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# Shooting in the Dark

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The young men who opened fire at [Columbine High School](#), at the [movie theater](#) in Aurora, Colo., and in other massacres had this in common: they were video gamers who seemed to be acting out some dark digital fantasy. It was as if all that exposure to computerized violence gave them the idea to go on a rampage — or at least fueled their urges.

But did it really?

Social scientists have been studying and debating the effects of media violence on behavior since the 1950s, and video games in particular since the 1980s. The issue is especially relevant today, because the games are more realistic and bloodier than ever, and because most American boys play them at some point. Girls play at lower rates and are significantly less likely to play violent games.

A burst of new research has begun to clarify what can and cannot be said about the effects of violent gaming. Playing the games can and does stir hostile urges and mildly aggressive behavior in the short term. Moreover, youngsters who develop a gaming habit can become slightly more aggressive — as measured by clashes with peers, for instance — at least over a period of a year or two.

Yet it is not at all clear whether, over longer periods, such a habit increases the likelihood that a person will commit a violent crime, like murder, rape, or assault, much less a [Newtown](#)-like massacre. (Such calculated rampages are too rare to study in any rigorous way, researchers agree.)

“I don’t know that a psychological study can ever answer that question definitively,” said Michael R. Ward, an economist at the University of Texas, Arlington. “We are left to glean what we can from the data and research on video game use that we have.”

The research falls into three categories: short-term laboratory experiments; longer-term studies, often based in schools; and correlation studies — between playing time and aggression, for instance, or between video game sales and trends in violent crime.

Lab experiments confirm what any gamer knows in his gut: playing games like “Call of

Duty,” “Killzone 3” or “Battlefield 3” stirs the blood. In one recent study, Christopher Barlett, a psychologist at Iowa State University, led a research team that had 47 undergraduates play “Mortal Kombat: Deadly Alliance” for 15 minutes. Afterward, the team took various measures of arousal, both physical and psychological. It also tested whether the students would behave more aggressively, by having them dole out hot sauce to a fellow student who, they were told, did not like spicy food but had to swallow the sauce.

Sure enough, compared with a group who had played a nonviolent video game, those who had been engaged in “Mortal Kombat” were more aggressive across the board. They gave their fellow students significantly bigger portions of the hot sauce.

Many similar studies have found the same thing: A dose of violent gaming makes people act a little more rudely than they would otherwise, at least for a few minutes after playing.

It is far harder to determine whether cumulative exposure leads to real-world hostility over the long term. Some studies in schools have found that over time digital warriors get into increasing numbers of scrapes with peers — fights in the schoolyard, for example. In a [report published last summer](#), psychologists at Brock University in Ontario found that longer periods of violent video game playing among high school students predicted a slightly higher number of such incidents over time.

“None of these extreme acts, like a school shooting, occurs because of only one risk factor; there are many factors, including feeling socially isolated, being bullied, and so on,” said Craig A. Anderson, a psychologist at Iowa State University. “But if you look at the literature, I think it’s clear that violent media is one factor; it’s not the largest factor, but it’s also not the smallest.”

Most researchers in the field agree with Dr. Anderson, but not all of them. Some studies done in schools or elsewhere have found that it is aggressive children who are the most likely to be drawn to violent video games in the first place; they are self-selected to be in more schoolyard conflicts. And some studies are not able to control for outside factors, like family situation or mood problems.

“This is a pool of research that, so far, has not been very well done,” said Christopher J. Ferguson, associate professor of psychology and criminal justice at Texas A&M International University and a critic of the field [whose own research has found no link](#). “I look at it and I can’t say what it means.”

Neither Dr. Ferguson, nor others interviewed in this article, receive money from the gaming

industry.

Many psychologists argue that violent video games “socialize” children over time, prompting them to imitate the behavior of the game’s characters, the cartoonish machismo, the hair-trigger rage, the dismissive brutality. Children also imitate flesh and blood people in their lives, of course — parents, friends, teachers, siblings — and one question that researchers have not yet answered is when, exactly, a habit is so consuming that its influence trumps the socializing effects of other major figures in a child’s life.

That is, what constitutes a bad habit? In surveys about 80 percent of high school-age boys say they play video games, most of which are thought to be violent, and perhaps a third to a half of those players have had a habit of 10 hours a week or more.

The proliferation of violent video games has not coincided with spikes in youth violent crime. The number of violent youth offenders fell by more than half between 1994 and 2010, to 224 per 100,000 population, according to government statistics, while video game sales have more than doubled since 1996.

In a [working paper now available online](#), Dr. Ward and two colleagues examined week-by-week sales data for violent video games, across a wide range of communities. Violence rates are seasonal, generally higher in summer than in winter; so are video game sales, which peak during the holidays. The researchers controlled for those trends and analyzed crime rates in the month or so after surges in sales, in communities with a high concentrations of young people, like college towns.

“We found that higher rates of violent video game sales related to a decrease in crimes, and especially violent crimes,” said Dr. Ward, whose co-authors were A. Scott Cunningham of Baylor University and Benjamin Engelstätter of the Center for European Economic Research in Mannheim, Germany.

No one knows for sure what these findings mean. It may be that playing video games for hours every day keeps people off the streets who would otherwise be getting into trouble. It could be that the games provide “an outlet” that satisfies violent urges in some players — a theory that many psychologists dismiss but that many players believe.

Or the two trends may be entirely unrelated.

“At the very least, parents should be aware of what’s in the games their kids are playing,” Dr. Anderson said, “and think of it from a socialization point of view: what kind of values,

behavioral skills, and social scripts is the child learning?”