

the charlatan

Vol 41 • Issue 10 • October 13 - October 19, 2011

carleton's independent weekly - since 1945



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Information Overload

DATA DISTRACTIONS

By YAMINA TSALAMAL & KATHLEEN CLARK

Jeffery Satchwill, a fifth-year communications student at the University of Ottawa, gets all his news on the way to work from his iPad, a tool to access the plethora of information virtually within his grasp.

"I like it in the sense that it allows me to instantaneously fill my natural curiosity," Satchwill said. "To be able to access the Internet anywhere I go is pretty remarkable and useful."

He said his only concern is relying too much on technology. And he's not alone.

From technology writers to neuroscientists, experts have been studying the

"You can have it with any communication means: Twitter, Facebook, Internet chat, text messages and what have you," Pijpers said in a phone interview.

"If you stick to one, then you don't have an information overload. But if you use various communication means, with the same information, then you are probably suffering information overload. But don't blame the tool. Blame the person for not selecting the right tool and filtering the right information."

Pijpers isn't the only one who has pointed out people's misuse of technology.

Pulled apart

"We pull the trigger on the guns, not the guns them-

Being distracted can affect productivity. Jackson said studies have shown the average worker switches tasks every three minutes.

Not only that, but a distracted lifestyle also affects relationships. She argued that with sites like Facebook, unwired relationships are few and far between.

"[We need] depth of connections, not just hyper connectivity and expanding networks of people," Jackson said.

In other words, people need face-time with friends and family.

Author and journalist David Shenk said he agrees.

Before the birth of iPads and smartphones, he wrote the 1997 book, *Data Smog: Surviv-*

third answer. This takes patience. Yet slower-paced, more patient individuals aren't considered as productive.

"Out of all this mix, I'd argue that we're not valuing slower, focused types of attention," Jackson said.

"We are tending to value the quick, the multitasking style. We think that that's the way to get things done. We're trying so hard to be efficient that we're becoming inefficient. We're not giving ourselves time for slow thinking, which is highly creative," she added.

The answer to this may be to spend some time "unplugged," away from the computer screen, Shenk said. People should make themselves inaccessible from time to time in order to be more reflective, he added.

Beyond our capacity

Amedeo D'Angiulli, a neuroscience professor at Carleton University, studies the oversaturated brain. He said his research on memory and how humans select information from their environments has helped spark an interest in the science behind multi-tasking.

"Our cognitive system is very limited," he said.

In fact, [people are only capable of processing about five to seven "chunks" of information at any given time, according to D'Angiulli.

"And that's the amount we can consciously control," he said.

"A chunk of information could be anything. It could be five to seven digits or five to seven words or five to seven images . . . the rest of the information is lost or we are not entirely sure if it's transferred to long-term memory."

Outsourcing the info

To overcome this biological barrier, people have developed the clever technique of "extended external memory."

Simply put, people take notes, read maps, consult drawings and use symbols to fill in where their brains can't manage.

"That's why people are constantly relying [on] pieces of

paper, notes and that kind of stuff because we cannot hold the information," D'Angiulli said.

"To manipulate and work on it, you need to hold it. But when there's capacity limits and you have to do this very quickly — for example sitting in a class for a very complex, even boring lecture — you need some external memory to help you."

Multi-wasting

Multi-tasking requires more than just a brain, he said.

More and more, people are turning to technology as their extended memory.

But D'Angiulli said he has reservations about relying too heavily on the new toys.

"The Internet and other gadgets are supposed to be supporting technology to do the multi-tasking. But what

I happens [is that devices like the mobile phone] will distract you and then it becomes dangerous," he said.

"This gadgetry very, very quickly can produce addiction. I can do email anytime now, right. Even in the bathroom. That means the technology is controlling you but you don't have any executive control over it."

The addiction can sometimes make studying pretty ineffective, he said.

More seriously, there are dangers of people believing they are master of their smart phone while they happen to be driving.

An interpersonal solution

There are a few easy ways to avoid information overload, Pijpers said. Friends and acquaintances can act as conduits of information. People

can distill long, tedious articles into informational tidbits.

"A human can add more value than anything else. And the famous phrase I use: talking to a person for five minutes gives you more information than five hours online," he said.

"People forget. They think we need to find it on the Internet. If you have to paint your house do you go on the internet or do you talk to your neighbours and friends to look if they have a good painter? You can find anything on the Internet of course, but if you want a really good painter for your house, you talk to your neighbour, you talk to your friends. That's where you get the qualified information."

An ignorant future?

If people don't tone down

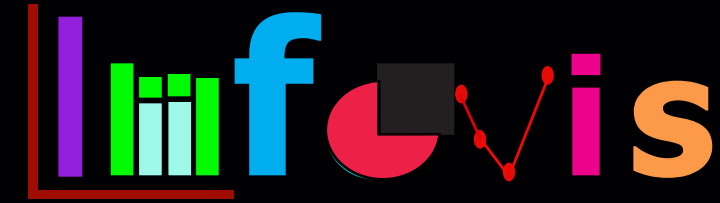
their information mining, Pijpers said he worries society will begin to overlook data that is actually important.

"I think there will be a time in the next couple of years that people make the wrong decisions because they just missed the information, they didn't get that nugget out of those hundred emails," he said. "It's not that the information is not available but just people miss it."

Jackson said she foresees pile-ups on the information highway.

"The potential to be well-informed is there but I think that we're at risk of creating a new form of ignorance," Jackson said.

"In the past, ignorance was based on the lack of information. . . now ignorance is based on an unwillingness or inability to access the information and turn it into knowledge."



BY ANNA KOZLOVA

From a map of the local transit network to a graph displaying a cellphone's monthly usage, information graphics have become a regular part of people's lives.

Infographics have been around for thousands of years, with cave paintings being the earliest example, but they haven't always been well-received.

"Most people in the past have shunned infographics," said Larry Weldon, a statistics professor at Simon Fraser University. "Now they're seen as a great way to communicate a message."

Chris Collins, an assistant professor in the faculty of science at the University of Ontario Institute of Technology (UOIT), said people use infographics all the time, even though they may not call them that.

"We draw diagrams, make sketches . . . information graphics are just a formalized version of that," said Collins, who specializes in information visualization at UOIT.

Infographics help communicate information to the public, he added.

Infographics also help people focus on the information itself by "[moving] the information from the periphery . . . to a more central position in the argument," said Brian Fisher, an associate professor at Simon Fraser University's School of Interactive Arts and Technology, in an email.

In addition to simplifying information, however, infographics have the potential of complicating it, which Collins said can lead to information overload.

"The temptation is always to try to present more information in such a way that it is understandable by the reader. This is not easy," Fisher said.

"There's certainly a tendency to make them overly complex," said John Dill, a

professor at the School of Interactive Arts & Technology at Simon Fraser University. "It ends up not being helpful and also [turns] off the person who you are trying to sell this visualization to."

No longer limited to the two dimensional print images often displayed in textbooks, infographics have evolved into web graphics that allow users to interact with the data.

One way to increase the comprehension of infographics is through adding interaction, essentially giving the reader an active role in the conversation, Fisher said.

"This parallels what has happened in YouTube etc . . . where we went from consuming media from radio and television to reworking it and re-presenting it," Fisher said.

Interactive infographics can help alleviate information overload by putting the viewers in control and letting them choose the information they want to look at, according to Collins.

There are now entire departments dedicated to the creation of infographics at publications like the *Toronto Star*, the *New York Times* and CNN, according to Collins.

"I think it's a really exciting and hot area right now," he said.

While the field of infographics is rapidly developing, it's important for people to possess the visual literacy to understand them, he added.

Fisher said he believes people are becoming more and more used to information graphics.

"I think we are beginning to build a 'visual vocabulary' to communicate the implications of data that a reasonable proportion of the population can understand," he said.

"This means that instead of simply accepting [or not] the conclusions of a writer, readers can draw their own conclusions."



People who bombard themselves with information may be decreasing their productivity by overloading their brain. || PHOTO ILLUSTRATION BY PEDRO VASCONCELLOS