

How video games stretch the limits of our visual attention

November 18 2010

They are often accused of being distracting, but recent research has found that action packed video games like Halo and Call of Duty can enhance visual attention, the ability that allows us to focus on relevant visual information. This growing body of research, reviewed in *WIREs Cognitive Science*, suggests that action based games could be used to improve military training, educational approaches, and certain visual deficits.

The review, authored by a group led by Dr Daphne Bavelier from the University of Rochester, focused on the impact video games have on [visual attention](#), the mechanism which allows us to select relevant [visual information](#) and suppress irrelevant information, allowing us to function in a world made up of infinite visual data.

"Visual attention is crucial to preventing sensory overload, since the brain is constantly faced with an overwhelming amount of visual information," explained Bjorn Hubert-Wallander, the paper's lead author. "It's an ability that is especially emphasized during visually demanding activities such as driving a car or searching for a friend's face in a crowd, so it is not surprising that scientists have long been interested in ways to modify, extend, and enhance the different facets of visual attention."

Paralleling the growing interest in visual attention, the world of video games has developed both technologically and culturally. It is now believed that 68% of American households play video or computer

games. Hubert-Wallander, Green, and Bavelier reviewed recent studies by their group but also many other laboratories where gamers and non-gamers had to perform tasks related to visual attention and found that gamers consistently outperformed their non game playing peers.

While gamers were found to outstrip nongamers in these tests, they also found that not all video games provide the same benefits to attention. Fast-paced, action based games that emphasized rapid responses to visual information and required divided attention seemed to be the only ones that affected attention specifically.

"Just as drivers have to focus on the road, other cars, and potential obstacles while ignoring other information, modern action games place heavy attentional demands on players," said Hubert-Wallander. "These games require players to aim and shoot accurately in the center of the screen while continuously tracking other enemies and fast moving objects."

Training studies have also shown improvements in the visual attention of non-gamers given experience playing these video games, establishing that it is the actual [video game](#) play that is causing the benefits. This finding that video games can enhance visual attention abilities may have implications for military training and broader education, as well as clinical rehabilitation programs for conditions such as amblyopia.

"At the core of these action video game-induced improvements appears to be a remarkable enhancement in the ability to flexibly and precisely control attention, a finding that could have a variety of real-world applications," concluded Shawn Green, one of the co-authors. "For example, those in professions that demand "super-normal" visual attention, such as fighter pilots, would benefit enormously from enhanced visual attention, as their performance and lives depend on their ability to react quickly and accurately to primarily visual information."

Provided by Wiley

Citation: How video games stretch the limits of our visual attention (2010, November 18)
retrieved 6 May 2024 from

<https://medicalxpress.com/news/2010-11-video-games-limits-visual-attention.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.