# SUMMARY

#### **TALENT IS OVERRATED**

**GEOFF COLVIN** 





### Summary of Talent Is Overrated by Geoff Colvin

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Natural talent and intelligence are unimportant compared to diligent deliberate practice

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#### Introduction

Are world class athletes born with a natural talent for their sport? Can only a select few reach the highest levels of performance in a given field, based on their genetics? Certainly people who excel at the top of their field work extremely hard for it, they aren't born knowing the necessary skills and knowledge. But does that mean that, given enough time and work, anyone could become world class in their field? Or does it require a combination of work and natural in-born talent?

In Talent Is Overrated Geoff Colvin challenges that traditional assumption and asserts that modern research proves that superior performance is virtually entirely due to what he calls "deliberate practice", i.e. well-defined activities performed with repetition and diligence. The more deliberate practices one does, the higher their level of performance. Concluding that people at the top of their fields are there because they have practiced more, and practiced better, than anyone else. The differentiating characteristic isn't genetic but an unwillingness to quit.

#### Experience Isn't The Same Thing As Practice

It seems logical that those who are the best at their jobs are the ones with the most experience, after all they've had the most practice right? But anyone who's ever had a job knows how untrue this is, and can tell you specific examples of experienced workers that are in fact terrible at what they do.

This isn't just anecdotal, research actually demonstrates that years of experience have no correlation with how well someone performs at their job, and that there is often a negative correlation.

Think about it like this, let's say you work as a cook, and from the very beginning your soup is absolutely terrible. Making that same terrible soup for 20 years doesn't mean you'll become better at making soup, because your skills and knowledge haven't changed at all just from making the same bad soup over and over.

Further those who remain at the same job for long periods can also become worse at them, often due to an unwillingness to continue learning as the field advances. Experienced doctors for instance actually score lower, on average, than new doctors on medical knowledge. Part of this is because they've become set in their ways and don't keep up with new knowledge and skills.

There's also the Peter Principle to consider. The Peter Principle is a concept in business management that posits that people are promoted to the level of their own incompetence. You have an entry level job that you're very good at, so you get promoted. You turn out to be really good at your new job as well so you're promoted again to, say, a mid level management position. But it turns out you're not very good at this management position, not bad enough to get fired, but never good enough to get promoted any higher, this is the Peter Principle.

Experience level and past competence are not themselves signs that you're improving at what you do. Doing the same thing over and over will make you more experienced, but it won't necessarily make you any better at doing that thing.

So what about natural talent? Other studies have shown that given the same time spent learning their instrument, a musician that showed natural talent is no better at their instrument than a musician who was awful in the beginning.

#### Intelligence Is Rarely A Contributor To Performance Level

So experience doesn't correlate with skill and performance level, nor does natural talent, what about intelligence? Again, it makes sense right? The more intelligent you are the more quickly you'll be able to learn and improve skills, right?

Well before we can really answer that we have to tackle the issue of what intelligence actually means, and how it can be measured. What makes one person smarter than another? Is an expert physicist smarter than an expert mathematician? How do you measure that?

One of the only widely used means of measuring intelligence is the Intelligence Quotient, or IQ test. IQ tests are meant to gauge a person's ability to problem solve and comprehend complex concepts. The assertion being that someone better at those things is more intelligent.

There is a correlation between the complexity of a job, and the IQ scores of those who hold them, perceived intelligence is often associated with the assumption by employers that a given employee is better at their job than others as well. However when we look at objective measurements it turns out that IQ scores are not in fact an indicator of performance level.

For instance an experiment on this subject was conducted that measured the relationship between perceived intelligence, actual intelligence, and sales performance at a given business. It was found that while the managers assumed that salespeople they perceived as more intelligent were better at their jobs, a comparison between the IQ scores of the sales team and actual sales numbers showed that there was no connection between intelligence and sales performance.

Another experiment studied the connection between IQ scores of horse race bettors and success in predicting winning horses. In the United States the

average IQ score is 98, with 68% of Americans scoring between 85 and 115, only 5% score above 125 and a score below 70 is considered intellectually disabled.

The most successful horse bettor turned out to be a manual laborer with an IQ score of 85, while the least successful was a lawyer with a score of 118.

#### Serendipity Is Mostly A Myth

What did your last "aha" moment feel like? A sudden stroke of genius out of nowhere? If so, you're not alone, and that's because the notion that creative ideas ostensibly strike us out of the blue permeates our culture.

The story goes that Isaac Newton was sitting under a tree when an apple fell on his head, it was at this moment that he suddenly had a breakthrough in understanding the physics of gravity.

Similarly the word "eureka" (Greek for "I found it!) was made famous by a story about Archimedes who, upon entering a bath, noticed the water level rose as he sat down. This led to a sudden realization that the volume of water displaced must be equal to the volume of the object inserted into the water, which allowed him to solve the previous intractable problem of measuring irregular objects with precision.

Supposedly this resulted in Archimedes running through the streets naked shouting "Eureka!"

These sorts of sudden strokes of genius have a name; serendipity, an unplanned and sudden fortunate discovery. It's also, when used in regard to invention or scientific advancement, mostly a myth. Both stories about Newton and Archimedes likely never occurred, and in reality moments of invention, artistic inspiration, and scientific discovery are virtually always the culmination of long periods of work, sometimes years worth.

Research has shown that, in the study of nearly 80 composers, there was an average of ten years of work before their first notable works were created. Similar research has been done with other artists, and famous examples of invention, such as the lightbulb, have scores of failed attempts before the inventor creates something successfully. Thomas Edison famously said he tried and failed 2000 times before he successfully created the lightbulb.

Success virtually never comes from nowhere, it is the result of deliberate and intense immersion in your chosen field.

#### **Deliberate Practice**

"Landing on your butt twenty thousand times is where great performance comes from."

Experience doesn't predict performance levels, and neither do talent or intelligence. So what on earth does?

The answer is deliberate practice. Deliberate practice isn't just doing the same thing over and over again, which as we saw previously doesn't help. Deliberate practice is practicing something with the specific intent of getting better at it and figuring out where your weaknesses are.

Time spent practicing is the single greatest correlator for high performance. Researchers have seen this in numerous settings. In music academies the best musicians aren't correlated with their genetics, their background, the age they started playing at, or who they learned from. They were correlated with how often they practiced, and how they practiced.

There is a common phrase "work smart, not hard", but in the context of world class performance in a field the more accurate phrase would be "work smart and hard". Smart methods of practice, what the author calls deliberate practice, is what separates it from experience. Deliberate practice involves finding what you're good in regards to your field, and then identifying what you're bad at, and focusing your practice on the latter until they improve. Rinse and repeat until you're the best.

This sort of practice results in literal physical changes to your brain. Let's say you're a table tennis player, table tennis requires lots of complex motor functions. Complex motor functions are controlled by the neocortex in the frontal lobe of the brain. The knowledge of how to perform the movements is stored in the hippocampus (part of the neocortex), where most memories are stored. However when you practice a movement enough times, the information is transferred out of the hippocampus and stored in the cerebellum at the base of the brain.

As stated most knowledge is stored in the hippocampus, and most motor functions are controlled by the neocortex, but not all of them. Your instincts, the basic reactions and behaviors that all animals have, are stored in the cerebellum. Along with them are your reflex functions, this doesn't just refer to how quickly you react to something, it refers to motor behaviors that are more or less impossible to forget once they are learned, how to walk, for instance. This is why it is famously difficult to forget how to ride a bike.

Well when you perform a movement enough times it stops being stored in the hippocampus and controlled by the neocortex and becomes stored in and controlled by the cerebellum. Which is to say it becomes instinctive. This is what is often called "muscle memory". So the reason high level table tennis players seem to be so unbelievably fast at the game isn't because they have naturally quick reaction times, in fact research performed on legendary table tennis player Desmond Douglas found that he actually had slower than average reaction time in everything except table tennis.

So the difference is nothing biological. The difference is that through endless deliberate practice the standard movements of hitting the ball are controlled by a different part of the brain than the brains of beginners. His cerebellum handles the movements, leaving his prefrontal cortex free to focus on strategy and trajectory and the other high level problem solving that those who've practiced less aren't able to accomplish.

## The Earlier You Begin Deliberate Practice, The Better

"The most important effect of practice in great performers is that it takes them beyond – or more precisely, around – the limitations that most of us think of as critical. Specifically, it enables them to perceive more, to know more, and to remember more than most people. Eventually the effects go beyond even that. Many years of intensive deliberate practice actually change the body and the brain. There's a good reason why we see the world's great performers as being fundamentally different from us, as operating on a completely different plane. It's because they're and they do. But they didn't start out that way and the transformation didn't happen by itself"

Technological innovations are often made by people around college age. That was the age of the founders of Microsoft, Apple, and Facebook when they started their companies. There are good arguments to be made about why that is, but it's like because at that age you're old enough to have had adequate practice time in your field to know what you're doing (provided you dedicated much of your childhood to it, as these sorts of founders usually do) but also young enough to see new possibilities.

Scientific research, however, is the opposite. The age of your average Nobel Prize winner is at least middle age and very often older. That's because advancing scientific research requires understanding basically everything in your field of research up until that point. Which would require decades of education.

As a matter of fact the average age of a Nobel Prize winner is 6 years older than it was a century ago. Which makes sense, since there are more years of research to learn today. The old saying is that in order to make intellectual progress we must "stand on the shoulders of giants", meaning have an understanding of all the great thinkers that progressed human knowledge up until now.

And it takes a lot of time to climb up onto those shoulders. Which is why one of the greatest advantages you can give a child in life is to start teaching them deliberate practice from a young age. It should be no surprise that top performers, whether scientists or entrepreneurs or athletes, usually come from households where their parents encouraged them and aided them in their pursuits.

Starting from a young age is ideal, because the younger we are, the better we are at learning. For instance it is exponentially easier for a child under 9 to learn a foreign language than a child over 9, and it only gets harder with age.

#### Reaching The Top Requires Immense Selfmotivation

Obviously the amount of practice time we're talking about is extremely long, and when it comes to the very highest levels of performance it requires that field to basically be your sole interest in life.

And whether it's the highest levels of performance, or just above average, the deciding factor as to whether you will succeed or not is motivation. That's what separates those who quit from those who keep going.

Which is one of the reasons a child having parents who push them to work hard is such a huge advantage. That early head start multiplies exponentially. Being even slightly ahead at the beginning of life increases the chances that teachers will pay extra attention and offer valuable resources, increase the odds that your work ethic will be higher than those around you, offer you more, and earlier, opportunities, and so on. It snowballs, all from a slight head start.

But that external motivation can only go so far, ultimately you have to develop an internal drive. Because without strong self-motivation it won't matter how hard people push you, you'll eventually give up or rebel. And once you reach adulthood self-motivation is all there is.

Inner motivation and drive is present in virtually all high performers. But whether or not it develops can be at least somewhat out of anybody's control. Many of the most highly acclaimed musicians had parents that pushed them to play and to practice even if they had no interest and were basically forced. Those who become highly accomplished report that eventually they developed their own self-motivation, but there are exponentially more who simply came to hate that instrument and quit entirely.

It is a difficult thing to balance, and while you can help cultivate inner drive in a child, through praise and other positive reinforcement, ultimately it's a bit random.

#### **Choosing Your Field**

"You can do a great deal as an individual to apply the principles of great performance in your own life and work. Applying these principles is always beneficial. No matter how many steps on the road to great performance you choose to take, you will be better off than if you hadn't taken them. There is no hurdle to clear before the advantages start accruing. This is pure opportunity."

Odds are that if you're reading this summary you are no longer a child, and thus the advice to start early won't be particularly useful for you personally. But that doesn't mean it's too late to start.

One potential advantage is that as an adult you likely have a much better idea of what you want in life than a child does, and you probably have a lot more patience as well. Hopefully that means that you understand the perseverance you will need to become great at whatever it is you are pursuing.

Because you'll need an iron will and desire to put in the work. You have to have a passion and determination for the field you're picking that is marrow deep. Finding it interesting isn't enough. Thinking "I might like to try that" isn't enough. You need to know, not think, that you want it.

Next you need to identify which skills or knowledge you're lacking in, and focus on those specifically. That's what deliberate practice is, practicing with strategic intent and doing so over and over until you've eliminated that weakness.

This means your ability to give yourself helpful feedback is extremely important, and if you can get feedback from others, that's even better.

#### **Final Summary**

There is no such thing as fate. There are no "once in a generation" talents. Any given person is capable of becoming a "genius" at something. It just takes time and it takes intelligent, deliberate practice. Identifying your weaknesses at something, and focusing on improving them. Research demonstrates that innate traits, like intelligence and talent, aren't important when it comes to performing at the highest levels. Greatness isn't genetic, and it's not a gift from the gods. It's the result of hard work and targeted practice. Nothing more, nothing less.



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