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Abstract
In the last 10 years, following the incidence of serious acts of school violence—particularly multiple homicides on school campuses—much attention has focused on the potential causal role of violent video game exposure. Some scholars have attempted to draw links between laboratory and correlational research on video game playing and school shooting incidents. This paper argues that such claims are faulty and fail to acknowledge the significant methodological and constructional divides between existing video game research and acts of serious aggression and violence. It is concluded that no significant relationship between violent video game exposure and school shooting incidents has been demonstrated in the existing scientific literature, and that data from real world violence call such a link into question. Copyright © 2008 John Wiley & Sons, Ltd.

Key words: computer games; violence; aggression; school violence; mass media

INTRODUCTION
Following the April 2007 Virginia Tech massacre, in which Seung-Hui Cho killed 32 students and professors, considerable debate emerged regarding the impact of violent video games and other forms of violent media as a causal agent in such serious violent acts. Related to the Virginia Tech shooting, pundits such as the lawyer and anti-game activist Jack Thompson and Dr Phil McGraw (‘Dr Phil’) appeared in national US media outlets stating that violent games were a significant causal factor (McGraw, 2007; Thompson, 2007). As a considerable majority of young males play violent video games (Griffiths & Hunt, 1995; Olson et al., 2007) suggesting that a young male school shooter may have played violent games is hardly as prescient as it may seem on the surface. Thus, it was something of a shock when investigators concluded that Cho had little to no exposure to violent video games (Virginia Tech Review Panel, 2007). Similarly, Sulejman Talovic (age 18), who killed five in a Utah mall on February 12, 2007, was found not to be in
possession of computer or video games (Carlisle & Hunt, 2007). As of this writing, no
evidence has emerged to suggest that the more recent (February 14, 2008) Northern Illinois
University shooter, Steven Phillip Kazmierczak, was an avid player of violent games,
although this may change with further investigation. These recent shootings differ mark-
edly from the Columbine High shooting, in which the perpetrators Eric Harris and Dylan
Klebold were known to have been avid players of Doom (Anderson & Dill, 2000).
Although much speculation persists regarding the role of violent video games and school
shootings, this speculation is seldom based on factual evidence. This paper will attempt
to address this divide and bridge the gap between public debate and scholarly evidence.

METHODOLOGY: IDENTIFICATION OF KEY RESEARCH

Research related to violent video games and aggression was broadly examined for relevant
literature using search terms employed in previous meta-analyses of violent games (Ander-
son, 2004; Ferguson, 2007). To these search terms, targeted searches for (school shoot*
AND [video games OR computer games]) as well as (homicide AND [video games OR
computer games]) were also conducted. Reference sections of all articles were further
searched to gain a comprehensive base of literature for this review.

THE RESEARCH ON VIOLENT VIDEO GAMES: A BRIEF OVERVIEW

Speculation regarding the potential link between violent video games and school shooting
events is not limited to politicians and media ‘talking heads’. Indeed, several scholars have
explicitly linked academic research on violent video games with school shooting incidents
even the 9/11 terrorist attacks are relevant to the media violence debate. Is there a basis
for this generalisation, however?

Video game research tends to fall into two basic forms, experimental and correlational
(which may include longitudinal designs). In most experimental designs, participants
(usually college students) are exposed to either a violent or non-violent game, and then
observed during some task that is presumed to be related, if only distantly, to aggression.
Typical tasks have included delivery of non-painful white noise bursts during a competi-
tive game (Anderson & Dill, 2000; Ferguson, Rueda, & Cruz, 2008b), filling in the missing
letters in words (Carnagey & Anderson, 2006), or filling in the ending of ambiguous stories
(Bushman & Anderson, 2002). Seldom are actual physical acts of aggression examined,
as naturally, there are ethical constraints on the kinds of aggressive acts that can be exam-
inied in the laboratory. Results have generally been mixed, with some studies supporting
a link between violent video games and minor acts of aggression (e.g. Anderson & Murphy,
2003; Carnagey & Anderson, 2006) and others finding no link (e.g. Ferguson, Rueda, &
Cruz, 2008b; Unsworth, Devilly, & Ward, 2007), or even finding reduced aggression
because of violent game exposure (Barnett, Coulson, & Foreman, 2008). At least one study
(Anderson & Dill, 2000) purports to link games with aggression, yet a close examination
of their results finds that their data does not support their conclusions (see Ferguson,
Rueda, & Cruz, 2008b for a discussion).

Even if experimental results demonstrated greater consistency than they do, there are
considerable difficulties in generalising the results from laboratory tests of aggression to

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real world serious acts of aggression (Ritter & Eslea, 2005). Recent results, for instance, have suggested that the noise blast measure of aggression does not correlate with violent crimes or domestic violence (Ferguson, Rueda, & Cruz, 2008b). Nor do peer or teacher nominations of aggression seen in some research (Henry & Metropolitan Area Child Study Research Group, 2006). Thus, the generalisability of these results to real world acts of serious violence is dubious, even if these results were consistent as some have attempted to claim (e.g. Anderson, 2004), is severely curtailed.

Correlational research tends to produce weaker results than does experimental research (Ferguson, 2007). As with experimental results, correlational results are mixed with some studies finding a relationship between violent video games and aggression (e.g. Anderson & Dill, 2000; Gentile et al., 2004), others finding no relationship (e.g. Ferguson et al., 2008a; Williams & Skoric, 2005), and still others finding that violent games may reduce aggression (e.g. Colwell & Kato, 2003). Unfortunately, most correlational studies fail to take account of potentially confounding ‘third’ variables such as personality, family violence, or genetics. A few do, and consistently find that the link between video game violence and aggression is greatly weakened by the inclusion of ‘third’ variables. For instance, Ferguson et al. (2008a) find that family violence exposure, not video game violence, is predictive of violent criminal acts. Gentile et al. (2004) find that even including gender alone as a predictor variable greatly weakens the relationship between violent games and aggression. The only peer-reviewed longitudinal study on violent video games available thus far found no relationship between video game exposure and aggressive acts (Williams & Skoric, 2005), although this study lasted for only 1 month. One non-peer-reviewed longitudinal study did find a small association between video game playing and aggression (Anderson, Gentile, & Buckley, 2007), although this study poorly controlled for relevant third variables.

Recent meta-analytic results have also questioned the links between violent video games and aggression. Ferguson (2007) found significant problems in the violent games literature related to the use of unstandardised, unreliable aggression measures, as well as publication bias. Ferguson concluded that no causal or correlational relationship between violent games and aggression had been demonstrated through the current literature. Sherry (2007) came to a similar conclusion, suggesting even that the catharsis hypothesis (that violent games may reduce aggression) ought to be better examined than it has been in past research. In the most recent meta-analysis on violent media more generally (Savage, 2008), no relationship between consuming violent media and violent crimes was found. A recent review commissioned by the British government (Byron, 2008), although not a meta-analysis, also noted that the research on video games was unable to support a link with serious acts of aggression or violence, although continued self-regulation and the provision of high-quality ratings for parents of child consumers was recommended (a relatively non-controversial recommendation).

From this body of research, the empirical link between violent gameplay and serious acts of aggression or violent behaviour appears to be slim at best. However, most research done on violent games is conducted with ‘normal’ children or adults, and certainly not with individuals at high risk for school shootings. Whilst this limits the generalisability of existing video game research to the (very small) school shooter population, it also raises the question regarding findings in the literature on school shooters themselves. It could reasonably be argued that school shooters present a particular ‘at risk’ subgroup of individuals (primarily males) for whom violent video games may increase aggression, even if violent games do not increase aggression in ‘normal’ populations. Violent video games,
then, could be arguably synonymous to peanut butter: a perfectly harmless indulgence for
the vast majority, but potentially harmful to a tiny minority.

THE DATA ON SCHOOL SHOOTERS

Given that mass school shooters are a very small population of individuals, and given that
all of them ultimately end up either dead or incarcerated (Jonesboro shooter Mitchell
Johnson was released from juvenile incarceration on his 21st birthday, but has since been
rearrested for several non-violent charges and awaits sentencing as of this writing; co-
shooter Andrew Golden was also released and his whereabouts are not known to this
writer), empirical research on school shooters specifically is understandably thin.

Reddy et al. (2001) discuss the issue of evaluating risk and threat of targeted school
violence. As noted, each approach, such as risk assessment and threat assessment, carries
certain benefits and risks. Many approaches, such as the identification of ‘profiles’ of
school shooters, carry a significant risk of overidentification or false positives (Sewell &
Mendelsohn, 2000). Furthermore, data collected regarding risk factors for other types of
delinquency or aggression may not prove useful in the prediction of school shooting
(Borum, 2000).

Probably the most comprehensive study of school shooters to date was conducted by
This report examined 37 school shooting incidents involving 41 perpetrators from 1974–
2000. Primary data sources included police reports, school reports, mental health records,
and interviews with 10 of the surviving perpetrators. In general, the report challenged the
notion that a ‘profile’ of school shooters existed. Prior organisations such as the Federal
Bureau of Investigations (1999) had attempted to respond to public demand by providing
characteristics of ‘at risk’ individuals for serious acts of violence at school. Although the
FBI cautioned against overuse of this ‘profile’, stating that it should be used only after an
individual has made a threat in order to judge the credibility of the threat, the Secret Service
report suggested that even this approach may have been of limited utility. Indeed, the
Secret Service report suggested that school shooters were rather diverse, with the only
‘predictive’ theme being that many provided information or threats in advance about their
plans.

The FBI report (1999) had included ‘unusual fascination’ with violent media amongst
its potential predictors. As most young males consume considerable amounts of violent
media (e.g. Griffiths & Hunt, 1995; Olson et al., 2007), ‘unusual’ consumption necessitates
reaching a very high bar. The report also suggests that incessantly reading/viewing a par-
ticular book or visual media with violent, or school violence content, may be a predictor.
The FBI report appeared to reflect individuals who approved of hateful or destructive
messages in the media, rather than merely enjoying the media for entertainment purposes.
For instance, an individual who praised Mein Kampf and its message of racism and hatred
would arguably be considered more ‘at risk’ than someone who enjoyed playing
the violent video game Medal of Honor because it was fun. Indeed, related to violent video
games, the FBI report specifically stated, “The student spends inordinate amounts of time
[although inordinate is never defined and is left subjective] playing video games with
violent themes and seems more interested in the violent images than the game itself”
[italics added]. Thus, an overall interest in causing harm is potentially predictive of vio-
ence, not exposure to violent media in and of itself, a conclusion supported by the recent
Savage, (2008) meta-analysis. The FBI report also carefully notes that no one or two
School shootings and video games

predictors should be given unique weight, despite that this often happens in regard to
violent games, with even some scholars pointing to video games as a unique link between
school shooting cases (Anderson, 2004). The FBI report has come under some criticism,
for the relatively low number of cases used in developing the profile (Reddy et al.,
2001).

Related to media violence generally, and video game violence specifically, the results
from the Secret Service report (2002) were even more striking. Only 59% of perpetrators
demonstrated ‘some interest’ in violent media of any kind (as compared to Griffiths &
Hunt’s 1995 results suggesting that over 90% of non-violent males play violent video
games alone) including in their own writings. For video games, the figure was even
lower—only 12%. Video games featuring person-on-person violence began to become
widely available in the early 1980s with games such as Castle Wolfenstein (1981), Chiller
(1986), Swashbuckler (1982), and others. The graphicness of such games increased in the
late 1980s with games such as Street Fighter (1987), Mortal Kombat (1992), and Doom
(1993). Three of the school shootings occurred before the widespread availability of
violent games (one in 1974 and two in 1978) with two others (1985 and 1986) occurring
before the release of Street Fighter. As these cases had either no or little access to violent
games, they clearly should not be included in the percentile analysis on violent game
interest. Readjusting for this fact, we find that the percentage of perpetrators with ‘some
interest’ in violent games increases to only 14%. Removing three more (1987, 1988, and
1989) cases prior to the release of Mortal Kombat improves the percentile only to 15%.
Thus, we can see that even removing individuals from the sample who are unlikely to
have had access to violent games does little to influence the surprisingly low percentage
of shooters with ‘some interest’ in violent games. Given prior data suggesting that the
majority of young males play violent games (Griffiths & Hunt, 1995; Olson et al., 2007),
this data would seem to suggest that school shooters have less interest in violent games,
not more. It is important to point out several caveats to this possibility, however, given
the existing data. First, there is no study comparing school shooters to a contemporary
group of non-pathological youth. Such a study would be the ideal standard by which to
examine media consumption in school shooters. Secondly, the Secret Service’s use of the
terms ‘some interest’ is vague and difficult to quantify. It is worth noting that school shoot-
ings, such as that committed by Charles Whitman at the University of Texas in 1966,
occurred long before the widespread availability of video games. However, these results are not
without precedent in other areas involving the intersection of media and violent crimes,
as increased availability to pornography has been found to be associated with decreased
sexual assault rates (Diamond & Uehiyama, 1999). Sex offenders have been found to have
used less pornography, and been exposed to pornography later in life than non-offenders
(Becker & Stein, 1991; Goldstein & Kant, 1973; Kendall, 2006; Nutter & Kearns, 1993;

Although these results are interesting and run contrary to much of the public discourse,
it must be cautioned that there is a danger in comparing ‘apples to oranges’ in that the
contrast is between two data sets, the Secret Service report and that by Griffiths and Hunt
(1995) and Olson et al. (2007) with potentially different methods of data collection.
However, it may be valuable to address this question by examining the video game con-
sumption histories of non-violent controls and violent offenders to see how they may differ.
Nonetheless, the evidence available to date on school shooters is not supportive of the
hypothesis that their consumption of violent video games played an etiological role in the
instigation of school shooting incidents.

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In the 1980s, the paper-and-pencil board game *Dungeons and Dragons*, in which (to simplify the game quite a bit) players assume the roles of wizards, knights, and priests and slay monsters as part of an ongoing story, generated a substantial amount of controversy (Cardwell, 1994; Waldron, 2005). The game is highly immersive and featured demons and involved paganesque religions, and thus naturally attracted considerable condemnation from conservative religious groups concerned about Satanism and moral turpitude. Some therapists and mental health professionals worried about the game’s impact on suicide and psychosis, particular given the oft-repeated but somewhat apocryphal view that ‘kids can’t tell fiction from reality’ (this same belief was also applied to women during the 19th century, who it was believed would suffer ill effects from reading novels (Kirschenbaum, 2007), although actual research on this phenomenon remained scarce (Waldron, 2005) and tended not to support the alarmist view. In this sense, the moral panic regarding *Dungeons and Dragons* differed from that regarding video games, in that the scientific community produced little research on the topic, one way or another. *Dungeons and Dragons*, despite its popularity, clearly never touched off a wave of child mental health problems or aggression and, save for a few ongoing religious commentaries, the controversy over *Dungeons and Dragons* has largely faded from view.

The emergence of violent video games appears unlikely to be the cause of any wave of child mental health problems, increased problems with aggression, or violent crimes amongst either youth or adults. Government agencies, from the Virginia Tech Review Panel (2007), to the United States Secret Service and United States Department of Education (2002), to the UK’s Byron Report (2008) have found little evidence of violent games sparking an increase in youth violence or school shootings specifically. Why, then, does this discussion persist?

Several authors (Burns & Crawford, 1999; Gauntlett, 1995; Lawrence & Mueller, 2003; Sternheimer, 2007; Trend, 2007) have discussed mechanisms by which politicians, news media, and social scientists interact to cause a moral panic in the general populace. A moral panic occurs when a segment of society believes that the behaviour or moral choices of others within that society poses a significant risk to the society as a whole (Cohen, 1972; Gauntlett, 1995). Moral panics may emerge from ‘culture wars’ occurring in a society, although moral beliefs often become disguised as scientific ‘research’, oftentimes of poor quality (Gauntlett, 1995). Each of these groups arguably has motives for promoting hysterical beliefs about media violence, and video games specifically. Actual causes of violent crime, such as family environment, genetics, poverty, and inequality, are oftentimes difficult, controversial, and intractable problems. By contrast, video games present something of a ‘straw man’ by which politicians can create an appearance of taking action against crime (Kutner & Olson, 2008). As for the news media, it has long been recognised that negative news … including that which promotes extreme views of a potential problem, ‘sell’ better than do positive news (Surette, 2006). As such, news media and politicians may both pay greater attention to ‘negative’ news about video games than ‘positive’ news as it better suits their agendas. As for social scientists, it has been observed that a small group of researchers have been most vocal in promoting the anti-game message (Kutner & Olson, 2008), oftentimes ignoring research from other researchers, or failing to disclose problems with their own research. As some researchers have staked their professional reputation on anti-game activism, it may be difficult for these researchers to maintain scientific objectivity regarding the subject of their study. Similarly, it may be argued that...
granting agencies are more likely to provide grant money when a potential problem is identified, rather than for studying a topic with the possibility that the outcome may reveal that there is nothing to worry about (this may be similar to pharmaceutical research in which pharmaceutical companies are more likely to fund researchers whose results are more friendly to their products, or publish research that is supportive rather than non-supportive [see Turner et al., 2008]).

Figure 1 presents the ‘Moral Panic Wheel’, which has been adapted from Gauntlett’s, (1995) theories about the origins of moral panic. In this model, ‘societal beliefs’, which may include ‘commonsense notions’, moral beliefs, religious beliefs, scientific dogma, and other beliefs, essentially ‘spin the wheel’ of moral panic. The populace begins to become concerned about something, in this case, the media (although other issues such as immigration, race, homosexuality, etc., could also apply to this model), particularly something that is new, foreign, or alien. It may be more likely that societal ‘elders’ who are particularly unfamiliar with a new media technology, and perhaps wary of youth rebelliousness against the social order, are often the progenitors of a panic.

It has been the observation of this author, for instance, that the majority of individuals critical of video games are above the age of 35 (many are elderly) and oftentimes admit to not having directly experienced the games. Some commentators make claims betraying their unfamiliarity, such as that games such as Grant Theft Auto ‘award points’ for antisocial behaviour (e.g. Dads & Daughters, 2008; Mello, 2004; Meltz, 2003) despite that few games award points for anything anymore, instead focusing on stories. Even Grand Theft Auto includes negative ramifications for antisocial behaviour, such as police

Figure 1. The moral panic wheel.

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attention, and it would be more accurate to state that *Grand Theft Auto* does not prohibit antisocial behaviour, more so than awarding points for it. The player is left to make many decisions in this regard for themselves.

In one recent unfortunate incident, the psychologist Cooper Lawrence discussed the video game *Mass Effect* on Fox News and compared some scenes in the game to pornography (see [Gamepolitics.com, 2008a], which includes a partial transcript of the discussion). It quickly was revealed that Dr Lawrence had not actually played the game, and ultimately recanted her statements that were erroneous. It is quite possible that Dr Lawrence was ‘tricked’ in some way by Fox News, yet she also bears responsibility for commenting on a medium with which she was not familiar. It is to Dr Lawrence’s credit, however, that she recanted her erroneous statements.

These societal beliefs become the basis for early news stories and calls for ‘research’ of the potential problem. As the moral panic develops, research is ‘cherry-picked’ that supports the panic. Research supportive of the moral panic is accepted without question (or thorough examination), whereas research suggestive that little problem exists is typically ignored (or at best, criticised and discarded). In at least one recent court case, it was pointed out that even some social scientists have cherry-picked data that support the panic view, ignoring unsupported research (ESA, VSDA and IRMA v. Blagojevich, Madigan and Devine, 2005). The Illinois case cited above mentions this issue in several passages, noting that:

‘With regard to their conclusions, Dr. Goldstein and Dr. Williams noted that Dr. Anderson not only had failed to cite any peer-reviewed studies that had shown a definitive causal link between violent video game play and aggression, but had also ignored research that reached conflicting conclusions. Dr. Goldstein and Dr. Williams noted that several studies concluded that there was no relationship between these two variables. They also cited studies concluding that in certain instances, there was a negative relationship between violent video game play and aggressive thoughts and behavior (e.g., initial increases in aggression wore off if the individual was allowed to play violent video game for longer period).’ (ESA, VSDA and IRMA v. Blagojevich, Madigan and Devine, 2005, pp. 14–15).

The court also expresses similar concerns about cherry-picking of data by politicians involved in enacting anti-game legislation, noting (ESA, VSDA and IRMA v. Blagojevich, Madigan and Devine, 2005, p. 16):

‘Finally, the Court is concerned that the legislative record does not indicate that the Illinois General Assembly considered any of the evidence that showed no relationship or a negative relationship between violent video game play and increases in aggressive thoughts and behavior. The legislative record included none of the articles cited by Dr. Goldstein or Dr. Williams. It included no data whatsoever that was critical of research finding a causal link between violent video game play and aggression. These omissions further undermine defendants’ claim that the legislature made “reasonable inferences” from the scientific literature based on “substantial evidence.’

The media dutifully reports on the most negative results, as these results ‘sell’ to an already anxious public. Politicians seize upon the panic, eager to be seen as doing something particular as it gives them an opportunity to appear to be ‘concerned for children’.
School shootings and video games

on the far right, who typically are concerned for religious reasons, and on the far left, who
are typically motivated by pacifism (for a discussion of the influence of politics on psy-
chological science, see Redding [2001]).

The unfortunate result of this moral panic wheel is that mistaken beliefs are promulgated
in the general public and the hysteria sown for the gain of the news media, politicians,
and some activist scholars. The cost comes in reference to personal freedoms, the threat
of increased government intrusion in parenting (i.e. the so-called ‘Nanny State’), and loss
of credibility for social science (e.g. Sikes, 2008) once the most dire of predictions to not
come true (as is already the case in regard to video games).

The reality is that (as presented in Figure 2, data from Childstats.gov, 2007; Entertain-
ment Software Association, 2007), as violent video games have become more prevalent,
violent crimes have decreased dramatically. This is true both for police arrest data, as well
as crime victimisation data. Similar statistics for reduced crime have been found in Canada,
Australia, the European Union, and the United Kingdom using both arrest and victimisa-
This is certainly not to say that violent video games are necessarily responsible for this
decline, even partially. However, this certainly cuts away the basis of any belief that violent
games are promoting societal violence. The correlation (an astonishing \( r = -0.95 \)) is simply
in the wrong direction. This would be akin to lung cancer decreasing radically after
smoking cigarettes was introduced into a population, which is simply not the case.

Almost all research on video game violence examines ‘normal’ populations of indi-
viduals. Unfortunately, little research has examined the possibility that, whilst most chil-
dren are unaffected by violent video games, small groups of children with existing
problems may be ‘at risk’. Only further investigation will elucidate whether this is
a possibility.

School shootings, although exceedingly rare, are an important issue worthy of serious
consideration. However, for our understanding of this phenomenon to progress, we must

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Figure 2. Youth violence and video game sales data.
move past the moral panic on video games and other media and take a hard look at the
real causes of serious aggression and violence. A recent editorial in the medical journal
*The Lancet* (2008) suggested that the time may have come to move beyond research focusing
on media violence, generally, as a cause of serious aggression. As presented here, the
wealth of evidence, from social science research on video games, to governmental reports
and legal cases, to real world data on crime, fails to establish a link between violent video
games and violent crimes, including school shootings. The link has not merely been
unproven; I argue that the wealth of available data simply weighs against any causal
relationship.

Regarding the investigative implications of this conclusion, I argue that excessive
investigative focus on potential violent game effects are a poor use of police resources.
Given that the majority of young males play violent video games (Griffiths & Hunt, 1995;
Olson et al., 2007), ‘linking’ an individual crime to violent games easily risks the investiga-
tive equivalent of a type I error. Such errors may mislead the public, contribute to
unnecessary panic, and focus attention away from real social issues that contribute to youth
crime. This is true also in cases in which perpetrators themselves claim to have been
influenced by games. In the US, this occurred recently in a June 2008 ‘crime spree’ by six
youths, in which one youth made a reference to *Grand Theft Auto*, (Gamepolitics.com,
2008b). In this recent case, police alleged that one of the suspects made comments suggest-
ing that he was mimicking the game *Grand Theft Auto IV*, although the police also
noted that several of the youths had previous criminal records. The police have, at the time
of this writing, not made the youth’s comments publicly available. However, it is common
for criminal offenders, once caught, to cast blame for their own actions on multiple exter-
nal causes, oftentimes their victims, their parents, peers, alleged mental illnesses, society
as a whole, etc. Blaming video games is simply ‘more of the same’ and it is remarkable
that law enforcement officers would consider offender statements to the effect of blaming
games as credible, when statements blaming other sources would likely be viewed as
non-credible.

In regard to offender profiling, if profiling must be undertaken for school shooters (and
with data currently available, it is not recommended by this author), the issue of video
game exposure be discarded as a facet of any such profiles. There is simply no
quality evidence for the predictive value of violent game exposure as a risk factor for
school shootings. Indeed, the risk of false positives is significant, even when considered
in light with other variables (the inclusion of even one or two ‘universal variables’, that
is, variables that are near universally true for the population of interest, give the illusion
of multiple risk factors when considered in combination). Even if the focus is on ‘incess-
ant’ interest in violent games, most elders (teachers, parents, psychologists, etc.), as
unfamiliar with game culture as most are, simply lack the perspective to evaluate what
constitutes ‘incessant’ interest, and what is developmentally normal or even healthy. Again,
aside from individuals who claim in advance that they are going to commit a school shoot-
ing, it is argued here that not enough data exists to suggest that a consistent ‘profile’ of
potential school shooters exists that would avoid significant risk of false positives.
Certainly, the inclusion of violent game exposure as a potential risk factor worsens the
predictive utility of any such profile.

This review of violent video games and school shootings is viewed as a platform for
further discourse and research, as well as a potential source of information for public
policy. If further debate on violent video game effects is stimulated by this paper, its
mission will have been largely achieved.
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<td>Au: Kirschenbaum 2007. Please confirm that this is a single-page article.</td>
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<td>7.</td>
<td>Au: The Lancet 2008. Please confirm that this is a single-page article.</td>
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