Unravelling addiction

Sabitri Ghosh

Gisele Jubinville was a brilliant inventor, a self-described “risk-taker” whose willingness to gamble helped to make her career. It also nearly destroyed her life. Fourteen years ago, Jubinville sat down to watch a TV news clip about a seemingly innocuous subject—fitted bed sheets that wouldn’t stay put. Always a creative thinker, the Alberta mother of three got a bold idea. Why not design a better kind of bed sheet that would remain securely moored to the corners of the mattress?
"Gamblers’ dopamine levels, when playing a game of chance, parallel that of addicts in the full thrall of cocaine."

With her family’s support, she jumped into the project, ignoring naysayers who called her crazy. One night, as she tossed and turned over the problem in her sleep, the solution came to her in a dream: a unique corner pocket using a wholly original type of stitch. Sure enough, the prototype worked.

Three years later, in 1993, J Rubinville sold her idea to a major linen manufacturer for $1 million US. Suddenly a successful entrepreneur, lauded for her perseverance and daring, she seemed to have had it made. But, as she now muses, “Sometimes the very qualities that help you succeed may be the same ones that get you in trouble.”

With her children grown up and her husband frequently away on business, J Rubinville soon found herself frustrated and bored. To while away the time, she began visiting local establishments with video lottery terminals (VLTs), which promised big payoffs for those willing to flirt with risk.

For five years, she played the VLTs obsessively. On some days, she would gamble from afternoon to the early hours of the morning, until her eyes became bleary and bloodshot from the glare of the screen. Finally, after spending a small fortune on what she unblinkingly calls “my addiction,” she decided to face it head-on. Through prayer and intensive self-reflection, she realized she’d been bottling up her anger and fear of failure all her life. Playing the VLTs had been “an escape tool,” she says. From then on, she would confront her emotions honestly and try to capitalize on every challenge as an opportunity for spiritual growth.

Now 49, J Rubinville has come to see her gambling addiction, paradoxically, as a gift. She believes that it forced her “to go where most of us are afraid to go, or subconsciously or consciously choose not to go, which is getting in touch with our true feelings.” And while she bases this view on her own personal journey, the most exciting work currently taking place on addictions is arriving at remarkably similar truths.

The great debate

Today, we use “addiction” to describe everything from an innocent crush to fanatical soap-opera watching. Yet in spite of such familiar colloquialisms, addiction remains one of the most controversial terms in all of medicine.

Some experts believe addiction should be restricted to drugs and alcohol, arguing that nothing else wreaks the same physiological and psychological devastation. Others feel it applies just as fittingly to compulsive overeaters, pathological gamblers, and people consumed by sex.

Alan Leshner, a director of The National Institute on Drug Abuse (NIDA), has tried to sensitize the American public to the plight of addicts by portraying addiction as a chronic condition akin to diabetes or asthma—one that, like them, must be managed through treatment. “One might ask where voluntary drug-taking behavior ends and the compulsive disease of addiction begins,” wrote Leshner in the March/April 1996 edition of the NIDA newsletter. “And can’t addicts talk themselves out of this craving? The answer is no.”
Not everyone, however, agrees. Dr. Thomas Horvath, a San Diego psychologist and president of SMART Recovery Services, points to the fact that many hospital patients take morphine for pain relief, yet don’t become addicted. He believes that addiction is ultimately a voluntary behaviour, which he says, “Is chosen based on some form of cost-benefit analysis.”

While drugs might not “short-circuit” the brain, what they can and will do is reprogram its wiring, often in uniquely insidious ways. Research shows that they tap into the nucleus accumbens, the brain’s reward centre. Cocaine causes it to increase the circulation of dopamine, the neurotransmitter that gives us our sense of pleasure and motivation. Opiates activate opioid peptides, the body’s pain relievers. The hardest drug of them all, alcohol, appears to stimulate both opioid peptides and dopamine.

Why, then, do the neural changes sparked by drinking and drug-taking turn some people into addicts, while leaving others unfazed? Researchers have begun to examine genetics, biochemical deficiencies, and other variables in an effort to find out.

A message that never comes

Last year, using magnetic resonance imaging (MRI), Boston psychiatrist Hans Breiter scanned gamblers playing a game of chance and recorded an increase in dopamine levels paralleling that of addicts in the full thrall of cocaine.

The study confirmed that compulsive gamblers obey patterns of arousal, euphoria, and withdrawal virtually identical to those of drug addicts and alcoholics. They can feel just as high while gambling as drug addicts do while using, and just as low when they aren’t. More than half, notes Harvard professor Howard Shaffer, even display the classic withdrawal symptoms: irritability, sweating, stomach upsets, and insomnia. Shaffer is convinced that “repetitive and excessive patterns of emotionally stirring experiences,” rather than addictive substances or activities as such, ultimately underlie addiction.

Breiter’s MRI results sharpen the picture even further. Reporting his findings in Neuron, the leading journal of brain research, he concluded, “The same neural circuitry is involved in the highs and lows of winning money, abusing drugs, or anticipating a gastronomical treat.”

That doesn’t come as news to Ron Ruden, director of the Bio-Balance Center of New York. “It’s not the drug; it’s not the drug!” he insists, mantra-like, over the phone from Manhattan. After treating people with addictive behaviours for more than 20 years, the Harvard-educated doctor believes he knows what causes addiction—a theory cogently summarized in his 1997 book, The Craving Brain.
According to Ruden’s model, all cravings originate in the nucleus accumbens, the primitive part of the limbic system that tells us what to do and rewards us for doing it. When we feel any kind of need, whether it’s to eat, to find a mate, or to dull our pain, the nucleus accumbens alerts us by elevating our dopamine levels—an impulse Ruden characterizes as “the gotta have it.” Once the need has been met, or the task at hand completed, a carefully calibrated rise in serotonin levels lets us know that we’ve “got it” and allows us to relax. Ruden calls the resulting state of calm “bio-balance.”

In people prone to addictive behaviour, however, something is amiss. They suffer from a sensitized nucleus accumbens and perpetually low levels of serotonin, which means that when the craving comes calling via elevated dopamine levels, they will never be satisfied by a corresponding surge in serotonin. As Ruden puts it, “The ‘got it’ never happens ... the ‘gotta have it’ becomes unstoppable.”

But the biggest factor of all, he asserts, is chronic, inescapable stress. By keeping dopamine levels high, chronic stress prompts the brain to click into homeostatic mode and automatically lower its receptivity to the neurotransmitter. The chronically stressed person is then driven to actively seek out dopamine-inducing substances or activities. At the same time, their inability to “solve” the intractable problems plaguing them—whether past or present—has all but shut down production of serotonin, the neurotransmitter that works in conjunction with dopamine to assure them “everything’s OK.” In their lonely quest for relief, that message never comes.

The gift of addiction

Twenty men and five women sit quietly in a dimly lit room. Ranging in age from their early 20s to their 60s, the men and women come from a wide variety of social and ethnic backgrounds. All are here, at Toronto’s Centre for Addiction and Mental Health (CAMH), seeking recovery from addiction.

As ambient music tugs away at the silence, seven workers perform acupuncture on each of the 25 men and women. When asked how he finds the treatments, one man replies, “I don’t really feel anything,” his eyes remaining closed. As an afterthought, he adds, “I haven’t had any desires, cravings, whatsoever.”

Kimberly Murdock, the lead worker, and her colleagues in CAMH’s Stress Management Therapy program also use meditation, biofeedback, yoga, bodywork, relaxation, and imagery techniques to help addicts manage their stress and quell their cravings.

Common Addictive Behaviours

Sex
Gambling
Eating
Exercise
Working
Watching television
Surfing the Internet
Thrift-seeking

Some Causes of Chronic Inescapable Stress

- Abuse [sexual, physical, verbal]
- Loss of a loved one through death or separation
- Loss of social or economic status
- Problems at work or at school
- Chronic illness or disability
- Historical upheavals [e.g. war, depression]
- Fear of success

Sources: Student British Medical Journal, Natural Health
A partnership between the three levels of government, CAMH has long championed alternative therapies in the treatment of addiction. Like Ruden, its founders understand that addictive behaviour is essentially reactive and, in Murdoch’s words, “People utilize substances as chemical coping skills. They see therapies like acupuncture and meditation as initiatives that, at once, reduce stress and invoke time-tested insights about the mind, body, and spirit—and of the context in which they must function—which people struggling with addiction needed to have to move on.” Of these, the most important may well be the principle of human interdependence.

“We always do treatment in groups,” notes Murdoch. “As human beings, we’re built for rapport; we’re designed to self-regulate each other.”

Indeed, Ruden has theorized that the reason addicts so often find healing within support groups is because being together in community and answering our primal “herding” call remains one of the surest ways to coax the release of serotonin. In finding their way back, recovering addicts may also encounter profound truths about themselves and what matters most in life. Based on what she has seen, Murdoch says, “Addiction can be a real growth experience,” and in many cases, she believes, “people become more compassionate.” Like Gisele Jubinville.

“For reasons I have since discovered,” says Jubinville, now working as a therapist, “I needed to go through this experience for me to become who and what I am today, one of those reasons being that I was meant to help other people struggling with addictions.”

She tells how everything she's gone through as an addict has one purpose: “to discover the special and gifted person she really is.”

**Acupuncture as treatment**

Several studies point to the effectiveness of acupuncture in helping overcome addiction. In one study of 82 cocaine addicts, 54.8 per cent of those who had auricular acupuncture had no trace of cocaine in their urine when later tested, compared to only 17.5 per cent among those who did not have the treatment. Another study found that twice as many smokers managed to break the habit when they received acupuncture along with their counselling as part of an anti-smoking program. ☛

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