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Television Violence and Aggression: The Debate Continues

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Many social scientists believe there is a causal relation between viewing television violence and aggression. That majority consensus has recently been challenged on the grounds that the data are inconsistent, that different methods of study may be subject to systematic biases, and that the findings have limited generalizability to real-world violence. In this review we reply to these challenges. We conclude that the data support a bidirectional causal relation between viewing television violence and aggression, that the potential threats to the internal and external validity of studies using different methods are not likely to produce a positive bias, and that the findings can be generalized. The available research is placed in a theoretical context encompassing multiple psychological processes and developmental change, and social policy implications are discussed.

Since the advent of movies and particularly television, there has been social concern about the potential effects of media violence on the attitudes, values, and aggressive behavior of young viewers. A large body of psychological research on these questions was summarized and evaluated in the 1972 Surgeon General's Report (Surgeon General's Scientific Advisory Committee on Television and Social Behavior, 1972) and the 1982 report from the National Institute of Mental Health (Pearl, Bouthilet, & Lazar, 1982). Their conclusion that television violence has a causal effect on aggressive behavior for children and adolescents was recently reaffirmed by the American Psychological Association (1985).

The majority consensus of the social science community, reflected in these reports, has recently been challenged. Freedman (1984) concluded that the available empirical evidence does not support a causal relation between television violence and aggression and does not justify efforts to influence public policy. He argued that laboratory research is irrelevant to the issue because it lacks external validity, and that field experiments and longitudinal studies have produced weak and inconsistent results.

Cook, Kendziersky, and Thomas (1983) concluded that there *is a small but reliable effect of television violence on aggression,* but raised conceptual and methodological questions about the interpretations in the National Institute of Mental Health report. They argued that convergence of findings from different methods (e.g., laboratory experiments and field studies) could be due to common biases across methods, and they questioned whether the aggression measured in most studies can be generalized to socially important forms of violence such as delinquent and criminal behavior.

In this review we defend the majority consensus and reply to some of the issues raised by Freedman (1984) and by Cook et al. (1983). The internal and external validity of the available studies is discussed. Particular attention is given to potential sources of bias inherent in the stimuli, settings, and measures used, and to the generalizability of the findings to situations of social concern. Finally, both theoretical and social policy implications are discussed.

Experimental Studies in Laboratory and Field Settings

Laboratory Experiments

Most reviewers agree that laboratory experiments are consistent in showing that viewing violent television leads to aggressive behavior for both children and adolescents (Andison, 1977; Freedman, 1984; Stein & Friedrich, 1975). Laboratory experiments generally have high internal validity because random assignment of subjects to treatments and manipulation of the independent variable permit causal inference and ensure that the differences between groups are not a function of other unmeasured variables.

Stimuli

Freedman (1984) raised three major questions about the external validity of laboratory studies. One challenge concerned the degree to which the stimuli used represent real-world television. In the early studies of young children, films were experimentally constructed (Bandura & Walters, 1963); however, in many studies of children and adults, real television programs or films were shown (Berkowitz, 1984; Collins & Getz, 1976; Stein & Friedrich, 1975). In almost all of these investigations, nonviolent control programs were included in an effort to isolate the violent content of the experimental treatments as the important variable.

The stimuli used in laboratory experiments were not atypically violent or unlike normal programming. Content analyses

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since 1968 have demonstrated that there are 5 or 6 incidents of violence per hour in prime time television and from 15 to 25 incidents per hour in cartoons (Signorielli, Gross, & Morgan, 1982). Indeed, ethical considerations often led experimenters to use programs that did not reflect maximum levels of violence available in real-world television.

Setting. A second criticism of laboratory studies is that their artificial settings focus attention on the television content and lead to experimenter demand for imitation. Although such demand may occur, there is no evidence that it accounts for the effects of aggressive television. On the contrary, for children, aggressive television is more likely to produce aggressive behavior when the experimenter leaves the child alone than when the adult remains during the test of aggression (Stein & Friedrich, 1975). Similarly, in studies of adolescents and adults, the evidence contradicts the hypothesis that experimenter demand accounts for aggressive imitation (Berkowitz & Donnerstein, 1982).

Measures of aggression. The third major criticism of laboratory studies concerns the external validity of measures of aggression. Some studies of children have measured "playful" punching of Bobo dolls or other aggressive toy play, but interpersonal aggression in play groups or in classrooms was observed in other studies (Ellis & Sekyra, 1972; Ross, 1972; Steuer, Applefield, & Smith, 1971). Analog measures, such as administering shock or pressing buttons to interfere with another's activity, constitute another index of aggression (Collins & Getz, 1976; Liebert & Baron, 1972). The validity of analog measures is supported by the finding that children's responses on a "hurt" machine were correlated with naturally occurring interpersonal aggression (Johnston, DeLuca, Murtaugh, & Diener, 1977). Finally, children's selections of aggressive, avoidant, or prosocial solutions to interpersonal conflict formed an index in investigations across a wide age range (Collins, 1973; Leifer & Roberts, 1972). The preponderance of results for all these measures was positive (Stein & Friedrich, 1975).

Summary. Laboratory studies make an important contribution because of their high internal validity. Challenges to external validity suggesting that the television programs and behaviors measured are unrepresentative of the "real world" or that the results are due to experimenter demand do not receive strong support from a careful examination of the literature. The potential biases in the laboratory method are both positive and negative. The effects of television violence could be magnified because the impact of other variables is minimized, but they might also be underestimated because the stimuli used are brief and often less violent than the television typically available at home.

Field Experiments

The field experiment appears at first glance to be the method of choice for evaluating causal hypotheses in real-world settings. It has the advantages of random assignment of people to viewing conditions and experimental manipulation of the stimuli. External validity is enhanced by the use of natural settings, relatively long time periods, and measurement of everyday behavior.

Field experiments have been conducted with preschool children in nursery school settings, with young adolescent boys in residential settings, and with male adolescent delinquents who were incarcerated. The results have been mixed, but we assess them differently than Freedman (1984) did in several respects. Some aspects of these studies were not presented by Freedman; therefore, they are summarized briefly here.

In one field experiment (Friedrich & Stein, 1973), children in a nursery school were assigned to view violent cartoons, neutral films, or prosocial television for 12 days across 4 weeks. Aggressive behavior was recorded during free play. The main effect of the television program was not significant, but as predicted, there was a significant Baseline Level × Treatment interaction. For high-initial-aggression children, the change scores for the violent television group were significantly different from the neutral group (Friedrich & Stein, 1973, p. 38); the violent television group remained high, whereas the neutral group decreased considerably. Because the mean baseline scores for the two groups were similar, regression to the mean should have been equally likely for both groups. Children who watched violent television also declined in self-control—that is, tolerance for minor delays, spontaneous obedience of school rules, and task persistence.

Freedman (1984) devoted considerable attention to an early field study of adolescent boys in residential settings who were assigned to watch violent or nonviolent television diets for several weeks (Feshbach & Singer, 1971). In three schools, boys watching nonviolent programs were significantly more aggressive than those watching violent programs, but the study's many methodological problems raised serious questions about its internal validity (Liebert, Sobol, & Davidson, 1972). Wells (1973) replicated Feshbach & Singer's basic design with much improved methods, including baseline data and objective behavior ratings. Boys who viewed a violent diet were slightly, but not significantly, higher in physical aggression than those who viewed nonviolent television. The difference was significant for boys who were above average in initial aggression and for boys who liked their television diets.

In a series of experiments in Belgium and the United States that was heavily criticized by Freedman (1984), violent and nonviolent movies were shown to groups of institutionalized delinquent and neglected boys for 1 week (Leyens, Parke, Camino, & Berkowitz, 1975; Parke, Berkowitz, Leyens, West, & Sebastian, 1977). In the Belgian study, physical aggression increased significantly after viewing in both cottages assigned to violent films, but did not increase in the neutral film cottages. Total aggression, including both physical and verbal aggression, increased primarily in the violent film cottage that was initially more aggressive. In two U.S. studies total aggression was significantly higher in two cottages viewing television violence for 5 days than in cottages viewing neutral films.

The external validity of field experiments is enhanced by the use of real television programs over a period from one to several weeks, placement in real-life settings, and measurement of naturally occurring aggression. Nevertheless, there are serious methodological problems in some cases.

Stimuli. In existing field experiments, the violent stimuli were typical of materials viewed frequently by the age group studied. In several instances, however, there were major problems in finding control stimuli that were as attractive as the vio-

lent programs (Feshbach & Singer, 1971; Parke et al., 1977, first study; Wells, 1973). Only two studies included nonviolent programs that elicited as much attention (Friedrich & Stein, 1973) or were rated as attractive (Parke et al., 1977, final study) as the violent programs. The frustration resulting from being required to watch disliked programs could have generated aggression that counteracted the effects of viewing violence in the field experiments that failed to find an effect of violent television. When program attractiveness was controlled by comparing boys in both treatments who liked their assigned television diets, the violent diet group had significantly higher levels of physical aggression than the nonviolent diet group (Wells, 1973).

Settings. Although field experiments occur in real-life settings, the locations do not represent the most common viewing environment—the home. Adolescents in residential institutions may not represent the larger population well. One field experiment conducted on adults at home is fraught with threats to its internal validity (Loye, Gorney, & Steele, 1977).

Potential invalidity is also introduced by the reactions of subjects and staff to the disruption of their routines and to the imposition of restrictions on their freedom of choice in television viewing. These problems were probably minimized in the preschool setting by the brevity of the sessions and the fact that television viewing sessions fit an accustomed pattern of leaving the classroom for special activities (Friedrich & Stein, 1973). Similarly, the manipulation by Parke et al. (1977) was probably relatively unintrusive because it lasted only 1 week and replaced undesirable activities. In the other investigations (Feshbach & Singer, 1971; Wells, 1973), the experiment required a substantial amount of time, and students were sometimes required to give up desired activities.

Measures of aggression. The aggressive behaviors coded represent theoretically central characteristics of children and adolescents, including physical attacks on other people (hitting, banging, pushing, kicking, squeezing, choking, holding down, and throwing objects), threats and verbal abuse, and destruction of property. These serious forms of interpersonal and object aggression are conceptually distinct from playful and fantasy aggression, and the two types of aggression are not correlated in the behavior of young children (Friedrich & Stein, 1973).

External validity is achieved, however, with some loss of internal validity. Freedman (1984) criticized Parke et al.'s studies because whole cottages received the same treatment and were observed interacting with one another, but were treated as independent cases in statistical analyses. Interdependence of subjects' behavior could reduce error variance in all existing field studies.[1] However, the likely bias depends on whether whole groups experienced the same treatment (Parke et al., 1977) or were assigned to different treatments (Feshbach & Singer, 1971; Friedrich & Stein, 1973; Wells, 1973). In the former case, the mean difference might be inflated; in the latter it might be reduced, causing a negative bias.

On a more substantive level, external validity is enhanced by administering the same television treatment to whole groups because real-world media effects occur in ongoing family and peer groups that share viewing patterns and whose aggression is interdependent. Whole families have similar levels of aggression (Patterson, 1976), as do adolescent male friendship groups (Cairns & Cairns, in press). If violent television has direct effects on a few members of such groups, it may well reverberate throughout the family or peer group system.

Freedman's discussion of field experiments implies that the results are spotty and inconsistent because significant findings occurred for only a few of the dependent variables measured. The variables on which significant effects occurred were most often composites of subcategories, not a chance selection from multiple measures. For example, significant findings in the Parke et al. (1977) studies occurred for general aggression, a composite of all categories, or on physical aggression, a composite of four. Significant effects in Friedrich and Stein's (1973) study occurred for interpersonal aggression, a composite of several subcategories representing the most theoretically central form of aggression. In fact, the failure to find effects on playful, fantasy aggression is of substantive interest.

Summary. The best designed field experiments form a moderately consistent pattern suggesting an effect of television violence on aggression and self-control, particularly for subjects with relatively high baseline levels of aggression. Negative results occur most often in studies with serious threats to internal validity created by unappealing, nonviolent control treatments and disruption of ongoing social settings that may increase subjects' reactivity to the manipulation.

The overall bias of field experiments appears to be in the direction of underestimating the effects of television violence. The experimental manipulation is weak because the programs shown are a tiny fraction of the television that the subjects have watched in their lives or even during the experiment in some cases, but the television treatment must be sufficiently robust to produce effects on aggression in methodologically noisy natural contexts in which many extraneous variables contribute to the variance and the usual laboratory controls are not operating.

The rate of aggression in natural settings is probably underestimated by observations collected by adults in settings in which teachers or counselors are present because aggression is negatively sanctioned in schools and institutions. The inhibiting effects of adults should affect both experimental and control groups equally, but the reduction in level may militate against finding differences between treatments.

Correlational Studies

A large number of correlational studies involving thousands of subjects across widely differing levels of age, socioeconomic status, and ethnic background have yielded consistently modest, but positive correlations (ranging from .10 to .35) between viewing naturally occurring violence and aggression (Freedman, 1984; Stein & Friedrich, 1975). Interpretation of these correlations hinges on two questions: causal direction and possible contributions of third variables to the association between viewing and aggression.

Longitudinal Studies

Longitudinal studies provide the opportunity to assess temporal relations among variables and to test causal hypotheses.

[1] The only way to achieve statistical independence would be to observe only one person in each group setting, a procedure that is unrealistic in field studies.

The available studies support the hypothesis that the relations between viewing violence and aggression persist over time (Eron, Huesmann, Lefkowitz, & Walder, 1972; Huesmann, 1982; Huesmann, Lagerspetz, & Eron, 1984; Milavsky, Stipp, Kessler, & Rubens, 1982; Singer & Singer, 1981; Singer, Singer, & Rapaczynski, 1984). All show positive correlations between viewing at one time and aggression at another.

Cumulative and enduring effects. Freedman (1984) proposed that if television violence has a causal effect, it should be cumulative and the correlations should increase with age. By that line of reasoning, correlations also ought to increase with age if aggressive personality attributes caused violent viewing. Hence, the fact that correlations do not increase consistently with age has little bearing on the issue of causal direction.

Causal analyses. The longitudinal method is emphasized by Freedman (1984) and Cook et al. (1983) as an excellent tool for testing causal relations. The basic logic of causal analyses of longitudinal data is to determine whether a variable (e.g., television viewing) measured at one point predicts the other variable (e.g., aggression) measured at a later point. If naturally occurring *variations* in one variable predict later *variations* in the other variable, then the hypothesis that *A* causes *B* is supported. Such analyses may reflect delayed effects of television viewing or critical periods during which television has particular effects, as Freedman (1984) suggests, but they can be interpreted more parsimoniously as assessments of temporal relations.

Longitudinal findings support a bidirectional model of causality—television violence influences aggression, and aggressive predispositions influence the preference for television violence. In the first longitudinal investigation (Eron et al., 1972), cross-lag correlations demonstrated, for male subjects only, that violence viewing at age 8 predicted aggression at 18, but that aggression at age 8 did not predict violence viewing at 18. However, any causal conclusion was weakened by statistical artifacts in the cross-lag procedure (Cook et al., 1983). Nevertheless, of a large number of parent, family, and socioeconomic variables measured at age 8, television was the single best predictor of aggression in 18-year-olds (Eron et al., 1972).

Singer and Singer (1981) presented correlations between preschool children's viewing assessed by parental diary records and observed aggression in preschoolers for four waves of data collected in 1 year. Children's viewing of "action" programs was positively related to later aggression for both sexes in all six pairs of wave comparisons. The reverse comparison, predicting later waves of viewing from earlier aggression, also yielded consistently positive correlations. In elementary school, viewing of "realistic action TV" predicted later aggression and children's belief in a "scary world" (Singer et al., 1984).

A more sophisticated analysis performed by Huesmann et al. (1984) consisted of regressions designed to determine whether earlier viewing predicted later aggression after initial levels of aggression and age were controlled. Their data consisted of three annual waves of data collected in the United States and Finland for children who were in the first or third grade at the initial wave. The reverse causal direction was tested by regressions predicting later violence viewing from earlier aggression, controlling for grade level and initial viewing.

The findings supported a bidirectional model: Early violence viewing predicted later aggression, and initial aggression predicted later violence viewing. The coefficients were consistently positive for both genders in both countries; some reached statistical significance, others did not. Among boys, violence viewing predicted later aggression primarily for those who identified with television characters.

Milavsky et al. (1982) performed regressions for elementary school children assessed six times during 3 years and adolescent boys assessed five times during 3 years in a panel design. Violence viewing in the earlier wave was tested as a predictor of aggression in the later wave, controlling for earlier aggression. They estimated LISREL models as well. In general, the coefficients were positive; some were significant, but many were not. The authors concluded that television viewing made a negligible contribution to the variance accounted for.

Although Freedman (1984) accepted their negative conclusion, Cook et al. (1983) noted that the contribution of viewing television violence was positive in most analyses, and that the coefficients were larger the longer the time lag between the measures of viewing and aggression. They criticized the analysis for using low-power statistical procedures and failing to probe models that might demonstrate the cumulative impact of television or interactions with subject variables such as gender and socioeconomic status (Cook et al., 1983).

Two other problems are equally serious. The causal analysis was limited because they did not test the reverse hypothesis that earlier aggression predicted later violence viewing. Second, naturally occurring aggression scores are typically highly skewed, but no correction for skewing was reported. Unlike analysis of variance, causal modeling analyses are readily affected by nonnormal distributions, making any model difficult to replicate.

Summary. Longitudinal investigations support a small, but consistent effect of viewing violence on aggression. Early viewing was positively related to later aggression in all studies, even when earlier aggression was partialed out. Some relations were statistically significant and some were not, but there were virtually no instances of negative relations between viewing and aggression. If the real relation were zero, one would expect an approximately equal number of positive and negative correlations.

Causal analyses of longitudinal data could be biased toward underestimation of the association of variables because the initial correlation between viewing and aggression is partialed out. As a result, the factors that contributed to the association, including earlier television viewing, are excluded. What these analyses evaluate is whether variations in viewing at one time contribute to *changes* in aggressive behavior at a later time.

Third Variables

A second major question about correlational studies is the possibility of selection bias or the contribution of third variables to the association of viewing and aggression. Cook et al. (1983) suggested that relevant background variables have not been adequately controlled in cross-sectional surveys. However, inspection of the data shows careful attention to a wide range of theoretically relevant background and personality variables.

Several early studies of elementary and adolescent children examined social class, IQ, school achievement, age, parental ag-

gression, parental warmth, restrictiveness, punitiveness, aspirations for the child, parental viewing of violence, control of television viewing, and styles of family communication (Chaffee & McLeod, 1972; Lefkowitz, Eron, Walder, & Huesmann, 1972; McIntyre & Teevan, 1972). Similarly, measures of perceived realism of television, aggressive fantasy, sex role identification, aggressive predispositions, parental viewing, parental aggression, social class, and the child's achievement level were entered in regressions by Huesmann et al. (1984). None of these variables accounted for the relation between viewing and aggression.

Belson (1978) conducted a still more extensive test of potential selection variables. A stratified sample of 1,565 boys aged 12–17 living in London participated in two extensive interviews in which data about television viewing history, aggressive behavior, and numerous other variables were obtained. Measures of viewing and aggression were derived. In addition, a pool of 227 possible predictors of violence viewing and aggression was assembled. They included age, demographic information, neighborhood qualities, locality and home conditions, physical strength, physical maturation, attitudes, type of school, school performance and attitudes, child rearing practices, reports of childhood behavior and temperament, and nonaggressive delinquent behaviors (e.g., minor theft).

High and low viewers of violence were statistically equated for a subset of variables selected from the pool to maximize their correlation with aggression and with viewing violence.[2] This procedure partialed out the contribution of a large number of possible third variables that might account for the relation between viewing and aggression. The aggression scores of the high- and low-violence viewers remained significantly different on all indices of aggression.

Although it is logically impossible to ensure that all possible variables contributing to selection bias have been accounted for, the extensive analyses by Huesmann et al. (1984) and Belson (1978) provide strong evidence for the conclusion that the relation of viewing violence to aggression is not accounted for by associated background and personality variables.

Potential Sources of Bias

Correlational studies have high external validity because they are nonintrusive assessments of naturally occurring viewing and behavior. Internal validity is more difficult to evaluate. Viewing is usually assessed by self-reports of unknown validity. There appears to be no strong reason to assume that such reports overestimate or underestimate violence viewing systematically.

Freedman (1984) argued that measures of viewing violence could represent television viewing in general. For example, in Belson's (1978) study, serious acts of aggression were correlated with total television viewed and the amount of nonviolent television viewed as well as with violent television viewing. However, violence viewing was highly correlated with total viewing ($r = .87$) and with nonviolent program viewing ($r = .72$). When the amount of violent television viewed was controlled, there was no relation of total viewing to aggressive behavior.

Measures of aggression. The measures of aggression include self-reports in interviews, questionnaires, peer nominations, parent reports, and observations. Extensive evidence exists for the validity of peer nominations (Huesmann, Eron, Lefkowitz, & Walder, 1984). Self-reports from interviews, such as those conducted by Belson (1978), also have good evidence for validity, but self-reports on questionnaires are subject to more threats to validity (Elliot & Ageton, 1980; Olweus, 1979).

The measures in correlational studies appear better suited to assess long-term learned patterns of behavior, attitudes, and values than to measuring change over time. Peer nominations, for example, are based on children's long-term experience with each other and on reputations that may not alter easily even if behavior changes. In a quantitative review of the outcomes of psychotherapy with children, peer ratings of behavior changed considerably less than indices based on direct observation, therapist and parent ratings, or subject performance (Casey & Berman, 1985). Self-reports include behaviors exhibited over several months or even years. Most of the measures in correlational studies, including longitudinal studies designed to measure change, appear to assess trait rather than state and may not be sensitive to changes in behavior over relatively short periods.

Conclusion

Convergence

The weight of the evidence from different methods of investigation supports the hypothesis that television violence affects aggression. Virtually all reviewers agree that laboratory studies of children and adults demonstrate positive findings and that field surveys produce modest but consistently positive correlations. Our review of the field experiments and longitudinal causal analyses disputes Freedman's negative conclusions. The field experiments produced mixed results, but on balance, they are positive. The longitudinal causal analyses indicate small but consistent relations of television viewing to later aggression.

The convergence argument is valid only if shared biases are not operating in the same direction across laboratory experiments, field experiments, and correlational studies. Our review suggests that both positive and negative potential biases exist within as well as between methods. Laboratory experiments have high internal validity. The assertions that they are positively biased by the selection of unusually violent materials, experimenter demand, and artificial or unusual measures of aggression are not supported by a careful examination of the literature. One can make an equally good case that they are negatively biased by selection of benign and brief stimuli, experimenter-produced inhibition of aggression, and measures that fail to sample existing aggressive tendencies.

In field experiments, the bias appears more likely to be negative than positive because the treatment is relatively weak in comparison to naturally occurring television viewing, but must influence naturally occurring behavior. There is considerable danger of negative reactions to control treatments and to the intrusion of an experimental manipulation into an ongoing social setting, and aggression may be underestimated by adult observation.

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[2] The analysis procedure was the stable correlates technique, a statistical procedure that is analogous to multiple regression with fewer assumptions (Belson, 1978).

In correlational studies, selection bias is the major potential threat to validity. Several careful efforts have been made to test the contribution of a wide range of demographic, intellectual, personality, and social attributes to the correlation of violence viewing with aggression. In all cases, the correlation remains robust. It is reasonable to conclude that selection bias does not explain the correlation between natural viewing of violence and aggressive behavior.

Finally, longitudinal causal analyses may also underestimate effects because the methods and measures of aggression are better suited to detecting stability of behavior than to detecting change.

Generalization to Socially Important Forms of Aggression

The forms of aggression measured in studies of television go well beyond "boisterousness" and "incivility" (Cook et al., 1983, p. 193); they have clear relevance to serious forms of aggression directly. For example, the category of aggression most clearly related to television violence in Belson's (1978) study was "serious acts of aggression"; it included firing a revolver at someone, attacks with a knife, setting fire to a building, hitting someone in the face with a broken bottle, and knocking someone off a bike. Several other studies of adolescents include delinquent and criminal actions. Most correlational and observational studies focus on physical aggression—hitting, kicking, biting, threatening, and other forms of direct physical attack.

In addition, physical and verbal childhood aggression of the type measured by peer nominations predicts adult physical aggression, criminal behavior, and serious crimes (Farrington, 1979; Huesmann, Eron, Lefkowitz, & Walder, 1984; Olweus, 1979; Parke & Slaby, 1983). If a constant diet of television violence is causally related to childhood aggression, then it may indeed contribute to the violence that concerns the society at large.

Moreover, criminal behavior is not the only socially important form of violence. Family violence is a major social problem affecting many more people than criminal activity. In one follow-up, childhood aggression (measured by peer nominations), predicted the amount of physical punishment that men and women used with their children and the amount of spouse abuse indulged in by men (Huesmann, Eron, Lefkowitz, & Walder, 1984).

Theoretical Implications

The social issues surrounding television violence sometimes obscure careful theoretical analysis. The theories guiding many early empirical investigations were social learning and arousal theories, both of which led to the prediction that viewing violence would increase aggression. The explanatory power of both theories was limited by simple unidirectional models of causality. Freedman's (1984) critique of the literature was based on the assumption of a unidirectional model. After rejecting the hypothesis that television violence causes aggression, he accepted by default the reverse hypothesis, that aggressive personality attributes cause a preference for viewing violence (Freedman, 1984, p. 244).

Recent social learning theories articulate the reciprocal effects of environmental variables and qualities of the individual (e.g., Bandura, 1978; Mischel, 1979). The theory and research supporting a bidirectional model of the relations between television violence and aggression is consistent with this more sophisticated conceptualization (Stein & Friedrich, 1975). Independent assessment of each direction of causality supports the prediction that both are important.

More complete models might specify interacting variables (e.g., Berkowitz, 1984). It is reasonable to expect that the relation between viewing and aggression varies with individual viewer attributes (e.g., age, gender, cognitions about aggression, and aggressive predisposition), program attributes (e.g., production techniques, plot context), and environmental variables (e.g., cues for aggression, amount of adult-imposed structure, and existing patterns of social interchanges among peers).

A complete understanding of television effects is not advanced by interpreting such variations as evidence of inconsistent results. For example, Freedman (1984) saw no "convincing a priori reason" why viewing violence should predict aggression for male subjects but not female subjects in the research by Eron et al. (1972) and concluded that their result was "weakened considerably by the lack of effect for girls" (p. 241). Yet, gender differences in aggression from early childhood on are well documented (Parke & Slaby, 1983), and they are magnified in adolescence. The incidence of violent offenses increases abruptly for boys after puberty; at age 18, there is a 10:1 difference in the male:female arrest rate for murder (Cairns & Cairns, 1985).

Process. The processes relating television violence to aggression can be divided into immediate, short-term effects on behavior (e.g., activation, arousal, disinhibition, and behavior contagion) and long-term effects involving learning of habitual behavior patterns, attitudes, and values about aggression. Laboratory and field experiments show the short-term effects more clearly than they do the long-term learned patterns. Of course, one would probably not predict long-term effects from a single laboratory exposure or a brief field experiment, given subjects' wide television experience before and after an experiment.

Even if much of the effect of television violence were limited to short-term activation or arousal (and we do not believe that it is), such an effect is important. Aggressive actions committed immediately after viewing can be just as harmful as those instigated by habitual patterns of behavior. Given the frequency of viewing violent television and the millions of children and adolescents who watch it every day, even short-term effects can constitute a major social problem.

Correlational data, including multivariate investigations, demonstrate long-term patterns of learned behavior, attitudes, and values. If television violence produces repeated instigation or disinhibition of aggression, then children exposed to it frequently will probably engage in aggression often. The daily repetition of simple, direct, violent problem solutions on television may function to maintain high levels of aggression and to counteract societal demands for more mature, self-controlled behavior.

Social Policy Implications

The debate about television effects cannot be divorced from social and political contexts. For more than 30 years the princi-

pal players—politicians, broadcast industry executives, reformers, and academic researchers—have been locked in alternating positions of dispute and accommodation (Rowland, 1983). Social science research was elevated to a central role in arguments directed toward establishing a relation between violent television and aggressive behavior. The networks questioned social scientists' conclusions and conducted their own research. The major thrust was to press for proof of unidirectional, direct causality.

Responsible psychologists and other social scientists have been obliged to acknowledge the limits of their theoretical and research paradigms. Social science research alone will not settle the policy questions about television fare because current conceptualizations and methods cannot provide irrefutable causal proof. We can at best argue probabilities. The weight of theory and convergent evidence supports the likelihood that television contributes to aggression for many young people.

The policy questions are becoming more urgent and more complicated with the increased availability of cable movie channels and videotape rentals that contain much more explicit violence than is shown on broadcast television. Perhaps social scientists need to acknowledge that while their contributions to the policy debate are important, the dialogue must be widened to include consideration of societal values. The Federal Communications Act states that programs on the public airwaves are to serve the "public interest, convenience, and necessity." The question is not merely out of fallible empirical methods, but what uses and consequent effects of the media are in the public interest.

References

American Psychological Association. (1985). *Violence on TV. A social issue release from the Board of Social and Ethical Responsibility for Psychology.* Washington, DC: Author.

Andison, F. S. (1977). TV violence and viewer aggression: A cumulation of study results: 1956–1976. *Public Opinion Quarterly, 41,* 314–331.

Bandura, A. (1978). The self system in reciprocal determinism. *American Psychologist, 33,* 344–358.

Bandura, A., & Walters, R. (1963). *Social learning and personality development.* New York: Holt, Rinehart & Winston.

Belson, W. (1978). *Television violence and the adolescent boy.* Hampshire, England: Saxon House.

Berkowitz, L. (1984). Some effects of thoughts on anti- and prosocial influences of media events: A cognitive neoassociation analysis. *Psychological Bulletin, 95,* 410–427.

Berkowitz, L., & Donnerstein, E. (1982). External validity is more than skin deep: Some answers to criticisms of laboratory experiments. *American Psychologist, 37,* 245–257.

Cairns, R., & Cairns, B. (1985). The developmental–interactional view of social behavior: Four issues of adolescent aggression. In D. Olweus, J. Block, & M. Radke-Yarrow (Eds.), *Development of antisocial and prosocial behavior: Theories, research and issues* (pp. 315–342). New York: Academic Press.

Cairns, R. B., & Cairns, B. D. (in press). On social values and social development: Gender and aggression. In L. K. Friedrich-Cofer (Ed.) *Human nature and public policy: Scientific views of women, children, and families.* New York: Praeger.

Casey, R. J. & Berman, J. S. (1985). The outcomes of psychotherapy with children. *Psychological Bulletin, 98,* 388–400.

Chaffee, S. H., & McLeod, J. M. (1972). Adolescent television use in the family context. In G. A. Comstock & E. A. Rubinstein (Eds.), *Television and social behavior: Vol. 3. Television and adolescent aggressiveness* (pp. 149–172). Washington, DC: U.S. Government Printing Office.

Collins, W. A. (1973). Effect of temporal separation between motivation, aggression, and consequence: A developmental study. *Developmental Psychology, 8,* 215–221.

Collins, W. A., & Getz, S. K. (1976). Children's social responses following modeled reactions to pronocation: Prosocial effects of a television drama. *Journal of Personality, 44,* 488–500.

Cook, T. D., Kendziersky, D. A., & Thomas, S. V. (1983). The implicit assumptions of television: An analysis of the 1982 NIMH Report on Television and Behavior. *Public Opinion Quarterly, 47,* 161–201.

Elliot, D. S., & Ageton, S. S. (1980). Reconciling race and class differences in self-reported and official estimates of delinquency. *American Sociological Review, 45,* 95–110.

Ellis, G. T., & Sekyra, F. (1972). The effect of aggressive cartoons on the behavior of first grade children. *Journal of Psychology, 81,* 37–43.

Eron, L. D., Huesmann, L. R., Lefkowitz, M. M., & Walder, L. O. (1972). Does television violence cause aggression? *American Psychologist, 27,* 253–263.

Farrington, D. P. (1979). Longitudinal research on crime and delinquency. In N. Morris & M. Tondry (Eds.), *Crime and justice: An annual review of research* (Vol. 1, pp. 289–348). Chicago: University of Chicago Press.

Feshbach, S., & Singer, R. (1971). *Television and aggression.* San Francisco: Jossey-Bass.

Freedman, J. L. (1984). Effect of television violence on aggressiveness. *Psychological Bulletin, 96,* 227–246.

Friedrich, L. K., & Stein, A. H. (1973). Aggressive and prosocial television programs and the natural behavior of preschool children. *Monographs of the Society for Research in Child Development, 38*(4, Serial No. 151).

Huesmann, L. R. (1982). Television violence and aggressive behavior. In D. Pearl, L. Bouthilet, & J. Lazar (Eds.), *Television and behavior: Ten years of scientific progress and implications for the eighties: Vol. 2. Technical reviews* (pp. 220–256). Washington, DC: National Institute of Mental Health.

Huesmann, L. R., Eron, L. D., Lefkowitz, M. M., & Walder, L. O. (1984). Stability of aggression over time and generations. *Developmental Psychology, 20,* 1120–1134.

Huesmann, L. R., Lagerspetz, K., & Eron, L. D. (1984). Intervening variables in the TV violence–aggression relation: Evidence from two countries. *Developmental Psychology, 20,* 746–775.

Johnston, A., DeLuca, D., Murtaugh, K., & Diener, E. (1977). Validation of a laboratory play measure of child aggression. *Child Development, 48,* 324–327.

Lefkowitz, M. M., Eron, L. D., Walder, L. O., & Huesmann, L. R. (1972). Television violence and child aggression: A follow-up study. In G. A. Comstock & E. A. Rubinstein (Eds.), *Television and social behavior: Vol. 3. Television and adolescent aggressiveness* (pp. 35–135). Washington, DC: U.S. Government Printing Office.

Leifer, A. D., & Roberts, D. F. (1972). Children's responses to television violence. In J. P. Murray, E. A. Rubinstein, & G. A. Comstock (Eds.), *Television and social behavior: Vol. 2. Television and social learning* (pp. 43–180). Washington, DC: U.S. Government Printing Office.

Leyens, J. P., Parke, R. D., Camino, L., & Berkowitz, L. (1975). Effects of movie violence on aggression in a field setting as a function of group dominance and cohesion. *Journal of Personality and Social Psychology, 32,* 346–360.

Liebert, R. M., & Baron, R. A. (1972). Some immediate effects of televised violence on children's behavior. *Developmental Psychology, 6,* 469–475.

Liebert, R. M., Sobol, M. P., & Davidson, E. S. (1972). Catharsis of aggression among institutionalized boys: Fact or artifact? In G. A.

Comstock, E. A. Rubinstein, & J. P. Murray (Eds.), *Television and social behavior: Vol. 5. Television effects, further explorations* (pp. 351–358). Washington, DC: National Institute of Mental Health.

Loye, D., Gorney, R., & Steele, G. (1977). An experimental field study. *Journal of Communication, 27,* 206–216.

McIntyre, J. J., & Teevan, J. J. (1972). Television violence and deviant behavior. In G. A. Comstock & E. A. Rubinstein (Eds.), *Television and social behavior: Vol. 3. Television and adolescent aggressiveness* (pp. 383–435). Washington, DC: U.S. Government Printing Office.

Milavsky, J. R., Stipp, H. H., Kessler, R. C., & Rubens, W. S. (1982). *Television and aggression: A panel study.* New York: Academic Press.

Mischel, W. (1979). On the interface of cognition and personality: Beyond the person–situation debate. *American Psychologist, 34,* 740–754.

Olweus, D. (1979). The stability of aggressive reaction patterns in human males: A review. *Psychological Bulletin, 86,* 852–875.

Parke, R. D., Berkowitz, L., Leyens, J. P., West, S. G., & Sebastian, R. J. (1977). Some effects of violent and nonviolent movies on the behavior of juvenile delinquents. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 10, pp. 135–172). New York: Academic Press.

Parke, R. D., & Slaby, R. G. (1983). The development of aggression. In P. H. Mussen & E. M. Hetherington (Eds.), *Handbook of child psychology: Vol. 4. Socialization, personality, and social development* (pp. 547–641). New York: Wiley.

Patterson, G. R. (1976). The aggressive child: Victim and architect of a coercive system. In L. A. Hamerlynck. E. J. Mash, & L. C. Handy (Eds.), *Behavior modification and families: Vol. 1. Theory and research* (pp. 1–44). New York: Brunner & Mazell.

Pearl, D., Bouthilet, L., & Lazar, J. (Eds.). (1982). *Television and behavior: Ten years of scientific progress and implications for the eighties.* (Vols. 1 and 2). Washington, DC: U.S. Government Printing Office.

Ross, L. B. (1972). *The effect of aggressive cartoons on the group play of children.* Unpublished doctoral dissertation, Miami University, Oxford, OH.

Rowland, W. D., Jr. (1983). *The politics of TV violence: Policy uses of communication research.* Beverly Hills, CA: Sage.

Signorielli, N., Gross, L., & Morgan, M. (1982). Violence in television programs: Ten years later. In D. Pearl, L. Bouthilet, & J. Lazar (Eds.), *Television and behavior: Ten years of scientific progress and implications for the eighties: Vol. 2. Technical reviews* (pp. 158–173). Washington, DC: U.S. Government Printing Office.

Singer, J. L., & Singer, D. G. (1981). *Television, imagination and aggression: A study of preschoolers.* Hillsdale, NJ: Erlbaum.

Singer, J. L., Singer, D. G., & Rapaczynski, W. S. (1984). Family patterns and television viewing as predictors of children's beliefs and aggression. *Journal of Communication, 34,* 73–89.

Stein, A. H., & Friedrich, L. K. (1975). Impact of television on children and youth. In E. M. Hetherington (Ed.), *Review of child development research* (Vol. 5, pp. 183–256). Chicago: University of Chicago Press.

Steuer, F. B., Applefield, J. M., & Smith, R. (1971). Televised aggression and the interpersonal aggression of preschool children. *Journal of Experimental Child Psychology, 11,* 442–447.

Surgeon General's Scientific Advisory Committee on Television and Social Behavior. (1972). *Television and growing up: The impact of televised violence.* Washington, DC: U.S. Government Printing Office.

Wells, W. D. (1973). *Television and aggression: Replication of an experimental field study.* Unpublished manuscript, University of Chicago Graduate School of Business.

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Change in Distribution of APA Convention "Call for Programs"

In an effort to facilitate distribution of the APA "Call for Programs" for the annual convention, the "Call" for the 1987 convention will appear in the December issue of the *APA Monitor* instead of being a separate mailing to APA members. The 1987 convention will be in New York from August 28 to September 1. Deadline for submission of program and presentation proposals is January 20, 1987. Additional copies of the "Call" will be available from the APA Convention Office in December.