

# Fight Club

## Is screen culture damaging our children's brains?



Vs

YES

says **Baroness Greenfield, neuroscientist and director of the Institute for the Future of the Mind, the University of Oxford**

Screen culture — video gaming and using computers in general — is impacting on our lives, especially those of the young, to an unprecedented degree. We know that the human brain is exquisitely sensitive to the environment. It follows that if that environment is changing in unprecedented ways, so the brain may be changing in a way that results in a departure in mindset from that which human beings have had since we evolved.

First among these changes is a shorter attention span. If the young brain is exposed to a world of new images flashing up with each press of a key, then it might become accustomed to operating over such timescales. Perhaps when, back in the real world, such responses are not forthcoming, attention deficit hyperactivity disorder will result.

Secondly, there is “living for the moment”, where the emphasis is on sensory-laden thrill — the buzz of, say, rescuing the princess in a game. This is a literal world where everything is not related to previous experiences or any wider context. No care is given for the princess herself, for the significance of her situation. Because there is none.

### 17%

The percentage of children aged 5 to 7 whose parents do not supervise their internet use

SOURCE: BECTA

Thirdly, recklessness. If most of a young child's actions take place on screen and so have no permanent consequences, it will prove a bad lesson when it comes to real life. A recent study found that obese people, for whom the sensual pleasure of eating trumps the consequences, are more reckless in performing tasks

that involve an element of gambling. Could a daily life lived in the two dimensions of the screen be similarly predisposing the brain to a disregard for consequences?

Fourthly, a decline in the capacity for empathy. Interacting in person with others, listening to stories and reading novels are all good ways of learning about how others feel and think. The prolonged exposure to screen activities will, for the first time, stymie this familiar developmental process.

Fifthly, the diminished use of metaphor and abstract concepts. It would be difficult to expect current software to help the user gain a sense of concepts such as honour, or of measuring one's life in coffee spoons (as mentioned by T.S. Eliot's Prufrock). Small children have problems interpreting metaphor. Might constant exposure to a literal world mean that the brain remains infant-like?

Finally, there is the impact on our identity, which has been shaped by a narrative that we call our life story. If we live perpetually in the moment, and in a world where events are not linked consequentially, then might our sense of self be in jeopardy? The popularity of Twitter might indicate a need for feedback to remind us that we actually exist as unique and continuing entities.

Interestingly enough, the mindset profiled above is similar to that seen in a disparate range of conditions such as compulsive gambling and schizophrenia, and has been linked to an under-active prefrontal cortex. This area of the brain only becomes fully active in our late teens. My suggestion is that prolonged screen-based activities could be driving the malleable brain circuitry into a “hypo-frontal” state of persistent infancy. ●

NO

says **Vaughan Bell, neuropsychologist at King's College London and the University of Antioquia, Colombia**

I don't play computer games and I avoid Facebook, but the scientific evidence doesn't support my personal prejudices. To date, research has shown that the internet is largely benign and that computer games are probably beneficial to the brains of young people.

In recent months, two scientific articles have reviewed the evidence on whether computer games cause problems in the workings of the brain and whether internet use is associated with mental health problems. Let's be clear that these articles do not represent surprising new findings; they are reviews of the many existing studies that help us understand whether so-called “screen culture” is genuinely damaging the mind and brain.

In the journal *Current Directions in Psychological Science*, cognitive scientist Matthew Dye, now at the University of Urbana-Champaign in Illinois, and colleagues reviewed studies of the effects of action video games, evaluated using standard neuropsychological tests. The unambiguous conclusions were that video gamers had quicker reactions than non-gamers, and that this edge was not achieved at the expense of being impulsive or making more mistakes.

### 35%

The percentage of children aged 12 to 14 with internet access in their bedrooms

SOURCE: BECTA

In other words, gamers' brains worked faster with no loss of accuracy, and there was no difference in levels of concentration or in the ability to resist quick but rash decisions.

Internet use has often been the focus of media scare stories, but once again there is little to worry about. A review published last year in *CyberPsychology and Behavior* by psychologist Chiungjung Huang, of the National Changhua University of Education in Taiwan, found that internet use was linked to a slight reduction in people's sense of well-being, but one so slender as to be irrelevant. What's more, there was no correlation with age.

Despite sensationalist headlines suggesting social networking sites such as Facebook and MySpace lead to social problems, research on young users shows they tend to have a better social life in the real world as they use these sites to enhance offline relationships — just as anyone would do with the telephone.

Scare stories are attractive in part because they reflect our anxieties about new technology. But the idea that screen culture could be producing brain damage in children, and that people who deny the “brain-scrambling” potential of screen technology are like those who denied the link between smoking and lung cancer, is brazen scaremongering.

There is an important debate to be had about the impact of technology on our lives, but personal opinion is no substitute for hard evidence, and as scientists we do the public a disservice if we confuse the two. ●

