THE BIG IDEAS

The Gift
You have it. I do. We all do.

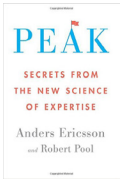
Practice
Naive. Purposeful. Deliberate.

Adaptability
Using homeostasis to our benefit.

Mental Representations
= What we're really building.

10,000 Rule?
Not so much.

Homo Exercens
Practicing man. OPTIMIZE!



Peak

Secrets from the New Science of Expertise

BY ANDERS ERICSSON & ROBERT POOL · HOUGHTON MIFFLIN HARCOURT © 2016 · 336 PAGES

"Why are some people so amazingly good at what they do? Anywhere you look, from competitive sports and musical performance to science, medicine, and business, there always seem to be a few exceptional sorts who dazzle us with what they can do and how well they do it. And when we are confronted with such an exceptional person, we naturally tend to conclude that this person was born with something a little extra. 'He is so gifted,' we say, or, 'She has a real gift.'

But is that really so? For more than thirty years I have studied these people, the special ones who stand out as experts in their fields—athletes, musicians, chess players, doctors, salespeople, teachers, and more. I have delved into the nuts of bolts of what they do and how they do it. I have observed, interviewed, and tested them. I have explored the psychology, the physiology, and the neuroanatomy of these extraordinary people. And over time I've come to understand that, yes, these people do have an extraordinary gift, which lies at the heart of their capabilities. But it is not the gift that people usually assume it to be, and it is even more powerful than we imagine. Most importantly, it is a gift that every one of us is born with and can, with the right approach, take advantage of."

~ Anders Ericsson from *Peak*

Anders Ericsson is the world's leading scientist studying expert performance—looking at how, precisely, the people who are the best in the world at what they do became the best.

"The right sort of practice carried out over a sufficient period of time leads to improvement. Nothing else. This book describes in detail what that 'right sort of practice' is and how it can be put to work."

~ Anders Ericsson

Dan Coyle, who wrote *The Talent Code* and *The Little Book of Talent* (see Notes + Interview), says this about Anders: *"The science of excellence can be divided into two eras: before Ericsson and after Ericsson. His groundbreaking research, captured in this brilliantly useful book, provides us with a blueprint for achieving the most important and life-changing work possible: to become a little bit better each day."*

<— That sums it up quite well.

We've covered a bunch of books that touch on Anders's concept of deliberate practice in pursuit of greatness. (Check out our growing collection here. It's funny b/c I tagged them "10000 hours" but, as you'll see in this Note, Anders challenges the "rule" that Malcolm Gladwell popularized. :)

I got this book the day it came out and read it the following day. I'm typing this at 6:14 am the following morning. I was GIDDY to read it and see what the master has to say about how to become a master. I wasn't disappointed. The book is fantastic. If you're serious about attaining truly world-class performance or helping others do so, or just interested in how to dial in your life a bit/a lot more, I think you'll really enjoy it. (Get the book here.)

As you'd expect, it's packed with Big Ideas. We're only going to scratch the surface of the stories and research and practices in the book but I'm excited to share a few of my favorites so let's jump straight in!

"'Good enough' is generally good enough. But it's important to remember that *the option exists.* If you wish to become significantly better at something, you can."

~ Anders Ericsson

YOU HAVE THE GIFT (WE ALL DO!)

"With this truth in mind, let's return to the question that I asked at the beginning: Why are some people so amazingly good at what they do? Over my years of studying experts in various fields, I have found that they all develop their abilities ... through dedicated training that drives changes in the brain (and sometimes, depending on the ability, in the body) that make it possible for them to do things that they otherwise could not. Yes, in some cases genetic endowment makes a difference, particularly in areas where height or other physical factors are important. A man with genes for being five feet five will find it tough to become a professional basketball player, just as a six-foot woman will find it virtually impossible to succeed as an artistic gymnast at the international level. And, as we will discuss later in the book, there are other ways in which genes may influence one's achievements, particularly those genes that influence how likely a person is to practice diligently and correctly. But the clear message from decades of research is that no matter what role innate genetic endowment may play in the achievements of 'gifted' people, the main gift that these people have is the same one we all have—the adaptability of the human brain and body, which they have taken advantage of more than the rest of us."

The book's first chapter is called "Introduction: The Gift."

Anders kicks it off by establishing the fact that we ALL (!!!!!!) have "The Gift."

—> *"The main gift that these people have is the same one we all have—the adaptability of the human brain and body, which they have taken advantage of more than the rest of us."*

That's our starting point. We need to K.N.O.W. that we can improve.

ALL of us. You. Me. Your family. And mine.

Of course there are some genetic limitations in how we may express ourselves most fully. A super short man isn't likely to become a pro basketball player and a super tall woman isn't likely to become a top gymnast.

And...

We *all* have the gift of being able to shape our brains and bodies in truly phenomenal ways. The experts among us who do the seemingly impossible have simply taken advantage of this gift the most.

"We need to start now. ... And we need to get the message out: you can take charge of your own potential. But it is the coming generations who have the most to gain. The most important gifts we can give our children are the confidence in their ability to remake themselves again and again and the tools with which to do the job."

~ Anders Ericsson

This is a REALLY (!!!) important starting point.

Why? Because if you're seduced by the idea that some people have "it" and some don't, you may too quickly decide that you (or your kids, friends, etc.) *don't* have it and then give up—not even TRYING to go for it and, as a result, proving yourself right. (Anders calls this "the dark side of believing in innate talent.")

Now, let's take a closer look at how to go about taking full advantage of this gift of adaptability. :)

PRACTICE: NAIVE, PURPOSEFUL, DELIBERATE

"Purposeful practice has several characteristics that set it apart from what we might call 'naive practice,' which is essentially just doing something repeatedly, and expecting that repetition alone will improve one's performance."

Let's start by chatting about what WON'T help you take advantage of the gift of adaptability:

"Naive practice."

Simply doing the same thing over and over again and expecting to get better.

<— That doesn't work.

" Remember: if your mind is wandering or you're relaxed and just having fun, you probably won't improve."

~ Anders Ericsson

An example: driving. You may think that the more experience you have driving, the better driver you are. (Or, the longer you've been a doctor, the better doctor you are.) But that just isn't the case. Simply doing something again and again does NOT lead to adaptability and improvement.

We need to be purposeful + deliberate about it.

Which leads us to purposeful practice. Purposeful practice is better than naive practice but not quite as good as deliberate practice which, Anders tells us, is "The Gold Standard."

For now, let's take a quick look at purposeful practice. Here are some of it's top qualities:

"Purposeful practice has well-defined, specific goals."

How, specifically (!), do you intend to improve in this practice session? What will you do? In short: We need to identify our long-term goals, break it down into mini-goals and then take baby steps in pursuit of that goal. It all starts with a specific goal. A target.

"Purposeful practice is focused."

Anders tells us that if we're calm and relaxed and having "fun" or kinda sorta going through the motions, we're not really practicing. We need to focus INTENSELY. This is why Dan Pink says one of the three laws of mastery is that it's a pain. (See Notes on *Drive*.)

"Purposeful practice involves feedback."

You need to know how you're doing step by step. Did you miss a note playing that song you want to play perfectly three times in today's practice session? Immediate feedback to help you identify what you're doing wrong (and how you can improve) is essential.

"Purposeful practice requires getting out of one's comfort zone."

Anders tells us this may be the most essential aspect of purposeful practice. He puts it directly: *"If you never push yourself beyond your comfort zone, you will never improve."*

We need to streeettttcccchhhh ourselves out of our comfort zone. BUT, not so far that we snap. We talk about this all the time in our Notes and it's awesome to see Anders walk us through the science of why this matters. It's the subject of the next chapter and our next idea on ADAPTABILITY.

But first, a quick re-cap: "So here we have purposeful practice in a nutshell: Get outside your comfort zone but do it in a focused way, with clear goals, a plan for reaching those goals, and a way to monitor your progress. Oh, and figure out a way to maintain your motivation."

" So that's the problem in a nutshell: purposeful practice is hard work. It's hard to keep going."

~ Anders Ericsson

P.S. "The Gold Standard" of deliberate practice is, in short, essentially purposeful practice plus having a teacher and going thru a very clear training program in an established field like chess, music, sports that have REALLY clear, established top performers and equally clear means to achieving that mastery.

USING HOMEOSTASIS + ADAPTABILITY TO OUR ADVANTAGE

"The fact that the human brain and body respond to challenges by developing new abilities underlies the effectiveness of purposeful and deliberate practice. The training of a London taxi driver or an Olympic gymnast or a violinist at a music academy is, in essence, a method of harnessing the adaptability of the brain and body to develop abilities that would otherwise be out of reach."

Remember that gift you (and we all) got earlier? Imagine a box wrapped in beautiful paper. Add a nice little bow on top. Got it? Now, open it up. Inside that box you have your gift: ADAPTABILITY.

In short: You can change. You can get better.

"These studies... tell us that the brain's structure and function are not fixed. They change in response to use. It is possible to shape the brain—your brain, my brain, anybody's brain—in the ways that we desire through conscious, deliberate training."

~ Anders Ericsson

Anders shows us *how* in a chapter called "Harnessing Adaptability" in which he walks us through the role homeostasis plays and how, somewhat ironically, the way we get better is fueled by our natural programming to stay stable.

Here's the super quick re-cap: Homeostasis is a system's tendency to do what it needs to do to maintain stability. In this case, the system we're interested in is us. Every cell in our body and brain is *constantly* working to maintain a sense of stability—adjusting everything from our blood pressure and heart rate to our pH balance and blood sugar levels.

What's exciting is that, if we push ourselves out of our comfort zone, our bodies respond by overcompensating in pursuit of creating a new, higher level of homeostasis.

—> "This is the general pattern for how physical activity creates changes in the body: when a body system—certain muscles, the cardiovascular system, or something else—is stressed to the point that homeostasis can no longer be maintained, the body responds with changes that are intended to reestablish homeostasis."

For example, if you start running a few miles a few times a week, your body is going to say (roughly), *"Hey now! What's this? You're pushing me out of homeostasis. Let me see what I can do to handle this new load and reestablish a new baseline of homeostasis, yo!"*

The same rules apply for EVERYTHING we do. Lifting weights. Meditating. etc. (When we're forcing our BRAINS to adapt, it's usually called "neuroplasticity" but it's the same idea.)

This is a REALLY exciting feature of the human body and brain. In fact, it's our greatest gift. We need to use it wisely. Remember: Get out of your comfort zone. It's the only way to grow.

P.S. How many pushups can you do? How many do you think someone who has *really* trained could do in a row? Seriously. What's your guess? 10,507 nonstop pushups sound about right? (HAH. Nuts, right? How about 46,001 pushups in <24 hours? #done.)

btw: Same thing on pullups. In 2014, a gentlemen from the Czech republic banged out 4,654 in 12 hours. (*rubs eyes*)

In sum: "With deliberate practice, however, the goal is not just to reach your potential but to build it, to make things possible that were not possible before. This requires challenging homeostasis—getting out of your comfort zone—and forcing your brain or your body to adapt. But once you do this, learning is no longer just a way of fulfilling some genetic destiny; it becomes a way of taking control of your destiny and shaping your potential in ways that you choose."

What do YOU aspire to do? Your upper limits are unknown and unknowable. Take the next step toward your peak by getting out of your comfort zone and putting the power of ADAPTABILITY to work.

BUILDING MENTAL REPRESENTATIONS

"So here is a major part of the answer to the question we asked at the end of the last chapter: What exactly is being changed in the brain with deliberate practice? The main thing that sets experts apart from the rest of us is that their years of practice have changed the neural circuitry in their brains to produce highly specialized mental representations, which in turn make possible the incredible memory, pattern recognition, problem solving, and other sorts of advanced abilities needed to excel in their particular specialties."

Alright. So, we can change. We do so via leaving our comfort zones and triggering adaptation.

Step by step, over a long period of time, we're building a HUGE library of tiny distinctions. What are we changing though? Mental representations.

" Much of deliberate practice involves developing ever more efficient mental representations that you can use in whatever activity you are practicing."

~ Anders Ericsson

As Anders says: "The more you study a subject, the more detailed your mental representations of it become, and the better you get at assimilating new information."

My process with these Notes + the OL101 classes comes to mind. I (obviously) aspire to be among the best at what I do—mastering my craft of helping you optimize your life and actualize your potential by sharing more wisdom in less time.

Although my "field" of teaching does not fit the strict parameters Anders lays out for an "established field" like chess or music, I strive to purposefully practice getting better. As I do this and march toward my goal of 1,000 books distilled + classes, etc., what's happening is that my mental models are getting a little bit more developed with each session of practice I put in.

I've often thought of it like a spiderweb. I started with one little thread. Then another. And another. As I immerse myself in the field, striving to get better and stretching myself, I find that the "web" is getting stronger and stronger and certain Ideas I've seen + taught before make even more sense and fit into an interconnected whole. It's one big mental representation game.

How about *you*? Can you see the power of mental representations in *your* chosen field?

10,000 HOUR RULE? NOT SO MUCH.

"By now it is safe to conclude from many studies on a wide variety of disciplines that nobody develop extraordinary abilities without putting in tremendous amounts of practice. I do not know of any serious scientists who doubts that conclusion. No matter which area you study, music, dance, sports, competitive games, or anything else with objective measures of performance—you find that the top performers have devoted a tremendous amount of time to developing their abilities."

That's from the chapter on "The Gold Standard" in which we explore, in depth, the nuts and bolts of deliberate practice.

Anders walks us through a ton of his great research—including the early study of violinists that Malcolm Gladwell popularized into the so-called "10,000 rule" in *Outliers* (see Notes).

To address some of the confusion/misrepresentation of his research, Anders has a section in this chapter called *"No, the ten-thousand-hour rule isn't really a rule."* :)

In short, Anders makes the important point that Gladwell's 10,000 hour number was kinda arbitrary. The data from his research on violinists showed that, altho the best violinists Anders studied had, in fact, *on average* (important distinction) put in 10,000 hours of practice by the time they were 20 (another important distinction), 10,000 hours wasn't sufficient to actually make them the best in the world—they had to spend another decade or two to reach those heights (which = a total of 20,000 to 25,000 hours until they were truly the best).

" Every world-class athlete, every prima ballerina, every concert violinist, every chess grandmaster is living proof it can be done-that people can practice hard day after day, week after week, for years on end. These people have all figured out how to get past the New Year's resolution effect and make deliberate practice an ongoing part of their lives."

~ Anders Ericsson

Further, Anders tells us that Gladwell could have just as easily picked the 7,400 hours these highest performing students had put in by age 18. (Of course, 10,000 is much sexier. :) And... In other fields the number may be considerably less or more than 10,000 so the 10,000 hour rule is not, in fact, a rule.

For our purposes, the point remains: It takes a lot of deliberate practice to get great. :)

Here's a nice overview to wrap that up: "This is the basic blueprint for getting better in any pursuit: get as close to deliberate practice as you can. If you're in a field where deliberate practice is an option, you should take that option. If not, apply the principles of deliberate practice as much as possible. In practice this often boils down to purposeful practice with a few extra steps: first, identify the expert performers, then figure out what makes them so good, then come up with training techniques that allow you to do it, too."

P.S. Pro tip: Another thing the best violinists did was sleep more. 5+ hours more per week.

Mostly in the form of naps. Deliberate practice is hard work. Need to recover! (And: After an hour of deliberate practice take a break. Need to oscillate! :)

"And this, more than anything else, is the lesson that people should take away from all these stories and all this research: There is no reason not to follow your dream. Deliberate practice can open the door to a world of possibilities that you may have been convinced were out of reach. Open that door."

~ Anders Ericsson

HOMO EXERCENS

"And I would argue that we humans are most human when we're improving ourselves. We, unlike any other animal, can consciously change ourselves, to improve ourselves in ways we choose. This distinguishes us from every other species alive today and, as far as we know, from every other species that has ever lived.

The classic conception of human nature is captured in the name we gave ourselves as a species, *Homo sapiens*. Our distant ancestors included *Homo erectus*, or 'upright man,' because the species could walk upright, and *Homo habilis*, the 'handy man,' so named because the species was at one time thought to be the earliest humans to have made and used stone tools. We call ourselves 'knowing man' because we see ourselves as distinguished from our ancestors by our vast amount of knowledge. But perhaps a better way to see ourselves would be as *Homo exercens*, or 'practicing man,' the species that takes control of its life through practice and makes of itself what it will."

We are the only species that can consciously choose to improve ourselves. As Anders sees it, this is what makes us most human.

Homo exercens. The practicing man.

Let's make the choice to improve. Let's practice in our fields and with our lives. Moment to moment to moment.

Homo OPTIMUS! :)

Brian Johnson,
Chief Philosopher

If you liked this Note, you'll probably like…

- Outliers
- Mastery by Greene
- The Talent Code
- The Little Book of Talent
- Talent Is Overrated
- Bounce

About the Author of "Peak"

ANDERS ERICSSON & ROBERT POOL

K. ANDERS ERICSSON, Ph.D., is Conradi Eminent Scholar and professor of psychology at Florida State University. He studies expert performance in domains such as music, chess, medicine, and sports. His groundbreaking work has been cited in bestsellers from *Moonwalking with Einstein* to *Outliers* to *How Children Succeed*. He lives in Florida.

ROBERT POOL, PhD, is a science writer living and working in Tallahassee, Florida. He has worked at some of the world's most prestigious science publications, including *Science* and *Nature*, and his work has appeared in many others, including *Discover* and *Technology Review*.

About the Author of This Note

BRIAN JOHNSON

Brian Johnson loves helping people optimize their lives as he studies, embodies and teaches the fundamentals of optimal living—integrating ancient wisdom + modern science + common sense + virtue + mastery + fun. Learn more and optimize your life at brianjohnson.me.