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Why It Is Hard To Believe That Media Violence Causes Aggression

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[–] Abstract and Keywords

Research studies on how media violence influences aggressive and violent behaviors face unusual hurdles in having an impact on the public, journalists, and even other scientists. Despite the existence of compelling empirical evidence that media violence causes increased aggression in the observer or game player, intelligent people still doubt the effects. A fundamental reason is that the outcomes of such research have implications not only for public policy, but also for how one views oneself. Through several well-understood psychological processes, this leads to many people denying the results of the scientific research. There are four psychological processes that together can account for most denials of media violence effects: (1) the need for cognitive consistency; (2) reactance; (3) the "third-person effect"; and (4) desensitization. This chapter illustrates how these processes lead to disbelief. Finally, it offers conclusions and ideas for future directions of how research may contribute to public opinion and public policy.

Keywords: media violence, psychological processes, public perceptions of research, violent video games

Long before the introduction of video games into the everyday lives of children, the question of whether exposure to violence in the mass media makes the viewer more violent was being widely debated. It was debated with regard to oral and written communications even in antiquity; it was debated with regard to movies when they were introduced; and it became a major topic of research and debate with the emergence of television as a fundamental part of every child's development by the end of the 1950s. Both the research and the debate have accelerated, however, as modern electronic recording and communication media make movie and television portrayals of violence available to everyone everywhere, and as the modern electronic video game has become a central part of every child's life. We now have reached the point at which not only are all children being socialized as much by electronic media as by parents and peers, but also today's researchers, policy makers, and debaters have mostly now been raised in these environments themselves.

To the current authors, the research of the last 50 or so years is compelling in demonstrating at least two cause–effect relations about media socialization: (1) short exposures of almost anyone to violent scenes or playing violent games cause an increase in the likelihood of behaving aggressively immediately afterward; and (2) habitual exposure to violent scenes or playing violent games changes children's developing brain structures to cause an increase in the likelihood of behaving more aggressively even many years later. These statements are true of violence observed in the family, neighborhood, or school or true of violent games played with peers, and they are true of violence in the mass media or electronic games. There is a clear consensus of opinion among most scholars who actually do research on the topic (p. 160) of the truth of these statements. Surveys have shown that more than 80% of those doing research on the topic have long ago concluded from the evidence that media violence is causing aggression (Murray, 1984). Most major health professional groups and governmental organizations have issued statements citing exposure to media violence as one cause of youth violence (Eron, Gentry, & Schlegel, 1994; Joint Statement of Congress, 2000; Anderson et al., 2003; American Academy of

Pediatrics, 2009). Two Surgeon Generals of the United States (in 1972 and 2001) have warned the public that media violence is a risk factor for aggression. For example, in March 1972, then Surgeon General Jesse Steinfeld told Congress:

> …it is clear to me that the causal relationship between [exposure to] televised violence and antisocial behavior is sufficient to warrant appropriate and immediate remedial action…*there comes a time when the data are sufficient to justify action. That time has come*. (Steinfeld, 1972)

Yet, despite this conclusion supported by prestigious individuals and most scientific organizations, and despite the sizable body of empirical evidence accumulated over several decades confirming the negative effects of the consumption of media violence, a relatively small number of critics continue to challenge this conclusion, disregarding the weight of empirical data, and further disregarding the theoretical explanations underlying the effects. Many dissenters obviously believe passionately in what they have concluded and write prolifically and compellingly about it. The quantity of such writing, in which the flaws are often difficult for nonexperts to discern, eventually may influence informed public opinion and give even those policy-making organizations that have opposed media violence second thoughts about their positions. For example, we note that recently, the American Psychological Association, which had previously issued statements opposing media violence, decided against submitting an amicus brief on the research evidence to the Supreme Court, which was hearing a challenge to a California law requiring parental approval for sales of violent video games to minors (Azar, 2010). They explained their decision as follows:

> APA was invited to submit a brief, but after a review of the literature, the association concluded it was premature to advise the court on research-based links between violent video games and problematic behavior in the context of a First Amendment challenge. Breckler (APA's Executive Director for Science) explained that although *most of the research in this area supports a connection between violent games and aggression*, there is also some credible research to the contrary, and APA concluded that there was not a basis to weigh in with the Supreme Court given the nature of the relevant research and the legal issues at question. (Azar, 2010, p. 38)

To the authors of this chapter this explanation represents an admission that APA, despite believing that media violence is harmful, is caving in to pressure not to take a position because of potential legal consequences from either first amendment advocates or those with economic interests in violent media.

The goal of this chapter is to present an explanation of why, when the evidence that media violence and violent video games causes aggression is as compelling as the evidence supporting many other public health threats, many people who are intelligent and well informed don't accept that there are significant effects on aggression for media violence. It is not our goal to review extensively the empirical literature in this area. A plethora of extensive reviews have appeared in print in the past decade (e.g., Anderson et al., 2003, 2010; Huesmann & Kirwil, 2007; Bushman & Huesmann, 2011). Nevertheless, we must begin with a very brief summary of the empirical evidence to set the stage for our major argument.

Meta-analyses Demonstrating That Media Violence Stimulates Aggression

When the body of research in an area becomes very large, single studies in the body may be expected to show contradictory results; so a meta-analysis becomes the best way to get an overall grasp of what the empirical evidence shows. Meta-analyses combine effect sizes from large numbers of studies to reach a “best” estimate of the true population effect size. In 1994, Paik and Comstock conducted the first large comprehensive meta-analysis of the relation between observing media violence and aggressive or antisocial behavior. They analyzed 217 studies conducted from 1957 to 1990. The studies included laboratory and field experiments, surveys, and time series designs. The authors found that the average effect size for experiments testing causal effects was r =.40 and for field studies (cross-sectional or longitudinal) was r =.19. These effects sizes, although moderate to small in absolute terms, were highly significant. The effect sizes were significant for college-age students (p. 161) (r =.39), preschoolers (r = .49), 6- to 11-year-olds (r = .32), and 12- to 17-year-olds (r = .23). The overall effect sizes were also somewhat stronger for males (r = .37) than females (r = .26).

The Paik and Comstock review did not include many studies of video games, but 7 years later Anderson and

Bushman (2001, 2002) published meta-analyses that include the effects of *violent video games*. Using 280 studies conducted before 2001 across multiple media types (television, movies, video games, comic books, and music), the authors found effect sizes somewhat smaller than those reported earlier by Paik and Comstock (1994), but highly significant. Effect sizes across study designs (laboratory and field experiments, cross-sectional and longitudinal studies) ranged from $r = .17$ to $r = .23$. Most recently, Anderson et al. (2010) conducted a meta-analysis of the results from 136 high-quality studies (yielding 381 effect size estimates) published through 2008 on the relation between *playing violent video games* and aggressive behavior, aggressive cognitions, aggressive affect, physiological arousal, empathy/desensitization, and prosocial behavior. This meta-analysis yielded a pattern of effect sizes consistent with their prior meta-analysis showing that playing violent video games causes increases in aggression in the short run and playing violent video games is a risk factor for increased aggression in the long run.

To be fair, not all experiments have shown causal effects of exposure to media violence on aggression and not all field studies have shown positive longitudinal effects of exposure to media violence on aggression. Although many such studies have glaring flaws, some seem to be very well done; for example, a longitudinal study by von Salisch, Vogelgesang, Kristen, and Oppl (2001) that indicated that the relation between aggression and violent video game play in third and fourth graders is more caused by aggressive children liking violent games than children who play violent games becoming more aggressive. From a theoretical standpoint, it is quite plausible that there would be effects in both directions (Huesmann et al., 2003; Slater, Henry, Swaim, & Anderson, 2003); however, it is unusual in this body of research not to have a longitudinal effect from prior exposure to media violence to subsequent aggression. How threatening should be the effect of any one such study to the overall conclusion that media violence stimulates aggressive behavior in the short run and in the long run? This is why the meta-analyses are so important. Meta-analyses serve the important function of statistically aggregating the results of many diverse studies—some with positive effects, some with negative effects, some with no effects—to reach an overall conclusion. And the conclusion shown by the vast majority of such meta-analyses is that media violence causes increases in aggression. The few dissenting meta-analyses (e.g., Ferguson, 2007a,b), Ferguson & Kilburn, 2009) have been conducted by the dissenters we discuss in the following pages, and have flaws described in detail elsewhere (Anderson et al., 2010).

Theoretical Explanations for Media Violence Effects

Empirical evidence by itself, however consistent and powerful, should not be enough to convince scientists or the public that a particular environmental substance is dangerous. One needs a process-model explanation of how it exerts its dangerous effect. For more than four decades, scientists have been building a consistent psychological process model of why exposure to violence stimulates aggression both in the short run and in the long run (Eron et al., 1972; Bandura, 1977; Huesmann, 1988, 1998; Bushman & Huesmann, 2001; Huesmann et al., 2003; Huesmann & Kirwil, 2007). We now know why and how it happens. In the short term, priming, mimicry, and excitation transfer account for the effects. In the long term, observational learning of aggressive scripts, schemas, and beliefs and emotional desensitization account for the effects.

Short-Term Processes

Priming explains relatively short-term underlying processes by which exposure to media violence can incite aggression. The logic of priming is based on cognitive and neurological perspectives that consider human memory as an associative network of scripts or ideas representing semantically related thoughts, feelings, and behavioral tendencies (Fiske & Taylor, 1984; Berkowitz, 1989, 1993). Priming from observing violence refers to the neurological fact that related violent thoughts, emotions, and concepts residing in memory are automatically activated when violence is observed. These primed or activated thoughts and emotions bias the processing and interpretation of subsequently encountered situations, even without one's perception of this influence (Bargh & Pietromonaco, 1982). Empirical studies reveal that violent media content activates aggressive scripts in one's memory, and these aggressive scripts in turn increase the likelihood of subsequent hostile responses to certain situations, (p. 162) especially those involving interpersonal conflicts or frustration (Bargh & Pietromonaco, 1982). In addition, the mere presence of objects associated with violence, such as weapons, primes aggressive responses (Berkowitz & LePage, 1967; Anderson, Benjamin, & Bartholow, 1998; Payne, 2001).

Activation and processing of aggressive scripts occurs even without one's conscious awareness, and, when repeated, eventually makes aggressive scripts chronically accessible (Huesmann & Kirwil, 2007, p. 549). This increase in chronic accessibility is owing to a "lowered threshold of activation," which makes the construct more easily activated by other stimuli for at least a short period (Bushman, 1995, p. 538). Thus, although the priming effect is considered relatively fleeting compared with enduring social learning effects (described in the following pages), because aggression-activated thoughts become chronically accessible through repeated priming, violent media consumption can have a considerable cumulative impact on increasing the likelihood of aggressive behavior through the priming process.

Another short-term process is mimicry, which explains why exposure to violent media immediately precipitates aggressive behavior, especially among young children. Neurophysiological research on automatic imitation has revealed that humans have an innate tendency to mimic any behavior they observe (Meltzoff & Moore, 2000; Hurley & Chatter, 2004; Rizzolatti, 2005). Applied to the violent media, aggressive actions performed by media heroes can be immediately mimicked by young children, especially if children perceive the observed model to be similar to themselves and if the model's behavior is reinforced (Bandura, 1977). Short-term imitation can occur after a single observation of an action without elaborate cognitive processing (Huesmann, 1998; Bushman & Huesmann, 2006). The observation and imitation of a specific aggressive behavior can lead to acquisition of more coordinated aggressive scripts for future behavior (Huesmann, 1988, 1998).

The third short-term psychological process accounting for why exposure to media violence can temporarily increase aggression relates to arousal and excitation transfer. Excitation transfer is the idea that physiological arousal dissipates slowly and if two arousing events are separated by a short amount of time, some of the arousal caused by the first event may pass on to the second event (Zillmann, 1983, 1988). In general, observing violent media creates a sense of excitement in most people. As Bandura (1983) explained, this emotional arousal can increase the likelihood of aggressive action, particularly if the person conceives his or her aroused experience as negative, such as frustration or anger. Other types of arousal such as sexual or physiological arousal (by exercise) are thought to facilitate aggressive reaction during the subsequent event. A number of experimental studies have reported that emotionally or physiologically aroused individuals are especially prone to be aggressively stimulated by violent scenes (e.g., Bryant & Zillmann, 1979; Zillmann, Bryant, Comisky, & Medoff, 1981).

Long-Term Processes

Unlike priming, mimicry, and arousal, whose effects are relatively short lived, observational learning of aggressive scripts and schemas for behavior includes specific mechanisms through which viewing violent media increases aggression in the long run. According to Huesmann, "a script serves as a guide for behavior by laying out the sequence of events that one believes are likely to happen and the behaviors that one believes are possible or appropriate for a particular situation" (1998, p. 80). Huesmann (1988, 1998) developed a cognitive processing model to account for one's own and others' actions during social situations and how exposure to violence might influence behavior. Huesmann's model provides a detailed explanation of how an individual develops aggressive problem-solving behavior through a four-step sequential process. The four steps involve perception and interpretation of environmental cues, activation of retrieved scripts, evaluation of scripts against normative beliefs, and interpretation of environmental responses (Huesmann, 1998).

To begin with aggressive children have a larger repertoire of aggressive scripts than nonaggressive children and thus are more likely to call on these scripts in social conflict situations. Aggressive scripts are acquired initially mainly though observational learning of others behaving aggressively in the child's environment including the mass media. They are then cemented in place through reinforcement of the use of aggressive scripts that achieve desired outcomes. Aggressive children will seek out environments that are consistent with their aggressive scripts (e.g., violent media, aggressive peers, opportunities to use aggression), and aggressive children can create their own aggressive environments. Thus, a downward spiral of increasing aggression can occur (Slater et al., 2003). The maintenance of an aggressive script also depends on how frequently and competently the child rehearses it (Huesmann, 1988); rehearsal of observed information enhances (p. 163) its connectedness in memory, thereby making it more accessible (Klatzky, 1980). Thus, frequent enactment of aggressive scripts (even through fantasizing) should make their retrieval more likely (Huesmann, 1998). Huesmann also contends that once in place,

aggressive scripts are relatively resistant to change, and therefore chronically influence aggressive behavior throughout development. However, an activated script may remain unused if it is evaluated as negative or inappropriate given the situation. Huesmann posits that whether children act out an aggressive script depends on the self-perception that the script is doable, that enacting the script will lead to desired consequences and that the script is socially acceptable.

Two cognitive schemas that affect whether aggressive scripts will be selected and employed include the child's "normative belief about aggression" and "world views" (Huesmann & Guerra, 1997; Anderson & Huesmann, 2003; Huesmann & Kirwil, 2007). Through inferences drawn from observational learning, children develop normative beliefs about what aggressive behaviors are socially appropriate and develop schemas about how violent they perceive the world to be in general (world schemas). Like aggressive scripts, normative beliefs and world schemas are learned through observation of parents, peers, and media characters (Huesmann, Lagerspetz, & Eron, 1984; Miller, 1991; Henry et al., 2000). A child who is repeatedly exposed to violence in real life or the mass media (including video games) will perceive the world to be a more violent place (i.e., "have hostile attributional biases" or "perceive a mean world") (Signorielli, 1990; Gerbner, Gross, Morgan, & Signorielli, 1994), and also may think that it is socially acceptable to resolve any encountered conflict with violence. Consequently, the child is more likely to enact aggressive scripts in response to perceived provocation.

Thus, through such observational learning and enactment of aggressive schemas, scripts, and beliefs, children not only learn specific aggressive behaviors, but also internalize the values, beliefs, and attitudes that are associated with the process and context of their learning (Huesmann, 1998). Accordingly, as Huesmann and Kirwil (2007) describe, this process can result in "habitual modes of [aggressive] behavior," which last a long time (p. 552). Consistent with this theoretical model, Huesmann et al. (Eron, Huesmann, Lefkowitz, & Walder, 1972; Huesmann, Moise-Titus, Podolski, & Eron, 2003) found that higher levels of childhood exposure to television violence significantly predicted higher levels of aggressive behavior in adulthood (e.g., crime records, traffic tickets, spouse abuse, child hitting), even when other relevant individual and social factors (e.g., education, early parenting, parent aggression, socioeconomic status) were statistically controlled.

Emotional desensitization is another psychological process with long-term implications for aggressive behavior. Desensitization to media violence refers to "emotional habituation" or the gradual increase in emotional tolerance for violence and the reduction of the unpleasant physiological responses to violence that occur with repeated exposures to violence (Carnagey, Anderson & Bushman, 2007; Krahe et al., 2011). Thus, by repeatedly viewing violence over an extended period of time, a person becomes less affected by the unpleasantness associated with violence, both emotionally and physiologically, and as a result, he or she may be less inhibited about behaving aggressively. According to researchers, then, the risk of consuming extensive amounts of violent media is that the likelihood of having aggressive thoughts and acting aggressively increases when depictions of violence no longer cause emotional distress (Huesmann et al., 2003). It should be noted that, like precipitating effects of priming and excitation transfer, this desensitization also is experienced as a "natural" and "unconscious" process, and the enduring effects on aggressive attitudes and behaviors also develop outside of one's conscious awareness.

Disputing Media Violence Effects

Given the compelling amount of empirical data summarized in the preceding and the consistent theoretical explanations for the effects reviewed there, one must wonder how an informed layman, much less an informed social scientist, can dispute the conclusion that media violence causes aggression. Why do "disbelievers" continue to adamantly hold their views in the light of the evidence? Of course, it is amazing to most of us what many people do and don't believe. Large portions of the American population still believe that President Obama was not born in the United States (although a significant portion of people who say "not in the USA," when asked where he was born, then say "in Hawaii"). Many people also believe that all sorts of dietary substances improve or worsen their health when there is absolutely no evidence that the effects exist. But there should be a difference between what the general public may accept about influences on behavior and health and what well-read "public intellectuals" and especially those trained in science and health (p. 164) should accept. Highly educated people, especially those with training in social science research, should be able to evaluate the quality of media violence research and understand what conclusions follow from the preponderance of the evidence. If they are not doing so in a way that represents the conclusions that can be drawn from this body of evidence, it may be that other

psychological factors within them, perhaps unconsciously, are influencing their beliefs.

The remainder of this chapter describes some underlying psychological processes that may motivate (consciously or unconsciously) the disbelievers to reject the evidence drawn from the vast research relating media violence and aggression. We offer theory-driven explanations of the critics' denials. Then we offer conclusions and ideas for future directions of how research may contribute to public opinion and public policy.

Some Flawed Arguments Used to Discredit Media Violence Research

First, however, before we describe the psychological processes that lead to disbelief, we need to briefly address the surface arguments presented by disbelievers as reasons for their disbelief. One common argument is that the evidence accumulated to date has provided little or no indication of a *causal* effect of media violence on viewers' aggressive behavior (e.g., Ferguson, 2009b). Typically, when making this argument, disbelievers ignore experiments and focus on one-shot field studies that, indeed, do not provide evidence of causation. However, other critics (or the same critics at other times) focus only on experiments and argue that the results of such studies are unimportant because they are done in an artificial laboratory setting using measures that do not represent real-world aggression. (Typically, when making this argument, disbelievers ignore one-shot and longitudinal field studies.) Perhaps the most frequent methodological criticism is that experimental studies are contaminated by the artificiality of the viewing situations and laboratory settings (Howitt & Cumberbatch, 1975), and thus the findings are not generalizable to the "real world." This lack of generalizability, however, is not critical if the primary goal of the experiment is to test a causal hypothesis, which requires demonstrating only that manipulating the independent variable can cause the changes in dependent variable. Crano and Brewer (2002) referred to this goal as "psychological realism," which represents the extent to which "the psychological processes that occur in an experiment are the same as psychological processes that occur in everyday life" (p. 110). As the authors argue, although an experimental setting may bear little resemblance to real-life experiences, or what they call "mundane realism," the experimental operations still may capture important underlying processes that are highly representative of those that reflect events in the real world. For this reason, establishing experimental realism would be more imperative for validity of true experimental results. To achieve this, the researcher must ensure the internal validity of his or her research by controlling for the effects of confounding variables that might contaminate the findings.

Of course, the good scientist should combine evidence from well-controlled internally valid experiments with more externally valid field studies in which the criterion measures assess severe forms of actual physical aggression and violence such as fighting, hitting, and bullying at school (McLeod, Atkin, & Chaffee, 1972; Buchanan, Gentile, Nelson, Walsh, & Hansel, 2002; Huesmann et al., 2003; Lee & Kim, 2004). The best way to do this is not to "cherry-pick" selected studies that fit your preconceived ideas, but to conduct a meta-analysis that combines the effects of all studies. When this is done, as described, the comprehensive meta-analyses show positive and very significant effect sizes.

A second approach used by those who want to argue against positive effects has been to combine small truths and minor accurate criticisms with the "big lie" that there are no effects. For example, Freedman (2002) found a number of studies on exposure to media violence in which he could correctly point out specific flaws (e.g., experimenter demands, confounding factors, poor aggression measures). As with any other large body of research in the social sciences, there are studies with methodological flaws—some minor, some major. After reviewing only this subset of studies, Freedman concluded that studies finding positive effects are flawed, and therefore the conclusion that media violence promotes aggressive behavior is not justified. However, as Cantor (2003) stated in her review of Freedman's book, although Freedman raised valid questions on certain issues (e.g., the exaggerated number of published articles on violent media and aggression), he failed to differentiate between "the lack of a statistically significant difference" and "a finding of no effect" (p. 468). Moreover, Huesmann and Taylor (2003) pointed out that Freedman's study-by-study analysis was based on a theoretical vacuum, giving no reference to "a psychological theory that has been advanced to explain why observation of violence engenders aggressive behavior" (p. 119). The authors (p. 165) also argued that Freedman's criteria for evaluation were not consistent across studies, leading to biased and inaccurate readings of the findings of extant literature (see reviews by Cantor, 2003; Crooks, 2003; Huesmann & Taylor, 2003).

A third approach to arguing against the conclusion that viewing media violence causes increased aggression has been to argue that viewing media violence reduces aggression. For example, Fowles (1999) and Jones (2002) have contended that watching violent television serves as an outlet for natural violent impulses and therefore decreases aggression in the viewer. This "catharsis" view, perhaps because it draws on Freudian thinking, is often accepted by mass media and pop psychologists who then encourage angry people to vent their feelings through various aggressive and violent activities (e.g., hitting a pillow or punching bag). Despite its popularity, the catharsis hypothesis has no significant empirical support (Geen & Quanty, 1977; Bushman, Baumeister, & Phillips, 2001). For example, one study showed that people who hit the punching bag after reading a procathartic message subsequently became *more* aggressive than people who read an anticathartic message (Bushman, Baumeister, & Stack, 1999).

A fourth argument frequently offered by disbelievers is that media violence researchers have failed to consider alterative causes of aggression such as personality traits, evolution, or domestic violence (Freedman, 2002; Olson, 2004; Savage, 2004). However, no reputable media violence researcher has ever argued that aggressive behavior is caused only by media violence. In fact, it has been shown in several longitudinal studies that the effects of frequent viewing of violent television shows on later aggression are significant even after statistically controlling for other significant causes of aggression such as the child's prior level of aggression, the child's intelligence or academic achievement, and family of origin socioeconomic status (e.g., Huesmann & Eron, 1986; Huesmann et al., 2003).

Still another badly flawed argument by the disbelievers has been that one should not believe that media violence has an effect because as violent video game sales and violent movie sales have increased in the country in recent years, homicides have decreased. This argument would only make sense if one believed that the only cause of homicides was media violence. It makes as little sense as the counterargument that because homicides increased in the 1960s and 1970s, exactly 15 years after most people got televisions, homicides must be caused by television violence.

A remaining common criticism offered by disbelievers, however, has been that the agreed-on effect sizes (around .15 to .20 for field studies and .30 to .35 for experiments) are too small to be "socially significant" even if they are statistically significant. However, a number of scholars (e.g., Abelson, 1985; Rosenthal, 1986; Anderson et al., 2003) have argued that these effect sizes really are socially significant. These researchers pointed out that although correlations around .20 may seem to explain only small proportions of variance, the squared correlation is the wrong metric with which to evaluate the social significance of a public health threat. Effect sizes of $r = .20$ are very socially meaningful because a very large population is exposed to the risk factor, the effects are likely to accumulate with repeated exposure, and no other explanatory factors have much larger effect sizes. Furthermore, a correlation of .20 amounts to a shift in odds from 50/50 to 60/40 for a dichotomous outcome that is binomially distributed. Such a shift in odds for violence is certainly socially significant. Additionally, Bushman and Huesmann (2001) have shown that such effect sizes are as large as or larger than public health threats such as the link between passive exposure to cigarette smoke and lung cancer, condom use and HIV risk, and calcium intake and bone mass. Recently, Ferguson (2009a) has tried to argue that these kinds of comparisons are inappropriate because medical effect sizes are really usually underestimates of true effect sizes. He argues that most effect sizes for therapeutic drugs are computed by examining samples of both well and sick people and therefore underestimate the true effect sizes because, of course, the drug won't do anything for people who are not sick. However, he misses the fact that his argument is irrelevant to the computation of effect sizes for public health threats like smoking and asbestos, which do not just affect ill people.

Psychological Processes Driving the Denial of Media Violence Effects

Given the existing empirical data, existing theoretical explanations for it, and weakness of the counterarguments reviewed in the preceding that the disbelievers have offered, one has to remain puzzled about why the disbelievers disbelieve. In 2003, Huesmann and Taylor first addressed this issue and offered several psychological explanations for why the disbelievers are so adamant in their disbelief. Here, we present and expand on those explanations.

(p. 166) ### The Need for Cognitive Consistency

First, we argue that a strong drive toward cognitive consistency is behind several reasons for denying the effects of media violence. Cognitive consistency is a remarkably powerful psychological force that affects behaviors and beliefs (Abelson et al., 1968); it requires that new discrepant beliefs be denied or existing beliefs or behaviors be changed when beliefs or beliefs and behaviors are perceived as dissonant. For example, individuals involved in the production or marketing of media violence will find it difficult to believe that viewing violence could be damaging to audiences because that belief would be *cognitively inconsistent* with their existing behavior of producing or marketing violence. The economic fact is that violence in entertainment attracts audiences and makes large amounts of money for its purveyors (Hamilton, 1998). Many of the most vociferous disbelievers represent companies or organizations with vested interests in the money being made by media violence, and a few have been paid by such organizations for what they write (e.g., Friedman, 2002). Recognizing that media violence has negative effects would be discrepant with accepting financial benefits that producing violence engenders or arguing against it produces.

Perhaps equally important, accepting that media violence has negative effects would be discrepant with the purveyors' images of themselves as doing something valuable for society by producing artistic entertainment. This same type of reasoning would apply to those social science consultants to media industries who are paid for their work. Is it possible to be unaffected when one's identity becomes connected to a group with a view? Furthermore, if the purveyors of violence accepted that violence has serious effects on children, they would have to categorize themselves with other purveyors of products that threaten health (e.g., tobacco), which would produce even more dissonance. Years ago the senior author of this chapter was verbally berated in front of a meeting of the director's guild in Hollywood by director Rob Reiner who was incensed that producers of violent films could be compared with purveyors of tobacco. Perhaps his need for cognitive consistency as a director of violent films required him to deny negative effects of media violence, which made it seem cognitively inconsistent and outrageous to him that he could be compared to the tobacco sellers who clearly distribute harmful substances.

This need to maintain a positive self-image also affects the beliefs and behaviors of younger social scientists who have no financial interest in media violence but have grown up using media violence. The generation that graduated from college in the 1960s and began to influence social thinking in the 1970s was the first generation for which television was a major socializer. The generation that graduated from college in the 1990s and began to influence social thinking in the 2000s, however, was the first generation for which video games was a major socializer. We argue that if one grows up developing a self-image that includes "violent television viewer" or "violent video game player" as a major part of one's self-image, the cognitive consistency process will make it very difficult for one to accept that violent television programs or violent video games could cause problems.

In fact, some of the most regular and vocal dissenters in the social science literature have reported having intense and long-lasting involvement with violent media of one kind or another. They do not hide this information; in fact, the information about their spending years of playing multiplayer violent games, or being "glued" to video game consoles, or playing strategy and war games, or playing violent games like "The Borgias" or "Grand Theft Auto," or watching lots of violent television and movies, or even information about their writing violent prose is readily available on their web sites. We are not suggesting that these experiences make the dissenters *consciously* biased. In fact, a number are scientists who strive to be unbiased and value unbiased evaluations. The problem is that cognitive consistency exerts its effect at an unconscious level. Anyone, academic or not, who has an identity associated both with behaving nonviolently and playing violent video games or viewing media violence faces a cognitive inconsistency if he or she accepts the view that those activities make people more violent. This cognitive dissonance creates an unconscious bias against believing that media violence could cause violence that is hard for even them to see.

In addition to affecting those who have grown up using violent media, the cognitive consistency process can lead to a denial of effects for those who believe strongly in the free expression in the mass media. Many individuals with strong liberal beliefs about free expression in the mass media also have strong beliefs about society having a duty to protect children. If they accepted the fact that media violence harms children, they might have to rethink their beliefs about balancing freedom of expression with protecting children. It is easier for them to reduce this cognitive dissonance by denying that media violence has effects than it would be for them (p. 167) to resolve the dissonance by having to alter their beliefs about free expression.

Reactance to Control

Another psychological concept that can account for denial of media violence effects, *reactance*, is most relevant to the artistic community, including authors, movie makes, and game producers. Most humans at a young age develop an aversion to being controlled and respond to such attempts with *reactance*, or attempts to regain or increase their own control (Brehm & Brehm, 1981). We suggest that artists, writers, and producers are particularly susceptible to displaying such reactance when attempts are made to control their creative products, in which their egos are heavily involved. Artists often view statements that their programs or films harm viewers as threats over control. Suppose a researcher tells an artist that a program of his or hers, which is a financial and critical success, is bad because it stimulates violence in the children watching it. The artist, rightly or wrongly, consciously or unconsciously, may well interpret this statement as a threat over control. Therefore, a plausible response by the artist who detests control according to reactance theory would be to attack the researcher's thesis that the program has negative effects on the viewer.

The Third Person Effect

A third psychological phenomenon that is relevant to denial of media violence effects is the *third person effect* in communication research (Davison, 1983). This is the tendency of people to believe that the mass media may be affecting *other* people, but it is not affecting *them* or *their* children—specifically, in this case, the opinion is that "media violence may affect some 'susceptible' people, but it will not affect 'me' or 'my children' because we are impervious to such influences." The third person effect is really not a separate psychological process, but probably a consequence of the two processes described in the preceding (cognitive consistency and reactance). First, with regard to reactance, what viewer wants to admit that he or she is being influenced by messages in the media? To admit this, the viewer would have to admit to being "controlled" to some extent by the media. Reactance would demand some action, then. But if one denies that one is being controlled by the media, one does not need to act, according to reactance theory. Second, with regard to cognitive consistency, if one believes that violence is bad and media violence is causing his or her own aggression or his or her child's aggression, one is in a state of dissonance. The inconsistency could be resolved, for example, by turning the child away from media violence, but it could also be resolved by simply denying that media violence plays any role in causing one's child's aggressive behavior. Similarly, if one's own self-identity is heavily invested in video games and behaving nonaggressively, it is inconsistent with the individual's self-image to play violent video games if they cause *you* to be aggressive. However, it would be fine if you believe that *you* are impervious to the influence, even if *others* are not.

Desensitization

A fourth psychological process that might account for denial of media violence effects is *desensitization*. As reviewed, researchers have shown that repeated exposure to violence both reduces the negative emotional impact that violence has on an observer and generates a cognitive desensitization in the sense that violence is perceived as more normative (Krahe et al., 2011). We are now at a point in history when the emerging generation of policy makers and researchers has mostly grown up playing violent video games as well as observing violent television and movies. The public today, on average, has been exposed to more scenes of violence than any recent generation. Beatings, mutilations, rapes, and murders are all common in violent video games, movies, and television. Although the total level of violence may not have increased substantially on television and in movies in recent years, the explicitness of the violence and blood and gore has increased. Inevitably, this must desensitize the public more to violence. Consequently, the public is less likely to "see" violent video games or violent movies as violent. Thus, it becomes harder for the public to be concerned about the general issue of media violence.

Desensitization to media violence might also account for the argument that a focus on media violence effects takes attention away from what some researchers and policy makers believe to be "more important" causes of aggression (e.g., observing or being victimized by violence in the family, school, and peer group). Indeed, researchers and policy makers themselves are not immune to desensitization. Dedicated individuals opposed to violence may not "see" the violence in video games, movies, or television as particularly upsetting because they have been raised on a diet of that violence. Consequently, they may focus more on exposure to violence in the real world because they have not been exposed to it themselves. If one is not aware of the theory about why observation of violence stimulates violence, one (p. 168) can easily imagine that observation of real-world

violence might have a much more potent effect.

Exposure to "Unbalanced" News Coverage of the Research Findings

Finally, in addition to these four psychological processes that might account for denial of media violence effects, it also is important to note the potentially important influence of news media reports on the topic. Bushman and Anderson (2001) showed that from 1975 to 2000, effect sizes based on scientific studies of the effects of media violence on aggression have actually increased. However, the strongest statements in news reports (the authors found 636 newspaper and magazine articles) about negative effects of media violence peaked in the 1970s and early 1980s, and then weakened through 2000. Specifically, the authors had judges rate news reports on a 21-point scale with –10 assigned to reports stating that violence viewing causes a *decrease* in aggression, –5 assigned to reports saying or implying that parents should *encourage* their children to watch violence, 0 assigned to reports stating there was *no association* between media violence and aggression, +5 assigned to reports saying or implying that parents should *discourage* their children from watching violence, and +10 assigned to reports stating that media violence *causes* aggression. Between 1975 and 1985, the average article was judged at 5.09, but from 1990 to 2000 it was judged as 4.06. This led the authors to speculate on why, as scientific evidence for media violence effects became *stronger*, news articles reported *weaker* effects. The authors speculated that: (1) the news industry might have a vested economic interest in denying the effect; (2) scientists have failed to explain the effect; and (3) the news media may operate according to a "fairness doctrine," that is, in an attempt to present both sides of any argument, they give equal weight to the opinions of both sides. Thus, news reports give "balanced" coverage to both sides of the debate, *despite the fact that the weight of the scientific evidence supports the link between media violence and aggression*. Thus, we argue that the news media may represent a powerful source of influence that shapes public attitudes about media violence effects.

Our view is that the psychological processes we have described along with unbalanced news coverage about any topic, not just media violence, would be likely to lead to intellectually flawed critical thinking by many people about information that is new and in conflict with those individuals' already established beliefs. Scriven and Paul (1987) defined critical thinking thus:

> intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action. In its exemplary form, it is based on universal intellectual values that transcend subject matter divisions: clarity, accuracy, precision, consistency, relevance, sound evidence, good reasons, depth, breadth, and fairness.

They go on to say:

> Critical thinking varies according to the motivation underlying it. When grounded in selfish motives, it is often manifested in the skillful manipulation of ideas in service of one's own, or one's groups,' vested interest. As such it is typically intellectually flawed, however pragmatically successful it might be. When grounded in fairmindedness and intellectual integrity, it is typically of a higher order intellectually, though subject to the charge of 'idealism' by those habituated to its selfish use.

Future Directions

Bushman and Anderson (2001) described some steps that social scientists themselves could take to present their findings and educate the public about the link between exposure to media violence and aggressive behavior. One step is simply to recognize that different types of communication styles are required for the "conservative scientist role" (e.g., presenting research with appropriate caution at scientific conferences) versus the "public educator role" (e.g., offering opinions, without technical language, based on one's general knowledge of the empirical findings). Second, Bushman and Anderson suggested that regarding the public educator role, researchers may communicate to the public how the findings have led to their own personal choices regarding use of violent media. For example, have the research findings affected whether they restrict their own children's violent media use?

Third, the authors argued that researchers need to "realize that the role of disseminating insights gained from their research *is* a part of their job…" (p. 487). In this vein, it is instructive to note that media violence researchers did

indeed contribute to the recently highly publicized court case involving a California law requiring parent approval for sales of violent video games to minors. Thirteen scientific (p. 169) experts (all of whom had published original empirical research on media violence effects in peer-reviewed journals) authored a "Statement on Video Game Violence" to accompany a court brief (the Gruel Brief) in support of the media violence–aggression relation; that report was cosigned by 115 additional experts. An opposing brief (the Millett Brief), filed in support of the video game merchants, was signed by 82 individuals, including researchers, medical scientists, and video game industry executives. Two lower courts, followed by the Supreme Court in June 2011, struck down the law based on an infringement of the First Amendment's freedom of speech guarantee. Gentile and Anderson (2011) noted, "Yet, we can imagine that many parents may misunderstand this ruling as suggesting that there is no evidence that video games can have effects on children. It is important to recognize that this ruling is based on constitutional grounds and is only peripherally related to scientific evidence." Interestingly, Sacks et al. (2011) analyzed the scientific credibility of the "experts" who filed the opposing briefs. Sacks et al. found that Gruel Brief authors and signatories were much more likely to have published peer-reviewed journal articles in the field of aggression/violence, and in particular, media violence effects (including in top-tier journals), compared with Millett Brief signatories. For example, 100% of the 13 Gruel Brief authors and 37% of the 115 Gruel signatories had published at least one peer-reviewed article on media violence, compared with 13% of the 82 Millett Brief signatories. Sacks et al. suggested that the courts need to have at their disposal a way to judge the degree to which briefs' "experts" are truly qualified to make judgments to support their arguments.

Gentile and Anderson (2011) anticipated the Supreme Court's decision to overturn the California law. They wrote, "…we understood that many other factors are relevant to this case beyond research, such as legal precedent, constitutional issues, and political factors." Those authors concluded that perhaps the most effective roles for media violence researchers are to continue to collaborate with industry representatives to improve media ratings systems and educate parents to understand and use these systems. Although we agree with this approach, we also think that, as with other socially relevant effects in the past that the public and courts had trouble accepting (e.g., smoking causes cancer, segregating schools causes poor education for minorities), eventually truth will triumph and dissonance between beliefs and behaviors will be reduced more easily by changing behaviors rather than by denying that effects exist.

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