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Study: No evidence to support link between violent video games and behaviour

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'Priming' is thought to lead to changes in behaviour. Credit: University of York

Researchers at the University of York have found no evidence to support the theory that video games make players more violent.

In a series of experiments, with more than 3,000 participants, the team demonstrated that video game concepts do not 'prime' players to behave in certain ways and that increasing the realism of violent video games

does not necessarily increase aggression in game players.

The dominant model of learning in games is built on the idea that exposing players to concepts, such as violence in a game, makes those concepts easier to use in "real life." This is known as 'priming," and is thought to lead to changes in behaviour. Previous experiments on this effect, however, have so far provided mixed conclusions.

Researchers at the University of York expanded the number of participants in experiments, compared to studies that had gone before it, and compared different types of gaming realism to explore whether more conclusive evidence could be found.

Reaction time

In one study, participants played a game where they had to either be a car avoiding collisions with trucks or a mouse avoiding being caught by a cat. Following the game, the players were shown various images, such as a bus or a dog, and asked to label them as either a vehicle or an animal.

Dr. David Zendle, from the University's Department of Computer Science, said: "If players are 'primed' through immersing themselves in the concepts of the game, they should be able to categorise the objects associated with this game more quickly in the real world once the game had concluded.

"Across the two games we didn't find this to be the case. Participants who played a car-themed game were no quicker at categorising vehicle images, and indeed in some cases their reaction time was significantly slower."

Realism

In a separate, but connected study, the team investigated whether realism influenced the aggression of game players. Research in the past has suggested that the greater the realism of the game the more primed players are by violent concepts, leading to antisocial effects in the real world.

Dr. Zendle said: "There are several experiments looking at graphic realism in video games, but they have returned mixed results. There are, however, other ways that violent games can be realistic, besides looking like the 'real world," such as the way characters behave for example.

"Our experiment looked at the use of 'ragdoll physics' in game design, which creates characters that move and react in the same way that they would in real life. Human characters are modelled on the movement of the human skeleton and how that skeleton would fall if it was injured."

Combat games

The experiment compared player reactions to two combat games, one that used 'ragdoll physics' to create realistic character behaviour and one that did not, in an animated world that nevertheless looked real.

Following the game the players were asked to complete word puzzles called 'word fragment completion tasks," where researchers expected more violent word associations would be chosen for those who played the game that employed more realistic behaviours.

They compared the results of this experiment with another test of game realism, where a single bespoke war game was modified to form two different games. In one of these games, enemy characters used realistic soldier behaviours, whilst in the other game they did not employ realistic soldier behaviour.

Further work

Dr. Zendle said: "We found that the priming of violent concepts, as measured by how many violent concepts appeared in the word fragment completion task, was not detectable. There was no difference in priming between the game that employed 'ragdoll physics' and the game that didn't, as well as no significant difference between the games that used 'real' and 'unreal' solider tactics.

"The findings suggest that there is no link between these kinds of realism in games and the kind of effects that video games are commonly thought to have on their players.

"Further study is now needed into other aspects of realism to see if this has the same result. What happens when we consider the realism of by-standing characters in the game, for example, and the inclusion of extreme content, such as torture?

"We also only tested these theories on adults, so more work is needed to understand whether a different effect is evident in children players."

The research paper, "No Priming in Video Games," is published in the journal *Computers in Human Behaviour*, and the research paper, "Behavioural Realism and the Activation of Aggressive Concepts in Violent Video Games," is published in the journal *Entertainment Computing*.

More information: David Zendle et al. No priming in video games, *Computers in Human Behavior* (2017). DOI: 10.1016/j.chb.2017.09.021

David Zendle et al. Behavioural realism and the activation of aggressive concepts in violent video games, *Entertainment Computing* (2017). DOI: 10.1016/j.entcom.2017.10.003