

*Journal of Police Crisis Negotiations*, 11:1–17, 2011  
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ISSN: 1533-2586 print / 1533-2594 online  
DOI: 10.1080/15332586.2011.581523



1 **Psychological Profiles of School Shooters:**  
2 **Positive Directions and One Big Wrong Turn**

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7 *A wave of school shootings in the mid- to late 1990s led to great*  
8 *interest in attempts to “profile” school shooters with an eye both*  
9 *on identifying imminent perpetrators and preventing further inci-*  
10 *dents. Given that school shootings are generally rare, and many*  
11 *perpetrators are killed during their crimes, the availability of school*  
12 *shooters for research is obviously limited. Not surprisingly, initial*  
13 *profiles of school shooters were arguably of limited value. Although*  
14 *school shooting incidents, particularly by minors, have declined,*  
15 *some evidence has emerged to elucidate the psychological elements*  
16 *of school shooting incidents. School shooting incidents may follow*  
17 *extreme versions of etiological pathways seen for less extreme youth*  
18 *violence, and youthful school shooters appear more similar than*  
19 *different to adult perpetrators of mass shootings. The quest to un-*  
20 *derstanding school shootings has led to several wrong turns, most*  
21 *notably the quixotic desire by politicians, advocates, and some*  
22 *scholars to link both school shootings and less extreme youth vi-*  
23 *olence to playing violent video games, despite considerable and*  
24 *increasing evidence to the contrary.*

25 *KEYWORDS School shootings, youth violence, aggression, com-*  
26 *puter games, video games*

27 Mass homicides on academic campuses (henceforth referred to as “school  
28 shootings”<sup>1</sup>) were not a new phenomenon to the 1990s. Charles Whitman,  
29 the 25-year-old University of Texas sniper, killed 16 and wounded more

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30 than 30 during one of the most famous and fatal incidents in 1966, and nu-  
31 merous smaller non-headline-grabbing incidents occurred both before and  
32 after (United States Secret Service and United States Department of Educa-  
33 tion, 2002). However, the 1990s saw an unusual string of such incidents,  
34 particularly those involving relatively young teen and even preteen shooters.  
35 Depending on how one counts them, these incidents began roughly with  
36 that of Gang Lu at the University of Iowa in 1991, who may have been  
37 aggrieved over a slight to his physics dissertation, and concludes with at  
38 least five incidents in 1999, including the infamous Columbine High Mas-  
39 sacre. The 2002 report by the U.S. Secret Service provides a rough outline of  
40 school shooting incidents, and the relative peak in the 1990s is quite clear. Of  
41 course these “famous” incidents likely eclipse many more “lesser” shootings  
42 on school campuses that did not garner media attention, particularly those  
43 at inner city and minority schools where violence may be less surprising. It  
44 is probably safe to say this rash of school shooting in the U.S. took soci-  
45 ety by surprise, leading to fears of an “epidemic” of juvenile superpredators  
46 (Killingbeck, 2001; Muschert, 2007). Soon followed demands for answers on  
47 why this rash of mass homicides among the young had occurred; how such  
48 perpetrators could be identified in advance; and what steps parents, teach-  
49 ers, and government could take to prevent further incidents. The result was  
50 a considerable amount of misinformation and arguably considerable damage  
51 to individual youth, scientific integrity, and misguided public policy. As the  
52 1990s turned to a comparatively calm 2000s, researchers can now look back  
53 and understand a bit more about the school shooting phenomenon of the  
54 1990s and more recent events of the 2000s.

## 55 THE DEMAND FOR ANSWERS—WHETHER GOOD ONES OR BAD

56 The phenomenon of increased school shootings in the 1990s must be un-  
57 derstood in the context of violent crime rates more generally. From a period  
58 beginning roughly in the late 1960s, and particularly peaking in the 1980s  
59 and 1990s, the United States experienced one of its periodic crime waves  
60 (others having occurred in the 1930s and late 1800s). By 1993 this vio-  
61 lent crime wave, including youth violence, began to decline, although the  
62 strength of this decline likely was not fully apparent until the early 2000s. As  
63 of this writing, youth violence is at its lowest level since the mid 1960s—that  
64 is, before the major crime wave began (Childstats.gov, 2010). These trends  
65 were not unique to the United States, as most other industrialized nations  
66 saw similar rises and falls across the same period (van Dijk, van Kesteren, &  
67 Smit, 2007), although the United States stood out in sheer numbers, partic-  
68 ularly regarding homicides. Compared to the U.S., for instance, the United  
69 Kingdom had similarly high violent assault rates, but lower homicide rates  
70 (Nicholas, Kershaw, & Walker, 2007).

71 Thus, the rash of school shootings in the United States occurring in the  
72 1990s appears to lag behind more general youth violence trends. That is, as  
73 youth violence began to decline, mass homicides perpetrated by youth and  
74 young adults at academic campuses spiked. Part of this may owe simply to  
75 fluctuations in very rare phenomena, a certain degree of copycatting, and the  
76 tendency to define only certain attention-getting mass homicides as “school  
77 shootings” while ignoring a wider range of incidents, particularly among  
78 inner city or minority youth in which youths shoot people in schools. Events  
79 in Europe and elsewhere appear to have lagged further still, with a relative  
80 peak of European school shootings in the 2000s (with Germany and Finland  
81 in particular seeing multiple events) and a rash of school *knifings* in China  
82 in the late 2000s.

83 It is important to understand the rates of school shootings in light of  
84 Killingbeck’s (2001) warnings regarding the social construction of the phe-  
85 nomenon. Although mass homicides with multiple victims are, of course  
86 notable, events with fewer victims that may previously simply have fallen  
87 under the general youth violence umbrella may now shift under the “school  
88 shooter” umbrella, making difficult an examination of prevalence trends over  
89 time. For instance, only an event like the University of Texas sniper case in  
90 1966 may withstand the test of time when looking back retrospectively to  
91 the 1960s, with many shootings on school campuses forgotten because they  
92 never received headline attention. The best current evidence suggests that  
93 single homicide shootings in the United States have declined along with gen-  
94 eral youth violence rates, but that multiple homicides have remained stable  
95 across the 2000s (Centers for Disease Control, 2008). Of course these events  
96 generally remain rare, and discussions of prevalence of such events must  
97 be considered in light of this rarity (Wike & Fraser, 2009). For example, the  
98 steady rate of rare occurrences may be understood simply as a facet of an ex-  
99 ploding youth population. In the context of an increasing population, even  
100 very rare events are bound to become more common in absolute numbers  
101 even if their per capita rate remains constant.

102 With that in mind, many scholars have commented that public concerns  
103 about school shootings were somewhat out of sorts with the actual rarity of  
104 the events (Ferguson, 2008; Killingbeck, 2001; Muschert, 2007; Wike & Fraser,  
105 2009). These public concerns may be understandable, given the ferocity of  
106 the multiple homicide events, the fact children were victims, and the sense  
107 of helplessness fostered by the perception that such events could happen in  
108 any community (not just, one might cynically add, in inner city or minority  
109 communities where they might be “expected” and ignored).

110 Public fears demanded answers in hopes of providing some veneer  
111 that future events could be prevented, most typically through notions of  
112 profiling, which offered the possibility of identifying likely shooters be-  
113 fore the acts were perpetrated. Most scholars recognize that empirical ev-  
114 idence on school shooters is slim (Borum, 2000; Ferguson, 2008; Hong, Cho,

115 Allen-Meares, & Espelage, 2011; Langman, 2009; Wike & Fraser, 2009) and  
 116 that “profiles” of school shooters carry considerable risks of overidentification  
 117 (Mulvey & Cauffman, 2001).

118 Notwithstanding this, several attempts have been made at developing  
 119 such profiles, typically aimed at “school violence” more broadly than just  
 120 school shooters. The American Psychological Association (APA) (accessed  
 Q1 121 2010, although origin date is unspecified) maintains a web pamphlet on the  
 122 warning signs of youth violence. Beginning with a melodramatic one-word  
 123 sentence—“Violence. It’s the act of purposefully hurting someone. And it’s  
 124 a major issue facing today’s young adults.”—the last statement being some-  
 125 what at odds with plummeting youth violence rates, the pamphlet goes  
 126 on to list a series of “warning signs” for serious youth violence. Some of  
 127 these—“enjoying hurting animals,” “detailed plans to commit acts of vio-  
 128 lence,” “announcing threats or plans for hurting others”—are quite reason-  
 129 able, although one suspects visiting the APA web site shouldn’t have been  
 130 necessary to identify these as warning signs. Others such as “frequent phys-  
 131 ical fighting” have merit, but are vague (i.e., how frequent is “frequent?”).  
 132 Yet others, such as “feeling rejected or alone,” “poor school performance,”  
 133 “access to or fascination with weapons, especially guns” (which sounds  
 134 reasonable on the surface, but is probably quite common in males), could  
 135 probably apply to large swaths of mentally well juveniles. The APA pamphlet  
 136 also makes statements that have largely been discredited in recent research  
 137 such as that “Violence is a learned behavior” (for an overview of the ge-  
 138 netic and evolutionary roots of violence, see Ellis & Walsh, 1997; Ferguson  
 Q2 139 & Beaver, 2009) or the notion that viewing media violence contributes to  
 140 violent behavior, an idea popular in some circles, but never the recipient of  
 141 good supporting data (see Grimes, Anderson, & Bergen, 2008; Olson, 2004;  
 142 Savage, 2004 for discussions).

143 Perhaps more influential was a threat assessment for school shooters  
 144 provided by the Federal Bureau of Investigation (1999). The FBI cautioned  
 145 against overuse of this “profile,” stating that it should be used only after an  
 146 individual has made a threat in order to judge the credibility of the threat.  
 147 Such a protocol may go some way to addressing the generally low speci-  
 148 ficity of profiling tools. As with the APA pamphlet, the FBI report can’t resist  
 149 beginning with a dramatic opening statement—“Youth violence has been  
 150 one of the greatest single crime problems we face in this country.”—which  
 151 once again seems dated in retrospect. As with the APA pamphlet, the FBI  
 152 report (which is, to its credit, more detailed in how the conclusions were  
 153 reached) is a mixture of reasonable conclusions (e.g., “injustice collector,”  
 154 “dehumanizes others,” “lack of empathy”), vague (“unreasonable interest in  
 155 sensational violence”) and overly broad warning signs (e.g., “failed love  
 156 relationship,” “attitude of superiority,” “exaggerated need for attention,” “ex-  
 157 ternalizes blame,” “closed social group,” and “fascination with violence-filled  
 158 entertainment”). The use of vague descriptors such as “unreasonable” and

159 “inordinate” when describing things such as interest in violent themes (which  
160 in moderate amounts are common to almost all males and many females),  
161 are particularly unhelpful given the subjectivity of any assessments based  
162 upon them. In fairness to the FBI report, they do caution against overuse of  
163 their warning signs, acknowledging these risks; however, the risks of these  
164 kinds of broad and vague warning sign lists are great with the overidentifi-  
165 cation of many harmless youth who may be stigmatized or simply offended  
166 to be mistakenly identified as “violence prone.” Further, the FBI report has  
167 come under some criticism for the relatively low number of cases used in  
168 developing the profile (Reddy et al., 2001).

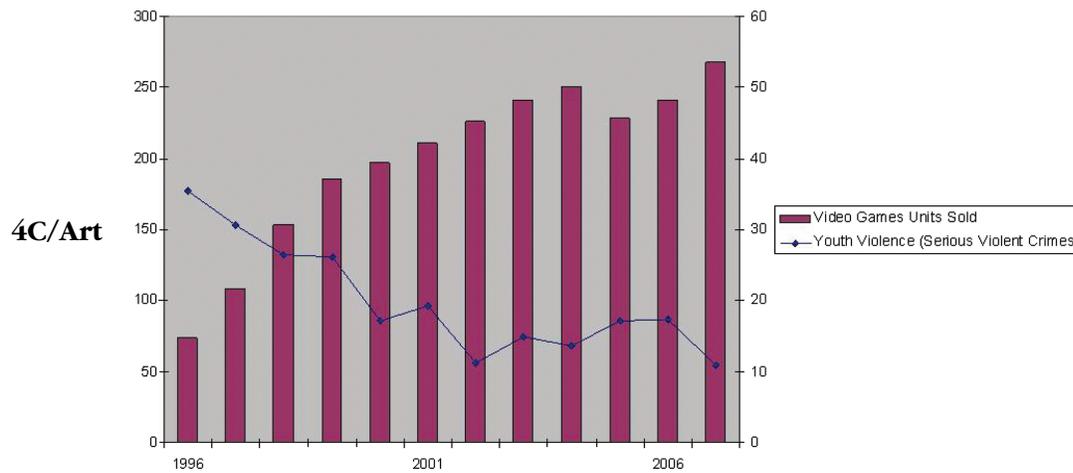
169 The APA pamphlet and FBI threat assessment were certainly well-  
170 intended documents, although they mixed together a certain degree of em-  
171 pirically valid information, common sense and nonsense together, produc-  
172 ing documents that ultimately are unwieldy and unreliable. However, both  
173 groups undoubtedly were doing their best to respond to vocal demands  
174 for answers from policy makers and the general public. Of course such  
175 demands can take on something of a life of their own, with the public ar-  
176 guably preferring relatively simple answers offering the promise of an easy  
177 solution. For instance, in their analysis of the Columbine High shootings in  
178 1999 Lawrence and Birkland (2004) found that news media tended to fo-  
179 cus on external factors such as movies, music, and video games, as well as  
180 the Gothic subculture, rather than on internal factors such as the depres-  
181 sion and psychopathic traits of the perpetrators themselves. Such a view  
182 arguably presents a nostrum in which school shootings are the product of  
183 a societal error rather than an internal problem within individuals; such a  
184 societal problem could be fixed via legislation and government intervention.  
185 Such moves are arguably a double advantage for governments, giving politi-  
186 cians the near-unassailable veneer of being “concerned for children” while  
187 simultaneously expanding government power and influence. They also may  
188 result in major deviations and distractions that can set back understanding  
189 of complex phenomena for years. As one such example, understanding of  
190 school shooters became largely mired in a debate over video game violence  
191 that only now is beginning to be unraveled as a spectacular wrong turn.

## 192 UNDERSTANDING THE PANIC OVER VIDEO GAME VIOLENCE

193 If fears of school shootings can be understood as a moral panic in which  
194 societal response seemed both emotionally laden and out of proportion with  
195 the actual risks (Killingbeck, 2001; Muschert, 2007) then the diversion into  
196 the issue of violent video games can certainly be understood within the same  
197 vein (Ferguson, 2008; Grimes et al., 2008; Kutner & Olson, 2008). Societal  
198 concern about emerging violent video games such as *Mortal Kombat* and  
199 *Street Fighter* certainly predated the school shooting peak of the late 1990s.<sup>2</sup>

200 In one incident of remarkable hyperbole, Senator Joseph Lieberman referred  
 201 to violent video games as “digital poison” (CNN, 1997). However, the focus  
 202 on the Columbine High massacre, with the observation that Eric Harris and  
 203 Dylan Klebold had played the violent game *Doom* (ignoring that almost all  
 204 boys play violent video games, suggesting that the specificity of this particular  
 205 datum is approaching zero) put incredible focus on video games as a source  
 206 of school shootings. Some scholars also became involved, making implicit or  
 207 explicit links between video game violence and school shootings (Anderson,  
 208 2004; Anderson & Dill, 2000) and in one remarkable example (Bushman &  
 209 Anderson, 2002) even the 9/11 terror attacks. Such comments by scholars  
 210 ultimately came under withering criticism (Ferguson, 2007; Kutner & Olson,  
 211 2008; Sherry, 2007), and to the credit of the scholarly community, such  
 212 comments have largely ceased. For instance, in one of the most poignant  
 213 lines of the video game debate, John Sherry (2007) asked “Further, why do  
 214 some researchers (e.g., Gentile & Anderson, 2003) continue to argue that  
 215 video games are dangerous despite evidence to the contrary?” (p. 244). We  
 216 have reached a point where we can begin to understand that, not only  
 217 are video games not a factor in school shootings (see for example the U.S.  
 218 Secret Service 2002 report on school shooters, which found no evidence for  
 219 unusually high levels of video game or other media violence consumption;  
 220 see also Ferguson, 2008 for a more thorough evaluation of this report), but  
 221 they do not appear to be correlated with, let alone a causal factor in youth  
 222 violence more broadly (e.g., Bosche, 2010; Desai, Krishnan-Sarin, Cavallo, &  
 223 Potenza, 2010; Ferguson, 2011; Kutner & Olson, 2008; Olson, 2004; Sherry,  
 224 2007; Williams & Skoric, 2005; Ybarra et al., 2008<sup>3</sup>). Indeed, research reports,  
 225 narrative reviews, and meta-analyses that challenged the causal view have  
 226 begun rolling in with increasing regularity. Furthermore, as already noted,  
 227 during the time video games soared in popularity and violence content,  
 228 youth violence plummeted to 40-year lows (see Figure 1). Naturally, video  
 229 games are unlikely to be the cause of this youth violence decline, but these  
 230 data do raise concerns that the causal view of video game violence is out of  
 231 synch with real-world crime data. Advocates of the causal view may claim  
 232 crime data doesn’t matter (although some of these same scholars cited rising  
 233 crime numbers when the data conveniently suited them, e.g., Bushman &  
 234 Anderson, 2001), but this position is scientifically lazy, effectively reducing  
 235 the causal position to a nonfalsifiable (and thus pseudoscientific) position in  
 236 which it need never explain why it conflicts so clearly with criminological  
 237 data. Thus we assert the time has come to reject the hypothesis that video  
 238 games cause youth violence, based both upon youth violence data as well  
 239 as the best evidence now emerging from psychological science.

240 If video games don’t cause youth violence, and school shootings in  
 241 particular, what gave rise to predominating public and even scholarly beliefs  
 242 that such causal links existed? It may be illuminating to examine a brief  
 243 history of the study and concerns about video games.



**FIGURE 1** Youth violence and video game sales data. Video game sales data source: The NPD Group, Inc./Retail Tracking Service. Youth violence data source: Childstats.gov. (Color figure available online).

#### 244 A Historical Look at Society's Reaction to Video Games

245 Prior to approximately the year 2000, most scholars studying video games ac-  
 246 knowledged that research results were inconsistent (Anderson & Ford, 1987;  
 247 Dominick, 1984; Kirsh, 1998; Scott, 1995; van Schie & Wiegman, 1997; Wieg-  
 248 man & van Schie, 1998; Winkel, Novak & Hopson, 1987). In many cases, Q4  
 249 scholars who investigated video games did so for only a study or two, be-  
 250 fore returning to other research agendas. Many of the “violent” video games  
 251 studied in experiments were games such as *Centipede*, *Zaxxon*, *Pac-Man*,  
 252 etc., which few individuals familiar with games would take seriously as “vi-  
 253 olent” games at present. Nonetheless, this didn't prevent some politicians as  
 254 well as some scholars from taking the notion of an influence on aggressive  
 255 acts in real life seriously (Anderson & Ford, 1987). Despite these inconsisten-  
 256 cies in the results, public concern grew once games such as *Mortal Kombat*  
 257 and *Street Fighter* introduced greater degrees of graphic person-on-person  
 258 violence than had been common beforehand.

259 Beginning in approximately 2000, scholars who had previously been  
 260 active in television violence research<sup>4</sup> became more highly involved in video  
 261 game research (e.g., Anderson & Bushman, 2001; Huesmann 2010). Many Q6  
 262 of these scholars were close colleagues, coauthoring on various papers. It is  
 263 interesting to note that the language of video game effects became one of  
 264 extreme causal certainty in a very short span of time (e.g., Anderson, 2004;  
 265 Anderson & Dill, 2000), despite little change in the inconclusive nature of  
 266 the data available in that time frame (Ferguson, 2007; Sherry, 2007). As noted  
 267 earlier, however, criticism of this extreme view has increased in recent years  
 268 (e.g., Block & Crain, 2007; Ferguson, 2007; Kutner & Olson, 2008; Olson, Q7

269 2004), and outside of this large, influential group, the tone of video game  
270 research within the scholarly community is gradually returning to one of  
271 moderation and qualified statements. The degree to which ideology and  
272 dogma influenced the extreme statements of some scholars has been well  
273 documented (see Grimes et al., 2008, for an excellent discussion). No one,  
274 including us, seriously denies that video games, like any other media or  
275 technology, can have negative as well as positive effects. What is becoming  
276 increasingly clear is that whatever their other effects may be, video games  
277 play no causal role in violent behavior.

278 Public discussions of video game violence arguably followed a parallel  
279 arcing course. Anderson and Ford (1987) suggest politicians had publicly  
280 wrung their hands about video games at least as far back as the 1980s.  
281 However, the bloody fighting games and first-person shooters emerging dur-  
282 ing the 1990s triggered increasing amounts of public and political scrutiny,  
283 culminating in Lieberman's dramatic "digital poison" comment. The school  
284 shooting incidents of the 1990s added fuel to the fire and ultimately sparked  
285 hearings on violent entertainment at the U.S. Senate (Bruni, 1999). In or-  
286 der to forestall regulatory legislation, the entertainment software industry  
287 established the Entertainment Software Ratings Board in 1994. (International  
288 ratings boards such as PEGI and British Board of Film Classification perform  
289 the same role overseas, sometimes with great controversy. Australia, for in-  
290 stance, has refused to allow an R18+ classification for highly violent video  
291 games in that country, despite much protest and support for such a classifica-  
292 tion.) The ESRB ratings have been praised by the Federal Trade Commission  
293 and the Parents and Teachers Association, as well as many state attorneys  
294 general, and have received independent research support for their validity  
295 (Ferguson, 2011). This has not stopped at least 10 states and municipalities  
296 within the United States from introducing legislation regulating the sale of vi-  
297 olent games to minors. All efforts have thus far failed, often with criticism of  
298 the "research" used to support such legislation; however, the U.S. Supreme  
299 Court (SCOTUS) is currently deliberating on a California law. An affirmative  
300 decision by SCOTUS would likely increase the number of such legislative  
301 efforts in the short term.

302 Several activists and activist groups have been prominent in expressing  
303 extreme views of the "harm" video games may cause, often with extreme and  
Q8 304 one-sided presentations of the research.<sup>5</sup> David Grossman (1995, 1999) is a  
305 veteran and self-proclaimed "killologist" who has referred to games as "mur-  
306 der simulators" and implicates them directly as a cause of school shooting  
307 incidents. One of his primary arguments has been that video games, partic-  
308 ularly first-person-shooter games, are similar to simulators that the military  
309 uses to train soldiers (many military simulation systems are inspired by first-  
310 person shooters and in several cases have been based on the game engines  
311 themselves). In part this analysis is based on comparisons of the rates at  
312 which soldiers fired at the enemy during WWII as compared to during more

313 recent conflicts. However, this comparison has been criticized (Ferguson,  
314 2010) for contrasting the poorly trained, poorly equipped, nonprofessional,  
315 largely conscripted soldiers of WWII, with the professional, volunteer, highly  
316 trained, and exquisitely equipped modern American soldier, differences be-  
317 tween which can hardly have been localized to the use of digital simulators  
318 in training. It is notable also that Grossman (1996) claims that the WWII  
319 nonfiring rate of approximately 75% had, by the time of the Vietnam War,  
320 dropped to a mere 5%—a dramatic change at a time when video games  
321 did not yet exist. Furthermore Ferguson (2010) > observes that police use  
322 shooting simulators to *reduce* bad shooting incidents among police officers.

323 Another activist to garner significant attention was former Florida attor-  
324 ney Jack Thompson, who exhibited particular media savvy and discussed  
325 video games in extreme terms, implicating them in school shootings such as  
326 the Virginia Tech massacre in 2007 (Thompson, 2007). In the case of Vir-  
327 ginia Tech, it ultimately turned out that the shooter was not a video gamer  
328 (Virginia Tech Review Panel, 2007).

329 The confluence of politicians, activists, and some scholars, often work-  
330 ing together, to create a narrative in which video games could be “linked”  
331 to school shootings (see Anderson, 2004 as an example from academia) can  
332 be understood through moral panic theory. Other scholars have described  
333 at length how moral panic theory can explain societal interest in video game  
334 violence as a “cause” of school shootings or youth violence more generally  
335 (see Ferguson, 2010; Gauntlett, 2005; Grimes et al., 2008; Kutner & Olson,  
336 2008 for discussions). Put briefly, information was selectively garnered and  
337 selectively interpreted to support a preexisting belief without any rigorous  
338 attempt to test it. Undoubtedly, most of the individuals involved were acting  
339 in good faith and unaware of the greater processes at play. However, one  
340 result has been the repetition of urban legends such as that 3500 studies of  
341 media violence had been conducted with only 18 finding null effects (see  
342 Freedman, 2002, for debunking) or that effects of media violence could be  
343 compared to smoking and lung cancer or other medical effects (see Block &  
344 Crain, 2007, and Ferguson, 2009, for debunking).

345 Arguably, perhaps optimistically, some signs are appearing that suggest  
346 society may be moving past the moral panic over violent video games.  
347 Even “antigame” scholars seldom reference “links” between video games and  
348 school shootings in their scholarly work any longer. Perhaps this comes in  
349 response to intense criticism of these comments by other scholars, although  
350 this is speculative. Similarly, the recent SCOTUS video game case has not  
351 seen a wellspring of support from the general public, with opinions mixed  
352 at best. Recent violent video game releases such as for Activision’s *Call of*  
353 *Duty: Modern Warfare* series have seen greater press attention to the scope  
354 of their sales or their artistic merits rather than controversies over violence.  
355 This is not to say that controversies, debate, and even nonsensical hyperbole  
356 over violent video games is over; however, we may be seeing an initial

357 point in the inevitable ebb of such a panic as the populace is realizing that  
358 the widespread availability of violent games has not led to an outbreak of  
359 violence in youth.

360 As noted, research is accumulating that violent video games are not  
361 a causal factor in any form of youth violence, let alone school shootings.  
362 Thus, with this considerable wrong turn laid to rest, what can research offer  
363 us about what might be real factors in the etiology of school shootings?

#### 364 UNDERSTANDING THE PSYCHOLOGY OF MASS SHOOTERS

365 Perhaps part of the problem in the wrong turn over video games was the  
366 implication that young school shooters represented a distinct group of in-  
367 dividuals from adults who commit mass homicides. For instance, in the  
368 rash of school knifings in China, the Ft. Hood shooting by an military psy-  
369 chiatrist, and the University of Alabama shooting by a middle-aged female  
370 biology professor, nary a mention was made of video games. Indeed, so-  
371 ciety may spend too much time focusing on the idiosyncratic features of  
372 individual mass homicide perpetrators (such as video games, radical Islam,  
373 or the tenure system) and too little time looking for commonalities between  
374 them.

375 As mentioned earlier, the rarity of school shooting events, coupled with  
376 the degree to which many perpetrators are killed or commit suicide dur-  
377 ing the events, limits the pool of participants for research endeavors. As  
378 such, empirical research on school shooters is near nonexistent. The biggest  
379 exception to this is the report compiled by the U.S. Secret Service and De-  
380 partment of Education in 2002 (United States Secret Service and United States  
381 Department of Education, 2002). This report analyzed 37 school shooting in-  
382 cidents from 1974 to 2000, comprising 41 attackers. Source materials were  
383 mainly court, school, mental health, and legal documents on the perpetra-  
384 tors, supplemented with interviews with 10 of the surviving perpetrators in  
385 custody. Though the best available research on school shooters, this report  
386 is limited in several important elements. The biggest issue is that the re-  
387 port is largely descriptive and does not make use of a matched sample of  
388 nonshooter youth. However, several important pieces of information can be  
389 garnered from this report.

390 First, the report makes clear that no reliable “profile” of school shooters  
391 existed. Although some commonalities emerged, few were universal, and  
392 many differences existed between individual school shooters. The popular  
393 image of a school shooter as a socially inept loner experiencing constant  
394 bullying (and playing violent video games) until they “snapped” did not  
395 emerge in the report.

396 According to the Secret Service report, consumption of violent media  
397 among this group was unremarkable at most, perhaps even lower than is

398 normal. Whereas the vast majority of children, particularly boys, consume  
399 at least some violent media (Ferguson, 2011), only 15% of shooters (after  
400 eliminating several early cases where the perpetrator likely had no to little  
401 opportunity to play violent games, see Ferguson, 2008) displayed “some  
402 interest” in violent video games. Only about half (59%) displayed “some  
403 interest” in violent media of any kind, whether television, books, or whatnot,  
404 considerably lower than for nonshooter males from other studies (although,  
405 in fairness, a direct comparison is difficult given the ambiguity of what  
406 constitutes “some interest”). The largest exposure to “media violence” came  
407 not from books, video games, or television, but (at 37%) from *their own*  
408 *poems, essays, or journals!*

409 Social isolation also was not particularly common among school shooter  
410 youth. Most had friends and nearly half (41%) were part of mainstream  
411 social groups (27% were part of “fringe” groups, but had friends). Only  
412 12% had no friends, and 34% were described as “loners” (and these two  
413 categories were not mutually exclusive). Again, there was no comparison  
414 group, but even if these numbers are higher than normal, they by no  
415 means indicate a universal trend. On the other hand, a large proportion  
416 (71%) *perceived* themselves as wronged, bullied, or persecuted by others.  
417 This may reflect perceptions on the part of the perpetrator rather than a  
418 real state of affairs. School and family backgrounds also seemed less than  
419 remarkable.

420 The feelings of persecution, which may or may not have reflected reality,  
421 offer one potential insight, and when the Secret Service examined the mental  
422 health histories of the perpetrators more consistent findings emerged. Not  
423 surprisingly, few perpetrators had received mental health services in the  
424 past or been diagnosed with mental health problems. However, this may  
425 represent a failure of the mental health system, such as it is, or perhaps  
426 more accurately a failure of society to support and fund any real semblance  
427 of a mental health system. Almost all (98%) of perpetrators had experienced  
428 some major loss prior to the incident. Despite most not receiving services, the  
429 majority had a history of suicide attempts or ideation in their past (78%) or  
430 a documented history of significant depression (61%). As such, the picture  
431 emerges of a mentally disturbed person who has not received adequate  
432 services and is depressed and/or suicidal.

433 Interestingly, this is remarkably similar to what data (however imper-  
434 fect) is available on adult perpetrators of mass homicides (Holmes & Holmes,  
435 1992, 2009). Replication, a core value of science, will be difficult for the Secret  
436 Service report. However, data on lesser forms of youth violence are begin-  
437 ning to converge on many of the same issues. For instance, in Ferguson’s  
438 (2011) prospective study of youth violence, video game and television vio-  
439 lence had no predictive value. However, current levels of depressive symp-  
440 toms, coupled with a history of antisocial personality traits, were highly pre-  
441 dictive of youth violence. Put another way, antisocial youth, not surprisingly,

442 were most prone to youth violence, particularly when they were depressed.  
443 These findings are remarkably similar to the picture that emerges from the  
444 Secret Service report. Other research has followed along these same lines  
445 (e.g., Angold, Costello, & Erkanli, 1999; Hale, VanderValk, Akse, & Meeus,  
446 2008; Rowe, Maughan, & Eley, 2006), although obviously most of this work  
447 considers events far less dramatic than school shootings, and we must be  
448 cautious in generalizing from work on youth violence generally to school  
449 shootings specifically. However, data from the Secret Service report, from  
450 work on youth violence, and from work on adult mass murders, points in  
451 the same direction: The most salient risk factors are internal, not external to  
452 the individual. External factors such as video games simply do not figure in  
453 predictions of violent behavior.

454 Thus, data from all sources available, imperfect though certainly they  
455 are, converge upon certain psychological characteristics: long-term antisocial  
456 traits, current depression, recent loss, and (more speculatively) perception  
457 that others are to blame for problems or are persecuting them. However,  
458 we caution that these characteristics do not provide a “profile” that can be  
459 used to reliably predict which children are likely to commit mass homicides.  
460 That is to say, there likely are thousands of children in the United States,  
461 United Kingdom, and other countries who fit the list of above characteristics,  
462 but have no intention of committing mass homicides nor any other signifi-  
463 cant acts of violence. Although profiles such as this may be very sensitive,  
464 indentifying those likely to commit violent offences (that is, most people  
465 likely to commit such offences show most or all of the key indicators),  
466 they are not all that specific (as there exist many people who fit the pro-  
467 file but who will never commit violent offences). It is notable that recent  
468 meta-analyses of the predictive power of tools designed to predict violence  
469 in adults have only moderate effect sizes (Campbell, French, & Gendreau,  
470 2009).

471 The Secret Service report provides further guidance, however, on how  
472 to separate nondangerous cases from those of greater concern. In fact it’s  
473 rather obvious: In most cases (81%) the perpetrators had informed another  
474 uninvolved person of their intent to commit a school attack. Usually these  
475 are peers, sometimes warned by the perpetrator in advance so as not to  
476 be in harm’s way. In many cases (93%), the attackers had engaged in other  
477 behaviors that caused alarm in peers, parents, teachers, or mental health  
478 professionals. These include fantasizing about violence, particularly toward  
479 innocent targets. For instance, one attacker in the Secret Service report had  
480 fantasized aloud to peers about putting rat poison in the cheese shaker at  
481 a pizza restaurant. These same themes have emerged for more recent cases  
482 from Virginia Tech to the University of Alabama, and other mass shootings  
483 not involving schools, wherein the perpetrator was found to have long-  
484 standing issues with mental health problems that were left unaddressed or  
485 only partially addressed.

486

## WHAT IS TO BE DONE?

487 Given that school shooters appear to be motivated by a combination of anti-  
488 social traits, resentment, and despondency, self-preservation does not appear  
489 a central motivating feature of their crimes. Thus opportunities to “negotiate”  
490 with perpetrators in the midst of their acts may be limited. The best opportu-  
491 nity for prevention of these acts comes from those individuals who are made  
492 aware of them in advance (usually peers)—if they come forward and alert  
493 school officials or law enforcement. Given that most perpetrators give such  
494 indications of their intentions in advance, and few nonperpetrator students  
495 threaten to commit mass homicides at their schools, such threats should  
496 be taken seriously. (Although poems or prose that are clearly intended as  
497 fictional “entertainment” may be excluded, particularly when there is an ab-  
498 sence of rage themes or emotion in the writing. For example, a story in  
499 which a terrorist breaks into the school, shooting teachers and students, but  
500 the individual student in question then kills the terrorist and becomes the  
501 hero would be far less worrisome than a story in which the individual student  
502 kills teachers and students, particularly those who have “wronged” him.)

503 In many ways it appears apparent to us that the issue of school shooters,  
504 like other mass homicide perpetrators, is very much a failure of the mental  
505 health system or, in fairness, a failure of society more broadly to provide ad-  
506 equate mental health services. Given the deinstitutionalization movements  
507 of the 1950s and 1960s, many more mentally ill people are living in society.  
508 This, in many ways, is a triumph of humanism. However, if these deinstitu-  
509 tionalized mentally ill individuals are not provided adequate services, they  
510 may be at greater risk not only for harm to themselves but to others as well.  
511 We are well aware of the aversion to claims that mentally ill individuals are  
512 at risk for violence, and we wholeheartedly agree that the vast majority of  
513 mentally ill individuals are peaceful responsible citizens. However, we find  
514 ample evidence that mental illness can be a risk factor for violence, particu-  
515 larly in those individuals with antisocial personality traits (Douglas, Guy, &  
516 Hart, 2009; Ferguson, 2011).

517 Ideally, efforts at reducing school shootings would be best served fo-  
518 cusing on prevention rather than intervention. Environmental factors such as  
519 family background or use of media seem to be of little value in prediction  
520 of school shootings or youth violence more broadly. However, looking for  
521 early warning signs of antisocial behavior or mental illness, and responding  
522 to these issues early and compassionately in the developmental trajectory,  
523 may bear the greatest fruit. Indeed, treatments that are targeted at children  
524 who show early signs of behavioral risk appear more fruitful than those tar-  
525 geted more broadly at entire populations of children (Ferguson, San Miguel,  
526 Kilburn, & Sánchez, 2007). Unfortunately, we suspect society has not yet de-  
527 veloped an appetite for funding adequate mental health services for youth or  
528 adults at risk. Even in cases such as the Virginia Tech shooting, in which an

529 individual had been identified as having significant mental health problems  
 530 far in advance of the attack, the ability of the mental health system to coordi-  
 531 nate an effective intervention appears quite limited. Further, we note society  
 532 seems more interested in examining idiosyncratic elements of individual  
 533 shooting cases, whether video games, the tenure system, Gothic subculture,  
 534 or vitriolic political discourse—as in the contemporary (as of this writing)  
 535 case of the shooting of a U.S. congresswoman in Arizona.<sup>6</sup> A perplexed  
 536 society, and even some scholars, appear all too willing to be distracted by  
 537 these issues. Unfortunately, allowing such distractions may provide further  
 538 impediment to the development of adequate mental health services for the  
 539 treatment of individuals at risk and the prevention of future mass homicides.

540

## NOTES

541 1. It is noted that this very term, while colloquially popular, is somewhat misleading, particularly  
 542 as several of the incidents discussed in the paper are mass school *knifings*. However, the term “school  
 543 shooter” here is used as a general collective term.

544 2. Original “video game violence” research of the 1980s and early 1990s even considered games  
 545 such as *Pac Man*, *Centipede*, or *Zaxxon* as “violent” games. The notion that such games are contributors  
 546 to youth violence would seem near comical now; however, studies based on these games are still taken  
 547 seriously among some scholars and are regularly included in current meta-analytic reviews of video game  
 548 research alongside studies of more graphic games such as *Grand Theft Auto* or *Call of Duty*, as if no  
 549 difference existed.

550 3. The Ybarra et al. (2008) article presents something of a warning to scholars when reviewing  
 551 video game research. From their Figure 2 it is quite clear that, controlling for other variables, video game  
 552 violence had no correlational relationship with youth violence. However, reading the abstract of the same  
 553 paper, no indication of this important finding is given.

554 4. Television violence research has likewise been highly controversial. See Freedman, 2002;  
 555 Gauntlett, 2005; Grimes et al., 2008; or Savage & Yancey, 2008, for discussions.

556 5. One of the problems with the video game field is the degree to which not only politicians and  
 557 activists but also some scholars have been willing to simply ignore any evidence that contrasts with their  
 Q10 558 own views (see Ferguson, 2010, for a review of scholarly biases in the video game literature).

559 6. “Sarah Palin has blood on her hands!” was one blog post witnessed by the first author discussing  
 560 the 2011 shooting of U.S. congress woman Gabrielle Giffords and many others attending a rally. The  
 561 poster was condemning the vitriolic and hyperbolic state of political discourse in the United States,  
 562 apparently with no sense of irony.

563

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