

INTRODUCTORY NOTE: "Elijah James" appears to be a pseudonym. This essay, as far as can be determined, first appeared in Roberta Alexander's A Community of Readers, first published in 2007.

## **CAN YOU HOLD, PLEASE? YOUR BRAIN IS ON THE LINE**

Recently, psychologists, neuroscientists, and business management professors have been studying the phenomenon of multitasking. With cell phones, instant messages, digital assistants, MP3 players, e-mail, and the Internet available virtually anytime and anywhere, we often find ourselves doing two--or more--things at the same time. However, recent research indicates that attention, health, productivity, and profits can suffer as a result of too much multitasking.

In today's fast-paced world, it seems as if we get much more done than our parents and grandparents did. After all, we can talk and text, drive and talk or listen to tunes, respond to e-mail, and write a report all at the same time. But how does all this juggling affect us? Are we really better off?

Recent research suggests good reasons for limiting multitasking. Substantial evidence shows that driving while talking on a cell phone--even hands-free--is dangerous. Many states have already restricted cell phone use while driving and others are in the process of doing so. While working or studying, recommendations include checking e-mail once an hour and minimizing other distractions such as listening to songs with lyrics, instant messaging, surfing the web, or watching television. In other words, we need to learn how to manage technology, not just succumb to it every time we hear a beep or ring.

With its millions of neurons and firing synapses, the human brain has an amazing capacity to adapt. Yet psychologists and neuroscientists have discovered that cognition (mental processes) slow down when people try to do two tasks simultaneously. As Rene Marois, a neuroscientist and director of the Human Information Processing Laboratory at Vanderbilt University, states, "A core limitation is an inability to concentrate on two things at once."

Mr. Marois and other Vanderbilt researchers conducted a study that involved two tasks--responding to sounds and responding to images. In the first task, participants had to punch a key on a keyboard when they heard a certain sound. In the second task, they had to give an oral response when they saw a particular image. The researchers found that when participants were asked to do both tasks at about the same time, their ability to complete the second task was delayed by up to one second. Although one second doesn't seem critical, it could mean the difference between life and death when trying to avoid a road hazard or an oncoming car.

Other studies have more direct implications for studying and working. Dr. Russell Poldrack, associate professor of psychology at the University of California at Los Angeles, studied volunteers in their twenties, an age group that is renowned for its multitasking abilities. Through the use of magnetic resonance imaging, he found that when participants focused on a task, a different part of their brain was activated than when they did the same task while engaging in multitasking. That the part of the brain used for memory and recall--the hippocampus--was not active while multitasking is a concern to Poldrack because young

people's brains are still developing. "They develop a more superficial style of study and may not learn material as well. What they get out of their study might be less deep," he said.

In another study, researchers at Microsoft found that when workers replied to an e-mail or checked a website, it took them an average of 15 minutes to return to a task that required focus, such as writing a report or computer code. "I was surprised by how easily people were distracted and how long it took them to get back to the task," said Eric Horvitz, a Microsoft research scientist. As a result, worker productivity and company profits go down.

Most researchers acknowledge that multitasking in certain situations is not only necessary, it can also be beneficial. Interruptions can spark creativity and collaboration.

However, they caution that more is not always better, and that individuals should make choices about how and when they multitask. Otherwise, they will be missing out on some of the brain's power and losing time, rather than saving it.

### **ESSAY TOPIC**

According to James, what problems can result from multitasking—trying to do two—or more—things at the same time? To what extent do you agree with James in his analysis? In formulating our answer, be sure to cite specific examples from your personal experience, your observations of others, or any of your reading.