

# Playing highly competitive video games may lead to aggressive behavior

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While most research into video games and aggressive behavior has focused on violent games, competitiveness may be the main video game characteristic that influences aggression, according to new research published by the American Psychological Association.

In a series of experiments in which video games were matched on competitiveness, difficulty, and pace of action, researchers found [video game](#) violence alone did not elevate [aggressive behavior](#). However, more competitive games produced greater levels of aggressive behavior than less competitive games, no matter how much violence was in the games, according to research published online in *Psychology of Violence*. The study was conducted by lead author Paul J.C. Adachi, M.A., a PhD candidate at Brock University in Canada.

In one experiment, Adachi had 42 college students (25 men, 17 women) play one of two video games, "Conan" or "Fuel," for 12 minutes. "Conan" is a violent game in which the main character battles for survival using swords and axes. "Fuel" is a nonviolent racing game. In a [pilot study](#), both games were rated evenly in terms of competitiveness, difficulty and pace of action, but differently in terms of violence. After participants finished playing the game, they were told they were going to take part in a separate food tasting study. Participants had to make up a cup of hot sauce for a "taster" who they were told did not particularly like hot or spicy food. The participants could choose from one of four different hot sauces (from least hot to most hot) for the taster to drink. The authors found that there was no significant difference in the

intensity and amount of the hot sauces prepared by the participants who played "Conan" and those who played "Fuel." The authors concluded that, in this study, [video game violence](#) alone was not sufficient to elevate aggressive behavior.

In a second experiment, Adachi had 60 college students (32 men, 28 women) play one of the following four video games: "Mortal Kombat versus DC Universe," a violent fighting game rated as highly competitive and very violent; "Left 4 Dead 2," a violent, moderately competitive first-person shooter game in which the main character battles zombies using guns; "Marble Blast Ultra," a nonviolent, noncompetitive game where players control a marble through a series of labyrinth-like mazes as quickly as possible; and "Fuel," the highly competitive, nonviolent racing game from the first study. Afterward, the students completed the same hot sauce tasting test from the first study. Electrocardiograms measured the participants' heart rates before and during video game play.

On average, students who played the highly competitive games, "Fuel" and "Mortal Kombat versus DC Universe," prepared significantly more of a hotter sauce than participants who played "Marble Blast Ultra" and "Left 4 Dead 2," the least competitive games. They also had significantly higher heart rates.

"These findings suggest that the level of competitiveness in video games is an important factor in the relation between video games and aggressive behavior, with highly competitive games leading to greater elevations in aggression than less competitive games," wrote Adachi.

**More information:** "The Effect of Video Game Competition and Violence on Aggressive Behavior: Which Characteristic Has the Greatest Influence?" Paul J.C. Adachi, M.A., and Teena Willoughby, PhD, Brock University, Canada; *Psychology of Violence*, Online First, August 17, 2011.

Provided by American Psychological Association

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