

My Oh My, O Myelin!

Peggy D. Bennett, PhD
Professor of Music Education
Oberlin College Conservatory of Music
Recipient, 2009 Mary Helen Richards Lectureship

The “nature or nurture” argument has been plumbed for centuries, both sides arguing convincingly about whether our talents are with us at birth or whether they are trained into us. Just as beliefs about intelligence have shifted in recent years, so is the concept of talent changing, especially if you believe the premise of a new book about talent.

In his recent book, *The Talent Code: Greatness Isn't Born. It's Grown. Here's How*, Daniel Coyle offers a new explanation for talent. Growing talent, according to Coyle, is based in the action of “deep practice” and the consequent bodily production of a lipid nerve-wrap called “myelin.”

Coyle began a quest to answer, “What is talent?” by traveling to places that he considered “talent hot beds.” Aiming to find out why and how certain groups excelled, especially against the odds, Coyle sought “hot beds” that were wildly successful in spite of seemingly deprived circumstances: a penniless Russian tennis club, an obscure music school in Dallas, a “poor, scantily educated” family of writers in Britain, women’s golfers of South Korean, and baseball players from the Dominican Republic (to name a few).

What Coyle discovered was this: when we are “forced to slow down, make errors, and correct them,” operating at the edges of our abilities, we are actually *growing* talent, and we are doing this through what Coyle calls *deep practicing*. Deep practice is the act of figuring out what went wrong when we make mistakes. Deep practice is using time more efficiently.

“Your small efforts produce big, lasting results. You have positioned yourself at a place of leverage where you can capture failure and turn it into skill. The trick is to choose a goal just beyond your present abilities; to target the struggle. Thrashing blindly doesn’t help. Reaching does.”

As Coyle says, it is the “slipping and stumbling as we walk up an ice covered hill that ends up making us swift and graceful. The paradox is that struggling in targeted ways makes us smarter.” Many of us have a visceral reaction to our mistakes, because of all the guilt- and shame-laden messages we tell ourselves about what they mean. But, what if we reframed our errors and instead considered them “stepping stones?” What if, when we make a mistake, we take a cue from Ben Zander’s book and through our arms high in the air to proclaim, “How Fascinating!”

“The people inside the talent hotbeds are engaged in an activity that seems, on the face of it, strange and surprising. They are seeking out the slippery hills. . . . they are purposely operating at the edges of their ability, so they will screw up. And somehow screwing up is making them better.”

I personally related this notion of “figuring it out” to solving Sudoku puzzles. When I first encountered them, I absolutely could not figure out how to solve the puzzles. I soon just *knew* that I was not mathematically inclined enough to solve even the simplest puzzle. And, I learned Sudoku in isolation: I did not talk with anyone who “worked” them, I created my own system for solving them, and I knew of no one else’s strategies for figuring out which number went in which box. *But*, I figured it out. Although I am far, far from a Sudoku talent, it was the tenacity (some would call it stubbornness!) I had for, “I *will* figure this out!” that kept me staring at those numbers and boxes. Now, I thoroughly enjoy them even when I spend hours trying to figure out what *one* number to place in *one* box!

To make his point about how errors aid in the learning process, Coyle designed two lists of paired words. Read through each list.

A	B
Ocean/breeze	bread/b_tter
Leaf/tree	music/l_rics
Sweet/sour	sh_e/sock
Movie/actress	phone/bo_k
Gasoline/engine	chi_s/salsa
High school/college	pen_il/paper
Turkey/stuffing	river/b_at
Fruit/vegetable	be_r/wine
Computer/chip	television/rad_o
Chair/couch	l_nch/dinner

Now, without looking at the list, recall as many word pairs as you can.

Were you able to recall more pairs from List A or List B? “If you’re like most people, it won’t even be close,” says Coyle.

“Your IQ did not increase while you looked at column B. You didn’t feel different. You weren’t touched by genius (sorry). But when you encountered the words with blank spaces, something both imperceptible and profound happened. You stopped. You stumbled ever so briefly, then figured it out. You experienced a microsecond of struggle, and that microsecond made all the difference. You didn’t practice harder when you looked at column B. You practiced deeper.”

So, how does this “deep practice” relate to what Coyle states is the “holy grail” of skill-building, myelin? First, it is important to answer the question, “What is myelin?”

Imagine the rubber coating that surrounds an electrical wire. Rubber coating is to an electrical wire as myelin is to nerve fibers. The insulation on an electric wire does not produce or regulate electricity, rather its very important role is to protect the electrical current from leaking out and to “assist” the electrical impulse to be more efficient as it flows through the insulation.

Myelin serves nerve fibers in the same way that rubber coating serves electrical wire: it protects, insulates, and provides efficient conduction. A whitish, fatty substance, myelin is a sheath that “grows” on nerve fibers, wrapping them with a lipid protector that Coyle says answers the question about how talent is “grown.”

When we practice (fire our circuits) in the right way, our myelin responds by wrapping layers of insulation around the neural circuit, each new layer adding a bit more skill and speed. The thicker the myelin gets, the better it insulates, and the faster and more accurate our movements and thoughts become.

Scientists studying myelinated nerve fibers have not always understood the purpose or origin of this fatty substance. In earlier times (without the technology to find the answers), researchers wondered: Are nerves hollow? Is myelin inside the nerve fiber or around it? Is myelin secreted by the axon or formed by another cell?

According to Coyle, myelin grows in response to certain signals produced by deep practice, and the build-up of myelin is what solidifies a skill, it is what “grows” talent. So, the more we “figure it out,” encounter and overcome errors, and “deep practice” by spending focused time efficiently, pushing ourselves just past our comfort levels, the more we are building our stores of myelin-wrapped nerves!

According to Coyle, myelin is an amazing conduit to our skill development.

1. It’s universal: everyone can grow it throughout life, but most swiftly in childhood
2. It’s indiscriminate: its growth enables all skills, mental and physical
3. It’s imperceptible: we can’t see or feel it, and we can sense its increase only by seeing the effects

As I read Coyle's descriptions of the "talent hot beds" and the ways in which talent is grown, I was reminded of Gladwell's idea that it takes 10,000 hours of "hard practice" to be an expert, that "Ten thousand hours is the magic number of greatness." (p. 41) Like Coyle, Gladwell tells abundant, engaging stories of disparate individuals who make the 10,000 hour rule for achieving greatness seem quite believable.

Coyle begins *The Talent Code* by describing his fascination with video of a young clarinetist named "Clarissa." Borrowed from Australian music educator Gary McPherson's research project, a six-minute video of 13-year-old Clarissa's practicing prompted Coyle to identify "deep practice" as a key component of his theory of the talent code. Her teachers and parents (and Clarissa herself) pronounced Clarissa to be "musically mediocre" with no musical gifts. Yet, when Coyle watched one six-minute practice session, he was so stunned by what happened with Clarissa's focus, errors, corrections, and improvement, that he said the video should have been named: *The Girl Who Did a Month's Worth of Practice in Six Minutes*.

Embracing mistakes, welcoming difficulty, and soliciting toil may seem counterintuitive as pathways toward ease. Yet, if we believe what Coyle proposes in his book, they may be the only paths to take if we want to "break the code" and experience the *facility of skills* that manifest themselves as our talents. Happy climbing!

Sources

Coyle, Daniel (2009). *The talent code: Greatness isn't born. It's grown. Here's how*. New York: Bantam Books.
[Quotes above are taken from an ebook without page numbers.]

Gladwell, Malcolm (2008). *Outliers*. New York: Little, Brown, and Company.
[I also highly recommend Gladwell's two previous books: *The Tipping Point* and *Blink*]

Zander, Rosamund Stone & Zander, Benjamin (2000). *The art of possibility: Transforming professional and personal life*. New York: Penguin.