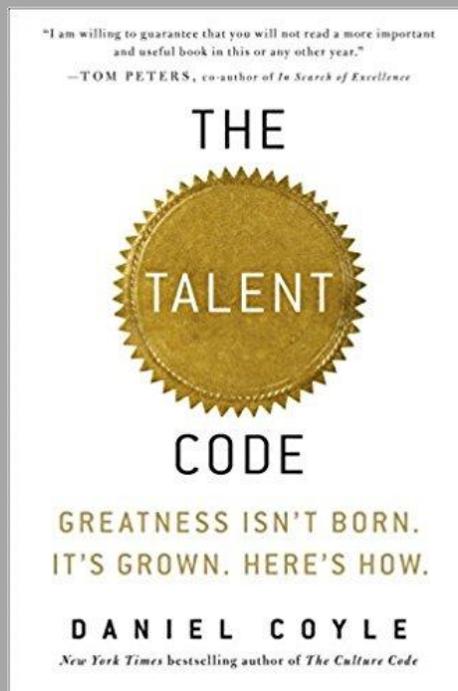


Matthew Mottola



The Talent Code





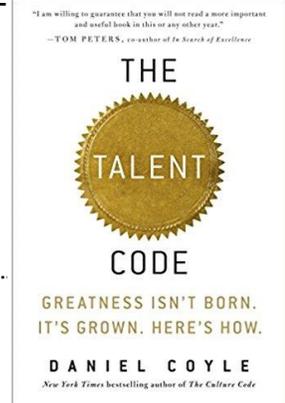
Let's Connect!



My Rating (From 0-5)



Complexity (From 0-10)



Summary

What is the secret of talent? How do we unlock it?

Whether you're coaching soccer or teaching a child to play the piano, writing a novel or trying to improve your golf swing, this revolutionary book shows you how to grow talent by tapping into a newly discovered brain mechanism.

My Takeaway

Skill can be built like a muscle using the science of myelin to develop a process that "codes" skill into the program of your ability to decipher patterns (skill).

This book covers how to build this myelin through:

- Deep Practice
- Ignition
- Master Coaching

Intro

Skill: A cellular insulation (Myelin) that wraps neural circuits and that grows in response to certain signals.

Goal: Get more of the right type of Myelin

Goal of practice: Having a neurological mechanism in which certain patterns of targeted practice build skill

“All skills, all language, all music, all movements, are made of living circuits, and all circuits grow according to certain rules” – Dr. George Bartzokis

“Every human skill, whether it’s playing baseball or playing Bach, is created by chains of nerve fibers carrying a tiny electrical impulse-basically, a signal traveling through a circuit. Myelin’s vital role is to wrap those nerve fibers the same way that rubber insulation wraps a copper wire, making the signal stronger and faster by preventing the electrical impulses from leaking out. When we fire our circuits in the right way-when we practice swinging that bat or playing that note-our myelin responds by wrapping layers of insulation around that 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.”

Talent: the possession of repeatable skills that don’t depend on physical size.

How to do this?

- Deep Practice
- Ignition
- Master Coaching

Chapter 1: Deep Practice

Lesson 1: Deep Practice

“When you’re practicing deeply, the world’s usual rules are suspended. You use 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.”

Lesson 2: Struggle

Struggle is an essential element to deep practice. In talent hotbeds, ½ the time he noticed a slow struggle → “They slammed to a halt; they stopped, looked, and thought carefully before taking each step. Making progress became a matter of small failures”.

Later in chapter 2, he says, “Struggle is not optional – it’s neurologically required”.

From Robert Bjork, chair of psychology at UCLA:

“We think of effortless performance as desirable, but its really a terrible way to learn”

“Things that appear to be obstacles turn out to be desirable in the long haul...one real encounter, even for a few seconds, is far more useful than several hundred observations”.

Lesson 3: Memory

Memory isn't like a tape recorder. Instead it's a living organism going through continuous creation/destruction.

“It's a living structure, a scaffold of nearly infinite size. The more we generate impulses, encountering and overcoming difficulties, the more scaffolding we build...the faster we learn” – Robert Bjork

Chapter 2: The Deep Practice Cell

“I have always maintained that excepting fools, men did not differ much in intellect, only in zeal and hard work” – Charles Darwin

This chapter is all about Myelin, and how Myelin is the “broadband”

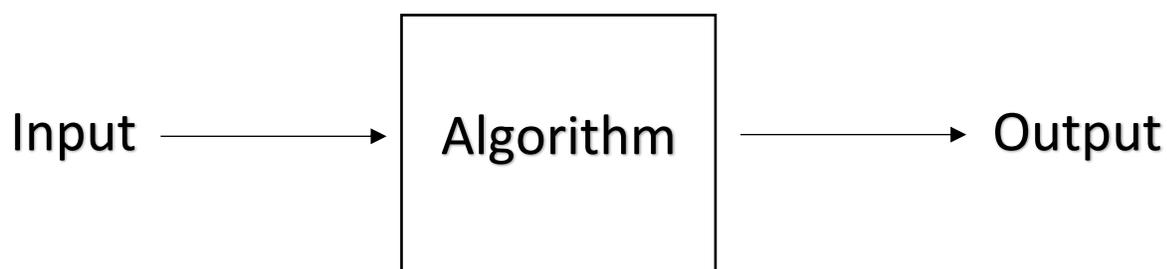
Lesson 1: Circuits

Every action – a thought, a movement - is the result of electrical impulses sent along chains of nerve fibers called circuits.

“All actions are really the result of electrical impulses sent along chains of nerve fibers. Basically, our brains are bundles of wires – 100 billion wires called neurons, connected to each other by synapses. Whenever you do something, your brain sends a signal through those chains of nerve fibers to your muscles. Each time you practice anything –sing a tune, swing a club, read this sentence-a different highly specific circuit lights up in your mind, sort of like a string of Christmas lights. The simplest skill-say, a tennis backhand-involves a circuit made up of hundreds of thousands of fibers and synapses.”

“The input is all the stuff that happens before we perform an action:seeing the ball, feeling the racquets position in our hand, deciding to swing. The output is the performance itself:the signals that move the muscles with the right timing and force to take a step, turn the hips, the shoulders, the arm.”

Relation to computer science: The base of computational thinking is:



The algorithm is software, while the input and output is the hardware (sensor, monitor, keyboard, etc.).

In our body, muscles are the hardware, while circuits are the software.

This alignment gets deeper with the properties of neurons: they are binary – either they fire or they don't.

Lesson 2: Myelin

Myelin is what determines the quality of our circuits.

“Myelin is infrastructure all right, but with a powerful twist: within the vast metropolis of the brain, myelin quietly transforms narrow alleys into broad, lightning-fast super highways. Neural traffic that once trundled along at two miles an hour can, with myelin's help, accelerate to two hundred miles an hour.”

Myelin also has the capacity to regulate velocity – “speeding or occasionally even slowing signals so they hit synapses at the optimal time”.

This matters because neurons are binary – they fire or they don't – thus capturing the timing of multiple neurons simultaneously is crucial.

What is myelin?

Myelin is insulation that wraps around nerve fibers and increases signal strength, speed & accuracy. The more we fire a circuit, the more myelin optimizes that circuit, and the more stronger, faster & fluent our movements of thought become, enabling a heightened level of consciousness.

“The truth is, practice makes myelin, and myelin makes perfect.”

Principles of Myelin:

1 – Active Learning: “Myelin is not built to respond to fond wishes or vague ideas or information that washes over us like a warm bath. The mechanism is built to respond to actions: the literal electrical impulses traveling down nerve fibers. It responds to urgent repetition...deep practice is assisted by the attainment of a primal state, one where we are attentive, hungry, and focused, even desperate”.

2 - Myelin is universal: “Myelin is meritocratic: circuits that fire get insulated” → you are what you do.

3 – Myelin wraps, it doesn't unwrap: This is why habits are so hard to crack. You can't just “quit” something, you need to replace it with other habits (through firing circuits).

4 – Age matters: 50 is where myelin starts diminishing.

Our understanding of myelin has only just begun → “When it comes to myelin, we know perhaps two percent of what we know about synapses...we're on the frontier” – Dr. Fields

Lesson 3: Automaticity

“The more we develop a skill circuit, the less we’re aware that we’re using it. We’re built to make skills automatic, to stash them in our unconscious mind. This process, which is called automaticity, exists for powerful evolutionary reasons. (The more processing we can do in our unconscious minds, the better our chances of noticing that saber-toothed tiger lurking in the brush.)” → nowadays that saber tooth tiger is the insights sparking innovation.

Reference: the Adaptive Unconscious

Chapter 3: The Brontes, the Z-Boys, and the Renaissance

“Excellence is a habit” – Aristotle

Lesson 1: Apprenticeship Model

The Renaissance was a result of an apprenticeship model – students learning through action, through experimenting and failing with the resource of a mentor to help guide the way.

Lesson 2: Wisdom

Wisdom is the result of circuits that are fully insulated.

Lesson 3: The Gene

Genes are: evolutionary tested instruction book that builds immensely complicated machines we are. There are two biological design questions:

1: How much prepackaged software should be installed? These are things we’re born with understanding, void of practice → breathing, eating

2: How can software adjust for changing conditions? Through custom software

Myelin

*Genes give us a universal language (like Java, Python, etc.), and it’s up to us to program it however way best fits our environment.

*Our body is a biological blue print for the digital age: our circuits are the internet & what we actively look at most builds quicker broadband connections to that.

Chapter 4: The Three Rules of Deep Practice

Lesson 1: Pattern Seekers

Experts see patterns. For example, while amateurs see unrelated letters, experts see the patterns of words within those letters.

Lesson 2: Chunking

Chunking is the grouping of patterns to conclude relevant insights – for example the right chess move.

3 Steps to Chunking:

- 1- Look at the task as a whole. This makes sure you know exactly WHAT you are solving for
- 2- Divide into smallest possible chunks
- 3- Play with time → slow it down, speed it up

Why? This enables:

- 1: A high degree of precision with each myelin firing
- 2: A working perception of the skills internal blueprint → shape & rhythm of the interlocking skill circuits.

Lesson 3: Repetition

“There is, biologically speaking, no substitute for attentive repetition”. This refers to talking, reading, thinking, imagining.

This is due to myelin’s property as a living organism, undergoing a constant flux of damaging/repairing/building.

*Myelin starts to decay after 30 days.

Lesson 4: Algorithm for Deep Practice

- 1: Pick a target
- 2: Reach for it
- 3: Evaluate gap between target & reach
- 4: Repeat step 1

Chapter 5: Primal Cues

Lesson 1: Ignition

Ignition is motivation that is created and sustained. It is the second ingredient to the talent code.

- Deep Practice, Ignition, Master Coaching

Lesson 2: Make it personal

Those that practiced the most were those that before starting expected the skill/journey to be a long term commitment. They also were able to see their future selves in the goal.

“a vision of their ideal future selves, a vision that oriented, energized, and accelerated progress, and that originated in the outside world”.

Lesson 3: Source of Motivation

Motivation is irrational – foregoing present comfort for future benefits.

It also stems from our reptilian brain and is a side effect to primal cues.

“Our brains are always looking for a cue as to where to spend energy now. Now? Now? We’re swimming in an ocean of cues, constantly responding to them, but like fish in water, we just don’t see it.”

Example: Losing a parent: The list with a high proportion of high achievers losing a parent. This primal cue “you are not safe”, ignited motivation to overcome the feelers and keep pushing.

“This signal can alter the child’s relationship to the world, redefine his identity, and energize and orient his mind to address the dangers and possibilities of life.”

“Losing a parent at a young age was not what gave them talent; rather, it was the primal cue- you are not safe- that, by tripping the ancient self-preserving evolutionary switch, provided energy for their efforts, so that they built their various talents over the course of years, step by step, wrap by wrap.”

Embrace the shit: “If we’re in a nice, easy, pleasant environment, we naturally shut off effort” – John Bargh, Yale University Psychologist

The Scrooge Principle: From John Bargh – “Our unconscious mind is a stingy banker of energy reserves, keeping its wealth locked in a vault. Direct pleas to open the vault often don’t work; Scrooge can’t be fooled that easily. But when he’s hit with the right combination of primal cues-when he’s visited by a series of primal-cue ghosts, you might say-the tumblers click, the vault of energy flies open, and suddenly it’s Christmas Day’.

1 – talent requires deep practice

2- deep practice requires vast amounts of energy

3- primal cues trigger huge outpourings of energy

Subsequent chapters were on having a master coach. Quite frankly, this point I found pointless.

MATTHEW  R

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