

# **"These players develop excellent sustained attention and focus"**

Regular players of action video games show an improvement in certain cognitive abilities, Daphne Bavelier finds

Interview by [Helena Pozniak](#)  
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*Cognitive neuroscientist Daphne Bavelier talks about her work examining how action video games can positively modify our attention. She also explains why parents should develop a more open attitude towards their children's gaming.*

Helena Pozniak: *Are screens good for us?*

Daphne Bavelier: Every teacher and parent wants to know whether screens are good or bad for you. It's the wrong question to ask. Screens mean so many different things – there are "good" and "bad" activities, so we need to be much more granular in how we look at them. We can't talk about the effects of "screen time" on our brain – it's a little like talking about the effects of food on health. People want a yes or no answer – and we know "it depends".

HP: *But you've discovered benefits to gaming?*

DB: Yes, in the very small percentage of the population that plays first- and third-person shooter games – action video games, as we call them. We've found that regular players of these games develop excellent sustained attention and focus. This doesn't mean all gaming has this result; our research concerns only this one specific genre.

To prove that this effect was caused by game play, we trained one group of adults in action shooter games, and another group in social simulation games. The first group showed enhanced ability to deploy attention – whereas the control group didn't.

## **"If we understand which game elements are key, then we can import them in therapeutic or educational video games."**

We're still trying to understand what the precise mechanics are in action games that are good for attention, in contrast to other types of video games. I'm a brain scientist – I care about how we can enhance brain plasticity and learning – so if we understand which game elements are key, then we can import them in therapeutic or educational video games.

HP: *Why don't teachers see these benefits for their students?*

DB: We do our studies in the lab; it's not a school environment. Being in a classroom requires sustained attention towards often boring materials for hours on end – all the while being distracted by a rich social context. At school you're required to be a good recipient of information, and we don't have evidence that playing action shooter games leads to changes where children are more willing to listen for longer.

HP: *Children use screens in many different ways – is that bad?*

DB: In our research, we contrasted playing action shooter games with media multi-tasking – watching a YouTube video at the same time that you're scrolling through social media and listening to music or reading something. We know your brain is not able to process these activities in parallel, so there's a lot of fast switching from one task to the other. And we found that while action shooter games enhance your ability to sustain attention, people who screen multi-task do not show better attention – in fact, many seem more easily distracted. But we are only looking here at one genre of screen use against another – and that's a small part of what children experience.

## **“The changes we see aren't induced by binge playing for three days – this would cause cognitive fatigue.”**

HP: *Does your work mean it doesn't matter how long children spend playing action games?*

DB: Every excess is bad, right? Parents complain: “My kids say your work means they can play as much as they want”. I advise these parents to direct their kids to read our methodology. In our experiments, we get people to play for about half an hour, five times a week for 12 weeks. If children were on screens for that amount of time, parents wouldn't be worried. The changes we see aren't induced by binge playing for three days – this would cause cognitive fatigue. This is about building up changes in how the brain works, and that takes training over a long period of time.

HP: *What advice would you give parents worried about their child's gaming habits?*

DB: When children fill in confidential questionnaires about their gaming, we notice a disconnect between what they say and what their parents report. If you as a parent have banned action shooter games at home, your children might be playing with friends, and they're not happy about lying to you. We work with professional gamers and they tell us the most hurtful aspect of their youth was lying to their parents, who thought what they were doing was a total waste of time. So my message to parents would be: talk to your children, even try to play with them, let them show you their skills.

HP: *Have you noticed any gender differences?*

DB: More males than females enjoy playing shooter games. The worry for us is that because boys are more likely to be attracted to the type of action shooter games that have beneficial effects on attention or spatial cognition, this is creating a gender gap.

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HP: *Does it matter that very young children now play on screens?*

DB: My gut feeling is that using tech as a babysitter from day one is probably the biggest mistake we're making right now. Research is too slow – it doesn't keep pace with changes in technology. Babies are playing with tablets and phones before we even know what the effects are – and we've decided as a society that this is OK. But we might be creating problems down the line. It's not that we need to ban everything. I'd like to see schools and parents start educating children very early on about their use of technology – what a healthy tech "diet" looks like.

HP: *Did you allow your own children to play video games?*

DB: One played action shooter games, and the other used social media – and I was way more worried about the social media user. They're both in their 20s now, and they've turned out OK.

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French-born **Daphne Bavelier** is a professor at the University of Geneva, Switzerland, where she runs the [cognitive neuroscience lab](#). A world leader in understanding how the brain adapts to an ever-changing environment, she seeks to uncover the neural mechanisms that allow for greater brain plasticity – and enhance learning. Her work demonstrating that action video games can modify attention has brought her wide acclaim. Daphne Bavelier is the 2019 [recipient of the Klaus J. Jacobs Research Prize](#). With the prize money, Bavelier wants to investigate the science of play.

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