

# Study Finds No Evidence That More Violent, Difficult Video Games Spur Aggression

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Global video game revenues top more than \$140 billion every year and e-sports are becoming just as competitive (and potentially lucrative) as other professional sports. Some of the most popular video games — including *Fortnite*, *Grand Theft Auto*, *Rainbow Six Siege*, *Red Dead Redemption*, *Overwatch*, *Counter-Strike*, and *Call of Duty* — feature violence of some kind, but the question still stands: Does violent in-game behavior have an impact on real-world behavior?

Some psychological studies have suggested that playing violent video games increases aggressive behavior, on the basis of experiments that compared the behavior of participants who played violent games with those who played nonviolent games. But critics say the findings fail to account for other possible factors, including differences in the mechanics of violent and nonviolent games.

To more directly answer the question, Joseph Hilgard of Illinois State University and colleagues altered a single game to examine the unique influence of two aspects of game play: content and difficulty. The findings, published in *Psychological Science*, provide no evidence that either violent or difficult content intensifies players' aggression toward others.

For the study, Hilgard and colleagues created four versions of the video game *Doom II*. The more violent versions contained enemy graphics and sounds borrowed from *Brutal Doom*, a game mod designed to make everything more extreme — participants were tasked with defeating aliens, which resulted in the enemies exploding in gory fashion. The less violent versions contained sillier-looking alien enemies drawn from *Chex Quest*; rather than killing the aliens, participants were tasked with sending them home with their “zorcher.”

In the difficult versions of the game, the enemies fought back and participants had to restart the level if they received too many hits. In the easy versions, the enemies simply walked slowly instead of directly attacking the player.

Although the content and overall objective varied across the four versions, the game play remained the same.

When the participants, all college-aged men, came to the lab, they completed a 5-minute writing assignment in which they described their views on abortion; they then received and rated another participant’s essay (in reality, a fake essay chosen because it opposed the participants’ stated beliefs).

Following the writing task, the participants played one of the versions of the video game for 15 minutes, after which they read the feedback they had received on their own essay. The feedback, which was designed to provoke an emotional response, was the same for each participant, featuring low ratings and the comment “This is the stupidest thing I’ve ever read.”

The researchers then measured participants’ aggression by having them engage in an exercise that supposedly examined decision making under distraction. As part of the exercise, participants chose how long their partner had to keep his hand in the water while performing the task.

Data from 275 participants showed no indication that playing the more violent or more difficult versions of the game influenced the amount of time participants assigned their partner to be exposed to the cold water. In other words, neither game violence nor difficulty resulted in increased aggressive behavior toward an antagonistic partner.

The researchers also examined another factor long suspected as an indicator of male aggression — the ratio of index finger length and ring finger length. Scientists have theorized that a low ratio reflects increased testosterone exposure in utero and is associated with aggressive behavior. But Hilgard and his team also found no relationship between this ratio and aggression.

Additional Bayesian analyses indicated that a model assuming no relationship between game characteristics and aggression was the model best supported by the data.

“Results indicate that when game stimuli are carefully controlled, the effects of 15 min of violent and difficult game play on aggressive behavior may be small and indistinguishable from zero. This suggests that the effects of brief violent-video-game play on aggressive outcomes may be smaller and less robust than the published research literature would indicate,” Hilgard and colleagues write.

The researchers mention several factors that should be investigated further, including the fact that many participants in the original sample reported awareness of the study aims and were therefore excluded from analyses. This awareness could be due, at least in part, to the two-step debriefing process the researchers used — establishing standardized practices in deception and debriefing could address this issue in future research, they say.

“Researchers may need to reevaluate whether violent-video-game manipulations are useful for revealing the causes and mechanisms of aggression. Further research will also be necessary to determine whether, and under which conditions, competitive or frustrating game play causes aggression,” Hilgard and colleagues conclude.

## Reference

Hilgard, J., Engelhardt, C. R., Rouder, J. N., Segert, I. L., & Bartholow, B. D. (2019). Null effects of game violence, game difficulty, and 2D:4D digit ratio on aggressive behavior. *Psychological Science*, 30, 606–616. <https://doi.org/10.1177/0956797619829688>