

Appendix A

A REVIEW OF RESEARCH ON THE IMPACT OF VIOLENCE IN ENTERTAINMENT MEDIA

This Appendix reviews scientific research on the effects of entertainment media violence on children. The research on this topic is extensive, yielding a large number of articles that describe the results of various studies. The great majority of these studies focus on the effects of television, which has been the dominant form of media entertainment over the past 50 years. Relatively few have looked directly at the effects of the products at issue in the Commission's study: motion pictures, music recordings, and electronic games – though, as described below, the body of research on electronic games is growing. Similarities in program format suggest that the television research results are most relevant to movies, while their relevance to music and electronic games is less clear.

A majority of the investigations into the impact of media violence on children find that there is a high *correlation* between exposure to media violence and aggressive and at times violent behavior.¹ In addition, a number of research efforts report that exposure to media violence is correlated with increased acceptance of violent behavior in others, as well as an exaggerated perception of the amount of violence in society.² Regarding *causation*, however, the studies appear to be less conclusive.³ Most researchers and investigators agree that exposure to media violence alone does not cause a child to commit a violent act, and that it is not the sole, or even necessarily the most important, factor contributing to youth aggression, anti-social attitudes, and violence.⁴ Although a consensus among researchers exists regarding the empirical relationships, significant differences remain over the interpretation of these associations and their implications for public policy.⁵ This review does not attempt to resolve those issues or to provide an independent evaluation of the merits of particular studies; rather, this review seeks to provide background information and a current survey of the principal research findings regarding the impact of media violence.

The review proceeds in four parts. Section I provides background information useful for understanding the empirical literature and the relevant policy issues. Section II surveys research into the impact of televised violence. Section III examines the results of more directed research on how different kinds of programming content can influence the aggressive tendencies of youthful viewers. Section IV reviews studies dealing with the impact of electronic games that contain violent content.

The study of media violence is necessarily intertwined with more general research on the causes of violent behavior. The Surgeon General is preparing a report, to be completed by the

end of 2000, on the various risk factors and developmental markers that have been connected through epidemiological research with youths who commit violent acts.⁶

I. BACKGROUND INFORMATION

A. Definitions of Media Violence Used by Researchers

Both “media” and “violence” are defined by researchers dealing with the entertainment media in a variety of ways.⁷ Most of the studies concentrate on either television or movies, although an increasing amount of research attention is being directed toward the impact of violent content in music and electronic games.

Researchers differ significantly in the kinds of violent content they employ in their study of media effects. Experimental studies allow for the greatest control over media content. Investigators have much less leeway for studies based on surveys of individual characteristics, because “exposure” is defined in terms of a subject’s past viewing preferences, as revealed by the survey.⁸ When relevant, this Appendix provides the particular definitions used in the research being discussed.

B. Theoretical Pathways from Media Violence to Real World Violence in Youth

Social learning theory has guided a great deal of research on social behavior. Huesmann and Eron (1986) identify three psychological processes through which exposing a child to excessive media violence can encourage aggressive behavior: 1) observational learning: children learn to behave aggressively by imitating violent actors on TV, just as they learn cognitive and social skills by imitating parents, siblings, peers, and others; 2) attitude change: the more TV a child watches, the more accepting the child becomes of aggressive behavior; and 3) scripts: social behavior is controlled to a great extent by cognitive scripts and strategies that have been stored in memory and are used as guides for behavior.⁹ Television shows can be a source of such scripts. A child who repeatedly watches TV characters behaving in a violent way may store this as “script” to be used when facing similar situations.¹⁰ These same linkages, of course, also describe the ways in which media can encourage pro-social behavior.¹¹

C. Types of Studies Conducted by Researchers¹²

In general, researchers employ three different techniques to study the impact of media violence on children. They are as follows:

Experimental Studies: Subjects in experimental studies are randomly assigned to exposed and

control groups. Children in the exposed group are shown violent television programs or movies, while the control group is shown nonviolent programming or no programming at all.

Investigators then observe the level of aggression exhibited by children in each group after exposure to the selected media. Effects of the violent media are estimated as the increase in aggression exhibited by the group watching the violent program compared to those who did not.

Indices of aggression are limited by practical and ethical constraints. One frequent approach is to place both groups of children in a room with a Bobo Doll, a large inflated plastic figure.

Aggression is measured by the degree to which the children hit the Bobo Doll.

Correlational Analysis: In correlational analysis, investigators obtain information from questionnaires administered to youthful subjects regarding their television watching activities and various self-reports of aggressive behavior, sometimes including criminal histories. They also typically collect additional background information on the subjects that also may be linked to aggressive activity. Researchers then use statistical analysis to identify relationships between a subject's preference for violent programming and his or her aggressive tendencies. These kinds of investigations are called "correlational" because of the difficulty in discerning the direction of the relation between media violence and aggressive behavior: does the watching of violent programming lead to aggressive behavior, or does aggressive behavior lead one to seek out media with violent content?

Event Studies: The third major class of empirical research attempts to combine the strengths of both experiments and surveys by analyzing the impact of an outside event that leads to greater exposure of violent programming – typically, the introduction of television into an area – on various indices of aggression and violence in that community. Ideally, this approach takes the form of a "natural experiment" where real world indices of violence in the community into which television is introduced are compared to control communities where television had already been available.

II. RESEARCH FINDINGS: TELEVISION

This section outlines the key research findings regarding the general impact of televised violence on young viewers and how these results have been interpreted.

A. *Results of the Empirical Research*

1. Experimental studies

A majority of experimental investigations undertaken in the laboratory report that exposure to violent programming leads children to act more aggressively.¹³ This is true for a wide variety of settings and outcomes. Violent television programming has been found to increase a child's tendency to fight with playmates, and to hit inanimate objects such as a Bobo Doll.¹⁴ One study reported that exposure to violent films led to an increase in blood pressure levels among college students.¹⁵ The kinds of violent media used in the tests vary widely, from naturalistic horror to fantasy cartoons.

The strength of the experimental method lies in its ability to attribute causality more unequivocally than other research methods where subjects cannot be assigned randomly to exposed and control groups. As a result, most researchers conclude that violent programming does, in a variety of experimental settings in the laboratory, lead children to act more aggressively.¹⁶ At issue, however, is the applicability of these results to more realistic settings. Comstock and Paik (1991) remark:

The experimental setting for teenagers and young adults departs from the everyday in the perceptions of the subjects, in the brevity of the television exposure, in the absence of the possibility of retaliation for aggression, in the exclusion of competing and countervailing communications, and in the criterion of immediacy of the measure of effects.¹⁷

Also, critics point to a variety of potential biases stemming from the way most experiments are conducted. Freedman (1994), for example, hypothesizes two alternative explanations for the finding that violent programming tends to stimulate aggressive behavior in youthful subjects: First, violent programs will tend to get subjects more excited than a quiet neutral film, so subjects will respond aggressively in either a pro- or an anti-social way.¹⁸ Second, youthful subjects tend to respond to what the researcher wants them to do.¹⁹ Therefore, Freedman does not find it surprising that subjects will, after watching a film where the actors hit each other, go into the test room and hit their playmates or the Bobo Doll.²⁰ Similar concerns have been registered by Wilson and Herrnstein (1985) and by Krattenmaker and Powe (1996).²¹

Despite the concerns raised by Freedman and others, it appears that most researchers believe that the almost uniform results generated by the laboratory experiments serve as an important complement to what they view as largely similar results obtained from other investigational approaches.²²

2. Correlational studies

The most frequent type of correlational study is the “one shot” model that uses a single questionnaire to ask subjects about their television viewing preferences and a variety of behavioral traits. One of the most extensive survey research efforts of this type was performed by Belson (1978), who investigated the behavior and viewing habits of over 1,500 adolescent males in London in the early 1970’s.²³ In addition to finding a moderate correlation between high exposure to television violence and violent behavior, Belson also identified a dose-response relationship: the more exposure to television violence, the greater the reported actual violent activity of the subjects – holding constant the impact of other influences on violent behavior such as family background, cognitive ability, etc.²⁴ Other survey investigations report results similar to Belson’s findings, although there is considerable variation in the strength of the relationship between media violence and aggressive behavior, as well as in the sophistication of the statistical techniques employed.²⁵

Longitudinal studies, where the same subjects are surveyed at different points in time, represent a potentially more informative approach because researchers can investigate the relation between early exposure to violent media and subsequent aggressive tendencies. One important study of this type is the investigation by Lefkowitz, Huesmann, Eron, and their associates into the television viewing habits and behavior of 875 third-grade children in a semi-rural county in upstate New York during the 1960’s.²⁶ The researchers report that children with a preference for violent programs at age eight were more likely to exhibit aggressive behavior at age 19.²⁷ Also, preference for violent television viewing at age eight was a predictor of serious crimes engaged in by subjects when they were 30 years old.²⁸ In a similar analysis based on surveys conducted in five countries in the late 1970’s, Huesmann and Eron (1986) conclude that their findings suggest a bidirectional relationship between exposure to media violence and violent behavior: the child learns to be violent from violent media which, in turn, induce the desire to watch more violent media.²⁹

Another important longitudinal study was published in 1982 by Milavsky and associates, who followed several hundred children in two Midwestern cities for three years in the 1970’s.³⁰

For the analysis of young boys and girls, the authors report that initial correlations between exposure to violent media at the beginning of the period and later aggressiveness turned small and statistically insignificant after controlling for social and familial factors, as well as past levels of aggressive behavior.³¹ Milavsky *et al.* conclude that their results fail to support the hypothesis that exposure to media violence causes aggression in children.³² Huesmann *et al.* (1997) view the Milavsky *et al.* results in a somewhat different light by focusing on the predominance of positive (albeit insignificant) statistical relationships between exposure to media violence and subsequent aggression as being at least consistent with the causal hypothesis.³³ Huesmann *et al.* argue that closer inspection of Milavsky *et al.* and other studies purporting to contradict the causal hypothesis reveals “that their results are not discrepant, but simply not strongly supportive of the [causal hypothesis].”³⁴

Survey research also has been used to investigate the extent to which televised violence creates desensitization and “mean world” effects among youthful viewers. In regard to the latter, Gerbner and his associates report that “long-term exposure to television, in which frequent violence is virtually inescapable, tends to cultivate the image of a relatively mean and dangerous world.”³⁵ They further describe an approximate dose-response relationship in which “heavy viewers,” those who watch television more than three hours a day, are more likely than “light viewers,” those who watch two hours or less, to provide responses characteristic of the mean world syndrome.³⁶ Bok (1998) and Gunter (1994) discuss further research on the Gerbner hypothesis, some of which is supportive and some of which is not.³⁷

Alternatively, some researchers report that the cumulative exposure to media violence has a numbing effect on heavy viewers, making them less sensitive to subsequent acts of violence – both in the media and in real life. Such a desensitization effect may “shrink empathy for suffering in real life and diminish the readiness to go to the help of persons in need.”³⁸ Support for this view comes from Huston *et al.* (1992) who report on research showing that children and adults who are exposed to televised violence “are less likely than unexposed individuals to seek help for victims of violence.”³⁹ Huesmann *et al.* note, however, that the link between desensitization and aggressive behavior is not clear-cut: “It should not be surprising that emotional and physiological responses to scenes of violence habituate as do responses to other stimuli. It is more difficult to make the case that such habituation would influence the future probability of aggressive behavior.”⁴⁰

The above review suggests that there is a fair amount of uniformity among researchers in finding a correlation between media violence and indices of aggression and violence in children

(with more variable results for desensitization and “mean world” effects). There remains, however, the question of whether these empirical patterns suggest a causal chain going from exposure to the media violence to aggressive and violent acts in the real world. Because of the difficulty in assigning causality from correlational studies, a number of researchers have employed inventive ways of assessing the impact of events that created large changes in a community’s exposure to television.

3. Event studies

A major event study analyzed effects on children from the introduction of television in a rural Canadian community during the 1950’s.⁴¹ The researchers in this project compared children before and after the introduction of television in one town (Notel) with their peers in two comparable towns where television was already well established: Unitel (receiving the government-owned channel, CBC) and Multitel (receiving both CBC and U.S. stations).⁴² They measured aggression based on observations of children’s interactions in the schoolyard during free play, by teacher ratings, and by peer ratings.⁴³ Longitudinal observations of 45 children first observed in grades one and two and re-evaluated two years later indicated that both verbal and physical aggression increased over this two-year period for children in Notel after the introduction of television, but not for children in the two control communities where television was already available.⁴⁴ Accordingly, the researchers conclude that their study demonstrates the potential of television to increase aggressive behavior among children.⁴⁵

The Canadian investigation is considered the best controlled study of its type, and provides some of the most persuasive evidence in support of the hypothesis that violent media content stimulates aggressive behavior in children. Nevertheless, additional results from the study suggest a somewhat equivocal role for media violence as a cause of aggressive behavior. Ledingham *et al.* (1993) note that Unitel received only the public television channel (CBC), yet its children exhibited aggression levels similar to the Multitel community, which received U.S. channels (and their greater level of media violence) as well.⁴⁶ They suggest that these results indicate that “the absolute number or type of channels available is relatively unimportant.”⁴⁷ Also, the Canadian investigation failed to replicate the above-noted Eron and Huesmann finding that initial viewing of violent programming predicts future aggression levels: “[T]he amount of television watched at the initial time of testing by the children of Unitel and Multitel did not significantly predict the amount of aggression seen two years later (although aggression assessed in the follow up period was predicted by television viewing assessed at the same time).”⁴⁸

A more recent study by Centerwall (1992) compares changes in violence rates among the U.S., Canada, and South Africa before and after the introduction of television in South Africa.⁴⁹ Because television was introduced in South Africa only in 1976 although it had been available since the 1950's in Canada and the U.S., Centerwall uses the latter to control for the non-television impact on violence rates. He reports that violence rates in South Africa remained constant during the 1960's while increasing at a rapid rate in the U.S. and Canada during the same period.⁵⁰ After the introduction of television, South Africa experienced significant increases in violence rates. Centerwall concludes that the introduction of television, with its associated frequent portrayal of violent acts, results in a significant rise in interpersonal violent acts in a society.⁵¹

The Centerwall study has been criticized on a number of grounds. Bok (1998) and Krattenmaker and Powe (1996) note the potential distorting effect on Centerwall's results of his not taking into account the social changes taking place in South Africa during the time period of the study.⁵² On a more general level, Donnerstein and Linz (1998) point out that Centerwall's focus on television in general makes it difficult to isolate the impact of violence in the entertainment media versus the violent content shown on televised news accounts.⁵³ This is a potentially important distinction because studies show that the extensive reporting of violent events in the news media can result in at least a short-term increase in crime rates.⁵⁴ Furthermore, other researchers suggest that excessive time spent by children watching television, regardless of content, may be a more important predictor of aggressive behavior and other antisocial acts.⁵⁵

B. Third-Party Assessments of the Research

This summary provides a snapshot of the very large volume of basic research that exists on the general impact of televised media violence on youth. Comprehensive reviews have been conducted over the past 40 years by various commissions, as well as by individual researchers. Most of these reviews note the general uniformity of empirical findings – in particular, a robust correlation between exposure to media violence and aggressive behavior among youth. There remain, however, appreciable differences in how these empirical results are interpreted.

Five principal commissions and review boards have assessed the overall research record regarding media violence: the National Commission on the Causes and Prevention of Violence (1969);⁵⁶ the Surgeon General's Scientific Advisory Committee on Television and Social Behavior (1972);⁵⁷ the National Institute of Mental Health ("NIMH") Television and Behavior

Project (1982);⁵⁸ the Group for the Advancement of Psychiatry Child and Television Drama Review (1982);⁵⁹ and the American Psychological Association Task Force on Television and Society (1992).⁶⁰ The first three commissions were sponsored by the U.S. federal government and included representatives from the government, industry, and academia. The last two commissions were sponsored by independent practitioner groups: the Group for the Advancement of Psychiatry (“GAP”) and the American Psychological Association (“APA”).

All five reviews note the existence of a significant empirical association between exposure to television violence and aggressive behavior among youthful viewers.⁶¹ Although they each chose different ways of characterizing the relationship, all imply that exposure to violent television programming is more likely than not to increase aggressive behavior among certain parts of the population. The NIMH study, for example, noted that “the consensus among most of the research community is that violence on television does lead to aggressive behavior by children and teenagers who watch the programs.”⁶² The APA task force concluded: “There is clear evidence that television violence can cause aggressive behavior and can cultivate values favoring the use of aggression to resolve conflicts.”⁶³

Surveys of the media violence literature by individual researchers reveal a much greater range of opinion on the impact of televised media violence. The majority of reviewers conclude that research has persuasively documented a causal link between media violence and aggression, and that this effect is significant.⁶⁴ Other commentators take the opposite position that the various methodological and data problems in the media violence research preclude the finding of any such link.⁶⁵ Finally, a number of reviewers adopt an intermediate position, viewing the evidence as suggestive, but not of a quality that persuasively documents a significant causal relationship.⁶⁶

There does appear to be general agreement among researchers that whatever the impact of media violence, it likely explains a relatively small amount of the total variation in youthful violent behavior. As Huesmann *et al.* (1997) point out: “What is important for the investigation of the role of media violence is that no one should expect the learning of aggression from exposure to media violence to explain more than a small percentage of the individual variation in aggressive behavior.”⁶⁷

Another important area of apparent agreement among diverse groups of observers is an increasing recognition that the media-aggression relationship is a complex one that involves a number of mediating influences. Broader research into the causes of youth violence has identified interacting risk factors, such as genetic, psychological, familial, and socioeconomic

characteristics.⁶⁸ Severe antisocial aggressive behavior appears to occur most often when more than one of these factors is present.⁶⁹ The typical profile of a violent youth is one who comes from a troubled home, has poor cognitive skills, and exhibits psychological disorders such as anxiety, depression, and attention deficit hyperactivity.⁷⁰ This configuration of risk factors makes attempts to isolate the independent effect of media violence difficult, because media violence can operate through many of the risk factors described above. As Huesmann and Eron remark: “[T]o understand the development of aggression, one must examine simultaneously a multiplicity of interrelated social, cultural, familial, and cognitive factors, each of which adds only a small increment to the totality of causation.”⁷¹

Finally, there appears to be increasing recognition that future research needs to focus more on the *kinds* of media content most likely to result in aggressive behavior, rather than emphasizing general levels of violence in the media. The final report of the National Television Violence Study (“NTVS”), a three-year effort to assess violence on television, acknowledged this trend:

Indeed, over the past decade, researchers have shifted attention away from investigating whether TV violence poses a problem, to focus on exploring conditions under which different kinds of negative consequences are more or less likely to occur. We now realize a need to look more closely at the nature of television content, asking not just how much violence occurs, but more important, how the medium portrays the motives and consequences of violence, its associated moods, its realism and so on – the context in which television portrays violence.⁷²

III. CONTEXTUAL ANALYSIS OF TELEVISED VIOLENCE

Theoretical analyses of media violence have led researchers to recognize the importance of contextual clues in determining how an audience will react. The NTVS attempted to classify the contextual impacts of media violence by reviewing the relevant empirical research literature.⁷³ The NTVS staff found 80 experiments where some contextual feature of media violence was manipulated to see how it affected outcomes.⁷⁴ Based on these studies, the NTVS staff identified the following contextual features in violent media that can affect young viewers:

- 1) the attractiveness of the perpetrator;
- 2) the attractiveness of the victim;
- 3) whether the violence is justified;
- 4) the presence of weapons;
- 5) the extent and graphic quality of the violence;
- 6) the punishment and rewards from the violence;
- 7) pain/harm cues; and

8) humor.⁷⁵

In particular, the shows deemed to pose the greatest risk for learning aggression were those where the perpetrator is attractive, there are morally justified reasons for the violence, the violence is realistic, is rewarded or goes unpunished, and the violence is presented in a humorous context.⁷⁶ Table 1 lists these characteristics and their predicted effects on aggression, fear, and desensitization.

Although the NTVS literature review represents an ambitious attempt to understand the way in which content and context can influence the impact of media violence, the authors of the study recognize that predicting the influence of particular kinds of media on behavior is far from an exact science:

[T]elevised violence does not have a uniform effect on viewers. The relationship between viewing violence and subsequent behavior depends both on the nature of the depiction and the makeup of the audience. In some cases, the same portrayal of violence may have different effects on different audiences. For example, graphically portrayed violence may elicit fear in some viewers and aggression in others. Peer influence, family role models, social and economic status, educational level and the availability of weapons can each significantly alter the likelihood of a particular reaction to viewing violence on television.⁷⁷

This uncertainty over effect is reflected in variations in the definition of violence used in studies attempting to monitor the degree of violence in television and how that definition has changed over time. In their review of the NTVS and other content-based analyses of violence on television, Potter *et al.* (1998) show that counts of violent episodes on television vary from 5.4 acts per hour to 38 per hour.⁷⁸ They note that the inclusion of acts of verbal aggression, accidents as well as intentional acts of violence, threats as well as acts involving actual harm, broaden the definition of violence.⁷⁹ Due to such disparities, some outside the scientific community, such as Edwards and Berman (1995), conclude that “the available research does not supply a basis upon which one could determine with adequate certainty whether a particular ‘violent’ program will cause harmful behavior.”⁸⁰

IV. ELECTRONIC GAMES

The bulk of research on media violence has focused on the content of television shows or movies. But the last 10 years have seen an important shift among young viewers toward

alternative media formats, including electronic games, music videos, and the Internet. This section reviews research into electronic games, the most analyzed of these alternative media.

Much of the theory regarding the effects of electronic games follows from the analyses of violent media in general. Dill and Dill (1998), for example, hypothesize that aggressive traits generated from exposure to violent media are basically a learned behavior.⁸¹ Because interactive games have been shown to be an especially effective learning medium, they deduce that the effects of game violence will tend to be even greater than similar content shown on a static medium such as television.⁸²

Recent empirical investigations into the impact of violent electronic games include Funk (2000) and Anderson and Dill (2000).⁸³ Funk describes an extensive research program designed to assess the links between a child's preference for violent games and various sociological and psychological traits. Her empirical analysis so far has found that a preference for violent games is correlated with adjustment problems and negative self-perceptions in some groups of children.⁸⁴ Funk concedes that her research approach "cannot determine causal relationships. However, finding only negative associations suggest that a strong preference for violent games may at least be an indicator of adjustment issues for some children."⁸⁵

Anderson and Dill (2000) use both correlational and experimental techniques to study the impact of electronic games on a sample of college students.⁸⁶ In the correlational phase, they report that real-life violent video game play is positively related to aggressive behavior and delinquency.⁸⁷ The relationship is stronger for persons with aggressive personalities and more pronounced for men.⁸⁸ In the experimental phase of the project, Anderson and Dill report that laboratory exposure to graphically violent video games increased aggressive thoughts and behavior in both males and females.⁸⁹ The convergence of findings from both the experimental and correlational stages of their study leads Anderson and Dill to conclude that their results lend "considerable strength to the main hypothesis that exposure to violent video games can increase aggressive behavior."⁹⁰

Goldstein (2000) raises questions about both the experimental and correlational evidence in the violent game research.⁹¹ He argues that a common flaw in most of the experimental studies is the failure to distinguish between aggressive play and aggressive behavior. According to Goldstein, most of the experiments measure only aggressive play, which can be viewed as a natural extension of the game. He contrasts this to the psychological definition of aggressive

behavior which involves an intent to harm someone.⁹² Goldstein states that studies distinguishing between the two concepts of aggression find that violent games stimulate aggressive play but not aggressive behavior.⁹³ In regard to correlational studies, Goldstein (2000) and Griffiths (1999) state the familiar criticism that observed associations between violent games and negative outcomes do not necessarily demonstrate that electronic games cause aggression: Goldstein explains that “[c]orrelation is not causality, no matter how tempted one may be to argue otherwise.”⁹⁴ Anderson and Dill (2000) concur. Referring to their own correlational study, they caution that “causal statements are risky at best. It could be that the obtained video game violence links to aggressive and nonaggressive delinquency are wholly due to the fact that highly aggressive individuals are especially attracted to violent video games.”⁹⁵ Anderson and Dill do, however, assert that the consistency in the results of their different types of experiments provides strong evidence for the hypothesis that exposure to violent video games can increase aggressive behavior.⁹⁶

To conclude, most researchers are reluctant to make definitive judgments at this point in time about the impact of violent electronic games on youth because of the limited amount of empirical analysis that has so far taken place. Although some surveys of the literature lean toward seeing a detrimental effect from playing violent video games, others are more skeptical.⁹⁷ As additional research becomes available, these technical assessments may change.

TABLE 1			
PREDICTED EFFECTS OF HOW CONTEXTUAL FEATURES CAN AFFECT THE RISKS ASSOCIATED WITH EXPOSURE TO TV VIOLENCE			
	HARMFUL EFFECTS OF TV VIOLENCE		
	LEARNING AGGRESSION	FEAR	DESENSITIZATION
CONTEXTUAL FEATURES			
Attractive Perpetrator	▲		
Attractive Victim		▲	
Justified Violence	▲		
Unjustified Violence	▼	▲	
Conventional Weapons	▲		
Extensive/Graphic Violence	▲	▲	▲
Realistic Violence	▲	▲	
Rewards	▲	▲	
Punishments	▼	▼	
Pain/Harm Cues	▼		
Humor	▲		▲
<p>Note: Predicted effects are based on review of social science research by NTVS staff on the different contextual features of violence. Blank spaces indicate NTVS staff's view that there is no relationship or inadequate research to make a prediction.</p> <p>▲ = likely to increase the outcome ▼ = likely to decrease the outcome</p>			
<p>source: <i>National Television Violence Study 3</i>, <i>infra</i> note 73, at 13 (table 1).</p>			

ENDNOTES

1. See, e.g., L. Rowell Huesmann et al., *The Effects of Media Violence on the Development of Antisocial Behavior*, in *Handbook of Antisocial Behavior* 181 (David Stoff et al. eds., 1997) [hereinafter Huesmann et al., *Media Violence & Antisocial Behavior*]. See also Donald E. Cook, M.D., President, Am. Academy of Pediatrics; Clarice Kestenbaum, M.D., President, Am. Academy of Child & Adolescent Psychiatry; L. Michael Honaker, Ph.D., Deputy Chief Executive Officer, Am. Psychological Ass'n; & E. Ratcliffe Anderson, Jr., Am. Medical Ass'n, *Joint Statement on the Impact of Entertainment Violence on Children* (July 26, 2000) (released at Congressional Public Health Summit), www.aap.org/advocacy/release/jstmtevc.htm (visited Aug. 1, 2000) [hereinafter *Joint Impact Statement*].
2. See, e.g., Sissela Bok, *Mayhem: Violence As Public Entertainment* 61-81 (1998).
3. See Jonathan L. Freedman, *Viewing Television Violence Does Not Make People More Aggressive*, 22 Hofstra L. Rev. 833 (1994) [hereinafter Freedman, *Television Violence*].
4. See, e.g., Huesmann et al., *Media Violence & Antisocial Behavior*, supra note 1, at 183; *Joint Impact Statement*, supra note 1; National Institute of Mental Health, *Child and Adolescent Violence Research at the NIMH* (2000), www.nimh.nih.gov/publicat/violenceresfact.cfm (visited Aug. 14, 2000) [hereinafter NIMH, *Children and Adolescent Violence Research*].
5. Compare Freedman, *Television Violence*, supra note 3 with Huesmann et al., *Media Violence & Antisocial Behavior*, supra note 1.
6. As part of the Clinton Administration's initiative against youth violence, the President requested that the Surgeon General prepare a report on the causes of youth violence. See Opening Remarks by the President in White House Strategy Meeting on Children, Violence, and Responsibility (May 10, 1999), www.pub.whitehouse.gov/uri-res/I2R?urn:pdi://oma.eop.gov.us/1999/5/17/5.text.1 (visited Aug. 14, 2000).
7. See James Potter et al. *Content Analysis of Entertainment Television: New Methodological Developments*, in *Television Violence and Public Policy* 55, 57 (James T. Hamilton ed., 1998).
8. See Barrie Gunter, *The Question of Media Violence*, in *Media Effects: Advances in Theory and Research* 163, 169-76 (Jennings Bryant & Dolf Zillmann eds., 1994).
9. L. Rowell Huesmann & Leonard D. Eron, *The Development of Aggression in Children of Different Cultures: Psychological Processes and Exposure to Violence*, in *Television and the Aggressive Child: A Cross-National Comparison* 1, 14-16 (L. Rowell Huesmann & Leonard D. Eron eds., 1986) [hereinafter *Cross-National Comparison*].
10. *Id.* at 16.
11. See generally Marie-Louise Mares, *Positive Effects of Television on Social Behavior: A Meta-Analysis* (Annenberg Pub. Pol'y Ctr. U. Penn. Report No. 3 1996).

12. *See generally* Gunter, *supra* note 8.
13. *See, e.g.*, Huesmann et al., *Media Violence & Antisocial Behavior*, *supra* note 1, at 184; Haejung Paik & George Comstock, *The Effects of Television Violence on Antisocial Behavior: A Meta-Analysis*, 21 *Comm. Res.* 516, 518-19, 536-38 (1994); Russell G. Geen, *Television and Aggression: Recent Developments in Research and Theory, in Media, Children, and the Family: Social, Scientific, Psychodynamic, and Clinical Perspectives* 151, 152 (Dolf Zillmann et al. eds., 1994).
14. *See, e.g.*, Gunter, *supra* note 8, at 170-71.
15. Huesmann et al., *Media Violence & Antisocial Behavior*, *supra* note 1, at 184 (citation omitted).
16. *Id.* at 185.
17. Haejung Paik & George Comstock, *Television and the American Child* 241 (1991).
18. Freedman, *Television Violence*, *supra* note 3, at 840-41.
19. *Id.*
20. *Id.*
21. *See* James Q. Wilson & Richard J. Herrnstein, *Crime and Human Nature* 346-48 (1985); *see also* Thomas G. Krattenmaker & Lucas A. Powe, Jr., *Regulating Broadcast Programming* 127-28 (1996).
22. *See, e.g.*, Huesmann et al., *Media Violence & Antisocial Behavior*, *supra* note 1, at 184.
23. William A. Belson, *Television Violence and the Adolescent Boy* (1978). The Belson study, although conducted at one point in time, asked questions relating to different periods in the past.
24. *Id.* at 15.
25. *See, e.g.*, Gunter, *supra* note 8, at 173-87; Huesmann et al., *Media Violence & Antisocial Behavior*, *supra* note 1, at 184-85; Paik & Comstock, *supra* note 17, at 242-54.
26. *See* Monroe M. Lefkowitz et al., *Television Violence and Child Aggression: A Followup Study, in Report of the Surgeon General's Scientific Advisory Committee on Television and Behavior: Television and Adolescent Aggressiveness (Reports and Papers Vol. 3)* 35 (George A. Comstock & Eli A. Rubenstein eds., 1972); *see also* L. Rowell Huesmann et al., *Stability of Aggression over Time and Generations*, 20 *Developmental Psychol.* 1120 (1984) [hereinafter *Stability of Aggression*].
27. *See* Lefkowitz et al., *supra* note 26, at 71.
28. *See* Huesmann et al., *Stability of Aggression*, *supra* note 26, at 1125-26.

29. L. Rowell Huesmann, *Cross-National Communalities in the Learning of Aggression from Media Violence*, in *Cross-National Comparison*, *supra* note 9, at 239, 254-55. These conclusions were challenged by Dutch researchers who were originally part of the international study. Publishing their own analysis of the international data, the Dutch researchers concluded that “there is almost no evidence for the hypothesis that television violence viewing leads to aggressive behavior or vice versa.” O. Wiegman et al., *A Longitudinal Study of the Effects of Television Viewing on Aggressive and Prosocial Behaviors*, 31 *Brit. J. of Soc. Psychol.* 147, 159, 161 (1992). Wiegman et al.’s contrary findings are based on the use of statistical techniques that attempt to correct for the impact of violence risk factors, such as a child’s intelligence, as well as preexisting levels of aggression.
30. J. Ronald Milavsky et al., *Television and Aggression: A Panel Study* (1982).
31. The tendency for other factors to be related both to exposure to media violence and to violent behavior was especially important in the analysis of boys. *Id.* at 483. Milavsky *et al.* report that the study “showed that many of the factors which were more strongly related than television exposure to the aggression of elementary school boys are also similarly related to teen aggression: living in neighborhoods and families where aggression occurs often, and being rejected by their mothers. In addition, the aggressive teen accepts aggression as a proper form of behavior and feels no regret when he is aggressive. He uses alcohol and has friends who use drugs. Most of these factors are predictors of his becoming more aggressive over time relative to teens who do not share such circumstances.” *Id.* at 486.
32. *Id.* at 487.
33. Huesmann et al., *Media Violence & Antisocial Behavior*, *supra* note 1, at 185.
34. *Id.*
35. George Gerbner et al., *Growing up with Television: The Cultivation Perspective*, in *Media Effects: Advances in Theory and Research*, *supra* note 8, at 30.
36. *Id.*
37. *See* Bok, *supra* note 2, at 62; Gunter, *supra* note 8, at 183-86.
38. Bok, *supra* note 2, at 69.
39. Aletha C. Huston et al., *Big World, Small Screen: The Role of Television in American Society* 57 (1992) [hereinafter *Big World, Small Screen*]. For a fuller review of the evidence, some of which is not supportive of the desensitization theory, see Bok, *supra* note 2, at 67-76.
40. Huesmann & Eron, in *Cross-National Comparison*, *supra* note 9, at 14. The authors briefly note the existence of studies that “seem to support” the desensitization hypothesis, but they do not evaluate the studies’ ability to identify a causal link. *Id.*
41. *See The Impact of Television: A Natural Experiment in Three Communities* (Tannis MacBeth Williams ed., 1986).

42. *Id.* at 312.
43. *Id.* at 314-18.
44. *Id.* at 319-20.
45. *Id.* at 401.
46. Jane E. Ledingham, et al., *The Effects of Media Violence on Children 5* (Nat'l Clearinghouse on Fam. Violence, Canada, 1993), www.hc-sc.gc.ca/hppb/familyviolence/html/mediaviolence.htm (visited Aug. 14, 2000).
47. *Id.*
48. *Id.*
49. Brandon S. Centerwall, *Television Violence: The Scale of the Problem and Where to Go from Here*, 267 JAMA 3059 (1992).
50. *Id.* at 3060-61.
51. *Id.* at 3061.
52. See Bok, *supra* note 2, at 86; Krattenmaker & Powe, *supra* note 21, at 125.
53. See Edward Donnerstein & Daniel Linz, *The Media, in Crime* 237, 252 (James Q. Wilson & Joan Petersilia, eds., 1995).
54. See Wilson & Herrnstein, *supra* note 21, at 342-43.
55. See, e.g., Wiegman, *supra* note 29.
56. Robert K. Baker & Sandra J. Ball, *Mass Media and Violence: A Staff Report to the National Commission on the Causes and Prevention of Violence* (1969).
57. Surgeon General's Scientific Advisory Committee on Television and Social Behavior, *Television and Growing Up: The Impact of Televised Violence* (1972).
58. 1 National Institute of Mental Health, *Television and Behavior: Ten Years of Scientific Progress and Implications for the Eighties* (David Pearl et al. eds., 1982).
59. Group for the Advancement of Psychiatry, *The Child and Television Drama: The Psychosocial Impact of Cumulative Viewing* (1982).
60. 1 American Psychological Association, *Violence & Youth: Psychology's Response – Summary Report on the American Psychological Association Commission on Violence and Youth* (1993).

61. See generally John P. Murray, *The Impact of Televised Violence*, www.ksu.edu/humec/impact.htm (visited Aug. 14, 2000).
62. 1 NIMH, *supra* note 58, at 6. Subsequently, the National Research Council (“NRC”), a quasi-governmental agency, convened a panel of experts to review the NIMH study. The NRC concluded that televised violence “may be related” to aggression, but that the magnitude of the relationship is small and the meaning of aggression is unclear. National Academy of Sciences/National Research Council, *Children and TV Violence: Where Do We Go from Here?*, *News Report* 8 (March 1983).
63. Huston, *Big World, Small Screen*, *supra* note 39, at 136.
64. See, e.g., Donnerstein & Linz, *supra* note 53, at 237 (“Media violence is also a causal factor in the stimulation of violent behavior including crime.”); Huesmann et al., *Media Violence & Antisocial Behavior*, *supra* note 1, at 190 (“viewing media violence stimulates aggressive behavior in children”); Donald F. Roberts, *Media Content Labeling Systems*, in *A Communications Cornucopia: Markle Foundation Essays on Information Policy* 350, 354 (Roger G. Noll & Monroe E. Price eds., 1998) (noting “unequivocal conclusion that exposure to mass media portrayals of violence contributes to aggressive attitudes and behavior in children, adolescents, and adults”).
65. See, e.g., Jonathan L. Freedman, *Remarks Before the House Bipartisan Task Force on Youth Violence* 1 (Oct. 1, 1999) (“The available studies provide no convincing evidence that viewing violence on television or in the movies causes aggression or crime and quite of bit of evidence that it does not.”) (on file with the Commission); Jonathan Kellerman, *Savage Spawn: Reflections on Violent Children* 72 (1999) (stating that “not a single causal link between media violence and criminality has ever been produced”).
66. See, e.g., Dora Black & Martin Newman, *Television Violence and Children*, 310 *Brit. Med. J.* 273, 273; Bok, *supra* note 2, at 87; Gunter, *supra* note 8, at 201-02.
67. Huesmann et al., *Media Violence & Antisocial Behavior*, *supra* note 1, at 183. A prominent exception to this view is Centerwall (1992), who believes that television is a major reason for increased crime rates in Western society. But Centerwall’s evidence relates to all television content, not just the entertainment component that is the focus of this review. Centerwall, *supra* note 49.
68. See generally National Research Council, *Perspectives On Violence, in Understanding and Preventing Violence: Panel on the Understanding and Control of Violent Behavior* 101 (Albert Reiss, Jr. & Jeffrey Roth eds., 1993); Huesmann & Eron, in *Cross-National Comparison*, *supra* note 9, at 1-27; NIMH, *Children and Adolescent Violence Research*, *supra* note 4.
69. Huesmann et al., *Media Violence & Antisocial Behavior*, *supra* note 1, at 183.
70. See generally note 68, *supra*.
71. Huesmann & Eron, in *Cross-National Comparison*, *supra* note 9, at 4.

72. 3 University of California, Santa Barbara et al., *National Television Violence Study: Executive Summary* 13 (Joel Federman ed., 1998) [hereinafter *NTVS Executive Summary*].

73. The NTVS, initiated in 1994, was a three-year effort to assess violence in television programming. The project was funded by the National Cable Television Association, and involved media researchers from four universities, as well as representatives from various policy and advocacy organizations. The results from the NTVS are set forth in three volumes. See *NTVS Executive Summary*, *supra* note 72; University of California, Santa Barbara et al., *National Television Violence Study 3* (Center for Communications and Social Policy, University of California, Santa Barbara eds., 1988) [hereinafter *NTVS Report*]; University of California, Santa Barbara et al., *National Television Violence Study: Scientific Papers 1994-95* (Mediascope, Inc. ed., 1996) [hereinafter *NTVS Scientific Papers*].

74. *NTVS Scientific Papers*, *supra* note 73, at I-15.

75. *NTVS Report*, *supra* note 73, at 11-19.

76. *Id.*

77. *Id.* at 3.

78. Potter, *supra* note 7, at 57.

79. *Id.* at 58. The authors also note that differences in the definition of media violence also influence researchers' selection of a unit of analysis (*e.g.*, each violent act in a narrative scene versus average numbers of acts per program) and their sample of television programs. *Id.* at 57-61.

80. Harry T. Edwards & Mitchell N. Berman, *Regulating Violence on Television*, 89 *Nw. U. L. Rev.* 1487, 1533 (1995).

81. Karen E. Dill & Jody C. Dill, *Video Game Violence: A Review of the Empirical Literature*, 3 *Aggression and Violent Behavior* 407, 409-14 (1998).

82. *Id.* at 411-14.

83. See Craig A. Anderson & Karen E. Dill, *Video Games and Aggressive Thoughts, Feelings, and Behavior in the Laboratory and in Life*, 78 *J. Personality & Soc. Psychol.* 772 (2000); *The Impact of Interactive Violence on Children: Hearings Before the Senate Comm. on Commerce, Science and Transp.*, 106th Cong. (2000) (written testimony of Jeanne B. Funk, Ph.D.), reprinted at 2000 WL 11070123.

84. Funk, *supra* note 83, 2000 WL 11070123, at *4-5.

85. *Id.* at *5.

86. Anderson & Dill, *supra* note 83.

87. *Id.* at 778-82.
88. *Id.* at 782.
89. *Id.* at 785-87.
90. *Id.* at 787.
91. See *The Impact of Interactive Violence on Children: Hearings Before the Senate Comm. on Commerce, Science and Transp.*, 106th Cong. (2000) (written testimony of Jeffrey Goldstein, Ph.D.), reprinted at 2000 WL 11069631.
92. *Id.* at 11069631, at *5-6.
93. *Id.* at *7 (citing Joel Cooper & Diane Mackie, *Video Games and Aggression in Children*, 16 *J. Applied Soc. Psychol.* 726 (1986), and Joop Hellendoorn & Frits J.H. Harinck, *War Toy Play and Aggression in Dutch Kindergarten Children*, 6 *Soc. Dev.* 340 (1997)).
94. *Id.* at *4; accord Mark Griffiths, *Violent Video Games and Aggression: A Review of the Literature*, 4 *Aggression & Violent Behavior* 203, 206 (1999).
95. Anderson & Dill, *supra* note 83, at 782.
96. *Id.* at 787.
97. Compare Dill & Dill, *supra* note 81, at 424 (“short term exposure to video-game and virtual reality violence engenders increase in aggressive behavior, affect, and cognitions and decreases in pro-social behavior”) with Griffiths, *supra* note 94, at 211 (“[T]he question of whether video games promote aggressiveness cannot be answered at present because the available literature is relatively sparse and conflicting, and there are many different types of video games which probably have different effects.”).