Old dogs... new tricks? It is possible.

By Don Hill

f you have ever pondered what goes on in the mind of a leader, it will be comfort to learn modern neuroscience also finds this brainteaser of considerable interest.

Neuroscience is the study of how humans think. A generation ago, serious enquiry about the 'c' word-consciousness-was thought to be career suicide, and consequently remained off-limits to scientists as taboo research.

"You couldn't say the word," recalled Stuart Kaufman, director of the University of Calgary's Institute for Biocomplexity and Informatics. "We didn't understand consciousness at all," because there was no scientific way to accurately measure and account for the human central nervous system, let alone the 'mind'.

Famous for his ideas about Chaos Theory. Dr. Kaufman invested the early going of his scientific career into the philosophy of mind "My major contribution to the field amounts to a couple of tee-shirt slogans," he laughed. "Consciousness: think of it," that's one, and the other, "Consciousness: it blows my mind."

The study of consciousness certainly has befuddled scientists. At the beginning of this decade, I spent an afternoon, one-on-one, with Marvin Minsky, a founder of Artificial Intelligence who complained, "I'm not even sure if consciousness is a noun." However, neuroscience's thinking about human cognition has advanced considerably since The Decade of the Brain was launched in the 1990s by President Bush-George the First.

CAT scans and fMRI's (functional magnetic resonance imaging machines) and other devices take snapshots of the human brain and the central nervous system. They measure what is going on in the muck and guck of our thinking. And with each and every scientific discovery, a fresh picture of how humans perceive the world is emerging.

'Neuroscience essentially says we have unlimited potential and possibilities," said **Bastiaan Heemsbergen**, author of *The* Leader's Brain, and a psychologist on core faculty with Leadership Development at the Banff Centre. "The biggest discovery in the last 10 years has been neuroplasticity," which confounds the notion that the human brain is hard-wired or fixed at adulthood. "You can teach old dogs new tricks," declared Dr. Heemsbergen with a grin that betrayed his middle-age.

ELECTRONIC THINKING CAPS

Extraordinary tools for stimulating the creative





wen and I have lived in Calgary over a year now. Some of you might remember my first column in September 2006

when I recounted meeting a fellow in the coffee shop line-up. On hearing we had just moved to town that day, he cautioned us not to 'lose our humanity'

Not only do we feel that we are still pretty decent folk, but we have found many examples of "humanity" right here in the Stampede city. Here's one of the best. A young mom

employed at the car wash I frequent was having trouble getting to work on time. She had to take two busses to get her baby daycare, then another to Bubbles. But, bosses **Andrew** and Tracey Bitcon didn't fire her. They

mind are just beginning to make their way out of the lab. It is now possible to put on an electronic 'thinking cap'-a piece of high-tech gear called repetitive transcranial magnetic stimulation-which sharpens cognition and shapes our ability to think better. Abbreviated as rTMS, the technology pulses electromagnetic fields around the outside of the human skull. Truth to tell: I've been part of a team of researchers at Laurentian University in Sudbury, Ontario, who have experimented with rTMS devices over the past 10 years.

I also can tell you that DARPA (the advanced research projects agency of the United States military) is also experimenting with electronic stimulation and other sophisticated contraptions to enhance human cognition and so-called 'situational awareness'.

All of this cutting-edge research has implications for 21st Century leaders of every sort who are required to make crucial decisions in a very short timeframe, compounded by a fog of inconclusive and overabundant data. When you have massive amounts of

information, it is just beyond the informationprocessing capacity of the brain," said Michael Persinger, an internationally-recognized pioneer of rTMS and the director of Laurentian University's Behavioural Neuroscience Laboratory. "You have to look for patterns."

Artists, for instance, tend to be good at pattern recognition, the ability to pick out weak signals in the environment and bundle them in such a way as to make sense of seemingly unrelated or confusing pieces of information.

Experiments with rTMS in Dr. Persinger's laboratory, which imitate the 'subtle energies' found in nature, have had a demonstrable affect on human perception and, overall, there is an increased level of awareness; it stimulates pattern recognition. This research was affirmed a few years ago when I was a guest at the Australian National University's Centre for the Mind, under the direction of Allan Snyder, a recent winner of the prestigious Marconi Prize. After being roused with rTMS, some of Dr. Snyder's human subjects exhibited uncanny savant-like abilities. Although extraordinary mental prowess tends to linger for only a brief time, the application of rTMS might make all the difference in a crisis or even perhaps a Stanley Cup winning goal.

FUTURE SAVVY

Have you ever made an intuitive leap? Went forward with a business decision in spite of the specifics because it felt right, only to find out

suggested she come straight to work with the baby, and one of them would drive the child to davcare. That's the kind of flexibility and support they offer their employees.

The Bitcons left lucrative careers just over a year ago-Andrew was a consultant and Tracey a figure skating coach-to start a business that would allow them the opportunity of employing and mentoring people having difficulties finding and keeping jobs: young, single mothers, immigrants, and people living with mental or physical challenges. Andrew and Tracy bought an old carwash on McLeod Trail, hired most of the previous business's employees as labourers to renovate it in six weeks, and opened the first Bubbles Car Wash in Calgary

The couple schedules employees hours around their school and daycare hours. They help them learn job and life skills, meeting them where they are and offering gentle guidance to the next step. They work with volunteer operations and agencies to provide continuity of support to the people they help. And they genuinely like and appreciate the people who work for them.

I've spoken to a couple of young women

much later that it was indeed the right choice? So how did you know what to do?

Cold hard facts are what dominate left-brain thinking. And it is the right hemisphere that is said to be the creative side of the human brain-this is where innovation lives.

"Intuition is a right brain activity," Heemsbergen said, citing the research of Daniel Pink, who argues that "what we desperately require in this economy is a right brain focus. Intuition is a key critical skill. Reflecting on the function and creative

possibilities for the right side of the brain, Persinger is reminded of "one of my old colleagues, William Roll, who once said the reason that psi phenomena-that is telepathy, clairvoyance, the kinds of things that people don't like to talk about-the reason it is not studied by major industries and business is because that is how the really good business people work."

That's their edge, he continued. "They're able to extract more information from the immediate environment" and perhaps beyond by a means which currently cannot be accounted for scientifically. "They may call it 'intuition' or good business sense or a hunch. But the point is some people have special capabilities that allow them access to what is going to happen in time. And those insights are utilized to make money."

The immediate future for Persinger and other neuroscientists investigating the affects of rTMS on the human central nervous system points toward a technology that extends the reach of ordinary perception. While it reads like the stuff of science-fiction, the scientific facts suggest "the average person in the next 30 or 40 years will have the insights of today's exceptional business man." And that implies tomorrow's business person "to stay ahead, must be even more advanced, which means he will be dependent upon a whole new technology that will give him that cutting edge." $\sqrt{}$

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employed at Bubbles. When "Pam" was taking baking and pastry arts at SAIT, Andrew and Tracey gave her a job, and sold her cookies and banana bread at the carwash. They helped Pam calculate reasonable prices for her baked goods, to cover the cost of ingredients and her time, and then sold them to appreciative customers, taking no profit for themselves. Pam is saving the income from that venture to help her buy her first home. Sandi works there now, and assures me "...it's the best place to work!" She says the Bitcons make her feel like she is a part of the company. She is impressed with how hard the couple works and how respectfully they treat all their employees.

That's what it's all about: Giving people a chance-sometimes several chances -to get

some work experience in a supportive, accepting environment. I've always thought Edmonton excelled in this area. It's gratifying to see that Calgary business has a similar focus. V

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One-year-old Keira Neal was diagnose in May with cancer above her right kne This case of Alveolar Rhabdomyosarcom is perplexing because babies are rarely diagnosed with the disease.

Keira currently is at Calgary's Alberta Children's Hospital with her parents. Daphne and A Neal, and her "Javac-old brother, Ryan. She is receiving chemo-theropy to reduce the tumor's size prior to leg anputation on Saptember 5. After Kiera's surgery, the family will remain in Calgary to undergo 30 weeks of additional chemotherapy before moving back to their home in Fairmort Hot Springs, British Columbia.

Keira's grandmother, Margaret Dalton, ives in Toronto and worries daily from a stance. She says, "I receive regular report from Daphne and AJ. Yet, this is little consolation. So I've decided to keep busy and organize a fundraiser on August 9 at Westmount Gallery, where I work, to help alleviate medicial costs for my granddaughter."

"I can hardly believe the generosity of strangers, "she exclaims. "When I visit a coal business and explain the circumstance first I am met with tears, as many of these individuals have felt first-hand what I'm going through."

sughout the years, Margaret's daugi haphne played hockey in Calgary wit ny of the Olympic Gold Medalists for the Women's ke Hockey Fean. her community fund raising events a underway, too, at Windermere, B.C. Argarer is still overwhelmed by the generosity of the B.C. community.

As you know, many medical costs are not covered by health insurance. When met by medical tragedies, Canadians are faced with paying exorbitant costs no matter where they live. For example, one of Keira's pain-relieving treatments costs \$750, administered once a week.

ntonians can help too! Ins can be made payable GARET DALTON IN TRUST

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Owners: Corenna Lundgren and Doneta Madge