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June 6, 2010
YOUR BRAIN ON COMPUTERS

Title establishes author's opinion

Attached to Technology and Paying a Price

By MATT RICHEL

SAN FRANCISCO — When one of the most important e-mail messages of his life landed in his inbox a few years ago, Kord Campbell overlooked it.

Not just for a day or two, but 12 days. He finally saw it while sifting through old messages: a big company wanted to buy his Internet start-up.

"I stood up from my desk and said, 'Oh my God, oh my God, oh my God,'" Mr. Campbell said. "It's kind of hard to miss an e-mail like that, but I did."

The message had slipped by him amid an electronic flood: two computer screens alive with e-mail, instant messages, online chats, a Web browser and the computer code he was writing. ([View an interactive panorama of Mr. Campbell's workstation.](#))

While he managed to salvage the \$1.3 million deal after apologizing to his suitor, Mr. Campbell continues to struggle with the effects of the deluge of data. Even after he unplugs, he craves the stimulation he gets from his electronic gadgets. He forgets things like dinner plans, and he has trouble focusing on his family.

His wife, Brenda, complains, "It seems like he can no longer be fully in the moment."

This is your brain on computers.

When did those "This is your brain on drugs" PSAs air? Do they still air? I wonder if the reference is intentionally dated.

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.

little wounds

opens with one person's story — makes argument personal and specific rather than just scientific

specific images set the scene

Richel uses Brenda to make judgment for him

main idea

Dry, straight-forward tone and short sentences and paragraphs create a sense of measured amazement

Subtly sets reader up to think of gadgets as drugs

as if he were electronic himself

ups the ante

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.

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.

“The technology is rewiring our brains,” said Nora Volkow, director of the National Institute of Drug Abuse and one of the world’s leading brain scientists. She and other researchers compare the lure of digital stimulation less to that of drugs and alcohol than to food and sex, which are essential but counterproductive in excess.

Technology use can benefit the brain in some ways, researchers say. Imaging studies show the brains of Internet users become more efficient at finding information. And players of some video games develop better visual acuity.

More broadly, cellphones and computers have transformed life. They let people escape their cubicles and work anywhere. They shrink distances and handle countless mundane tasks, freeing up time for more exciting pursuits.

For better or worse, the consumption of media, as varied as e-mail and TV, has exploded. In 2008, people consumed three times as much information each day as they did in 1960. And they are constantly shifting their attention. Computer users at work change windows or check e-mail or other programs nearly 37 times an hour, new research shows.

The nonstop interactivity is one of the most significant shifts ever in the human environment, said Adam Gazzaley, a neuroscientist at the University of California, San Francisco.

“We are exposing our brains to an environment and asking them to do things we weren’t necessarily evolved to do,” he said. “We know already there are consequences.”

Mr. Campbell, 43, came of age with the personal computer, and he is a heavier user of technology than most. But researchers say the habits and struggles of Mr. Campbell and his family typify what many experience — and what many more will, if trends continue.

For him, the tensions feel increasingly acute, and the effects harder to shake.

The Campbells recently moved to California from Oklahoma to start a software venture. Mr. Campbell’s life revolves around computers. (View a slide show on how the Campbells interact with technology.)

He goes to sleep with a laptop or iPhone on his chest, and when he wakes, he goes online. He and Mrs. Campbell, 39, head to the tidy kitchen in their four-bedroom hillside rental in Orinda, an affluent suburb of San Francisco, where she makes breakfast and watches a TV news feed in the corner of the computer screen while he uses the rest of the monitor to check his e-mail.

if the scientists don't compare "digital stimulation" to drugs, why does Richfel?

is the ability to "work anywhere" really "exciting"?

connection to rise of consumer culture.

but is evolution a continual process?

Shift from negative to positive effects of technology

As if it's the information itself that's the "drug," and computers etc. are just the delivery system

wow!

returns to specific scene set in opening paragraphs

Like when I brought my laptop on my honeymoon - bad idea!