

# Violent video games desensitize players to real-world violence

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Playing violent video games changes brain function and desensitizes chronic players to violence, a new study shows.

"It's already well known that playing violent video games increases aggressive behavior and decreases helping behavior," said University of Michigan researcher Brad Bushman. "But this study is the first to link exposure to violent video games with a diminished reaction to violent images."

Forthcoming in the *Journal of Experimental Social Psychology*, the study was conducted by Bruce Bartholow, an assistant professor of psychology at the University of Missouri-Columbia, Marc Sestir at the University of

North Carolina at Chapel Hill, and Bushman, a U-M professor of psychology and communications studies and a faculty associate at the U-M Institute for Social Research (ISR).

"Most of us naturally have a strong aversion to the sight of blood and gore," Bartholow said. "Surgeons and soldiers may need to overcome these reactions in order to perform their duties. But for most people, a diminished reaction to the effects of violence is not adaptive. It can reduce inhibitions against aggressive behavior and increase the possibility of inflicting violence on others."

For the study, the researchers asked 39 male undergraduates how often they played their five favorite video games, and how violent the games were. The researchers also assessed participants' irritability and aggressiveness, asking them how much they identified with statements like the following: "I easily fly off the handle with those who don't listen or understand" and "If somebody hits me, I hit back."

Next, the researchers outfitted participants with electrode caps to obtain EEG data, including the average amplitude of a particular type of brainwave, known as P300, which is believed to be an indicator of how people evaluate a stimulus, such as a photograph. After doing so, the researchers showed participants a series of images. The content of the images was emotionally neutral (a mushroom, a man riding a bicycle), violent (a man holding a gun to another man's head) or negative but nonviolent (a dead dog). While participants viewed the images, their brain waves were recorded.

After viewing the images, participants were told they were competing in a reaction time task with another person to see who could press a button faster following a tone. The slower person would supposedly receive a blast of noise through a pair of headphones, with the intensity and duration of the blast determined before each round by the previous

round's winner. Actually there was no partner, but participants' tendency to administer long, loud blasts of noise is a widely used, reliable measure of aggression.

What the researchers found was that participants who routinely played violent video games responded less to violent images, as measured by a diminished amplitude of their P300 brainwaves. But this was not true of their response to other, equally negative, nonviolent images. The researchers also found that the smaller the brainwave reaction to violent images, the less likely participants were to behave aggressively in the reaction time task by blasting their "partner" with loud, unpleasant noise.

Along with other recent research, the findings suggest that chronic exposure to violent video games has lasting harmful effects on brain function and behavior.

Source: University of Missouri-Columbia

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