

On Multitasking

Mar **2006**: <http://arstechnica.com/old/content/2006/03/6417.ars>

“The [cover story](#) in *Time* magazine this week, entitled 'Too Wired For Their Own Good?', condemns the youth of the nation as gadget-obsessed, perennially multitasking, social failures who can't really get into anything important or even relax.” **[But seriously, what is this crap? ... or is it crap?? Hmm. Maybe we need some more research results?]**

Mar **2007**: <http://arstechnica.com/old/content/2007/03/study-says-leave-the-multitasking-to-your-computer.ars>

“New research shows that, contrary to popular wisdom, the multi-tasking worker is actually a less efficient and less productive worker. ... The *NYT* then showed confirmation of these findings by Microsoft research scientist Eric Horvitz, who found that workers at the Redmond-based software company took an average of 15 minutes to return to the task they were working on after being interrupted by a phone call, e-mail, or instant message.”

Jun **2008**: <http://arstechnica.com/old/content/2008/06/the-boss-made-me-do-it-multitasking-still-inefficient.ars>

How about *you* read this one?

Aug **2009**: arstechnica.com/science/news/2009/08/multitaskers-beware-your-divided-attention-comes-at-a-price.ars

“A lot of the Ars readership would probably fit this description: TV on in the background, computer screen in front of them, and various windows—mail, chat, browser—vying for attention. Although most people find themselves multitasking, we're remarkably bad at it. ... The answer, according to a paper that will appear in the *Proceedings of the National Academies of Science* later this week, is that they may actually be worse; heavy multitaskers tended to be more readily distracted by extraneous information than their more focused peers.”

Jun 2010: www.nytimes.com/2010/06/07/technology/07brain.html?_r=1

“Scientists say juggling e-mail, phone calls and other incoming information can change how people think and behave. They say our ability to focus is being undermined by bursts of information.

These play to a primitive impulse to respond to immediate opportunities and threats. The stimulation provokes excitement — a [dopamine](#) squirt — that researchers say can be addictive. In its absence, people feel bored.

The resulting distractions can have deadly consequences, as when cellphone-wielding drivers and train engineers cause wrecks. And for millions of people like Mr. Campbell, these urges can inflict nicks and cuts on creativity and deep thought, interrupting work and family life.

While many people say multitasking makes them more productive, research shows otherwise. **Heavy multitaskers actually have more trouble focusing and shutting out irrelevant information, scientists say, and they experience more stress.** [bolding added]

And **scientists are discovering that even after the multitasking ends, fractured thinking and lack of focus persist.** In other words, this is also your brain *off* computers.” [bolding added]

Dec 2012: <http://www.theglobeandmail.com/life/parenting/back-to-school/laptops-in-class-lowers-students-grades-canadian-study/article13759430/>

“We really tried to make it pretty close to what actually happens in the lectures, we found that lo and behold, the students who multitasked performed much worse on the final test and those who were seated around peers who were multitasking also performed much worse on the final test,” said Sana.

“So you might not be multitasking but if you have a clear view of someone else who is multitasking, your performance is still going to be impaired.”

The students in the first experiment who were asked to multitask averaged 11% lower on their quiz. The students in the second experiment who were surrounded by laptops scored 17% lower.

More references

- On hypertext & comprehension: The Shallows, p. 127-128, 129, 130
- People can't even drive & text; what makes you think you can grapple with difficult new material & concepts and text at the same time? (30/Dec/2014)
<http://ottawacitizen.com/news/local-news/distracted-driving-why-we-suck-at-multitasking>
- July 2016: "When we attempt to multitask, we don't actually do more than one activity at once, but quickly switch between them. And this switching is exhausting. It uses up oxygenated glucose in the brain, running down the same fuel that's needed to focus on a task... "
<https://tech.slashdot.org/story/16/07/03/1628243/multitasking-drains-your-brains-energy-reserves-researchers-say>
- Aug 2016: "employees' performance improved 26 percent when their smartphones were taken away."
<https://it.slashdot.org/story/16/08/30/158223/not-using-smartphones-can-improve-productivity-by-26-says-study>
- Jan 2017: "We've seen how always being connected can cause stress, anxiety, depression, and burnout, and because of that, there is a growing desire to regain control — control over our time and our attention"
<http://www.cbc.ca/news/opinion/space-from-our-smartphones-1.3925258>
- July 2017: "laptops do not enhance classroom learning, and in fact students would be better off leaving their laptops in the dorm during class."
<https://news.slashdot.org/story/17/07/11/235205/students-are-better-off-without-a-laptop-in-the-classroom>
- Aug 2017: "Yet, after a decade and a half, and at a cost of about \$12 million annually (around one percent of the state's education budget), Maine has yet to see any measurable increases on statewide standardized test scores."
<https://news.slashdot.org/story/17/08/20/0029231/after-15-years-maines-laptops-in-schools-initiative-fails-to-raise-test-scores>
- Aug 2017: "A smartphone can tax its user's cognition simply by sitting next to them on a table, or being anywhere in the same room with them, [suggests a study published recently](#) ... Even if a phone [is] set to silent, even if it's powered off, its mere presence will reduce someone's working memory and problem-solving skills.
<https://www.theatlantic.com/technology/archive/2017/08/a-sitting-phone-gathers-brain-dross/535476/>
- Jul 2018: "To help manage the use of devices in the classroom, teachers should explain to students the damaging effect of distractions on retention -- not only for themselves, but for the whole class
https://www.upi.com/Health_News/2018/07/28/Using-smartphones-during-lectures-leads-to-lower-grades-study-finds/8911532786300/

(Oh, and by the way, sleep is a critical component of *learning*; apparently, studies are proving that learning cannot occur without sleep:

<https://arstechnica.com/science/2017/01/rem-sleep-lets-the-brain-cut-and-strengthen-new-connections/>)

In case you're wondering, no the research reports didn't stop in 2018: there's a continuing, steady stream of articles, such as this one:

"Is your smartphone ruining your memory? A special report on the rise of 'digital amnesia'"

<https://www.theguardian.com/global/2022/jul/03/is-your-smartphone-ruining-your-memory-the-rise-of-digital-amnesia>

... I think the point is made.

So, in summary:

- Multitasking sucks
- Cell phones really interfere with your learning
- **NO laptop or cell phone use during lectures;**
no cell phone use during labs!
See Algonquin Directive "AA32".