

Violent Video Games and Public Policy
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Abstract

The impact that violent video games have on aggressive behavior is a serious topic, with implications for video game players and non-players, school teachers, parents, and society, as a whole. Over two decades of empirical work using a variety of research methods has found conclusive evidence that violent video game play causes later aggressive behavior. However, to date, there are few public policies that effectively limit children's consumption of such violent media. The current chapter describes the results of empirical findings on violent video games and aggression, some of the barriers related to implementing effective public policy, and the current state of public policy concerning violent video games in the United States and in Europe.

Violent Video Games and Public Policy

“I have been playing violent video games since I was young and I have not gone out and punched people or shot anybody.”

This quote (paraphrased from a internet chat room) emphasizes the common misperception that many video game players and parents of these players have towards the effects that violent video games have on aggressive behavior: “I see violent media daily and I do not want to kill anybody. Therefore, violent video games don't affect me.” The question of whether violent video game play is related to negative behavioral consequences (i.e., aggression) is not new, nor are the attempts by the scientific community to communicate these findings to public policy makers. However, rarely does effective public policy concerning media violence get implemented. To support this claim, consider the following questions:

1. Does the scientific literature continually show strong relationships between violent media and aggressive thoughts, aggressive feelings, and aggressive behaviors? – Yes (see Anderson, 2004; Kirsh, 2006).
2. Have the leading media violence experts testified before their governing body stating that violent media increases the probability of aggression in consumers? - Yes (see Anderson, Berkowitz, Donnerstein, Huesmann, Johnson, Linz, Malamuth, & Wartella, 2003).
3. Are children still consuming violent mass media regularly? – Yes (see Anderson, Gentile, & Buckley, 2007).
4. Are there effective policies in the United States that minimize the consumption of violent media by children of certain ages (e.g., under 15 years old)? –No (see Anderson & Gentile, 2008).

Thus, scientific research has found evidence to suggest that violent media consumption, including violent video games, increases the probability of thinking, feeling, and behaving aggressively in children and adults. These findings have been explicitly communicated to public policy makers. However, children still get a steady diet of violent media. Why is there such a huge disconnection between the scientific evidence of harm and public policy? To adequately answer this question, this chapter is organized

into three sections: the scientific evidence, public policy concerning the mass media, and the disconnect between the scientific community and the public.

Scientific Evidence

Media violence is just one of many risk factors for aggression. It is beyond the scope of this chapter to discuss all of the known risk factors for aggression and violence, but what will be explained is the scientific research which has found a relationship between media violence and subsequent aggression. These findings will be organized by type of research design.

The first type is the cross-sectional correlational design. A correlation represents a relationship between two variables. For example, there is a relationship between height and weight, such that taller people typically weigh more. This is a positive correlation, because as the values of one variable (height) increase, so do the values of the other variable (weight). A negative correlation occurs when increases in the values of one variable are associated with decreases in the values of the other variable. For example, there is a negative relationship between the number of times a college student misses class and their grade in that class. Thus, as the number of times one misses class increases, grades tend to decrease. A weakness of cross-sectional correlational studies is that by themselves, they do not clearly establish causality, mainly because other variables are not typically controlled. For example, there is a strong positive correlation between ice cream sales and the number of murders. Does this mean that eating ice cream causes murders? No, rather ice cream sales occur most when it is hot outside and there is a positive relationship between heat and aggression (Anderson, Anderson, Dorr, DeNeve, & Flanagan, 2000). However, well designed correlational studies are useful for testing the generalizability of experimental findings and for testing alternative explanations.

Researchers using cross-sectional correlational designs have found that the amount of time participants play violent video games is positively correlated with aggressive delinquency (Anderson & Dill, 2000). Other research looking at different outcomes have found similar findings. For instance, Krahe and Moller (2004) found a significant positive relation between violent video game exposure and the endorsement of physical aggressive norms, suggesting that as the amount of violent video game play time increased, there was an increase in the acceptance to use physical aggression. Others

(e.g., Gentile, Lynch, Linder, & Walsh, 2004) found similar results, while statistically controlling for sex of the participant and trait hostility, ruling out these factors as alternative explanations of the correlation between violent video games and physical aggression.

A second type of research design is experimental. Such studies can yield strong causal answers because they effectively rule out all alternative explanations. The hallmark of experiments is that participants are randomly assigned to the different conditions of the study. In addition, good experiments attempt to control for other variables that could influence the dependent variable (i.e., gender, trait aggression). Scientists can say that the independent variable (exposure to media violence) causes changes in the dependent variable (aggression).

Researchers using experimental designs have found that having participants play a violent video game causes higher aggression levels than having them play a non-violent video game (e.g., Ballard & Wiest, 1996). This effect occurs across a wide variety of individual difference variables. For instance, this effect has been demonstrated in children (Irwin & Gross, 1995) and college-aged samples (Carnagey & Anderson, 2005), high and low trait aggressive individuals, and males and females (e.g., Anderson, Gentile, & Buckley, 2007). Also, this effect has been found for a wide variety of video game types, including fighting video games (Ballard & Lineberger, 1999), shooting video games (Ivory & Kalyanaraman, 2007), and driving video games (Carnagey & Anderson, 2005).

A third type of study is a longitudinal design, in which the same participants are measured at least twice over time. Well-designed longitudinal studies also can provide strong support for causal hypotheses, again because they effectively rule out many alternative explanations. Such research has found that repeated exposure to violent video games is related to increased aggression (Anderson, Gentile, & Buckley, 2007).

Finally, meta-analysis is a statistical technique which takes all of the scientific research done in an area of interest and aggregates the findings to answer global questions of the form: “Across the entire spectrum of research involving violent video game play, is exposure to this type of media violence related to aggression?” This technique is advantageous because it is less susceptible to reviewer biases than the typical

narrative review. Furthermore, by averaging all of the empirical research done in a given area, one can better estimate the size of the effect. Findings from meta-analyses reveal that exposure to violent video games is related to heightened aggressive feelings, aggressive thoughts, physiological arousal, aggressive behavior, and to a decrease in prosocial behavior (Anderson, 2004; Anderson & Bushman, 2001; Sherry, 2001). Further, the average effects are sufficiently large to warrant public concern. For instance, Bushman and Anderson (2002) reported that the effect size relating video game violence to aggression was larger than many effects that have led to effective and costly public health policies, such as the effects of second-hand tobacco smoke on lung cancer, or the effect of lead exposure on reduced IQ in children. Similarly, the long term effect of video game violence on later aggression and violence is larger than most known risk factors for adolescent violence, such as abusive parents, poverty, and antisocial parents (Anderson, Gentile, & Buckley, 2007).

Overall, the wealth of research on media violence and aggression has concluded that both one-time and repeated exposure to violent acts in the mass media increase the likelihood of aggression. This finding is consistent across a multitude of research designs, and, most importantly, there does not appear to be any identifiable group (e.g., age, sex, personality type) that is immune to these effects.

Public Policy Concerning the Mass Media

The United States of America

The staggering number of hours that individuals spend viewing mass media violence coupled with the ever increasing realism of television, film, and video game technology should be sufficient to warrant public policy action. By public policy, we mean specific governmental actions designed to reduce the exposure of youth to this known hazard -- media violence. This could include policies designed to educate consumers about the harmful effects of media violence, creation of better rating systems, inducements to enforce restrictions, and other forms of intervention (see Gentile & Anderson, 2006).

In the United States, there have been several relevant governmental and nongovernmental health organization reviews and reports presented before Congress clearly stating that research has found that media violence has harmful effects (e.g., the

1954 Kefauver hearings; the 1969 National Commission on the Causes and Prevention of Violence; the 1972 Surgeon General's report *Television and Growing Up* [US Surgeon General's Scientific Advisory Committee, 1972]; the 1982 National Institute of Mental Health [NIMH] report *Television and Behavior*; and Eron, Gentry, & Schlegel's 1994 report for the American Psychological Association). Recently in 2000, six medical and public health professional organizations (American Academy of Pediatrics, American Academy of Child and Adolescent Psychiatry, American Medical Association, American Psychological Association, American Academy of Family Physicians, and American Psychiatric Association) submitted a *Joint Statement on the Impact of Entertainment Violence on Children* to the Congressional Public Health Summit, which stated that "entertainment violence can lead to increases in aggressive attitudes, values, and behavior, particularly in children." This statement also noted that the research points to a "causal connection between media violence and aggressive behavior in some children" (Joint Statement, 2000, p. 1).

Although this latter example is not specific to only video game findings, there have been several advancements in public policy concerning violent video game restrictions in the United States. Pressure was first put on the video game industry in 1993 by two United States Senators. In response, the video game industry adopted a rating system that included the placement of an age-based rating symbol on video game boxes as well as content descriptors, to provide information about the content of the video game to parents and children and to the retailers who sell or rent video games. This voluntary system was supposed to restrict children's and adolescents' access to video games with content deemed too mature. The Entertainment Software Ratings Board (ESRB) was created in 1994 to implement such policy.

In order to make sure that the video game retailers and industry was complying with this mandate, in 1996 the United States Senate asked the National Institute on Media and the Family to conduct an annual Video and Computer Game Report Card (VGRC) to document how well the video game industry was complying with the rating system. Initially, this report card revealed that the video game industry was doing well, but after a while, the report card revealed that many rental and retail outlets failed to enforce the video game ratings. Furthermore, it was learned that the video game industry was

targeting children with advertisements for video games that were deemed inappropriate for them to play.

Heavy violent media exposure was partially blamed for the 1999 Columbine High School shootings. President Bill Clinton asked the Federal Trade Commission to investigate who was purchasing and renting which types of video games. The results revealed that the majority of M rated video games (for Mature, 17 years and older) were explicitly marketed to children, and that adolescents, aged 13-16, could purchase these games 83% of the time (FTC, 2000). Thus, it was clear that the ratings system was not working. The video game industry then created the Advertising Review Council to establish policy to monitor the promoting and packaging of video games.

In 2000, the United States Senate Committee on Commerce, Science, and Transportation held a hearing on the effects that interactive violence had on children, where scientific media violence experts reported on the current state of the research findings. The video game industry subsequently denied that there was any credible evidence of harm.

Although it may appear that the video game industry is taking appropriate steps (e.g., creating the rating system in response to the United States Senate), research on the video game rating system shows that this is not the case. Walsh and Gentile (2001) and Haninger and Thompson (2004) among others, have found that the ratings systems do not accurately reflect the content in the video games.

The current U.S. video game rating system consists of age-appropriate lettering (AO for adult only, M for Mature, T for Teen, E+ for everybody ten years or older, E for everybody six years or older, and EC for everybody aged three and older). However, according to Gentile, Humphrey, and Walsh (2005), parents often state that they would prefer content-based ratings, rather than age-appropriate lettering (Bushman & Cantor, 2003). Gentile et al. (2005) created a detailed description of a proposed universal media rating system and the factors that are associated with such a system. Three of these factors consist of showing reliabilities between those who rate these games for content, providing age-relevant information, and (most importantly) providing content-based information, including the research findings on the effects of violent media on children, which is currently not available on the video game packages.

Based on these research findings, the growing concerns voiced by parent groups and child advocates, and the production and distribution of more realistic and graphically violent and sexual video games, the United States Senate proposed the Family Entertainment Protection Act in 2005 and 2006. This Act would get the U.S. Government involved in examining the quality and evaluation of the video game rating systems. Specifically, this bill would impose stiff financial penalties (up to \$5,000) for those who sell or distribute video games to minors that are inappropriate for them to play. Also, the Children and Media Research and Advancement Act was proposed, which allowed the Centers for Disease Control and Prevention (CDC) to conduct a scientific investigations into the effects that violent media has on all types of children. However, neither of these proposals became law (see Table 1).

European Countries

The effects that violent mass media consumption (including hours spent playing violent video games) has on children is not specific to the United States. Concerns over what kids are viewing and playing has been documented in several European Union countries (Italy, France, Germany, Netherlands, Spain, and Sweden). All have been concerned about such violent media effects, and have tried to implement public policy (Aroldi, 2003). According to von Feilitzen and Carlsson (1999) there are two multi-national efforts in an attempt to shape public policy regarding media violence (including video games). The first is the United Nations Convention on the Rights of the Child, which produced a document containing several articles related to media violence consumption. Article 17 is concerned about the mass media in context, which includes encouraging educational media, for example, but is also concerned about developing guidelines for protecting children from information and materials that may be harmful to the child's well-being (www.unicef.org/crc). However, because each country has different laws and governmental policy regarding the mass media, each country can implement the suggestions of these guidelines at their discretion (Hammarberg, 1998).

Several European countries have a video game rating system formed by governmental pressure to restrict violent video game access by children. In the United Kingdom, the Entertainment and Leisure Software Publishers Association (ELSPA) was formed in 1989 to bring the content of video and computer games to the attention of the

government. This organization, in 1993, created the Video Standards Council (VSC) to create an age-related video game rating system.

More recently the European Union created a new rating system, adopted by the Interactive Software Federation of Europe (ISFE), called the Pan European Games Information (PEGI), with the aim of creating a unified rating system across the majority of the countries in the European Union. Unlike the ESRB system in the United States, the PEGI has eight categories with easily understood symbols for parents, children, and retailers. The ratings of games include age level appropriateness (e.g., 3+, 7+, 16+), violence, bad language, fear, sex, drugs, discrimination, and gambling (see <http://www.pegi.info/en/index> for details). For instance, the violent video game *Mortal Kombat* would have ratings for violence, bad language, age, and sex. Importantly, each of these eight categories has associated symbols which are to be included on the packaging, to make it easy for parents to determine the content of the video game. For example, if the game is scary, then there is a picture of a spider on the package, and if the game is aggressive, then there is a picture of a flexing arm on the package.

In perhaps the most restrictive public policy initiative, Germany has recently begun to engage in public policy debates to ban violent video games from all children. The governments of Bavaria and Lower Saxony began to draft a bill which would sentence video game producers to fines and a maximum of one year in jail for making video games that emphasize “cruel violence on humans or human-looking characters” (Reimer, 2006). This bill was created in response to a school shooting which involved the killing of students and teachers in Germany. According to N. Anderson (2006), it was reported that the shooter was a heavy violent video game player, especially of the violent shooter game *Counterstrike*. The bill is slated to go to Parliament in 2007 (see Table 2).

From a scientific point of view, if such a bill passed, researchers could then gauge aggression levels (assessed either in the laboratory or real world) to determine whether aggression levels (partially stemming from violent video game play) decreased. Of course, there are many risk factors for aggression other than violent media, so large shifts in societal aggression are unlikely. Nonetheless, dramatic reductions in media violence exposure of children should, over a several year period, lead to detectable reductions in

real world aggression by those children. This would further provide evidence for a strong media violence link to aggression.

Public Policy Factors

Good public policy is not decided by scientific literature alone. It has been argued (Anderson & Gentile, 2008) that there are at least four independent but important sources of information that form public policy: scientific, legal, personal values, and political realities.

Science refers to the relevant knowledge base created by the scientific community. This consists of empirical studies using a multitude of research designs, as well as well-established theory that has been iteratively tested and revised. Science can influence public policies in two different ways. The first is that well-developed scientific theory and data can identify the problems that society should be concerned about, which can lead to much needed attention, and even intervention, for a given topic. For instance, the science behind media violence and aggression has instigated much debate about public policy as well as personal decisions for parents, teachers, and consumers of the mass media. Second, science can identify effective policies by examining the success (or lack of success) for a given program or policy. For instance, if Germany does ban all violent video games from children, scientific research can determine whether that policy proved effective or not.

The second important source of information concerns legal aspects. For example, in the United States a major legal issue concerning media violence is the United States Constitution's First Amendment, which imposes rather severe requirements for any government-imposed restrictions on access and exposure of violent media to be legal. Although it clearly would infringe on the First Amendment to ban various forms of media for everybody, there are government restrictions on exposing children to pornography. It has been suggested that this restriction could be translated into governmental restrictions for violent media for children (Saunders, 2003a, 2003b), but that has not yet occurred in the United States.

Political realities constitute the third factor involved in public policy formation. To a great extent, this consists of what is important to voters and to powerful lobbies. In other words, what can the government do that would be popular for voters? Who has the

money to influence legislators? Since violent media is readily consumed, it would be doubtful that the government would get a standing ovation after banning such media from everybody. Similarly, television, film, music, and video game industries spend large sums of money lobbying legislators. However, if enough parents, teachers, and organizations become educated on the effects of media violence, they could be a very powerful voice in saying what does and does not become public policy.

The final factor associated with public policy concerns the personal values associated with the individual citizen. Some may consider open access to all media by all ages more important than lowering aggression and violence rates. Such individuals may have strong negative feelings toward media violence, but may also have strong positive feelings toward the freedom of choice.

The Disconnect between the Scientific Community and the Public

As evident from the previous section, there are multiple groups involved in public policy. The scientific community, legislative leaders, and the general public comprise three such groups for public policy formation; however, often these groups do not speak the same language, which leads to misunderstandings. This is not to suggest that the findings from scientific studies fall wholly on deaf ears of the legal, legislative, and general public communities; rather, the research is misinterpreted and misunderstood. For example, over 50% of parents believe that violent media affects their children, but parents also believe that the mass media has a greater effect on other children than on their own (Gentile & Walsh, 2002). Further, Gentile (1999) found that 75% of American parents believe that children who view violent television are more aggressive than children who do not view violent media, but only 13% of parents impose any rules about the content their children are allowed to watch on television (Roberts, Foehr, & Rideout, 2005). Overall, this suggests that parents know that media violence is related to aggression in children, but believe that it is more harmful to other children than their own.

Thus, one major reason for the disconnect between the scientific evidence and current public policy is miscommunication between the scientific community and the relevant non-scientific communities. Parents and policy makers often want to know: Will playing violent video games (for example) *cause* my child to hit, kick, or even kill

another child? However, scientists often are hesitant at making public statements that have the words “cause” or “prove” in them. Doing so is not considered sufficiently scientifically conservative. Thus, when scientific experts respond to the non-scientists' questions in their typically scientifically conservative ways (including pointing out other risk factors), the non-scientists hear a very different message than that intended by the scientists. Specifically, they hear that "x does not cause y." A related problem is the non-scientists' misunderstanding of modern scientific conceptions of probabilistic causality. For example, most people agree that prolonged exposure to cigarette smoking causes lung cancer, but many individuals who smoke never get lung cancer, and some people who never smoke do get lung cancer. Thus, smoking is neither a sufficient nor a necessary cause of lung cancer. Of course, smoking is a cause of lung cancer, but because there are so many additional risk factors involved it is best understood as a probabilistic cause. The probabilistic nature delayed the public understanding of the health consequences of smoking many years; the same difficulty is currently happening in the media violence domain.

In general, what conditions must be met before the scientific community decides that a given factor (such as smoking, or playing violent video games) is a probabilistic cause of some outcome (lung cancer, aggression) Four have been identified (Anderson & Bushman, 2002). The first is that there needs to be a strong theoretical basis to explain why media violence is associated with aggression. The second is that the research findings need fit the theory. Third, the research testing the theory needs to include the use of multiple research paradigms. Finally, the research needs to have tested and rejected all *plausible* alternative explanations.

To date, the research on the effect that violent video games have on aggressive behavior has met all of the aforementioned criteria. Multiple theoretical frameworks have been supported by the research showing a link between violent media and aggressive behavior. These theories include Social Learning Theory (Bandura, 1971), Script Theory (Huesmann, 1986), Cognitive Neoassociation Theory (Berkowitz, 1993), Excitation Transfer Theory (Zillman, 1971), and the General Aggression Model, which is an integration of these prior theories (Anderson & Bushman, 2001; Bushman & Anderson, 2002). One common element between these theories is that they all predict that violent

media consumption increases the likelihood of behaving aggressively. To meet the second and third criteria, over 20 years of empirical research studies, using correlational, experimental, longitudinal, and meta-analytic techniques has consistently yielded a positive link between media violence exposure and aggressive behavior. Although the results from one study do not allow researchers to conclude with 100% certainty that violent video games cause aggression, the accumulation of studies from different laboratories, using different research designs, and different video games all come to similar conclusions. Thus, media violence researchers can state with confidence that media violence does cause aggression (see Anderson et al., 2003).

A second reason why there is such a disconnect between scientists and the public is because of the mixed messages the public is receiving. Parents, teachers, and mass media consumers are often barraged with two competing messages concerning media violence effects. The first message comes from the scientific community who state that violent media exposure increases the probability of aggressive behavior. The other message is from the mass media industries, who deny that any valid research shows any negative effects of violent media. To verify their claim, the mass media industries often rely on the opinions of “experts” who are seldom true experts but often are on the company’s payroll. These “experts” are typically found or even created by the mass media industry with no rules about who can be classified as an expert. For example, the quote at the beginning of this chapter may constitute an opinion of a mass media “expert.”

When the public are presented with the scientific evidence from real media experts and the opinions of industry-promoted experts, the public has to decide who is right or whose opinion to take. Although logically one should side with the expert who has the strongest record of expertise in a given field, in actuality we know that this seldom occurs. As outlined by Anderson and Gentile (2008), there are several criteria that are necessary (but not necessarily sufficient) to evaluate who the experts are:

1. A doctorate in an empirical science
2. Multiple publications in top-ranked, peer-reviewed journal based on original empirical data gathered to examine media violence effects

3. Understanding of the strengths and weaknesses of all the major research designs (i.e., experimental, cross-sectional correlational, longitudinal)
4. Demonstrated willingness and ability to accept and integrate findings from all major research designs.

Using these criteria, the layperson, whose quote began this chapter, would not be considered an expert in media violence effects. Indeed, none of the major critics of the media violence research meet these criteria (Huesmann & Taylor, 2003).

However, it is not just the mass media industry that is preventing the public from processing and using valid information from the scientific community. The disconnect between the public and scientific research may also be created by the scientific community, especially in how they present scientific findings to the public. According to APS Fellow Alan Leshner, the scientific community needs to communicate *with* the public, rather than *at* the public (Byrd, 2007). In order to accomplish this goal, several strategies have been offered, which include: telling a personally relevant story; not flooding people with too much data; using the language of the public rather than scientific rhetoric; and presenting the data in an understandable fashion. If these goals are accomplished, then perhaps the public will better understand that violent video games do have negative consequences, which represents one of the factors that can influence public policy: personal values.

Conclusion

Why is it that there are no effective public policies in many countries concerning children and violent media, if the scientific research finds such strong relationships between media consumption and aggression? This was the question proposed at the beginning of this chapter. There is strong evidence to suggest a causal link between media violence exposure and aggressive behavior; however, public policy does not rely solely on the scientific findings. Other factors must be considered, and other obstacles overcome. The scientific community is doing its part by continually testing and refining theory that media violence, including violent video game play, is a causal risk factor for aggression.

Yet it appears that personal freedom laws, the mass media industry, and the disconnect between the scientific community and the public are impeding the realization

that the scientific community has envisioned: To decrease children's exposure to violent media, which will lead to a more non-aggressive society.

References

- Anderson, C. A. (2004). An update on the effects of playing violent video games. *Journal of Adolescence, 27*, 113-122.
- Anderson, C.A., Anderson, K.B., Dorr, N., DeNeve, K.M., & Flanagan, M. (2000). Temperature and aggression. *Advances in Experimental Social Psychology, 32*, 63-133. New York: Academic Press.
- Anderson, C. A., Berkowitz, L., Donnerstein, E., Huesmann, L. R., Johnson, J., Linz, D., Malamuth, N., & Wartella, E. (2003). The influence of media violence on youth. *Psychological Science in the Public Interest, 4*, 81-110.
- Anderson, C. A., & Bushman, B. J. (2001). Effects of violent video games on aggressive behavior, aggressive cognition, aggressive affect, physiological arousal, and prosocial behavior: A meta-analytic review of the scientific literature. *Psychological Science, 12*, 353-359.
- Anderson, C.A., & Bushman, B.J. (2002). Media violence and the American public revisited. *American Psychologist, 57*, 448-450.
- Anderson, C. A., & Dill, K. E. (2000). Video games and aggressive thoughts, feelings, and behavior in the laboratory and in life. *Journal of Personality and Social Psychology, 78*, 772-790.
- Anderson, C. A., & Gentile, D. A. (2008). Media violence, aggression, and public policy. In E. Borigida & S. Fiske (Eds.), *Beyond Common Sense: Psychological Science in the Courtroom* (pp. 281-300). Malden, MA: Blackwell.
- Anderson, C. A., Gentile, D. A., & Buckley, K. E. (2007). *Violent video game effects on children and adolescents: Theory, research, and public policy*. Oxford: Oxford University Press.
- Anderson, N. (November, 2006). German politicians call for a ban on violent video games. Retrieved from <http://arstechnica.com/news.ars/post/20061121-8264.html>, on September 14, 2007.

- Aroldi, P. (2003). Television and protection of minors in some European countries: A comparative study. In U. Carlsson & C. von Feilitzen (Eds.), *Promote or Protect? Perspectives on media literacy and media regulations* (pp. 179-196). Goteborg, Sweden: The UNESCO International Clearinghouse on Children and Violence on the Screen.
- Ballard, M. E., & Lineberger, R. (1999). Video game violence and confederate gender: Effects on reward and punishment given by college males. *Sex Roles, 41*, 541-558.
- Ballard, M. E., & Wiest, J. R. (1996). Mortal Kombat™: The effects of violent videogame play on males' hostility and cardiovascular responding. *Journal of Applied Social Psychology, 26*, 717-730.
- Bandura, A. (1971). Social learning of moral judgments. *Journal of Personality and Social Psychology, 11*, 275-279.
- Berkowitz, L. (1993). *Aggression: Its causes, consequences, and control*. New York: McGraw-Hill.
- Bushman, B. J., & Anderson, C. A. (2002). Violent video games and hostile expectations: A test of the general aggression model. *Personality and Social Psychology Bulletin, 28*, 1679-1686.
- Bushman, B. J., & Cantor, J. R. (2003). Media ratings for violence and sex: Implications for policymakers and parents. *American Psychologist, 58*, 130-141.
- Byrd, K. K. (2007). Bringing science to society. *Observer, 20*, 31.
- Carnagey, N. L., & Anderson, C. A. (2005). The effects of reward and punishment in violent video games on aggressive affect, cognition, and behavior. *Psychological Science, 16*, 882-889.
- Eron, L. D., Gentry, J. H., & Schlegel, P. (1994). *Reason to hope: A psychosocial perspective on violence and youth*. Washington, D.C.: American Psychological Association Press.
- Federal Trade Commission (2000). *Marketing violent entertainment to children: A review of self-regulation and industry practices in the motion picture, music recording, and electronic game industries*. Retrieved December 22, 2003 from <http://www.ftc.gov/reports/index.tm#2000>

- Gentile, D.A., & Anderson, C.A. (2006). Violent video games: Effects on youth and public policy implications. Chapter in N. Dowd, D. G. Singer, & R. F. Wilson (Eds.), *Handbook of Children, Culture, and Violence* (pp. 225-246). Thousand Oaks, CA: Sage.
- Gentile, D. A. (1999). *MediaQuotient: National survey of family media habits, knowledge, and attitudes*. Minneapolis, MN: National Institute on Media and the Family.
- Gentile, D. A., Humphrey, J., & Walsh, D. A. (2005). Media ratings for movies, music, video games, and television: A review of the research and recommendations for improvements. *Adolescent Medicine Clinics, 16*, 427-446.
- Gentile, D. A., Lynch, P. L., Linder, J. R., & Walsh, D. A. (2004). The effects of violent video game habits on adolescent hostility, aggressive behaviors, and school performance. *Journal of Adolescence, 27*, 5-22.
- Gentile, D. A. & Walsh, D. A. (2002). A normative study of family media habits. *Journal of Applied Developmental Psychology, 23*, 157-178.
- Hammarberg, T. (1998). The child and the media: A report from the UN committee on the rights of the child. In U. Carlsson & C. von Feilitzen (Eds.), *Children and media violence* (pp. 31-34). Goteborg, Sweden: The UNESCO International Clearinghouse on Children and Violence on the Screen.
- Haninger, K., & Thompson, K. M. (2004). Content and ratings of teen-rated video games. *Journal of the American Medical Association, 291*, 856-65.
- Huesmann, L. R. (1986). Psychological processes promoting the relation between exposure to media violence and aggressive behavior by the viewer. *Journal of Social Issues, 42*, 125-139.
- Huesmann, L. R., & Taylor, L. D. (2003). The case against the case against media violence. In D. A. Gentile (Ed.), *Media violence and children* (pp. 107-130). Westport, CT: Praeger.
- Irwin, A. R., & Gross, A. M. (1995). Cognitive tempo, violent video games, and aggressive behavior in young boys. *Journal of Family Violence, 10*, 337-350.

- Ivory, J. D., & Kalyanaraman, S. (2007). The effects of technological advancement and violent content in video games on player's feelings of presence, involvement, physiological arousal, and aggression. *Journal of Communication*, *57*, 532-555.
- Joint Statement (2000). Joint statement on the impact of entertainment violence on children. Retrieved December 2, 2003, from <http://www.aap.org/advocacy/releases/jsmtevc.htm>.
- Kirsh, S. J. (2006). *Children, adolescents, and media violence*. Thousand Oaks, CA: Sage Publications.
- Krahe, B., & Moller, I. (2004). Playing violent electronic games, hostile Attributional style, and aggression-related norms in German adolescents. *Journal of Adolescence*, *27*, 53-69.
- Reimer, J. (December, 2006). German parliament pondering crackdown on violent video games. Retrieved from <http://arstechnica.com/news.ars/post/20061206-8372.html>, on September 14, 2007.
- Roberts, D. F., Foehr, U. G., & Rideout, V. (2005). *Generation M: Media in the lives of 8- to 18-year-olds*. Menlo Park, CA: Kaiser Family Foundation.
- Saunders, K. W. (2003a). Regulating youth access to violent video games: Three responses to First Amendment concerns. *2003 Michigan State Law Review*, *51*, 51-114.
- Saunders, K. W. (2003b). *Saving our children from the First Amendment*. New York: New York University Press.
- Sherry, J. L. (2001). The effects of violent video games on aggression: A meta-analysis. *Human Communication Research*, *27*, 409-431.
- von Feilitzen, C., & Carlsson, U. (1999). *Children and media: Image education participation*. Goteborg, Sweden: The UNESCO International Clearinghouse on Children and Violence on the Screen.
- Walsh, D. A., & Gentile, D. A. (2001). A validity test of movie, television, and video-game ratings. *Pediatrics*, *107*, 1302-1308.
- Zillmann, D. (1971). Excitation transfer in communication-mediated aggressive behavior. *Journal of Experimental Social Psychology*, *7*, 419-434.

Table 1.

Major Landmarks in Public Policy Advances Concerning Violent Video Games in the United States

Year	Event
1993	Two United States senators realized that video games were becoming too violent
1994	Creation of the Entertainment Software Rating Board (ESRB) to implement a rating system on all video games
1996	United States Senate asked National Institute on Media and the Family to create a Video and Computer Game Report Card to monitor the quality of the rating system of the ESRB
1999	Columbine High School Shooting
1999	President Bill Clinton asked the Federal Trade Commission to investigate who was purchasing and renting video games, and what the content of those games are
1999-2000	Video game industry created the Advertising Review Council to monitor the advertising, promoting, and packaging of rating system on video game covers
2000	The United States Senate Committee on Commerce, Science, and Transportation had hearing on effects of interactive violence on children
2001	Gentile and Walsh (2001) conducted a study and found that the rating systems do not reflect the content in the games well
2001	Anderson and Bushman (2001) and Sherry (2001) published the first meta-analyses of the effect that violent video games had on aggression
2001	United States Senate had another hearing to revise the video game rating system
2005	Senator Hillary Rodham Clinton introduces legislation to prohibit the sales of sexually explicit and violent video games to children

Table 1 (continued)

Year	Event
2006	Bill introduced to the United States Senate to have the Centers for Disease Control and Prevention (CDC) to conduct a study on how electronic media affects children, called The Children and Media Research and Advancement Act (CAMRA)

Table 2.

Major Landmarks in Public Policy Advances Concerning Violent Video Games in the
European Union

Year	Event
1984	The Video Recordings Act was created in the United Kingdom, which punishes those who supply violent or sexually explicit material to anybody below a certain age limit. The consequences are up to 5,000 pounds or six months in jail
1989	The United Kingdom created the Entertainment and Leisure Software Publishers Association (ELSPA) to bring the attention of video games to the government
1993	The United Kingdom established the first age-based video game rating system sponsored by the VSC
2003	A new video game rating system is implemented by the ISFE, called the Pan European Games Information, to provide a unified European video game rating system
2006	School shooting in Emsdetten, Germany by Sebastian Bosse, who was reported to be a heavy violent video game player
2006	In response to this school shooting, the governments of Bavaria and Lower Saxony drafted bill to fine any violent video game producers to at most a one year jail sentence
2007	European Union justice ministers from Germany, UK, Greece, Finland, Spain, and France met to discuss preliminary methods to have a unified European policy to ban the access of violent video games to children
