

# Violent video games: More playing time equals more aggression

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(Medical Xpress)—A new study provides the first experimental evidence that the negative effects of playing violent video games can accumulate over time.

Researchers found that people who played a violent video game for three consecutive days showed increases in aggressive behavior and hostile expectations each day they played. Meanwhile, those who played nonviolent games showed no meaningful changes in [aggression](#) or hostile expectations over that period.

Although other experimental studies have shown that a single session of playing a violent video game increased short-term aggression, this is the first to show longer-term effects, said Brad Bushman, co-author of the study and professor of communication and psychology at Ohio State University.

"It's important to know the long-term causal effects of [violent video games](#), because so many young people regularly play these games," Bushman said.

"[Playing video games](#) could be compared to [smoking cigarettes](#). A single cigarette won't cause lung cancer, but smoking over weeks or months or years greatly increases the risk. In the same way, repeated exposure to violent video games may have a cumulative effect on aggression."

Bushman conducted the study with Youssef Hasan and Laurent Bègue of

the University Pierre Mendès-France, in Grenoble, France, and Michael Scharkow of the University of Hohenheim in Germany.

Their results are published online in the [Journal of Experimental Social Psychology](#) and will appear in a future print edition.

The study involved 70 French university students who were told they would be participating in a three-day study of the effects of brightness of video games on [visual perception](#).

They were then assigned to play a violent or nonviolent video game for 20 minutes on each of three consecutive days.

Those assigned the [violent games](#) played *Condemned 2*, *Call of Duty 4* and then *The Club* on consecutive days (in a random order). Those assigned the nonviolent games played *S3K Superbike*, *Dirt2* and *Pure* (in a random order).

After playing the game each day, participants took part in an exercise that measured their hostile expectations. They were given the beginning of a story, and then asked to list 20 things that the main character will do or say as the story unfolds. For example, in one story another driver crashes into the back of the main character's car, causing significant damage. The researchers counted how many times the participants listed violent or aggressive actions and words that might occur.

Students in the study then participated in a competitive reaction time task, which is used to measure aggression. Each student was told that he or she would compete against an unseen opponent in a 25-trial computer game in which the object was to be the first to respond to a visual cue on the computer screen.

The loser of each trial would receive a blast of unpleasant noise through

headphones, and the winner would decide how loud and long the blast would be. The noise blasts were a mixture of several sounds that most people find unpleasant (such as fingernails on a chalk board, dentist drills, and sirens). In actuality, there was no opponent and the participants were told they won about half the trials.)

The results showed that, after each day, those who played the violent games had an increase in their hostile expectations. In other words, after reading the beginning of the stories, they were more likely to think that the characters would react with aggression or violence.

"People who have a steady diet of playing these violent games may come to see the world as a hostile and violent place," Bushman said. "These results suggest there could be a cumulative effect."

This may help explain why players of the violent games also grew more aggressive day by day, agreeing to give their opponents longer and louder noise blasts through the headphones.

"Hostile expectations are probably not the only reason that players of violent games are more aggressive, but our study suggests it is certainly one important factor," Bushman said.

"After playing a violent [video game](#), we found that people expect others to behave aggressively. That expectation may make them more defensive and more likely to respond with aggression themselves, as we saw in this study and in other studies we have conducted."

Students who played the nonviolent games showed no changes in either their hostile expectations or their aggression, Bushman noted.

He said it is impossible to know for sure how much aggression may increase for those who play video games for months or years, as many

people do.

"We would know more if we could test players for longer periods of time, but that isn't practical or ethical," he said.

"I would expect that the increase in aggression would accumulate for more than three days. It may eventually level off. However, there is no theoretical reason to think that aggression would decrease over time, as long as players are still playing the violent games," he said.

Provided by The Ohio State University

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