

# Your Smartphone Reduces Your Brainpower, Even If It's Just Sitting There

A silent, powered-off phone can still distract the most dependent users.

I sit down at the table, move my napkin to my lap, and put my phone on the table face-down. I am at a restaurant, I am relaxed, and I am about to start lying to myself. I'm not going to check my phone, I tell myself. (My companion's phone has appeared face-down on the table, too.) I'm just going to have this right here in case something comes up.

Of course, something will not come up. But over the course of the next 90 minutes I will check my phone for texts, likes, and *New York Times* push alerts at every pang of boredom, anxiety, relaxation, satiety, frustration, or weariness. I will check it in the bathroom and when I return from the bathroom. I don't really enjoy this, but it is very interesting, even if some indignant and submerged part of my psyche moans that I am making myself dumber every time I look at it. As, in fact, I am.

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](#) in the *Journal of the Association for Consumer Research*. It finds that a smartphone can demand its user's attention even when the person isn't using it or consciously thinking about it. Even if a phone's out of sight in a bag, even if it's set to silent, even if it's powered off, its mere presence will reduce someone's working memory and problem-solving skills.

These effects are strongest for people who depend on their smartphones, such as those who affirm a statement like, "I would have trouble getting through a normal day without my cell phone."

But few people also know they're paying this cognitive smartphone tax as it plays out. Few participants in the study reported feeling distracted by their phone during the exam, even if the data suggested their attention was not at full capacity.

"We have limited attentional resources, and we use some of them to point the rest of those resources in the right direction. Usually different things are important in different contexts, but some things—like your name—have a really privileged status," says Adrian Ward, an author of the study and a psychologist who researches consumer decision-making at the University of Texas at Austin.

"This idea with smartphones is that it's similarly relevant all of the time, and it gets this privileged attentional space. That's not the default for other things," Ward told me. "In a situation where you're doing something other than, say, using your name, there's a pretty good chance that whatever your phone represents is more likely to be relevant to you than whatever else is going on."

In other words: If you grow dependent on your smartphone, it becomes a magical device that silently shouts your name at your brain at all times. (Now remember that this magical

shouting device is the most popular consumer product ever made. In the developed world, almost everyone owns one of these magical shouting devices and carries it around with them everywhere.)

In the study, Ward and his colleagues examined the performance of more than 500 undergraduates on two different common psychological tests of memory and attention. In the first experiment, some participants were told to set their phones to silent without vibration and either leave them in their bag or put them on their desk. Other participants were asked to leave all their possessions, including their cell phone, outside the testing room.

In the second experiment, students were asked to leave their phones on their desk, in their bag, or out in the hall, just as in the first experiment. But some students were also asked to power their phone off, regardless of location.

In both experiments, students who left their phones outside the room seemed to do best on the test. They also found the trials easier—though, in follow-up interviews, they did not attribute this to their smartphone’s absence or presence. Throughout the study, in fact, respondents rarely attributed their success or failure on a certain test to their smartphone, and they almost never reported thinking they were underperforming on the tests.

Daniel Oppenheimer, a professor of psychology at the University of California, Los Angeles, noted that this effect is well-documented for enticing objects that aren’t smartphones. He was not connected to this research, though his research has focused on other vagaries of digital life. Several years ago, he and his colleagues suggested that students [remember far more of a lecture when they take notes by hand](#) rather than with a laptop.

“Attractive objects draw attention, and it takes mental energy to keep your attention focused when a desirable distractor is nearby,” Oppenheimer told me in an email. “Put a chocolate cake on the table next to a dieter, a pack of cigarettes on the table next to a smoker, or a supermodel in a room with pretty much anybody, and we would expect them to have a bit more trouble on whatever they’re supposed to be doing.”

He continued: “We know that cell phones are highly desirable, and that lots of people are addicted to their phones, so in that sense it’s not so surprising that having one visible nearby would be a drain on mental resources. But this study is the first to actually demonstrate the effect, and given the prevalence of phones in modern society, that has important implications,” he said.

Ward will continue researching the psychological costs and benefits of the new technologies that have permeated everyday life. His dissertation at Harvard looked at the implications of delegating cognitive tasks to the cloud. “Big things are happening so quickly. It’s the 10th anniversary of the iPhone, and the internet’s only been around for 25 years, yet already we can’t imagine our lives without these technologies,” he said. “The joyful aspects, or positive aspects—or the addictive aspects—are so powerful, and we don’t really know the negative aspects yet.”

“We can yell our opinions at each other, and people are going to agree or disagree with them, and set up luddites-versus-technolovers debates. But I wanted to get data,” he told me.

It’s worth noting that the type of psychological research Ward conducts—trials on willing, Western undergrads, often participating in studies to fulfill course credit—has suffered a crisis of confidence in recent years. Psychologists have had difficulty replicating some of the most famous experiments in their field, leading some to argue that [all psychology experiments should be replicated](#) before they are published. This study has not yet been replicated.

One possible consequence of Ward’s work extends beyond smartphones. Most office workers now know that “multi-tasking” is a fallacy. The brain isn’t doing two tasks at once as much as it’s making constant, costly switches between tasks. But Ward says that assiduously *not* multi-tasking isn’t very helpful, either.

“When you’re succeeding at not multitasking—that is, when you’re doing a ‘good job’—that’s not exactly positive as well,” he said. That’s because it takes mental work, and uses up attentional resources, to avoid distraction.

Instead, he recommends that the most dependent users just put their smartphone in another room.