How to Become Great at Just About Anything

Freakonomics Podcast Audioscript

Before we get on with today's show – an encore presentation of one of our most popular episodes ever, "How to Become Great at Just About Anything" — I've got a quick favor to ask. As you may know, *Freakonomics Radio* is produced by the public-radio station WNYC. And a big part of public-radio funding comes from listener donations. From people like … you! So please go to Freakonomics.com, click the donate button, and do your thing. You can also donate by texting – just send the word "freak" to the number 698-66 and you'll get sent a link to the donation page. This is, of course, the best time of year to donate. Not only because it's the season for generosity. Not only because it's your last chance to qualify for a 2016 charitable-gift tax break. But also because your donation, right now, will be tripled. How's that? The Tow Foundation, a generous supporter of WNYC, has offered to triple donations to *Freakonomics Radio*; they'll contribute up to $50,000. So if you give $100, that's a $300 donation to our program. And if you want to use up the Tow Foundation's generosity in one shot, just send us $16,666.67, and that'll land their $50,000. All you have to do is go to Freakonomics.com, click on donate, or text "freak" to 698-66. We have some great *Freakonomics Radio* swag to choose from, including Titleist golf balls marked with the *Freakonomics Radio* logo. Which are good for golfing but also, I've discovered, small dogs love to play with them. Probably cats too, but I don't have any cats. In any case – happy holidays, thanks for your support, and thanks especially for listening to *Freakonomics Radio*.

Last week, we offered some advice on how to become more **productive**.
CHARLES DUHIGG: There's actually a big difference between being busy and being productive.

Now that you've all mastered productivity, we're moving on to something a bit more ambitious. How to become great at just about anything. Because that's what you told us you wanted.

SARAH CATE PFISTER: I would really love the ability to become an expert performer.
CHAD HYDRO: I compete in the sport of powerlifting and so if I could better perform in that sport, that would certainly be what I would most like to accomplish.
ELENI GALATA: I would like to improve and excel at presenting my work in front of an audience.
KEN RYAN: I would most like to shoot below 90 for the first time and then build upon that success.
J.R. PATRON: Hi, Stephen and the rest of the Freakonomics team. This is J.R. Patron from Metro Manila, Philippines. I am most definitely want to up my guitar-playing skills. So how do I do it?
How do you do it? How do you attain excellence in anything? Is it all about the genes, the natural-born talent? Or: is there an actual science of expertise?
*SUSANNE BARGMANN: So, my name is **Susanne Bargmann**, and I am a psychologist. And I work as a teacher and a supervisor here in Denmark.*

Bargmann lives …
BARGMANN: … a bit north of Copenhagen, which is the capital of Denmark.

Bargmann is 42, married, with two kids. About eight years ago, she and an American colleague were studying what they saw as a lack of progress in their profession.
BARGMANN: And what we can see when we look at the research is that the outcome of psychotherapy hasn't really improved over the last 40 years. And that had us puzzled. So we started looking in other directions to try and figure out why, or what would make us improve. And then we came across ***K. Anders Ericsson's*** *work on deliberate practice.*
STEPHEN DUBNER: Hello, Anders?
ANDERS ERICSSON: Hi, Stephen!
DUBNER: How are you?
ERICSSON: I'm doing very well.

And that is **K. Anders Ericsson**.
ERICSSSON: … and I'm a professor of psychology at Florida State University in Tallahassee, Florida.
Ericsson is the man of the hour on today's show; we'll get back to him soon. It was his research on something called **deliberate practice** that got the Danish psychologist Susanne Bargmann excited.

BARGMANN: I'd been plowing through all the literature on deliberate practice, but it still seems a bit abstract when you read it. It was hard for me to really understand what it felt like so we started talking about how could try this out on ourselves. And after discussing this for a while, we decided if we are going to study the process it needs to be not our work, because we're too close to our work to be able to see it. So we decided to pick up something else outside of our work and then apply the principles of deliberate practice.

So Bargmann wanted to use deliberate practice to try to improve at something, but something personal, not her profession. What should she do?
BARGMANN: When I was a kid, I had this dream of becoming a famous singer.

Her favorite singer?
BARGMANN: It was ***Whitney Houston****. Oh, she was amazing.*

But the dream got deferred, and then …
BARGMANN: Life took over, so instead, I became a psychologist and had a family and had a job.

Now, however, many years later, as part of her job, Bargmann thought that maybe …
BARGMANN: … I should give it a go and see if it was actually possible to improve my singing, improve my voice.

So she got back to it. The first thing to do was record herself to see what she sounded like.
BARGMANN: I started using this karaoke program, and I started singing. And then I started listening, and it was really horrible.

So did that mean that Susanne Bargmann just didn't have the tools, or maybe the natural talent, to be good at what she wanted to be good at? Or was there a way to become less horrible? Maybe to become … even … great?

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The research psychologist Anders Ericsson recently published, along with co-author **Robert Pool**, a book called ***Peak: Secrets from the New Science of Expertise***.

DUBNER: So, let's pretend for a moment that I'm skeptical off the bat and I say, "Well, Professor Ericsson, is there a science of expertise? That sounds like a bit of an overreach, perhaps." How do you respond to that?

ANDERS ERICSSON: Well, I think this is what is exciting here about our work is that, for the first time, we really have been studying in more objective ways, pinpointing what it is that some people are able to do much better than other individuals.

Among the many and diverse expert performers that Ericsson and his colleagues have studied:

ERICSSON: Ballet dancers, gymnasts, and all sorts of athletes, a lot of coaches; we've looked at chess experts, surgeons, doctors, teachers, musicians, taxi drivers, recreational activities like golf, and even, there's some research on scientists.

Let me admit that I've been fascinated for years by Ericsson's research. I was introduced to it by this guy:

STEVE LEVITT: Dubner, how are you doing?

Steve Levitt is my Freakonomics friend and co-author; he is an economist at the University of Chicago.

DUBNER: So, Levitt, I still remember very well the day — it was maybe 10 years ago — when you called me up, and you said you had a great idea for a column that we were writing. You said it was this big, Swedish psychologist that you had met while you were on sabbatical at Stanford, I think. A fellow named Anders Ericsson. What was it about Anders and those conversations you had with him, and his research, that got you so excited?

LEVITT: He was infectious. His ideas and his enthusiasm just set me on fire. It was interesting because he studied topics I hadn't really thought could be studied, like expertise and learning. The beauty of Anders — he's really an amazing academic in the sense that he just was so interested in what he did and also so interested in the truth and willing to be challenged. I do remember. I remember I had lunch with him, and I immediately came back and called you on the phone and said, "We've got to write about this guy. He's amazing."

We did write about him, in a **Freakonomics column** for *The New York Times Magazine.* It was called "**A Star Is Made**." It became one of the most popular things we ever wrote, I think, because it asked a very basic question: is the thing that we all call *talent* perhaps grotesquely overrated?

LEVITT: The part that really resonated with me is the idea that absent hard work, no one is really great at anything — because it's an interesting insight. We'd like to think that ***Wayne Gretzky*** *or* ***Michael Jordan*** *or* ***Taylor Swift*** *just emerge as savants, but they don't. If you start with someone with talent, and another person who has no talent, if the person with talent works just as hard as the person without talent, almost for certain they're going to have a better outcome. So, if our measure is true virtuosity, true expertise, it seems unlikely to me that this populist version of "oh, you don't have to be good; you just have to try hard," I think that's probably a fallacy. But I firmly*

believe the other direction, which is that: if you don't try hard, no matter how much talent you have, there's always going to be someone else who has a similar amount of talent who outworks you, and therefore outperforms you.

ERICSSON: Exactly.

Here's Anders Ericsson again.
ERICSSON: We actually find that with the right kind of training, any individual will be able to acquire abilities that were previously viewed as only attainable if you had the right kind of genetic talent.
DUBNER: Would it be fair to say that the kind of overarching thesis of your work is that this thing that we tend to call talent, is in fact more of an accumulation of ability that is caused by what you've labeled "deliberate practice"?
ERICSSON: I think that, that is a nice summary here of what we're finding.

For more than 30 years, Ericsson and his colleagues around the world have studied people who stand out in their field. They've conducted lab experiments and interviews; they've collected data of every sort, all in service of answering a simple question: when someone is very good at something, how did they get so good? If you can figure that out, the thinking goes, then any of us can use those strategies to also get much better at whatever we're trying to do. You don't necessarily need to have been born with a special talent, a special ability. Something like perfect pitch, or absolute pitch — that's the ability to identify or produce a particular musical note, with no reference point. It's an **incredibly rare** ability; roughly one in 10,000 people are thought to have it. And while having perfect pitch doesn't guarantee that you'll become a great musician or composer, it can be a big help. Consider one of the most acclaimed composers in history: **Wolfgang Amadeus Mozart**.
ERICSSON: Mozart is famous for his ability to actually listen to any kind of sound and actually tell you what kind of note that sound corresponded to. That seemed like a magical ability that was linked to his ability to be outstanding in composing and playing music.

But Ericsson has three points to make about Mozart. The first is that perfect pitch does not necessarily seem to be innate; it's teachable, although it helps to start early. As evidence, Ericsson points to research showing that perfect pitch is much more common in countries like China.
ERICSSON: In those countries where you're actually speaking tonal languages, where the tone influences the meaning of words, it's going to be much more frequent.
DUBNER: Meaning people are trained from a very early age to identify pitch, yeah?
ERICSSON: Well, that's the only way you can identify the meaning of the words, because in Mandarin, the difference between different words is just the difference in their tone. So you actually need to be able to acquire that general ability, and what people have found is that you have a very high degree of individuals who exhibit perfect pitch in those countries. It's becoming increasingly clear that, that is actually something that any individual, seemingly, with the right kind of training situation, can actually acquire, as long as they get the training early on, basically between four and six.
DUBNER: So, rather than perfect pitch being this incredibly rare innate ability, it is a teachable ability, if you know how to teach it.

ERICSSON: Exactly.

A second point about Mozart. Ericsson argues that as great as he was — having nothing to do with perfect pitch — that he wasn't necessarily born that way; Mozart became Mozart by starting very young and training long and hard. We may think of him today as a freak of nature. But, Ericsson says:

ERICSSON: If you compare the kind of music pieces that Mozart can play at various ages to today's Suzuki-trained children, he is not exceptional. If anything, he's relatively average.

Did you catch that? Mozart as a young musician, compared to today's good young musicians, would be relatively average. How can this be? This relates to the third point about Mozart. For his time, he was excellent. But over time, we humans generally become more excellent. Standards of excellence have risen, often a lot. In the book *Peak*, Ericsson writes of a more recent musical example: "In the early 1930s **Alfred Cortot** was one of the best-known classical musicians in the world, and his **recordings** of Chopin's '**24 Études**' were considered the definitive interpretation. Today teachers offer those same performances — sloppy and marred by missed notes — as an example of how not to play **Chopin**, with critics complaining about Cortot's careless technique, and any professional pianist is expected to be able to perform the études with far greater technical skill and élan than Cortot. Indeed, **Anthony Tommasini**, the music critic at the *New York Times*, once **commented** that musical ability has increased so much since Cortot's time that Cortot would probably not be admitted to Juilliard now."

ERICSSON: We have similar developments in any of the sports. In order to qualify to the Boston Marathon, if you could produce that kind of time, you would be competitive at the early Olympics.

That's right. In order to just qualify to run the **Boston Marathon** today, a male in the 18- to 34-year-old group has to have run a 3-hour, 5-minute marathon. That's only about six minutes slower than the winner of the marathon in the first modern Olympics, in 1896. The current marathon **world record**? Two hours, two minutes, and fifty-seven seconds. That's nearly 56 minutes faster than the Olympic gold medalist in 1896. Or consider the improvements in golf, which this year is returning to the Olympics after more than a century. In the **1900 Summer Olympics**, the men played two 18-hole rounds; the American golfer Charles Sands won the gold medal with scores of 82 and 85, which, these days, wouldn't get you on a good high school team in some parts of the country. Yeah, the equipment and ball have changed, a lot. But still: the undeniable fact — whether it's golf or running the marathon or playing the piano — is that as a species we have improved a lot at just about everything. How? Have we been selectively breeding for talent? Perhaps.

But, that is not what Anders Ericsson thinks is largely responsible. He thinks we've gotten so much better primarily because we've learned how to learn. And that if you study the people who have learned the best, and if you codify the techniques and strategies that they use, then we can all radically improve. But let me warn you: there's no magic bullet. Improvement comes only with practice — lots and lots and lots of practice. You may have heard of the "**10,000-hour rule**"? The idea that you need to practice for 10,000 hours to become great at something? That idea originates

from the research of Anders Ericsson and his colleagues. They were studying the most accomplished young musicians at a German academy.
ERICSSON: We found that the average of that elite group was over 10,000 hours by the time they reach 20.

The secrets really boil down to one word: practice. Not just volume of practice — although we'll get into that later. But the quality and the nature of the practice. There's "purposeful practice," for instance.
ERICSSON: Purposeful practice is when you actually pick a target — something that you want to improve — and you find a training activity that would allow you to actually improve that particular aspect. Purposeful practice is very different from playing a tennis game or if you're playing basketball scrimmages. Because when you're playing, there's really no target where you're actually trying to change something specifically and where you have the opportunity of repeating it and actually refine it so you can assure that you will improve that particular aspect.

And then there's deliberate practice.
ERICSSON: We think of deliberate practice requiring a teacher that actually has had experience of how to help individuals reach very high levels of performance.
DUBNER: I want to go through one by one the components of deliberate practice and have you explain a little bit more if necessary, or acknowledge why they are important. So you write that "deliberate practice develops skills that other people have already figured out how to do and for which effective training techniques have been established."
ERICSSON: And I think that's key.
DUBNER: Which I guess helps us explain why a pianist from 80 or 100 years ago who was considered the gold standard is now considered not very good, because the instruction is built on top of itself to get people better faster, yeah?
ERICSSON: Exactly, and I think the same thing in sports, where new techniques will allow individuals to reach kind of a higher level and practice more effectively than previous generations.
DUBNER: You write that "deliberate practice involves well-defined, specific goals, and often involves improving some aspect of the target performance. It is not aimed at some vague, overall improvement." Do you think that is a mistake that many people make when they're trying to, "get better at something?" A "vague, overall improvement"?
ERICSSON: I think that is one of the most important pieces that we're advocating, because you need feedback in order to be able to tell what kind of adjustments you should be making. If you don't have a clear criterion here for what it is that you were doing, then it's unclear how you actually are going to improve if you get subsequent opportunities to do the same thing. So anytime you can focus your performance on improving one aspect, that is the most effective way of improving performance.
DUBNER: Here's another component. You write: "Deliberate practice takes place outside one's comfort zone and requires a student to constantly try things that are just beyond his or her current abilities." That sounds horrible, first of all. You write, "Further thus it demands near-maximal effort,

which is generally not enjoyable." So you just discouraged everyone from ever wanting to do deliberate practice. But why is that important? Do you want to get out of what's comfortable because that enables you to try harder in a way that you otherwise can't?
ERICSSON: Well, I think this has to do with the body. If you're just doing things that feel comfortable and go out and jog, the body basically won't change. In order to actually change your aerobic ability, people now know that the only way you can do that is if you practice now at a heart rate that is above 70 percent of your maximal heart rate. So it would be maybe around 140 for a young adult. And you have to do that for about 30 minutes at least two or three times a week. If you practice at a lower intensity, the body will actually not develop this difficult, challenging biochemical situation, which will elicit now genes to create physiological adaptations.
DUBNER: Let's say I'm a crummy piano player, and I want to become a good piano player. For something like that, or for something like writing, or for something like selling insurance, what does it mean to get outside of one's comfort zone and why does that improve my ability to get good?
ERICSSON: Deliberate practice relies on this fact that if you make errors, you're going to find ways to eliminate those errors. So if you're not actually stretching yourself outside of what you already can do, you're probably not engaging in deliberate practice.

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BOB FISHER: The thing which really enabled me to do all this was Ericsson's deliberate-practice model.

Bob Fisher is a soil-conservation technician for the **Natural Resource Conservation Service** in Seneca, Kansas. Fisher has a number of world records.
FISHER: I currently hold 14.

All the records are in free-throw shooting.
FISHER: The first one is the one-minute record, I hold it with 52 currently; most basketball free throws in one minute by a pair using a limited number of balls; most free throws in two minutes while alternating hands; most free throws in a minute by a pair using two basketballs, most free throws in one minute while alternating hands; most free throws while standing on one leg; most blindfolded free throws in 1 minute; most underhanded free throws in one minute; most basketball free throws in 1 minute by a mixed pair; this one I am proud of: most basketball free throws in one hour, 2371.

Fisher is 58 years old, six feet tall. He's been playing basketball a long time.
FISHER: In high school, I started as a senior for a very small school and, no accolades, didn't make any area teams or all-star teams or anything like that, at all. And I never considered going on and playing college ball because, quite frankly, I wasn't good enough.

So how did he become one of the most accomplished free-throw shooters on the planet? By devising a physics-based approach to shooting, augmented by Anders Ericsson's gospel of deliberate practice.
FISHER: And what he said was that people who continue to get better never allow themselves to go on automatic pilot; they're continually breaking down the element they are trying to do and working

on pieces and then putting it back together — which is nothing new. But I made a concerted effort to do that, and I think that was a large part, a reason of my success.

And when Anders Ericsson talks about getting out of your comfort zone as a component of deliberate practice, Bob Fisher very much knows what he means.
FISHER: Instead of just practicing, you are focused; you're engaged; it's like a rubber band. You are constantly stretching the rubber band, and you don't want to stretch it to the point that it breaks, but you want it to have continual pressure. In other words, you want to try and do things that you are not able to do at the present time.

This leads to one of the most compelling angles of deliberate practice – the neuroscientific angle. The idea that the brain not only steers our practice, but is also shaped by it.
ERICSSON: I think this is one of the areas where we know the most .

That's Ericsson again. In *Peak*, he writes about a fascinating **study** by **Eleanor Maguire**, a neuroscientist at University College London. Maguire used MRIs to compare the brain growth of London taxi drivers and London bus drivers.
ERICSSON: In London, taxi drivers have to memorize all the routes in the London area, and this is a process that takes a lot of training, and it basically takes years to master that body of knowledge.

Bus drivers, meanwhile, with a set route, spend a lot less time pushing their brains to master new material.
ERICSSON: And when you compare now these taxi drivers with bus drivers, you find this big difference in their brains. So, the process of encoding and mastering all these maps is associated with a change in the brains.

So, you might have the most experienced bus driver in the world. But experience of that sort – driving the same route over and over and over again – doesn't seem to lead to growth. Which, if you move the conversation out of transportation and into something like medicine … well, I asked Ericsson about that.
DUBNER: There's a scary part of your book that is about how many people in many professions, as they do it longer, they get more experienced, and there's an assumption that they're getting better and better. But you write that, "Once a person reaches that level of "acceptable performance and automaticity" you write, the additional years of "practice" don't lead to improvement." Can you talk for a moment about the value of experience for doctors, let's say?
ERICSSON: I think this points out that difference between deliberate practice and experience. If you're just doing the same thing over and over, you're not going to prepare yourself for dealing with a complicated situation. When we analyze the outcomes of medical procedures, just the mere number of procedures that you completed is not related now to the outcome. It turns out that surgery is a little bit different, because there, you often get very immediate feedback, especially about failures.

DUBNER: But, you're saying that it could be that a doctor who's freshly out of medical school might be on some dimensions, at least, maybe some important dimensions, better than a doctor with 20 years experience?
ERICSSON: Well, it's interesting. When it comes to actually diagnosing heart sounds, when you test people with recordings of heart sounds, it turns out that general practitioners — basically their ability to diagnose decreases as a function of the number of years in their practice. And it sort of makes sense. How would you be able to know basically that you're making mistakes? Even if you realize that a patient was incorrectly diagnosed, you won't remember exactly what the heart sound sounded like. And what's kind of nice is that now they've developed courses, so within a weekend of training, where you are trying to diagnose particular heart sounds, you can now get up to a level to when you had graduated from medical school.
DUBNER: Many people listening to this are, I'm sure, familiar with the 10,000-hour rule, which you had a hand in defining. First of all, what is the 10,000-hour rule, if there is such a thing, as you understand it?
*ERICSSON: Our **research** showed, to the surprise of a lot of people, that even the most talented musicians at a music academy in Germany, that they actually had spent more time practicing by themselves than less-accomplished musicians. And we basically found that the average of that elite group was over 10,000 hours by the time they reach 20.*

Most people who have heard of the 10,000-hour rule, heard of it via the book ***Outliers***, by **Malcolm Gladwell**. *Outliers* looked at how extraordinarily accomplished people accomplished what they did.
ERICSSON: Now, right. Gladwell basically thought that was kind of an interesting magical number and suggested that the key here is to reach that 10,000 hours. I think he's really done something very important, helping people see the necessity of this extended training period before you reach high levels of performance. But I think there's really nothing magical about 10,000 hours. Just the amount of experience performing may in fact have very limited chances to improve your performance. The key seems to be that deliberate practice, where you're actually working on improving your own performance — that is the key process, and that's what you need to try to maximize.
DUBNER: You write that this rule, or the number, really — 10,000, nice, big round number — is "irresistibly appealing." "Unfortunately," you write, "this rule, which is the only thing many people today know about the effects of practice, is wrong in several ways." One example that you give, that Malcolm Gladwell writes about in Outliers *that you say looks good on first glance, maybe to a layperson, but falls apart upon inspection, is the Beatles playing all those nights at clubs in Hamburg. Can you talk about why that example doesn't serve as an example of what you're talking about deliberate practice representing?*
ERICSSON: So to us, the Beatles — and I think a lot of other people agree — what really made them outstanding was their composing of a new type of music. So it wasn't like they excelled as being exceptional instrumentalists. So if we want to explain here their ability to compose this really important music, deliberate practice should now be linked to activities that allowed them to basically improve their compositional skills and basically get feedback on their compositions. So counting up

the number of hours that they performed together wouldn't really enhance the ability here to write really innovative music.
DUBNER: So the very popularized version of one big piece of your research gets a lot of things wrong, according to you. How much does that bother you?
ERICSSON: Well, the one thing that I'm mostly concerned about is, and I've met a lot people who are counting hours that they're doing something and then assuming here that accumulating enough hours will eventually make them experts. Because I think that is a fundamental, incorrect view that is so different from what we're proposing — namely, that you intentionally have to increase your performance, and you have to be guided, ideally by a teacher, that would allow you now to incrementally improve. So that idea that people actually think that they're going to get better when they're not — that, I find, to be the most troubling.
DUBNER: Have you talked with Malcolm about what you feel he got wrong?
ERICSSON: Have not ever spoken to Malcolm Gladwell. And I think that could have avoided some of his summaries of that work in Outliers*, but I never interacted with him.*
DUBNER: All right, so if I run into him anytime soon, would you like me to pass along a message of some kind?
ERICSSON: I'm really impressed with his books, and I think that they've caught a large audience. And if we were able now to channel that interest in improving yourself by now suggesting how you really need to invest the time to improve your performance — I think that would be terrific. If he doesn't agree with our analysis here, I think it would be important that he explains why he views that basically it's not so important exactly what you do, but it's more important with the hours.

MALCOLM GLADWELL: The 10,000-hour stuff that I put in Outliers *was really only intended to perform a very specific narrative function — or not narrative function, but argumentative function.*

And that is Malcolm Gladwell.
GLADWELL: To me the point of 10,000 hours is: if it takes that long to be good, you can't do it by yourself. If you have to play chess for 10 years in order to be a great chess player, then that means that you can't have a job, or maybe if you have a job it can't be a job that takes most of your time. It means you can't come home, do the dishes, mow the lawn, take care of your kids. Someone has to do that stuff for you. That was my argument, that if there's a kind of incredibly prolonged period that is necessary for the incubation of genius, high-performance, elite status of one sort of another, then that means there always has to be a group of people behind the elite performer making that kind of practice possible. And that's what I wanted to say.
DUBNER: So there's a sentence in, I believe, it's in the chapter called "The 10,000-Hour Rule" in Outliers *where you write that "10,000 hours is the magic number of greatness." I understand that was one sentence within many paragraphs within many chapters that's trying to prove your larger point, and yet, I've heard from a lot of people— and I'm guessing for every one I've heard from, you've heard 50 — who've embarked on these trajectories, where "I want to be a ballerina, a golfer, a whatever, whatever, whatever, and if I can get to 10,000 hours, that will make me great." So that*

seems to be a causal relationship. How do you feel about people drawing that conclusion and taking action on it?

GLADWELL: Well, elsewhere in that same chapter, there is a very explicit moment where I say that you also have to have talent. That, what we're talking about with 10,000 hours is: how long does it take to bring talent to fruition? To take some baseline level of ability and allow it to properly express itself and flourish. Ten thousand hours is meaningless in the absence of that baseline level of ability. I could play music for 20,000 hours. I am not becoming Mozart — never, ever, ever. I can play chess for 50,000 hours, and I am not becoming a grandmaster —ever, ever, ever.

DUBNER: You wrote about the Beatles and how one of the key reasons why they became the Beatles was because of the huge amount of time they spent in Hamburg and playing in clubs. This is distilled best by one sentence in Outliers *on page 50: "The Hamburg crucible is one of the things that set the Beatles apart." So Anders, in his book,* Peak*, and in the interview, took exception with the Beatles example and I'd be curious to run this scenario past you. So he said, I'll just quote Anders a bit: "So to us" — he and his fellow researchers – "the Beatles, and I think a lot of people would agree, what made them outstanding was their composing of a new type of music. It wasn't like they excelled at being exceptional instrumentalists. So if we want to explain here their ability to compose this really important music, deliberate practice should now be linked to activities that allow them to basically improve their compositional skills and basically get new feedback on their composition. So counting up the number of hours they perform together wouldn't really enhance the ability here to write really innovative music."*

GLADWELL: Oh, I disagree — again, respectfully. I'm understanding I'm disagreeing with someone who knows more about this than me. My sense is that, as someone who is in — here I am about to commit a kind of casual obscenity, but — as someone who is also in the creative business, I think that playing in loud, crowded strip bars for hours on end, starting out with other people's music covers, and moving slowing to your own music, is an extraordinary way to learn about composition. I know of my own writing, I began as a writer trying to write like ***William F. Buckley****, my childhood hero. And if you read my early writing, it was insanely derivative. All I was doing was looking for models and copying them. Out of years of doing that, emerges my own style. So I would say, to the contrary. When you absorb on a deep level the lessons of your musical elders and betters, in many cases, that's what makes the next step, the next creative step, possible. I would have a very different interpretation of where creativity comes from than he does. And the other thing I would point out is the Beatles literature predates Ericsson. So, he's not the first to make arguments about practice. This literature goes back to the '60s and '70s. So a lot of what I was reading when I was writing that chapter was not Ericsson; it was rather a generation of people in this field that came before him. And they had point out, I think, very, very accurately, that the Beatles experience is really unusual. So people always say, "Well, lots of bands in Liverpool played a lot together." Actually, they had played together 1,200 times — played live 1,200 times by the time they came to America in 1964. Twelve hundred live performances is a, I'm sorry, absolutely staggering number.*

DUBNER: But the idea may be, presumably, that there could have been another group of four guys, even from Liverpool, who went to Hamburg and played for many, many hours — and played as

many hours, but never got good. That's the kind of hair that I think I'm trying to help you and Anders split. Because I don't hear as much disagreement as either of you hear, frankly. What I hear is that you're more focused on the holistic creation of expertise, and he's focused more on, I guess, what I would call the more technical version, which has to do with deliberate practice and what it is. And it sounds like he's saying that 10,000 hours of something isn't necessarily deliberate practice. And you're saying 10,000 hours of practice isn't necessarily deliberate practice, but there are things that happen in that process that you can't get to without the 10,000 hours anyway.
GLADWELL: Yeah, and particularly when the four guys who are playing together 1,200 times under very, very trying circumstances are themselves insanely talented, right? So it's not four schmoes — it's, for goodness sake, it's ***Lennon****,* ***McCartney****, and* ***Harrison****. (I'm not going to mention* ***Ringo Starr****.) Each one of whom individually could have had an extraordinary career as a rock-and-roll musician. We had three of them in the same room for years playing together. So there you have this kind of recipe for something extraordinary.*

So this, in the end, is the central puzzle. The talent puzzle – just as puzzling as "which came first, the chicken or the egg?" When we encounter someone who does something extraordinarily well, is it because they are "insanely talented," as Malcolm Gladwell puts it? Or is it because they had, yes, an adequate measure of baseline ability and then found a way to convert that ability into something extraordinary? And if it's the latter, can that conversion process be reliably emulated? By people like you and me? By people like the Danish psychologist Susanne Bargmann?
BARGMANN: I decided to pick up singing because it's something I really loved to do. I practiced at home. But I mean, I would have to negotiate with my kids how much time would they let sing, because it was really not very nice to listen to. At that point, I was really fascinated by ***Christina Aguilera****. So I decided to start recording myself singing a Christina Aguilera song. What my biggest problem in the beginning was, I couldn't make the, in lack of better words, the big sound that she makes. So she has this amazing big, loud sound when she sings. And that wasn't part of what my voice could do. I could make a very soft sound, or I could make a really sharp sound. That's all I was able to do.*

Bargmann had by now bought into Anders Ericsson's deliberate-practice model. Which, she acknowledged, required a certain commitment.
BARGMANN: I decided that if I wanted to be serious about the project, I would need the best coach available. So I went online and then I started searching for the person I thought would be the best coach in Denmark.

The coach she found was initially reluctant to work with her. But Bargmann explained she wasn't just pursuing a personal dream; she was exploring the science of expertise.
BARGMANN: So that was the start. And then, I committed to practicing an hour a day, because I knew the practice was important.

For a year and a half, Bargmann worked hard, practiced a lot, under the guidance of her coach. She seemed to be making progress, but it was slow.

BARGMANN: I felt that I wasn't really improving enough because I didn't get that big sound that I wanted. And my coach would be cheering for me, and he said, "It's right about the corner. Just continue." And then I remember it was summer, and suddenly I was singing, and the sound actually came. And in a song, I was able to make the big sound in a song. And that was a huge jump for me and really, really motivating.

Bargmann kept at it, practicing every day, focusing on improvement.
BARGMANN: So the next step was to stand in front of others and sing. And that was tough as well. But it was still a big step to move out of the practice room into performing in front of others and creating music.

Meaning: writing her own songs.
BARGMANN: That I worked on for quite a while.

She started training with other singers.
BARGMANN: And I think in that process I realized that the next step would be to start recording.

This phase was also bumpy, but she worked through it.
BARGMANN: And then I started working with the producer on what is now the music that I've released.

That's right. Susanne Bargmann finally realized her childhood dream, and she released a **record**.
BARGMANN: It's just called Sus B*, which is my artist name.*

In Denmark, she's gotten a lot of radio play.
BARGMANN: So actually, the reception has been quite phenomenal.

Most of the songs are love songs.
*BARGMANN: I don't know why all good music is about love. And then there's one song that more embodies the whole project of having the courage to start releasing music. It's called "**Fall Up**," where the message is more, "If you have something that you dream about, then do it, don't hesitate."*

Bargmann wants her accomplishment to inspire others.
BARGMANN: I really believe that it can inspire people to: instead of limiting themselves to what they think they can, to actually choose something they dream of or they have a passion for, and then experience how they can improve.

Coming up next week on *Freakonomics Radio* – we're back with a brand-new episode. It's a great conversation with **Michael Lewis**, the author of great non-fiction books that often get turned into great non-fiction movies, including ***The Big Short***, ***Moneyball***, and ***The Blind Side***. His **latest book**, though, this one is special – at least for me, and probably for a lot of you too. It's an unbelievably vibrant portrait of **Danny Kahneman** and **Amos Tversky**, the two Israeli psychologists whose amazingly creative research led to the field of behavioral economics.

MICHAEL LEWIS: One of their great discoveries is that people don't make clean, clear choices between things.

We talk about their research – and how Michael Lewis writes his books …

LEWIS: I write with headphones on that just plays on a loop the same playlist that I've built for whatever book I'm writing. And apparently I'm sitting there laughing the whole time.

Michael Lewis on Kahneman and Tversky – that's next time, on *Freakonomics Radio.*

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Here's where you can learn more about the people and ideas in this episode:

SOURCES

- **K. Anders Ericsson,** Conradi Eminent Scholar and Professor of Psychology at Florida State University
- **Steve Levitt,** Freakonomics co-author and William B. Ogden Distinguished Service Professor of Economics at the University of Chicago.
- **Malcolm Gladwell,** author and staff writer at *The New Yorker*
- **Susanne Bargmann**, psychologist and musician
- **Bob Fisher**, soil conservationist, coach, and world record-breaking free-thrower

RESOURCES

- ***Peak: Secrets from the New Science of Expertise*** by Anders Ericsson and Robert Pool, Eamon Dolan/Houghton Mifflin Harcourt (2016)
- ***Outliers: The Story of Success*** by Malcolm Gladwell, Little, Brown and Company (2008)
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- "**A Star Is Made**" by Stephen J. Dubner and Steven D. Levitt, *New York Times Magazine* (May 7, 2006)

ETC.

- Susanne Bargmann's music **website**
- Bob Fisher's "**Secrets of Shooting**"