or steal from a charity than a comparable group who had witnessed a neutral version of "Medical Center."

Later experiments in the Milgram and Shortland series (1973) involved actual broadcasts of experimental versions of "Medical Center" in large American cities. Subjects were told they would be given a free gift for watching the program and completing a questionnaire. After finding no gift at a redemption center, those who had seen the "Medical Center" program with antisocial modeling were no more likely to damage or pilfer from the charity than a control group who had come to the redemption center after watching a neutral version aired the previous week. Other experiments in the Milgram-Shortland series also failed to demonstrate modeling effects for other antisocial behaviors, such as abusive phone calls.

While the Milgram and Shortland studies have methodological limitations—including poor subject turnouts and obvious demand characteristics—they do have the advantage of being conducted in naturalistic environments, with representative materials and subject populations.

Null theory II: Conditions within experiments supporting other theories. Although null effects are infrequently published, they can often be found within a report about another experimental effect. This is most common for studies which use frustration and anger arousal. A common practice in aggression experiments has been to increase arousal by angering or frustrating subjects. This has sometimes been done to test some aspect of the catharsis hypothesis. Several of the studies which concern us here have experimentally aroused half the subjects to anger. In experiments involving the typical Berkowitz procedure, results have usually shown some experimental effect when subjects are angered and no effect when subjects are not angered (Berkowitz et al., 1963; Feshbach, 1961). Similarly, imitation studies have demonstrated that children do not imitate aggression unless they experience frustration after their exposure to the model (Hanratty et al.,
Berkowitz (1962) early pointed out that merely presenting a violent scene could actually inhibit subsequent aggression in the absence of the angering condition.

There are a few published experiments which report an activation effect for nonangered subjects (Walters, Llewellyn-Thomas, & Acker, 1962; Worchel, Hardy, & Hurley, 1976). However, the best known of these (Walters et al., 1962) could not be replicated in a recent study (Leifer & Roberts, 1972). Thus we feel safe in concluding that experimental conditions in which frustration/anger is absent yield data more compatible with a null view. Two important questions concerning anger instigation which remain unanswered are: (a) to what extent do people watch violence on TV when they are angry, and (b) does violent TV activate aggression among angry viewers or simply retard the rate at which arousal would otherwise decline? Future research could be directed toward clarifying these questions.

Other null effects can be found in studies on viewing the effects of real versus fantasy violence. Until the publication of Feshbach's (1972) work on this topic, nearly all research considered only the effects of fantasy portrayals. Research comparing the effects of fantasy and real aggression has now become more frequent (Berkowitz & Alioto, 1973; Geen, 1975; Thomas & Tell, 1974; Meyer, 1972; Worchel et al., 1976). Experiments in this new area typically compare the effects of fantasy and real violence to the effects of a nonviolent film. These studies often show that real life violence instigates aggression among angry subjects but has no effect for nonangered subjects, and that fantasy violence is no more likely to incite aggression than a neutral film for either angered or nonangered views (Berkowitz & Alioto, 1973; Thomas & Tell, 1974; Geen, 1975).

It could be argued that the null view becomes a catchall for poorly designed studies which are sloppily conducted or have insufficient sample sizes. The studies cited in this section, however, seemed not to have these problems. Obviously, statistical inference does not allow scientists to "prove" the null hypothesis. Nevertheless, we should consider the possibility that fantasy violence has a negligible or no effect upon aggression. If good studies repeatedly fail to find an effect, it is quite plausible that there may be none.

**DISCUSSION**

*Strong Inferences from Weak Effects*

Often reviews have drawn strong inferences from studies they believe to show an activation effect. On the basis of these
studies, some people have condemned the broadcasters and have suggested remedial action (Bandura, 1973; Liebert, et al., 1973; Rothenberg, 1975; Sommers, 1976). Some of the studies cited by these reviewers, however, show only minimal effects and some studies showing no effects have been ignored. Our review of the literature strongly suggests that the activating effects of television fantasy violence are marginal at most. The scientific data do not consistently link violent television, fantasy programming to violent behavior. Any change in social policy concerning the showing of TV fantasy violence is hard to justify on the basis of the current available data. New studies may change this picture and of course there are other grounds on which people can argue for programming changes.

Our review cannot respond to all concerns about the effects of televised violence. In particular some people believe that violence on TV may contribute to violent behavior among certain pathological viewers. When a San Diego youth murdered members of his family, the district attorney attributed the incident to the boy's viewing of a similar crime on a TV program about Lizzie Borden. The similarities between the slasher slayings in Los Angeles and a telecast on NBC's "Police Story" have also been regarded by some as being suspicious. Similarly, some people have attributed the gasoline dousing and burning of a derelict in Boston, the rape of two pre-teens with a broom handle, the death of a youngster attempting a mock hanging, and a child's lacing the family dinner with ground glass to TV programs depicting somewhat similar behaviors. Unfortunately, the literature and current methodologies do not permit us to evaluate such possibilities. However, a recent collection of studies (Heller & Polsky, Note 4) questions whether violent programs have disinhibitory effects upon pathological individuals. This report includes 12 investigations of the effects of violent TV upon highly assaultive and hostile youths. The studies included clinical, longitudinal, and experimental investigations. Results provide no evidence that TV contributes to the amount or frequency of violence committed by pathologically assaultive youths. The authors, however, suggest that TV may provide such aggressive viewers with novel aggressive responses. Certainly more research in this area is required.

Using Brunswik's concept of probabilistic functionalism, we have questioned the external validity of many well-known studies on TV and aggression. There is no argument that laboratory studies have in some cases shown that TV can be a possible cause
of human aggression. However, this research has failed to demonstrate that TV appreciably affects aggression in our daily lives. At present it is not entirely clear whether the effect of television becomes less detectable in natural settings or if the laboratory is not a good prototype in this research area. Unfortunately, too few field experiments have been performed and any firm conclusions must await further data. Future research should seek to determine the probability that TV violence significantly influences aggression in natural settings.

The probabilistic view would consider all of the possible influences upon aggression and then determine the contribution of each. A recent paper by Hartnagel, Teevan, and McIntyre (1975) took a first step in this direction. Using questionnaire data obtained from a representative sample of Maryland adolescents, they created a multivariate predictive model of aggressive behavior. Their analysis suggests that television violence has very poor predictive value in comparison to other variables, such as sex and grades in school. In fact, according to Hartnagel et al., TV violence variables “simply do not have sufficient explanatory power, either singly or in combination with other variables, to reduce the amount of unexplained variation in violent behavior” (p. 346).

The Current Evidence

This paper should not be interpreted as stating that TV fantasy violence can not cause aggression; rather we have argued that no such link has been demonstrated to date. Further, we have questioned the applicability of laboratory experimentation for this policy-related issue. By nature, scientific inquiry is conservative. We are not contending that the null hypothesis is true, but that the no-effect view is currently the most plausible one given.

One provocative opinion is that focusing on television violence circumvents exploration of the major causes of violence in society. In the “real world,” the effects of television violence on aggressive behavior may be minor. To uncover the major causes of violence, researchers should turn their attention to economic, developmental, social, and cultural factors—as well as to further TV studies. The television networks may have become an easy scapegoat, accepting undue blame for the violence in our world.

It is fascinating that so many hours of research and so many funding dollars have been directed at the possible effects of TV violence on aggressive behavior when it seems most likely that
television is not a major cause of human aggression, an activity which considerably antedates audio-visual media. It is unlikely that war, murder, suicide, the battered child syndrome, other violent crimes, and man's inhumanity to man stem to any marked degree from television viewing. Many social scientists may have become victims of the "bearer of bad news" syndrome. Like the Persian emperor beheading messengers who brought bad news, we berate television, which, it is true, shows us ad nauseam and out of all proportion the aggression which man commits against man.

Instead of castigating the networks it might be more useful to ask why the public is so fascinated by programs portraying violence. We would like to suggest investigations into the connection between violence and unemployment, racial prejudice, poor housing and lack of medical care, the prevalence of guns and the ease of obtaining alcohol, the high mobility of the population, the prevalence of broken families, the role of age, the still partly subservient role of women, the lack of public school courses in childrearing, and a possibly declining faith in the just nature of our political and judicial system. In investigating such possible relationships, as in further TV studies, wisdom dictates that we undertake careful field studies based on representative design and powerful correlational analyses, rather than concentrating our energies on laboratory studies with marginal, if any, external validity.

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