

The Great Riddle of Canadian entrepreneurship Fostering creativity and doggedness in a moderate society *by Sheldon Fernandez*

So if there is one thing I want you to remember from my talk today, it is *not* the following: there is an obscure Greek word termed *apophasis*, and it is a rhetorical device whereby you allude to something by denying it will be mentioned. You can think of it as a politician's trick of the tongue. So, for example, there is no point mentioning that I'm not being paid for tonight's talk and that you generally get what you pay for. Or, I'll try not to mention that a keynote address becomes less unbearable under the influence of alcohol and that we have a host bar tonight. And finally, I will not disclose the fact that to combat my nervousness at the moment, I'm picturing you all naked.

Instead, I'm going to begin with a rather surprising disclosure: namely, that this place gives me the creeps. Not just this building but the SLC, the DC Library, Ring Road, Porter, Fed Hall, Columbia Town Houses, and even East Side Marios - they are red flags in my mental rolodex, words that my psychiatrist fiancée would classify as *empathic failures*, terms that wound the psyche in a deep and profound manner. In years past, I'd become eerily silent while driving to Waterloo, so much so that my girlfriend at the time finally asked what was wrong with me. Or as she sensitively phrased it: *what in God's name did this place do to you?*

What I tried to describe to her in a roundabout way was the scar of trying times. Of nights spent in solitude with difficult mathematical concepts, cryptic computer code, and impossible exam problems. Of days wishing I'd picked an easier major like Religion or Anthropology so I could revel in the carefree existence that college was supposed to be. And finally, of the many hours I spent wishing I had more skill with the opposite sex, a longing that transformed into sadness when I realized that understanding the inner workings of a transistor didn't impresses the ladies.

Halfway through my undergrad I visited a close friend at the University of Loughborough in England, and I came home dejected because the trip was so fantastic. Their carefree and cavalier lifestyle, their happy-go-lucky swagger, and yes, the women, it was the ideal college experience I thought. A time to enjoy and really relish life before the tranquilizing drug of adult responsibility. And so however much pride I held in attending Canada's top technical institution, it was balanced or outweighed by an acute pain.

Now those of you are still sober surely realize this can't be the end of the story. Because this is supposed to be an uplifting address, not a melodramatic and admittedly quite pathetic Shakespearean tragedy. So, how exactly do I climb out of this ditch?



One of the classic documentaries from the 1990s is a movie called *Hoopdreams*, and it charts the lives of two African American boys trying to follow in the footsteps of NBA superstar Isaiah Thomas. Both live in the projects on Chicago's South Side and at ages 11 and 12 they begin attending St. Joseph's academy – the same school Isaiah went to – in search of basketball stardom. In one of the film's bleakest sequences, we see the boys rise at 5am on a cold winter morning to begin the ninety minute commute to Westchester. The street lights reflect off the hard winter ice and we realize what a long road – what plain hard work – is involved in trying climb to the top of the professional sports pyramid. More than anything, the movie is about the silent sacrifices that underpin greatness.

Think now, of a solemn walk to the library to confront differential equations while others are at the campus bar living it up. Think of the raw exhaustion in juggling five demanding technical courses, co-op interviews, labs, assignments, midterms, and all the rest. Think of the palpable anxiety before a final exam, when you know that

every ounce your ingenuity and intelligence may not prevail against a cruel professor and crueller exam problems. Think indeed, of what plain hard work is involved in negotiating the obstacles of this country's toughest engineering program.

I suspect many of you realize what it took me close to a decade to figure out: that if you've lost something here at Waterloo, you've inevitably gained a lot more. Two precious jewels, in fact, treasures to embrace and draw upon long after you leave these walls.

The 30th president of the United States got it right when he said:

Nothing in the world can take the place of persistence. Talent will not; nothing is more common than unsuccessful men with talent. Genius will not; unrewarded genius is almost a proverb. Education will not; the world is full of educated failures. Persistence and determination alone are omnipotent.

Throughout the rest of your lives, men more impressive than me will stand on stages like this and sprout their secrets of success. Some will captivate you with their eloquence and poetry, while others will lobotomize you with their torpor and cliché. I want you to remember always that the recipe for achievement, real achievement, significant achievement, is as simple as it is inevitable. More than equations and schematics, theory and technique, what should linger from your Engineering degree is this: the capacity for plain hard work, the propensity to persist, the strength when you are exhausted and discouraged to grind through the minutia of it all, through the obstacles, the naysayers, and all the stubborn hurdles of success. To be a force of nature instead a feverish, selfish, little clod of ailments and grievances complaining that the world will not devote itself to making you happy.

Whenever I indulge in a self-righteous soliloquy on the persistence of engineers, my fiancé shoots me an evil look, because as she often points out, we don't possess a monopoly on determination. Doctors, lawyers, accountants and scientists are no strangers to perseverance and pluck. Which brings me to the second treasure of your journey here at Waterloo.

I want to bring you back to August 10th, 1945 in Washington DC. It's the aftermath of WWII, Japan has surrendered, and the allies have decided to split the Japanese-controlled landmass of Korea into two parts. An all-night meeting is convened at the Executive Office Building next to the White House and two young military officers – Colonel Dean Rusk and Colonel Charles Bonsteel – have been given 30 minutes – 30 minutes! – to draw a line dividing the two new countries.

For the first 10 minutes they can't even find a map of the land, until an aide finally locates an old issue of National Geographic. And based on its out-dated atlas and their primitive understanding of the country, they choose the 38th parallel as a random and convenient way of dividing the peninsula. The Soviets, with more important things to worry about, consent to the split, and North and South Korea are formed.

There was tiny one problem, however: while the North got 50,000 square miles of dry and mostly un-farmable land, the South got twice the population and the most fertile rice fields. While the North suffered, the South flourished, and the division eventually led to the Korean War, a famine in the 1990s that killed somewhere between 2 and 4 million people, several periods of tension and tribulation, and many of the grave challenges that confront our global community today. All because of a random line drawn by two of history's forgotten men in an obscure office over half a century ago.

As a student of history, you see this pattern again and again, random, happenstance moments in time that snowball into events of incredible magnitude and significance; what mathematicians and weather scientists term the 'Butterfly effect', the idea that the tiniest fluctuations in a system can have colossal and long-term implications. The oscillations of history cut in both directions – sometimes for the greater good and sometimes not, but at this moment, in a certain context, they are colluding to your advantage.

Somewhere in my parent's basement is the 386 Compaq computer that I first learned to program on, and somewhere inside that computer, is the 14.4k baud modem that connected me to the outside world. Back then, the Internet in its modern form did not exist and some of you may recall Bulletin Board Services – or BBSs – that were like virtual electronic communities, a place where you could chat with other users, download pictures and software, and generally just waste time. And from this obscurity, arose the digital world as we know it today.

It's strange to reflect on that primitive era when the foundations of the Internet were first formed, because I don't think anyone thought that these tools, these hobbyist constructions, these little 1s and 0s flying over phone lines, would transform global economies and communities to the extent they have.

My point is whether by chance, coincidence, or the simple evolutionary quirks of our species, technology and applied science have become the golden hammer and chisel, tools to revamp whole industries and birth entirely new ones. Your proficiencies with this language can bring you to some amazing places, from the slums of Kenya to Paula Abdul's house in Beverly Hills, from a meeting with President of Fox Television to sitting with members of the royal family in Abu Dhabi. Few would argue today that the technology butterfly is flapping with full force.

To return to my basketball analogy from earlier, your two jewels of engineering – technical know-how the raw determination to wield it – make you our top NBA draft picks so to speak, our next entrepreneurs, idea-generators, architects, and dreamers. But like top draft picks, you are just beginning, most of you have yet to play the game with the big boys for big stakes and big money. So what advice can I, a player half-way through his career offer to you young superstars in-the-making?



Not everyone here is an entrepreneur, though some of you may be without realizing it. The word itself means different things to different people, but I most prefer the sentiments of the famous playwright who said: "some people see things and ask *why*, but I dream of things that never were and ask *why not?*"

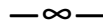
When you strip away all the decoration and fluff, what you find is that the entrepreneur's soul is move by two complementary forces: *refusal* and *audacity*. Refusal to be limited by the world as presented to them, which then blossoms into the audacity to transcend it.

I promise that should you traverse this road it will be difficult and exhausting because creation and change are never easy. I further promise that comfortable engineering jobs with large salaries await most of you after graduation should you want them. But I also want to challenge you to envision your life many years from now when you're my age or older.

Ignoring my grey hair and ashen face, how would you describe the first decade of your life after Waterloo if you didn't have to be pragmatic or realistic? What adjectives would you use? What triumphs would stir your soul? Is it an incremental contribution to a software giant, which is a practical, respectable, and comfortable road? Or is it something more, an opportunity to look back on your life many years from now and claim "I did that, that's my creation".

This is a question only you can answer, of course, but I'll let you in on two secrets. First, there are few things in life more professionally satisfying than seeing your own vision made real. To others it will seem like magic or luck and they will fawn over your achievements and ask how you did it. And in your heart of hearts there will reside a quiet and lasting satisfaction because you'll know the truth: that it wasn't magic or luck but plain hard work over several months and years; the small sacrifices, the struggles and the sweat experienced in solitude.

And secondly, even if you fail in traversing this more difficult path you will succeed because of what you learnt throughout the journey. The most successful entrepreneur I know once told me: you learn business not by pursuing an MBA, but by simply starting your own business. True leaders do not step into the ideal ecosystem, it crystalizes around them because of their presence. The perfect place and time does not exist. So be somewhere, shut up, and just do it.



Beyond this call to entrepreneurship, though, I want to explore one more thing, a topic quite dear to my heart.

For three years I worked at the Accelerator Center across campus where I ran our company's angel investment arm and one day the owner of a large VC from New England toured the building to see what Canada's brightest minds were up to. He was a millionaire many times over, and towards the end of his visit he made a revealing comment.

"You Canadians" he said "are so courteous and polite, but you don't think big enough. Most of you would be happy creating a 30 or 40 million dollar company, whereas your counterparts in the America define success as a 3 or 4 billion dollar enterprise".

There is a lot behind his words, isn't there?

During my time at Waterloo the media was abuzz over the so called 'brain drain' – the belief that Canada's top minds were leaving the country and taking their talents down south, and as someone who did co-op terms in New York City and Silicon Valley I'm proof of that fact. And yet, as the owner of a company with its head offices in Manhattan and Toronto, I can also tell you that many of our Canadian employees return to their homeland after some years abroad.

The majority tell us it's because of family and friends or that they simply miss home; Tim Hortons, Swiss Chalet, Ketchup chips, and the dependable awfulness of the Toronto Maple Leafs. Yet I would submit to you that the reasons are deeper and a little more subtle.

"Life, liberty and the pursuit of happiness" – you've undoubtedly all heard these words, one of the key phrases from the American Declaration of Independence. Note the individualistic flavour of the sentence because it envisions a world that is centered on the fulfillment of personal potential: *your* right to a higher education, *his* right to equal pay, *her* right to choose.

Now consider the competing words from Canada's constitution act which articulates our ideal as: *"peace, order and good government"*. Embedded in this phrase is the expectation that our responsibilities for the collective and for our communities are as important as the impulses we might hold as individuals. Implicit further are other words like 'civility' and 'moderation' that embody our Canadian way of life. And together they allude to Canada's commitment to human rights, tolerance and diversity which make our country one of the most sought after destinations in the world.

That said, think about how these differences might manifest themselves in an entrepreneurial setting. America's emphasis on the individual is tied to the belief that a person's altitude in life should be determined solely by their effort and talent. It's the American dream personified and the building-blocks of their more perfect union: that anyone can rise to the desired level if they would only have the courage to do so. With such a foundation, should it come as a surprise that so much invention and significant achievement – the Microsofts, the Googles, and the Facebooks – originates from our neighbours down south? If entire populace is engrained to dream without restraint, then at least a few of those dreams will come true.

But what about us Canadians, eh? Polite, courteous, cautious Canadians? There is something to the generalization that while Americans are concerned with monetary successes, Canadians are concerned with quality of life. I see it every day at my company when our top employees forgo substantial US salaries and return to Canada for less money. I see it in our Toronto office where my best and brightest people opt for quieter careers with less travel so they can spend more time with their spouses and children.

I can't fault my employees for these decisions, and on a human level their priorities make me proud even if they complicate our business. But how do you remain globally competitive if your killer instinct isn't quite as sharp as the competition's? How do you innovate and persist? Indeed, how do you foster creativity and doggedness in a moderate society? As Shakespeare said, therein lies the rub.



Six billion dollars. That is what the government of Russia is spending over the next three years to convert 900 acres of farmland near Moscow into a technological oasis. By 2015, the cows grazing on this land will be replaced with 15,000 scientists and entrepreneurs in hopes of creating the next Silicon Valley. Tunisia has made similar vibrations as they attempt to become the Arab standard-bearers of innovation. Both countries recognize – as do many others – that technical innovation in the private sector will fuel the economies of tomorrow.

But we return to the original dilemma: can you artificially replicate the American spirit? Can you recreate the special ecosystem of the *real* Silicon Valley?

After grappling with this puzzle for some time, I realized that the question might be misguided, and the inquiry we should instead be asking is: how do we turn our unique Canadian values to our entrepreneurial advantage? Is it a matter of defining success differently than our American counterparts? Is it focusing our technical talents on problems that intersect with our country's emphasis on the community and human rights? Is it also confronting the darker sides of unrestrained capitalism? For example, while many observers celebrated the incredible accomplishments of Steve Jobs, few examined the thorny issue of Chinese labour that made these accomplishments possible.

My fellow engineers, your education and hard work have given you the wonderful option of earning a living to daydream and create should you choose. I'm not going to ask you to think more ambitiously or more expansively, but I am going to implore you to think more 'Canadianly'. You and your classmates have considerable sway in shaping the Canada of tomorrow, so the real question, the real inquiry, is in fact very simple: what type of country and world do you wish to pass on to your successors?

In my last two years at Waterloo by pure coincidence I began working with a professor in the Optometry Department and using his research we devised a system that could diagnose the refractive error of individuals unable to communicate with an optometrist. This had been a long standing problem in the field especially for

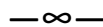
children and other disadvantaged persons who couldn't read. Although the practical benefits of the system were profound, what struck me was that the engineering work itself was relatively straightforward.

This experience highlighted for me a very discouraging reality; that the industries that might most benefit from your engineering skills –medical, environmental, humanitarian– will rarely profit from the fruits of your labour. You can probably guess why; because the financial reward of writing an iPhone app for a bank or oil company is much greater than doing the same for an NGO or an Optometry professor.

Four years ago I spent some time volunteering in the slums of Kenya and I promised myself I wouldn't touch or use a computer during my stay. It would be cathartic, I thought, to leave the engineering-Sheldon back in Canada. Once again, you can probably guess what happened. The organization required infrastructure help, teachers needed PowerPoint training to better educate women on the realities of HIV and AIDS, and the orphans wanted to write not with pencils, but in Microsoft Word. Quite simply, the impact I could exert as an engineer outweighed by an order of magnitude that which I could exercise as just another helping hand. So on day two, engineering-Sheldon reappeared, and my colleagues in Nairobi were soon using Facebook and MySpace to draw attention to their causes.

I'm not exactly sure what I hope to convey with these stories, other than to state that there something distinctly Canadian about the way we express concern for the marginalized and persecuted. I can speak only from experience and tell you that simply acquainting yourself with the troubling aspects of our humanity - the egregious violation of human rights in places like the Congo and North Korea, for example - will in some intangible way make you a better engineer, if not also a better person. As a Waterloo alumni, it gives me tremendous pride to recall that over a decade ago two of our graduates, George Roter and Parker Mitchell, founded Engineers Without Borders to address these very challenges.

Finally, I want to emphasize that although our values may differ from our neighbours down south, there is much we can learn from the tenacity of the American spirit. So instead of being content with a 30 or 40 million dollar company, perhaps your goal should be a 3- or 400 million dollar one, not for the sake of wealth itself, but because of how such wealth can be exerted. Think of the Mike Lazaridis and the Perimeter Institute for Theoretical Physics here on campus, or the philanthropy work of Bill Gates.



Towards the end of his life, Michelangelo said "the sculpture is already in the rock, it is only for me to bring out".

The creative act might be the most difficult act of all because the world does not react kindly to novelty or newness. This is true of art, philosophy, politics, and, yes, Engineering. The word *apophysis* aside, if there is one thing I want you to take away from all my blabbering, it's the courage to create Canadianly.

So fear not the naysayers and doubters and just create, emphatically and with unapologetic grandeur.

Create, with the resilience of an American, the sensitivity of a Canadian, and the integrity of a gentleman.

Dream with audacity, design with intelligence and execute with resolve as you search for that next rock and that next sculpture to make real.

Thank you.