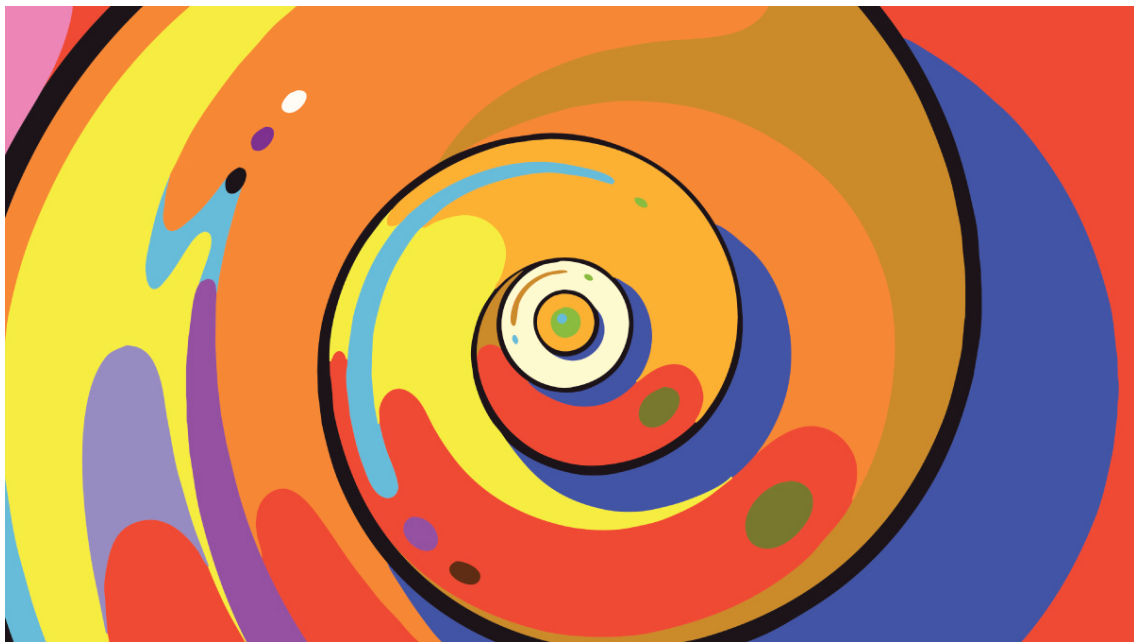


Having Your Smartphone Nearby Takes a Toll on Your Thinking

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Summary. In two lab experiments, nearly 800 people completed tasks designed to measure their cognitive capacity. Before completing these tasks, the researchers asked participants to either: place their phones in front of them (face-down on their desks); keep them in... [**more**](#)

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“Put your phone away” has become a commonplace phrase that is just as often dismissed. Despite wanting to be in the moment, we often do everything within our power to the contrary. We take out our phones to take pictures in the middle of festive family meals, and send text messages or update our social media profiles in the middle of a date or while watching a movie. At the same time, we are often interrupted passively by notifications of emails or phone calls. Clearly, interacting with our smartphones affects our experiences. But can our smartphones affect us even when we aren’t interacting with them — when they are simply nearby?

In recent research, we investigated whether merely having one’s own smartphone nearby could influence cognitive abilities. In two lab experiments, nearly 800 people completed tasks designed to measure their cognitive capacity. In one task, participants simultaneously completed math problems and memorized random letters. This tests how well they can keep track of task-relevant information while engaging in a complex cognitive task. In the second task, participants saw a set of images that formed an incomplete pattern, and chose the image that best completed the pattern. This task measures “fluid intelligence,” or people’s ability to reason and solve novel problems. Performance on both of these tasks is affected by individuals’ available mental resources.

Our intervention was simple: before completing these tasks, we asked participants to either place their phones in front of them (face-down on their desks), keep them in their pockets or bags, or leave them in another room. Importantly, all phones had sound alerts and vibration turned off, so the participants couldn’t be interrupted by notifications.

The results were striking: individuals who completed these tasks while their phones were in another room performed the best, followed by those who left their phones in their pockets. In last place were those whose phones were on their desks. We saw similar results when participants’ phones were turned off: people performed worst when their phones were nearby, and best when

they were away in a separate room. Thus, merely having their smartphones out on the desk led to a small but statistically significant impairment of individuals' cognitive capacity — on par with effects of lacking sleep.

This cognitive capacity is critical for helping us learn, reason, and develop creative ideas. In this way, even a small effect on cognitive capacity can have a big impact, considering the billions of smartphone owners who have their devices present at countless moments of their lives. This means that in these moments, the mere presence of our smartphones can adversely affect our ability to think and problem-solve — even when we aren't using them. Even when we aren't looking at them. Even when they are face-down. And even when they are powered off altogether.

Why are smart phones so distracting, even when they're not buzzing or chirping at us? The costs of smartphones are inextricably linked to their benefits. The immense value smartphones provide, as personal hubs connecting us to each other and to virtually all of the world's collective knowledge, necessarily positions them as important and relevant to myriad aspects of our everyday lives. Research in cognitive psychology shows that humans learn to automatically pay attention to things that are habitually relevant to them, even when they are focused on a different task. For example, even if we are actively engaged in a conversation, we will turn our heads when someone says our name across the room. Similarly, parents automatically attend to the sight or sound of a baby's cry.

Our research suggests that, in a way, the mere presence of our smartphones is like the sound of our names — they are constantly calling to us, exerting a gravitational pull on our attention. If you have ever felt a “phantom buzz” you inherently know this. Attempts to block or resist this pull takes a toll by impairing our cognitive abilities. In a poignant twist, then, this means that when

we are *successful* at resisting the urge to attend to our smartphones, we may actually be undermining our own cognitive performance.

Are you affected? Most likely. Consider the most recent meeting or lecture you attended: did anyone have their smartphone out on the table? Think about the last time you went to the movies, or went out with friends, read a book, or played a game: was your smartphone close by? In all of these cases, merely having your smartphone present may have impaired your cognitive functioning.

Our data also show that the negative impact of smartphone presence is most pronounced for individuals who rank high on a measure capturing the strength of their connection to their phones — that is, those who strongly agree with statements such as “I would have trouble getting through a normal day without my cell phone” and “It would be painful for me to give up my cell phone for a day.” In a world where people continue to increasingly rely on their phones, it is only logical to expect this effect to become stronger and more universal.

We are clearly not the first to take note of the potential costs of smartphones. Think about the number of fatalities associated with driving while talking on the phone or texting, or of texting while walking. Even hearing your phone ring while you’re busy doing something else can boost your anxiety. Knowing we have missed a text message or call leads our minds to wander, which can impair performance on tasks that require sustained attention and undermine our enjoyment. Beyond these cognitive and health-related consequences, smartphones may impair our social functioning: having your smartphone out can distract you during social experiences and make them less enjoyable.

With all these costs in mind, however, we must consider the immense value that smartphones provide. In the course of a day, you may use your smartphone to get in touch with friends, family,

and coworkers; order products online; check the weather; trade stocks; read HBR; navigate your way to a new address, and more. Evidently, smartphones increase our efficiency, allowing us to save time and money, connect with others, become more productive, and remain entertained.

So how do we resolve this tension between the costs and benefits of our smartphones?

Smartphones have distinct uses. There are situations in which our smartphones provide a key value, such as when they help us get in touch with someone we're trying to meet, or when we use them to search for information that can help us make better decisions. Those are great moments to have our phones nearby. But, rather than smartphones taking over our lives, we should take back the reins: when our smartphones aren't directly necessary, and when being fully cognitively available is important, setting aside a period of time to put them away — in another room — can be quite valuable.

With these findings in mind, students, employees, and CEOs alike may wish to maximize their productivity by defining windows of time during which they plan to be separated from their phones, allowing them to accomplish tasks requiring deeper thought. Moreover, asking employees not to use their phones during meetings may not be enough. Our work suggests that having meetings without phones present can be more effective, boosting focus, function, and the ability to come up with creative solutions. More broadly, we can all become more engaged and cognitively adept in our everyday lives simply by putting our smartphones (far) away.

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