

Another modern myth: Shrinking attention spans

Every new wave of technology has its skeptics. And now, it's digital technology—the onslaught of television, smartphone, video, radio, social media—that is shortening our attention spans. Or is it? And if it is, it may not matter.

A recent non-peer-reviewed study by Microsoft compared the attention span of a human and a goldfish, and found the two were disturbingly close. In fact, the goldfish beat us by half a second. The human span was down about four seconds from 2000, which some have said is due to technology inundating our eyes, ears, and brains.

This got a lot of, ahem, attention from the media. Time [led its coverage](#) with a story “You Now Have a Shorter Attention Span Than a Goldfish.” And the *New York Times*’ Timothy Egan included the study [in a column](#) on his own attention span:

In the information blur of last year, you may have overlooked news of our incredibly shrinking attention span. A survey of Canadian media consumption by Microsoft concluded that the average attention span had fallen to eight seconds, down from 12 in the year 2000. We now have a shorter attention span than goldfish, the study found.

Attention span was defined as the amount of concentrated time on a task without becoming distracted. I tried to read the entire 54-page report, but well, you know. Still, a quote from Satya Nadella, the chief executive officer of Microsoft, jumped out at me. ‘The true scarce commodity’ of the near future, he said, will be ‘human attention.’

While the goldfish comparison is amusing (and, yes, attention-getting), the idea that media (in whatever form) having an effect on our brains, consciousness, and attention spans isn’t all that new. And there are a lot of curious comparisons and foretellings of doom coming from a number of quarters, including this video, in which neuroscientist and British House of Lords member Susan Greenfield asks “what kind of person will they be?”

But these and other media reports miss an important aspect about the human brain: it’s adaptable. And in some cases, modern video technology results in increased attention spans, not shrinking ones.

The [Microsoft “study”](#) claimed that the human attention span went from 12 seconds on average in 2000 to just 8.25 seconds in 2015. Those figures were compared to an average goldfish attention span of 9 seconds. The problem is, no definition of attention span is given, and it’s not at all clear how these numbers were developed.

Another problem is that when studies do provide a definition of attention, a different physiological dynamic arises. Attention (and its close relative, consciousness) is one of the most studied attributes of the brain today. Thousands of psychological, neurobiological and social science studies have been conducted on how we “pay attention.” And one remarkable pattern shows that most of the time, we don’t. And that’s a

good thing.

Attention is actually the result of a series of reactions in the brain to sensory stimuli. First, a stimulus (say, an object picked up by the eyes) makes its way to the posterior parietal cortex of the brain, which seems to be the center of managing stimuli and attention. The brain has to disengage from whatever it's focusing on now, move to look at the new stimuli, engage that new stimuli and raise a sense of alertness to that new stimuli.

It's important to note that behind all this focusing of attention is another response, that of deliberately ignoring other stimuli. That's important, because our eyes and brains (to say the least for nose, ears and skin) are receiving thousands of stimuli at any given moment. In people with severe ADHD, one can see the results form an inability to focus.

This selective attention enhances neuron firing in the frontal cortex and the superior colliculus. The temporal cortex also starts firing more neurons. And these neuronal networks are highly adaptable, as they learn to move from one type of stimulus to another.

These adaptations have been evolutionarily valuable, and they are valuable now. Whether it picks out a true threat from mere objects in one's way, or a single Tweet from a news feed storm—the brain has been able to handle just about anything that's thrown at it. And a number of studies have shown the opposite of Microsoft's post:

- A group of researchers at the University of Illinois [found that](#) expert video gamers could “track objects moving at greater speeds, better detected changes to objects stored in visual short-term memory, switched more quickly from one task to another, and mentally rotated objects more efficiently.” In other words, their attention was better.
- And as for goldfish, there's not much, but [this Australian study](#) debunks the popular theory of tiny goldfish memories and retention. They actually can remember something (say, a source of food) for years. While not a standard attention-span study, it does question how these long-term memories could arise from not watching in the first place.

What's behind the odd Microsoft statistic, then? One, as [PolicyViz pointed](#) out, the study cited didn't even look at attention spans. Two, the Microsoft post was [aimed at advertisers](#), who have always faced the challenge of trying to make their product or service the final focus of our parietal lobes. And finally, the problem with our apparent distraction may not be attention, but multitasking. Our brains focus for a reason.

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