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Reading researcher John McEneaney explores the brain

In an office overshadowed by shelves of books piled to the ceiling, OU reading professor John McEneaney has spent the last decade pursuing an unlikely subject — technology. His interest in the partnership between reading and computers was sparked as an educator at the elementary level and has burgeoned into innovative and important theoretical research.

McEneaney explains, “I have always liked technology. When I was a classroom teacher and the principal got a computer for the school, she’d say, ‘Why don’t you keep it in your room?’ because she knew I would be eager to use it. And in doing so, I saw first hand how technology could change instruction for kids.” Later, in fulfillment of his doctoral dissertation at University of Georgia, McEneaney built a theoretical model of reading acquisition that took the form of a computer program.

His work to connect literacy and technology recently earned him the Albert J. Kingston Award, presented by the National Reading Conference (NRC). The award is given for distinguished service to NRC, the nation’s premier literacy research organization. McEneaney was nominated for the award for his work to bring the NRC online.

Involved with the NRC since the mid 1980s when he served as a reviewer for the Journal of Literacy Research, McEneaney’s major contribution to the organization is blazing its trail out onto the Web. He created the first NRC Web site in 1995, and followed it up with the first online conference proposal submission system in 2001.

He explains, “It was a very interesting project for me because I do research on how people use technology. So, much of it was figuring out how people were going to respond to the online submission system, as many of the NRC’s members at the time were not very interested in technology, or were frightened by it.”

John McEneaney in his salty sea-dog costume for a November ball he attended with his wife, Cheri, and his daughters.

For McEneaney, the human element that must be considered when building new technological tools trumps any technical obstacles. “There are technical problems that must be solved, but it really is sort of a human problem. How do people work, how can you help them feel like this will work for them, and how can you actually deliver benefits that are useful?”

Currently, McEneaney’s research is moving in a more nuanced direction. He is investigating how readers have unconscious responses to computers that influence the way they interact with the machines. He’s finding that people display biases and prejudices when using computers that display different human attributes. For example, if a computer has a male voice or a female voice, users respond differently.

The reactions are completely unconscious. McEneaney explains, “Participants in these studies deny it up one side and down the other when you ask them about it. For me, that’s a very important idea because while I do think of the computer as text, it’s a different kind of text because it can act on a reader in ways a book can’t. Books, physical things, are more rigidly organized. With computers, there is literal interaction; in hypertext, the reader builds the text as she reads. What’s more, there is software that’s running it all, and that software can pay attention to the way you read and adjust itself accordingly as you read — something that happens at Amazon.com every minute of every day. Basically, the text can change as people read based on each reader’s conscious and unconscious responses. That’s a big deal in my view.”

McEneaney’s affinity for reading research stems in part from its interdisciplinary nature. He says, “One of the things I like about the field of reading is that is covers so much fundamental territory. Reading in my view is thinking with text. So, when we research how people read, we are studying psychology, cultural and social aspects, cognitive science — and big philosophical questions about the nature of thought. The addition of technology has really allowed us to go much deeper into these questions than before.”

Part of that exploration involves issues of intention and volition. McEneaney explains, “The notion that there’s something mystical about intelligence has a long philosophical tradition. We have this idea that there’s a little person inside our head that says ‘Move arm,’ and the arm moves. But many controlled studies show that about eight tenths of a second before you say to yourself, ‘Move arm,’ your brain is already getting ready. The neural activity that has to happen for the arm to move is happening before you’re even aware of it. Most people want to believe they have this mystical ‘I decide’ moment that sets the brain into action, but the brain is always running.”

This is critical information for McEneaney’s research. “It appears that we have brain circuits that are specialized to respond to intentional acts — so called mirror-neurons — as opposed to purely physical or random events. Just as people process language in different areas of the brain from environmental noise, it appears that actions by intentional agents (e.g., people, animals, and perhaps even computers) may be processed in different ways than non-intentional events. For example, your brain reacts differently when you watch someone push a book off a shelf than it does if an earthquake makes that book fall.”

In his current research, McEneaney is using a reaction-time experimental design he hopes will allow us to distinguish whether an individual believes an act is intentional or random. He says, “I’m examining how people respond to the computer; for example, how they respond when they do something, like click; how they respond when they watch somebody else click; and how they respond when the computer just randomly clicks. All of this is at a level where there is no conscious awareness.”

McEneaney believes that cognitive science is reaching a place where we can begin to define, in both qualitative and quantitative ways, what we mean by intention and consciousness. “It is within our grasp now,” McEneaney says, “and reading is definitely a way in.”

SUMMARY
In an office overshadowed by shelves of books piled to the ceiling, OU reading professor John McEneaney has spent the last decade pursuing an unlikely subject — technology. His interest in the partnership between reading and computers was sparked as an educator at the elementary level and has burgeoned into innovative and important theoretical research. His work to connect literacy and technology recently earned him the Albert J. Kingston Award, presented by the National Reading Conference (NRC). The award is given for distinguished service to NRC, the nation’s premier literacy research organization. McEneaney was nominated for the award for his work to bring the NRC online.

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