



## **Multitasking Can Make You Lose ... Um ... Focus**

By **ALINA TUGEND**

AS you are reading this article, are you listening to music or the radio? Yelling at your children? If you are looking at it online, are you e-mailing or instant-messaging at the same time? Checking stocks?

Since the 1990s, we've accepted multitasking without question. Virtually all of us spend part or most of our day either rapidly switching from one task to another or juggling two or more things at the same time. While multitasking may seem to be saving time, psychologists, neuroscientists and others are finding that it can put us under a great deal of stress and actually make us less efficient.

Although doing many things at the same time — reading an article while listening to music, switching to check e-mail messages and talking on the phone — can be a way of making tasks more fun and energizing, “you have to keep in mind that you sacrifice focus when you do this,” said Edward M. Hallowell, a psychiatrist and author of “CrazyBusy: Overstretched, Overbooked, and About to Snap!” (Ballantine, 2006). “Multitasking is shifting focus from one task to another in rapid succession. It gives the

illusion that we're simultaneously tasking, but we're really not. It's like playing tennis with three balls."

Of course, it depends what you're doing. For some people, listening to music while working actually makes them more creative because they are using different cognitive functions. But despite what many of us think, you cannot simultaneously e-mail and talk on the phone. I think we're all familiar with what Dr. Hallowell calls "e-mail voice," when someone you're talking to on the phone suddenly sounds, well, disengaged. "You cannot divide your attention like that," he said. "It's a big illusion. You can shift back and forth."

We all know that computers and their spawn, the smartphone and cellphone, have created a very different world from several decades ago, when a desk worker had a typewriter, a phone and an occasional colleague who dropped into the office.

Think even of the days before the cordless phone. Those old enough can remember when talking on the telephone, which was stationary, meant sitting down, putting your feet up and chatting — not doing laundry, cooking dinner, sweeping the floor and answering the door. That is so far in the past. As we are required, or feel required, to do more and more things in a shorter period of time, researchers are trying to figure out how the brain changes attention from one subject to another.

Earl Miller, the Picower professor of neuroscience at the [Massachusetts Institute of Technology](#), explained it this way: human brains have a very large prefrontal cortex, which is the part of the brain that contains the "executive control" process. This helps us switch and prioritize tasks. In humans, he said, the prefrontal cortex is about one-third of the entire cortex, while in dogs and cats, it is 4 or 5 percent and in monkeys about 15 percent.

"With the growth of the prefrontal cortex, animals become more and more flexible in their behavior," Professor Miller said. We can do a couple of things at the same time if they are routine, but once they demand more cognitive process, the brain has "a severe bottleneck," he said. Professor Miller conducted studies where electrodes were attached to the head to monitor participants performing different tasks. He found that "when there's a bunch of visual stimulants out there in front of you, only one or two things tend to activate your neurons, indicating that we're really only focusing on one or two items at a time."

David E. Meyer, a professor of psychology at the [University of Michigan](#), and his colleagues looked at young adults as they performed tasks that involved solving math problems or classifying geometric objects. Their 2001 study, published in *The Journal of Experimental Psychology*, found that for all types of tasks, the participants lost time when they had to move back and forth from one undertaking to another, and that it took significantly longer to switch between the more complicated tasks.

Although the time it takes for our brains to switch tasks may be only a few seconds or less, it adds up. If we're talking about doing two jobs that can require real concentration, like text-messaging and driving, it can be fatal.

The RAC Foundation, a British nonprofit organization that focuses on driving issues, asked 17 drivers, age 17 to 24, to use a driving simulator to see how texting affected driving. The reaction time was around 35 percent slower when writing a text message — slower than driving drunk or stoned.

All right, there are definitely times we should not try to multitask. But, we may think, it's nice to say that we should focus on one thing at a time, but the real world doesn't work that way. We are constantly interrupted.

A 2005 study, "No Task Left Behind? Examining the Nature of Fragmented Work," found that people were interrupted and moved from one project to another about every 11 minutes. And each time, it took about 25 minutes to circle back to that same project.

Interestingly, a study published last April, "The Cost of Interrupted Work: More Speed and Stress," found that "people actually worked faster in conditions where they were interrupted, but they produced less," said Gloria Mark, a professor of informatics at the University of California at Irvine and a co-author of both studies. And she also found that people were as likely to self-interrupt as to be interrupted by someone else.

"As observers, we'll watch, and then after every 12 minutes or so, for no apparent reasons, someone working on a document will turn and call someone or e-mail," she said. As I read that, I realized how often I was switching between writing this article and checking my e-mail.

Professor Mark said further research needed to be done to know why people work in these patterns, but our increasingly shorter attention spans probably have something to

do with it. Her study found that after only 20 minutes of interrupted performance, people reported significantly higher stress, frustration, workload, effort and pressure. “I also argue that it’s bad for innovation,” she said. “Ten and a half minutes on one project is not enough time to think in-depth about anything.”

Dr. Hallowell has termed this effort to multitask “attention deficit trait.” Unlike attention deficit disorder, which he has studied for years and has a neurological basis, attention deficit trait “springs entirely from the environment,” he wrote in a 2005 Harvard Business Review article, “Overloaded Circuits: Why Smart People Underperform.”

“As our minds fill with noise — feckless synaptic events signifying nothing — the brain gradually loses its capacity to attend fully and gradually to anything,” he wrote. Desperately trying to keep up with a multitude of jobs, we “feel a constant low level of panic and guilt.” But Dr. Hallowell says that despite our belief that we cannot control how much we’re overloaded, we can. “We need to recreate boundaries,” he said. That means training yourself not to look at your BlackBerry every 20 seconds, or turning off your cellphone. It means trying to change your work culture so such devices are banned at meetings. Sleeping less to do more is a bad strategy, he says. We are efficient only when we sleep enough, eat right and exercise.

So the next time the phone rings and a good friend is on the line, try this trick: Sit on the couch. Focus on the conversation. Don’t jump up, no matter how much you feel the need to clean the kitchen. It seems weird, but stick with it. You, too, can learn the art of single-tasking.