

Television and Violent Criminal Behavior: Beyond the Bobo Doll

Linda Heath*
Candace Kruttschnitt†
David Ward†

This study builds on the research concerning television viewing and aggression by extending the external validity, or generalizability, of the dependent variable. We assess the relationship between self-reported television viewing at 8, 10, and 12 years of age and the subsequent commission of a violent criminal act. This study is based on interview data from 48 males incarcerated for violent crimes and 45 nonincarcerated, nonviolent males matched on age, race, and neighborhood of residence during adolescence. Results show that the extent of a respondent's reported television viewing was not, in and of itself, predictive of violent criminal acts. Instead, it was the interaction of heavy doses of television viewing and exposure to either maternal or paternal abuse that related to violent crime. These findings support the efforts of some recent scholars in their attempts to understand why television has a negative effect on only some viewers. The results are discussed in light of the cognitive formulations of neoassociationism, encoding specificity, and the double-dose effect.

Over the past 20 years, numerous scholars have attempted to determine what, if any, relationship exists between exposure to media violence and aggressive behavior. Most of these studies find at least a modest relationship between media exposure and aggression (Andison, 1977). Two key questions, however, remain unanswered. First, do the effects of media violence exposure extend to actual violent, criminal behavior, or are they limited to minor aggressions and acts of juvenile delinquency? Second, what factors, if any, enhance or moderate the links between media violence and aggressive or violent behavior? We attempt to answer each of these questions, beginning our analysis with a brief (and by no means exhaustive) review of the research concerning media effects on aggression and crime. (Comprehensive reviews of this literature can be found in Andison, 1977; Comstock, Chaffee, Katzman, McCombs, & Roberts, 1978; Geen, 1976; Liebert & Baron, 1972; Liebert, Neale, & Davison, 1973; Murray & Kippax, 1979).

*Loyola University of Chicago, Dept. of Psychology.

†University of Minnesota, Dept. of Sociology.

GENERALIZABILITY OF EFFECTS

The relationship between exposure to media violence and aggressive behavior has been demonstrated in a series of laboratory and field experiments and quasi-experiments. These studies have found that the media-aggression link is enhanced if (a) the media aggression is presented as being justified (e.g., Berkowitz, 1965); (b) salient cues are present during the retrieval period (e.g., Berkowitz & Frodi, 1977); (c) the respondents are predisposed to aggressive behavior (e.g., Friedrich & Stein, 1973; Parke, Berkowitz, Leyens, West, & Sebastian, 1977); and (d) the respondent identifies with the violent character (e.g., Huesmann, Eron, Klein, Brice, & Fischer, 1983; Turner & Berkowitz, 1972). These findings apply not only to young children (Bandura, Ross, & Ross, 1963; Liebert & Baron, 1972; Singer & Singer, 1980) but also to adolescents (Belson, 1978; Hartman, 1969) and to college students (Berkowitz & Rawlings, 1963; Berkowitz & Geen, 1966). Media effects are found on aggressive behaviors, including hitting a Bobo doll (e.g., Bandura et al., 1963), shocking confederates (e.g., Berkowitz & Geen, 1966), verbal and physical aggression (e.g., Eron & Huesmann, 1980; Feshbach & Singer, 1971), and minor acts of juvenile delinquency (e.g., Belson, 1978; McIntyre, Teevan, & Hartnagel, 1972). Finally, controlling for factors such as socioeconomic status, intelligence, race, and mother's education does not eliminate the relationship between media exposure and aggression and in some cases strengthens it (e.g., McIntyre et al., 1972).

While most of the findings from these studies point in the same direction (i.e., exposure to media violence is related to increased aggression), a number of researchers have questioned the practical significance of these findings. Specifically, causal ambiguities (Freedman, 1984), the modest size of the effects (e.g., Cook, Kendzierski, & Thomas, 1983), and the restricted generalizability of the dependent variables have led scholars to question whether, in fact, these findings have any bearing on the commission of a violent crime. Comstock, for example, concluded that the link between media violence and criminal activity

... rests on the willingness of the person who chooses to sit in judgment to extrapolate from the findings on interpersonal aggression to more serious, non-legal acts. Most important, the evidence does not tell us anything about the degree of social harm or criminal anti-social violence that may be attributable to television. It may be great, negligible, or nil. (Halloran, 1980, pp. 439-440)

In response to these concerns, some scholars have examined the relationship between mass media violence and actual criminal behavior. Milgram and Shotland (1973), for example, examined the rate of theft from a charity box immediately following exposure to one of three variations of a television program and found no relationship. However, the assumption that exposure to deviant behavior on television would, in fact, result in immediate imitation of criminal activity is questionable. Menzies (1971) compared the media habits of violent offenders and property offenders who were incarcerated and found no differences, although television habits while incarcerated might not be reflective of prior media exposure.

Other researchers have used aggregate rather than individual-level data to examine the relationship between crime rates and media events. Phillips (1983) documented an increase in the homicide rate following major televised prizefights, particularly among males of the same race as the loser of the fight. Using a similar ap-

proach, Hennigan and her colleagues (1982) documented an increase in the theft rate in cities immediately following the introduction of television into those cities. (The observed increase in theft rather than burglary indicates that the effect is not attributable to television sets being stolen.)

Although studies based on aggregate data greatly increase the external validity of the media–violence relationship, they do not easily lend themselves to testing the effect mediating variables might have on this relationship. A concern over the effect of such mediating variables has led to a reexamination of the processes by which media messages translate into action, resulting in expansion and reinterpretations of the traditional formulations.

MEDIATING VARIABLES AND PROCESSES

In 1972 the Surgeon General's Scientific Advisory Committee on Television and Social Behavior concluded that television can, under some circumstances, for some children, lead to increased aggressiveness. Since then researchers have been trying to pinpoint under what circumstances and for which people the relationship between viewing and aggression is strongest. To understand why and for whom these effects hold, researchers have ventured into the realm of cognitive psychology.

For example, Huesmann (1982) posited that social modeling effects rely on the principle of *encoding specificity*. The recall of an event (media or real life) depends, in part, on the similarity of the recall situation to the situation in which the encoding occurred. For example, a violent altercation might trigger memories of violent television episodes more easily if the television was viewed (or encoded) amid a setting of family violence. Further, Huesmann posited that characteristics that attract attention (such as familiarity) contribute to the possibility that the event will be encoded and stored in memory. Geen (1983) has suggested that one characteristic of television violence that might make scenes more salient and memorable is the perceived reality of the violence. Again, violence in the home could increase the perceived reality and ultimately the memorability of television violence.

Berkowitz (1984) suggested that *cognitive neoassociationism* can help researchers understand how the interpretations people give to media messages, and the thoughts that are activated by these messages, might influence the behavioral consequences of such messages. Basically, cognitive neoassociationism posits the memory as a collection of networks, composed of individual nodes or units that are connected by pathways. Factors such as contiguity, similarity, and semantic relatedness influence the strength of these pathways. The activation of any one node or unit (e.g., a thought, feeling, scene) will spread down the pathways to other related nodes, resulting in a priming effect. Nodes that have been recently primed will be brought into consciousness more easily than unprimed nodes.

By extension, although not explicitly tested by previous research, violent media depictions might trigger aggressive means of conflict resolution if those conflict resolution means are located on the same memory networks as the media depictions. For example, the coding of family violence and television violence on the same memory networks could result in more violent means of dealing with future interpersonal conflicts. Berkowitz (1984) further emphasized the importance of the meaning

attached to the media depiction by the viewer: "Aggression is in the mind of the beholder, and a movie will not activate aggression-associated thoughts unless the viewer regards what is seen as aggression" (p. 419).

Another possibility, however, is that aggressive media acts may trigger behaviors that outside observers would label as aggressive or violent, even if the viewer him/herself does not apply such a label. That is, media depictions of violence may lead some viewers to consider violence as a normal act. In essence, then, violent media actions may be miscoded onto the wrong network and associated with units representing "appropriate conflict resolution means," for example. Such coding could entirely sidestep the aggressiveness label, both at the encoding state and at retrieval stage, but could still result in behavior that would be labeled "aggressive" by the average observer.

This miscataloging of violent media messages might be especially prevalent when viewers are exposed to what Gerbner, Gross, Morgan, and Signorielli (1980) called the *double-dose effect*. That is, when media messages match real-world family experiences, the media depictions might not be cataloged as "fictional" or "deviant" but, instead, associated with "real life" memory units (such as "how Mom and Dad resolve disputes"). This formulation is congruent with Geen's (1983) and Huesmann's (1982) suggestions that events that are perceived as real rather than fictional might be more salient and therefore more likely to be encoded, leading to greater probability of later retrieval and possible behavioral effects.

In this research we examine the hypothesis that exposure to television violence during critical adolescent years—identified by Eron (1982) as between 8 and 12—is related to the commission of a violent crime as a young adult, particularly for those people whose home environments contained violence.

METHOD

Respondents

We defined violent offenders as individuals who had been convicted of an offense that involved the use or threat of force on a victim. As a result, most of our offender population were persons incarcerated for murder, rape, robbery, and/or aggravated assault. Because there were some cases in which other forms of criminal sexual conduct (e.g., incest) and kidnapping met our criteria of "threat or use of force on a victim," they were also included in our inmate population. Similarly, we also included several "burglars" for whom the recorded description of the crime indicated that sexual or physical assault or threat of assault was involved in the criminal act.

The second criterion we used to identify the violent offender respondents was age. Because the validity of our data depends in part on accurate recall of events that occurred during childhood and adolescence, we selected individuals for whom these life stages were fairly recent, that is, offenders who were, at the time of our interviews, between 18 and 25 years of age.

Our third criterion was conviction in the county where the study took place. The study design called for a match of our inmate population with a comparison group who grew up in the same neighborhood between the ages of 10 and 14, and we could

access comparison group respondents only from the immediate geographic area. We therefore restricted our inmate population to those committed to the institutions from Hennepin County, Minnesota, which includes the city of Minneapolis and its suburbs. Finally, because there were so few women incarcerated in Minnesota prisons for crimes of violence, we limited our study to men.

We completed interviews with 48 inmates who met the above four criteria.¹ To increase the internal validity of this study, we matched our violent offender population as closely as possible with a noncriminal population on the basis of age, race, sex, and neighborhood of residence during adolescence. We began this matching procedure by plotting on a map of Hennepin County the address of each inmate when he was approximately 10 to 14 years of age and his race. We then went to the relevant neighborhoods and placed posters in supermarkets, playgrounds, youth centers, and other recreational facilities. The posters offered \$25 to males between the ages of 17 and 26, willing to participate in a university research project on "life styles." The term "life styles" was purposely chosen to satisfy the human subjects committee's informed consent requirement without indicating that we were particularly interested in crime, violence, mass media use, and family relations. We chose such a vague term to reduce possible self-selection and rejection problems. The posters contained a phone number for interested parties to call in response. We screened each caller to determine his residence between the ages of 10 and 14, his race, his age, and his criminal history.² Questions about criminal history were included to ensure that our control group did not contain individuals who had been arrested for or convicted of violent crimes. These matching procedures ultimately produced completed interviews on a comparison group of 45 individuals of the same sex, age, socioeconomic background, and neighborhood during adolescence as our offender population.³ Although we were unable to obtain a one-for-one match on the racial dimension, the relative racial proportions between the control and offender populations are quite similar.⁴

The Instrument

Our survey instrument was composed of open- and closed-ended questions and paper-and-pencil items. Interviews were conducted by trained personnel (including the authors) and ranged in length from 3 to 8 hours. Each interview was tape recorded, transcribed, and then coded into quantitative form. The same interview format was used for both inmate and comparison groups, with only slight modifications in the criminal history questions for the comparison sample. Items were designed to document not only the extent of our subjects' exposure to television but also their exposure to violence in the home, their degree of family cohesiveness, their school and peer relationships, and their prior experiences with the criminal justice system.

Television exposure was measured by giving photocopies of *TV Guide* fall programming summaries to our respondents. Because the relevant literature on exposure to television violence suggests that ages 8 through 12 are particularly important (Eron, 1982), each respondent was given a copy of the television listing for 1 week for the years when he was 8, 10, and 12 years old. He was asked to circle the shows he remembered watching all the time (or "regularly") and to put an X through

the shows he watched only sometimes. In addition, we also asked our respondents to indicate the television shows and television characters that were their favorites when they were between 8 and 12 years of age.

This retrospective television viewing self-report method was subjected to test-retest reliability analysis prior to its use in this study. Heath and Petraitis (1984) found that with college students the same *TV Guide* sheets (corresponding to ages 8, 10, and 12) given out 7 to 10 days apart showed an exact-match test-retest reliability of .88. That is, the average respondent replied to 88% of the items identically during both of the sessions. Respondents were similar in age to the inmate and comparison samples and were therefore reporting viewing over a similar time span. Respondents in the reliability study did not know they would be asked to report television viewing a second time.

Our instrument also included six items that assessed physical abuse of the respondent by both his mother and his father. Factor analysis of these items indicated that they comprised two separate factors, one relating to paternal abuse and the other to maternal abuse. The paternal abuse items included three variables: (a) frequency of Dad losing his temper, coded in times per month or year; (b) what Dad did when he lost his temper, coded for degree of violence⁵; and (c) the consequence of the time Dad was the maddest, again coded for degree of violence. Maternal abuse was assessed by a similar method, using a scale composed of the above three items referencing mothers rather than fathers. Standardized scores were computed for the variables within each factor, and two additive factors were created (see Kruttschnitt, Heath, & Ward, 1986).

Our interviews revealed that family disorganization was a frequent characteristic of our respondents' childhoods. As a result, we thought that residential instability, which often accompanied family disorganization, might interfere with television-viewing habits. Using a chronological indicator of changes in family life, we coded all individuals who were removed from their homes, for whatever reason, before 13 years of age as not having resided consistently in their nuclear home. Those who stayed with their families until at least 13 years of age were coded as having had a consistent residence.

Finally, measures of the respondent's involvement in any recreational clubs and team sports and his race were included in the analysis. Recreational clubs and participation in team sports were included in order to control for time available for television viewing. The subject's race was included because we thought that individuals might be more likely to identify with television characters of their own race than characters of differing race. Previous research has shown not only that white television characters are more likely to use justified violence than minority characters (Gerbner, 1972) but also that viewing justified violence produces the more aggressive response in subjects (Geen, 1981). A respondent's race, therefore, may be related to his television viewing patterns and thereby to his subsequent aggression.

RESULTS

This study uses the epidemiological approach, whereby respondents are identified by variation on the dependent variable (in this case, violent behavior), and re-

relationships to possible causal variables are examined. This approach is frequently used in medical research and is useful for studying correlates of rare events (such as the commission of violent crime). Although some statistics that are used with such an approach (e.g., ANOVA) are most often used in conjunction with experimental research, in epidemiological applications the results are clearly correlational. Consequently, we must be particularly concerned about possible confounding variables. By matching our inmate and comparison groups on neighborhood of residence during adolescence, we also succeeded in matching the groups on family size, family constellation at birth, number of household moves, socioeconomic status, and neighborhood crime rate. These variables should not, therefore, produce spurious effects. Further, none of these variables has been hypothesized to interact with media exposure in regard to violent behavior.

We did, however, examine time-usage factors that could be confounded with television exposure. Because adolescents have a limited amount of time for leisure activities, time devoted to any one activity could detract from time available for other activities. Two types of activities that could limit adolescents' available time for television viewing are involvement in organized sports and attendance at clubs. Neither of these activities, however, correlates significantly with time spent viewing television (for clubs and television, $r = .08$, *N.S.*; for sports and television, $r = .07$, *N.S.*). We also examined the possible interactions between time spent on sports and clubs and exposure to television in relation to violent behavior. The analyses revealed no significant interactions between television viewing and sports involvement in predicting violent behavior. Similarly, time spent attending club activities did not interact with television viewing in any systematic way.⁶

Another factor that could reduce the time adolescents have for television viewing is removal of the adolescent from his natural home. Residence in a foster home, group home, or reformatory might entail restrictions on television viewing that would not be present in the natural home environment. To examine whether this variable would possibly confound our results, we compared the viewing habits of respondents who had been removed from their homes prior to age 12 with those of respondents who remained at home through age 12. Again, we found no relationship between viewing patterns and residential stability ($r = .06$, *N.S.*) and no patterns of interaction between media exposure and residence in regard to violent behavior (all F 's < 1.00 , *N.S.*).

Finally, we examined possible parental controls over television viewing for confounds with actual television viewing. Respondents were asked if their parents had any rules about television viewing when they were young. Among the inmate sample, 34% indicated that their parents had some sort of television rules; and among the comparison sample, 54% indicated their parents had such rules. Almost all of these rules pertained to the amount of television viewing. (Only one inmate and two comparison respondents indicated parental restrictions on their viewing violent programs.) However, for both inmate and control respondents, these time restrictions do not appear to have been enforced. Among inmates whose parents supposedly had time restrictions on television viewing, 64% fell in the "high television exposure" group, compared with 48% of inmates whose parents had no rules. Similarly, among the comparison respondents whose parents restricted their TV viewing time, 50% fell in the high television exposure group, compared with 39% of those respondents

whose parents had no time restrictions on viewing. We conclude, therefore, that variation in television viewing time was not merely an artifact of parental rule setting and supervision.

Analysis of Television Effects

We used discriminant analysis to differentiate between violent offenders and non-offenders and included television exposure, maternal abuse, and paternal abuse as predictor variables. Discriminant analyses were performed on both the total sample and racial subsamples.⁷ We were also concerned about possible interaction effects. The correlations between the discriminant analysis interaction terms and their main effects (r 's = .80 or above) indicated serious identification problems or evidence of multicollinearity. Therefore, we also used analysis of variance techniques; race, paternal abuse, maternal abuse, and television exposure (dichotomized at the respective medians) were entered as independent variables and violent behavior as the dependent variable.

The television exposure variables included the total number of shows watched "all the time" and the total number watched "sometimes" at 8, 10, and 12 years of age for each respondent. Because these six measures showed similar patterns, we collapsed across the three ages and across the frequency of viewing. The degree to which television programs contained portrayals of intentional harm served as our basis for distinguishing between violent and nonviolent television programs.

Table 1 presents the summaries of the discriminant analyses. As can be seen from this table, the television exposure variables (total viewing, violence viewing, and nonviolence viewing) enter all of the discriminant equations, but none of the equations provides particularly strong predictions of violent behavior. Analysis of the simple main effects indicates that inmates reported viewing more violent television as adolescents than did the comparison sample, $F(1,75) = 5.00, p < .05$. Inmates reported viewing an average of ten violent television programs a week, and the comparison sample of respondents reported viewing an average of eight violent shows a week. This same trend is evident in regard to total television viewing, $F(1,75) = 2.68, p < .11$. Inmates watched a mean of 33 programs per week, while the comparison

TABLE 1. Discriminant Analysis Summaries of Variables Entering the Equations:
Inmate versus Comparison Groups

Total TV	Violent TV	Nonviolent TV
Paternal abuse (.96, $p < .05$)	Paternal abuse (.94, $p < .05$)	Paternal abuse (.94, $p < .05$)
Total TV viewing (.90, $p < .05$)	Violent TV viewing (.87, $p < .01$)	Nonviolent TV viewing (.91, $p < .05$)
Maternal abuse (.90, $p < .05$)	Maternal abuse (.85, $p < .01$)	
Canonical correlation = .35	Canonical correlation = .38	Canonical correlation = .34

Note: Wilks statistics and associated significance levels are in parentheses.

group mean was 28 programs per week. The pattern of results in regard to non-violent programming was also in this direction, with inmates reporting watching 23 programs per week, compared with 19 programs per week for the control group. This finding, however, did not reach the standard level of statistical significance, $F(1,75) = 1.86, p = .18$. The high correlation between violent television viewing and nonviolent television viewing ($r = .82, p < .001$) precludes our attributing the effect conclusively to either type of programming.

In summary, the discriminant analysis revealed three noteworthy findings. First, paternal abuse, maternal abuse, and television viewing all associate with violent adult behavior. Second, violent and nonviolent television viewing are highly correlated, preventing us from examining one effect separate from the other. Our respondents did not seem to discriminate much in their program selection, lending credence to the television industry view that "hooking" people early in the evening ensures high ratings all evening long. Finally, the multicollinearity problems prevented us from examining the interaction terms with the discriminant analysis and led us to the next set of analyses.

Because of the aforementioned problems with the discriminant analysis, we also used analyses of variance (ANOVAs) to examine our interaction terms. These analyses revealed that paternal abuse is marginally related to later criminal behavior— $F(1,78) = 3.48, p < .10$ —with 56% of the respondents in the high paternal abuse category being incarcerated, compared with 47% of those in the low paternal abuse category. This effect, however, is subsumed under the significant interaction among paternal abuse, maternal abuse, and total television viewing, $F(1,78) = 5.95, p < .05$. As Table 2 indicates, respondents who were exposed to two forms of violent behavior (i.e., maternal abuse and TV, paternal abuse and TV, or both parental and maternal abuse) were more likely to engage in violent criminal behavior than were those respondents who were exposed to only one form of violence or to none. Exposure to all three forms of violence did not increase the likelihood of violent behavior over that of exposure to two forms. Importantly, no one form of exposure to violent behavior in isolation increased the likelihood of later criminal involve-

TABLE 2. Violent Behavior by Maternal Abuse, Paternal Abuse, and Total Television Viewing

Paternal abuse	Maternal abuse			
	Low		High	
	Total TV viewing		Total TV viewing	
	Low	High	Low	High
Low	43% ^a (3/4)	31% ^a (5/11)	12% ^a (1/7)	83% ^b (5/1)
High	40% ^a (6/9)	71% ^b (5/2)	77% ^b (10/3)	62% ^b (13/8)

Note: Cell percentages represent the proportion of that group who are inmates. Cell *Ns* for inmates/comparisons are in parentheses. Cell percentages with the same superscripts are not reliably different (at $p < .05$).

ment. This same three-way interaction is apparent when television viewing is broken down into violence viewing and nonviolence viewing—both $F_s(1,78) \geq 4.44$, $p_s < .05$.⁸ Again, however, because of the high correlation between violence and nonviolence viewing, we cannot attribute the effects conclusively to one type of programming or the other. Race did not enter significantly as a main effect or in any interactions.

We also wanted to know whether inmates were more likely than comparison respondents to list violent characters or shows as their favorites. A majority of both the inmate sample (58%) and the comparison sample (56%) listed violent programs as their favorites during adolescence. Inmates were slightly more likely to list comedies as their favorites than were comparison respondents (39% versus 30%, respectively), and comparison respondents were more likely to list nonviolent dramatic programs as their favorites than were inmates (14% versus 0%, respectively). These differences are not, however, statistically significant. In regard to favorite characters, the comparison sample was, if anything, more likely to list violent male characters as favorites than were inmates (53% versus 44%). Again, inmates were more likely to identify comedians as their favorite characters (33%) than were comparison respondents (28%), and race was irrelevant to favorite character choice.

Finally, in regard to the judged reality of the television messages, both the inmate and the comparison samples appear to be fairly credulous. Among inmates, 70% indicated that the things that happen on television could happen in real life. In the comparison sample, 72% agreed with this judgment.

DISCUSSION

The basic findings of this study are straightforward: high exposure to television during childhood years was related to the commission of a violent crime during young adulthood *if* violence was also present in the home. Exposure to television without violence in the home was not associated with violent crime. While our findings cannot speak to the exact cognitive processes underlying this relationship among television exposure, violence in the home, and violent behavior, they are congruent with at least three formulations that have been proposed to explain these processes: cognitive neoassociationism, encoding specificity, and the double-dose formulation.

According to cognitive neoassociationism (Berkowitz, 1984), activation of one node or memory spreads down the associative pathways to other nodes that reside on the same network. Perhaps children who view television violence amid a setting of family violence form associations between the televised violence and such other concepts (or nodes) as “conflict resolution,” “family relations,” or “goal attainment.” If such associations were formed, later experiences with family conflict or blocked goals could prime or trigger the violent television images, leading, perhaps, to violent behaviors. Peripheral support for this notion comes from Belson’s (1978) finding that one type of television violence that is strongly related to adolescent aggression is violence that occurs in close relationships. Similarly, among individuals raised in a violent family setting, television violence might not be coded on networks that contain nodes such as “deviant,” “unkind,” or even “aggressive.” Violent behaviors could thus come to be considered part of normal life and not be seen as

aggressive or nonnormative. Anecdotal evidence for this possibility comes from observations by the interviewers in this study that many inmates did not consider sticking a gun in someone's face as an unkind or aggressive act. Instead, they viewed such behavior simply as a means to an end (generally the acquisition of material possessions or money).

The findings from this research are also consistent with the concepts of encoding specificity (Huesmann, 1982). If children encode the messages from television violence in a hostile and aggressive family situation, they might be more likely, if later presented with a hostile or aggressive situation, to pull out those images of television violence.

Our findings are also congruent with Gerber and his colleagues' (1980) notion of the double-dose effect. Getting the same violent message from two sources (i.e., TV and Mom, TV and Dad, or Mom and Dad) increased the effect of each source. The double-dose message seems to be that television violence is not fiction when either Mom or Dad, or both, are also violent. Any one source of exposure to violence, in isolation, was not associated with criminal behavior, nor did a third source increase the harmful effect of two.

This research was not intended to pit these various theoretical formulations against each other, nor are these formulations necessarily contradictory. In fact, the overall results of our study are consistent with all of the above-noted formulations. Extensive exposure to television viewing, when coupled with physical abuse by either parent, produced a stronger relationship with later criminal activity than was observed with either force working in isolation.

These findings, however, must be muted with two caveats. First, we cannot be certain, from this research, that the crucial element of television exposure is the violence. Because we were unable to distinguish the effects of viewing violent and nonviolent television, we cannot rule out the possibility that some message other than violence (e.g., depiction of material wealth, which might lead to feelings of relative deprivation) is responsible for the increased violence. Second, we purposely chose respondents who had been convicted of serious, violent crimes, and this selection criterion produces serious external validity limitations. Our respondents were young, urban males, predominantly members of minority racial groups, predominantly of the lower socioeconomic class. This is the prototypic high-risk group for criminal involvement. The effects of television and family violence might be different among older populations, rural populations, or higher socioeconomic groupings.

In summary, the findings from this research indicate that television exposure is not only related to hitting Bobo dolls, shocking other subjects, rough playground activity, and petty delinquent acts; it is also related to serious, violent crimes. However, what is most intriguing about these findings is the way in which television exposure is related to acts of criminal violence. We have found that mass media effects do not operate in a vacuum. As current integrations between traditional social learning models and information processing models posit (e.g., Berkowitz, 1984; Geen, 1983), the effect that television exposure has on violent behavior depends, at least in part, on other aspects of the observer's environment. Only when the media message is congruent with the perceptions and life experiences of the observer will the message be associated with later action.

NOTES

¹For a variety of reasons (ranging from interviewer error to respondent's being paroled or sent to segregation), we could not obtain complete interviews from 53 additional respondents. The refusal rate (as opposed to the completion rate) was 13%, or 15 potential respondents.

²Potential respondents who indicated they were 17 or 26 years of age were excluded from the sample. These categories were included to screen out respondents who might be misrepresenting their ages.

³We collected incomplete interview data from an additional 19 comparison respondents.

⁴The actual breakdown of our inmate and control populations, respectively, by race is as follows: blacks, 49% and 43%; whites, 28% and 35%; American Indians, 17% and 14%; and other racial groups (which include Cubans and individuals of mixed racial origin), 6% and 8%. The white/black ratio matches the overall ratio for the prisons in Minnesota, as well as that of the national incarcerated populations (Uniform Crime Reports, 1979).

⁵All nonphysical responses (e.g., yelling, grounding, sending respondent to room, doing nothing) were coded 0; milder physical responses (e.g., slapping, shoving) were coded 1; severe physical responses (e.g., beating, breaking bones, hanging respondent from second story window) were coded 2. This same coding system was used for the consequences of father maddest variable and for the comparable items referencing the mother.

⁶Both sports involvement and club attendance are, however, significant correlates of later violent behavior, but these main effects are not relevant to the current discussion.

⁷Race is not entered in the discriminant analysis because we matched on this variable.

⁸Complete descriptions of these findings are available from the first author.

REFERENCES

- Andison, F. S. (1977). TV violence and viewer aggression: A cumulation of study results 1956-1976. *Public Opinion Quarterly*, 41, 314-331.
- Bandura, A., Ross, D., & Ross, S. (1963). Imitation of film-mediated aggressive models. *Journal of Abnormal and Social Psychology*, 66, 3-11.
- Belson, A. (1978). *Televised violence and the adolescent boy*. Westmead, England: Saxon House, Teakfield Limited.
- Berkowitz, L. (1965). Some aspects of observed aggression. *Journal of Personality and Social Psychology*, 2, 359-369.
- Berkowitz, L. (1984). Some effects of thoughts on anti- and prosocial influences of media events: A cognitive-neoassociationism analysis. *Psychological Bulletin*, 95, 410-427.
- Berkowitz, L., & Frodi, A. (1977). Stimulus characteristics that can enhance or decrease aggression: Associations with prior positive or negative reinforcements for aggression. *Aggressive Behavior*, 3, 1-15.
- Berkowitz, L., & Geen, R. G. (1966). Film violence and the cue properties of available targets. *Journal of Personality and Social Psychology*, 3, 525-530.
- Berkowitz, L., & Rawlings, E. (1963). Effects of film violence on inhibitions against subsequent aggression. *Journal of Abnormal and Social Psychology*, 66, 405-412.
- Comstock, G., Chaffee, S., Katzman, N., McCombs, M., & Roberts, D. (1978). *Television and human behavior*. New York: Columbia University Press.
- Cook, T. D., Kendzierski, D., & Thomas, S. (1983). The implicit assumptions of television research: An analysis of the 1982 NIMH report on television and behavior. *Public Opinion Quarterly*, 47, 161-201.
- Eron, L. (1982). Parent-child interaction, television violence and aggression of children. *American Psychologist*, 37, 197-211.
- Eron, L., & Huesmann, L. R. (1980). Adolescent aggression and television. *Annals of the New York Academy of Science*, 347, 319-331.
- Feshbach, S., & Singer, R. D. (1971). *Television and aggression: An experimental field study*. 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 (Serial No. 151).
- Geen, R. G. (1976). Observing violence in the mass media: Implications of basic research. In R. G. Geen & E. C. O'Neal (Eds.), *Perspectives on aggression* (pp. 193-234). New York: Academic Press.
- Geen, R. G. (1981). Behavioral and physiological reaction to observed violence: Effects of prior exposure to aggressive stimuli. *Journal of Personality and Social Psychology*, 40, 868-875.
- Geen, R. G. (1983). Aggression and television violence. In R. G. Geen & E. L. Donnerstein (Eds.), *Aggression: Theoretical and empirical reviews* (Vol. 2, pp. 103-125). New York: Academic Press.
- Gerbner, G. (1972). Violence in television drama: Trends and symbolic functions. In G. A. Comstock & E. A. Rubinstein (Eds.) *Television and social behavior*, Vol. 1, Content and Control (pp. 28-187). Washington, D.C.: U.S. Government Printing Office.
- Gerbner, G., Gross, L., Morgan, M., & Signorielli, N. (1980). The "mainstreaming" of America: Violence profile no. 11. *Journal of Communication*, 30, 10-29.
- Halloran, J. (1980). Mass communication: Symptom or cause of violence? In C. Wilhoit & H. deBock (Eds.), *Mass communication review yearbook* (Vol. 1, pp. 432-449). Beverly Hills, CA: Sage.
- Hartman, D. P. (1969). Influence of symbolically modeled instrumental aggression and pain cues on aggressive behavior. *Journal of Personality and Social Psychology*, 11, 280-288.
- Heath, L., & Petraitis, J. (1984). *The reliability of self-report television viewing*. Loyola University of Chicago. Unpublished manuscript.
- Hennigan, K., DelRossario, M., Heath, L., Cook, T., Wharton, J., & Calder, B. (1982). Impact of the introduction of television on crime in the United States: Empirical findings and theoretical implications. *Journal of Personality and Social Psychology*, 42, 461-477.
- 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, pp. 220-256). Washington, DC: U.S. Government Printing Office.
- Huesmann, L. R., Eron, L., Klein, L., Brice, P., & Fischer, P. (1983). Mitigating the imitation of aggressive behaviors by changing children's attitudes about media violence. *Journal of Personality and Social Psychology*, 44, 899-910.
- Kruttschnitt, C., Heath, L., & Ward, D. (1986). Family violence, television viewing habits and other adolescent experiences related to violent criminal behavior. *Criminology*, 24, 201-233.
- 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., Neale, J. M., & Davidson, E. S. (1973). *The early window: Effects of television on children and youth*. New York: Pergamon.
- McIntyre, J. J., Teevan, J. J., & Hartnagel, T. (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.
- Menzies, E. (1971). Preferences in television content among violent persons. *FCI Research Report*, 3.
- Milgram, S., & Shotland, R. L. (1973). *Television and antisocial behavior: Field experiments*. New York: Academic Press.
- Murray, J. P., & Kippax, S. (1979). From the early window to the late night show: International trends in the study of television's impact on children and adults. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 12, pp. 253-320). New York: Academic Press.
- Parke, R. D., Berkowitz, L., Leyens, J. P., West, S., & 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. 136-172). New York: Academic Press.
- Phillips, D. (1983). The impact of mass media violence on U.S. homicides. *American Sociological Review*, 48, 560-568.
- Singer, D. G., & Singer, J. L. (1980). Television viewing and behavior in preschool children: A field study. *Forensic Psychology and Psychiatry*, 347, 289-303.
- Surgeon General's Scientific Advisory Committee on *Television and Social Behavior*. (1972). (Report to the Surgeon General, U.S. Public Health Service.) Washington, DC: U.S. Government Printing Office.

- Turner, C., & Berkowitz, L. (1972). Identification with film aggression (covert role taking) and reactions to film violence. *Journal of Personality and Social Psychology*, 21, 256-264.
- Uniform Crime Reports. (1979). *Federal Bureau of Investigation, Uniform Crime Reports*. Washington, DC: U.S. Department of Justice.

Acknowledgments. This research was funded by a grant from Benjamin and Mildred Berger to David Ward and the Humphrey Institute of Public Affairs at the University of Minnesota. The authors wish to thank Anthony Calabrese, Mary Ann Sheble, Daniel McCarthy, Nancy Heitzeg, Musa Moore-Foster, Deborah Anderson, Lee Morrow, and John Petraitis for assistance in data collection and Steven Brown for helpful comments on an earlier draft of this paper.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.