

What It Takes to be Great [Adapted]

Research now shows that the lack of natural talent is irrelevant to great success. The secret? Painful and demanding practice and hard work.

By Geoff Colvin

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- 1 What makes Michael Jordan great? What made Berkshire Hathaway Chairman Warren Buffett the world's premier investor? We think we know: each was a natural who came into the world with a gift for doing exactly what he ended up doing. As Buffett told *Fortune* not long ago, he was "wired at birth" to be an investor. It's a one-in-a-million thing. You've got it - or you don't.
- 2 Well, folks, it's not so simple. You are not a born CEO or investor or chess grandmaster. You will achieve greatness only through an enormous amount of hard work over many years. And not just any hard work, but work of a particular type that's demanding and painful.
- 3 Buffett, for instance, is famed for his discipline and the hours he spends studying financial statements of potential investment targets. The good news is that your lack of a natural gift is irrelevant - talent has little or nothing to do with greatness. You can make yourself into any number of things, and you can even make yourself great.
- 4 Scientific experts are producing remarkably consistent findings across a wide array of fields. Understand that talent doesn't mean intelligence, motivation, or personality traits. It's an innate ability to do some specific activity especially well. British-based researchers Michael J. Howe, Jane W. Davidson, and John A. Sluboda conclude in an extensive study, "The evidence we have surveyed ... does not support the notion that excelling is a consequence of possessing innate gifts."
- 5 To see how the researchers could reach such a conclusion, consider the problem they were trying to solve. In virtually every field of endeavor, most people learn quickly at first, then more slowly, and then stop developing completely. Yet a few do improve for years and even decades, and go on to greatness.
- 6 The irresistible question—the "fundamental challenge" for researchers in this field, says the most prominent of them, professor K. Anders Ericsson of Florida State University—is, Why? How are certain people able to go on improving? The answers begin with consistent observations about great performers in many fields.
- 7 Scientists worldwide have conducted scores of studies since the 1993 publication of a paper by Ericsson and two colleagues, many focusing on sports, music and chess, in which performance is relatively easy to measure and plot over time. But plenty of additional studies have also examined other fields.

No substitute for hard work

- 8 The first major conclusion is that nobody is great without work. It's nice to believe that if you find the field where you're naturally gifted, you'll be great from day one; but it doesn't happen. There's no evidence of high-level performance without experience or practice.

- 9 Reinforcing that finding is vast evidence that even the most accomplished people need around ten years of hard work before becoming world-class, a pattern so well established researchers call it the ten-year rule.
- 10 What about Bobby Fischer, who became a chess grandmaster at 16? Turns out the rule holds: He'd had nine years of intensive study. And as John Horn of the University of Southern California and Hiromi Masunaga of California State University observe, "The ten-year rule represents a very rough estimate, and most researchers regard it as a minimum, not an average." In many fields (music, literature, etc.) elite performers need 20 or 30 years' experience before hitting their peak.
- 11 So greatness isn't handed to anyone; it requires a lot of hard work. Yet that isn't enough, since many people work hard for decades without approaching greatness or even getting significantly better. What's missing?

Practice makes perfect

- 12 The best people in any field are those who devote the most hours to what the researchers call "deliberate practice." It's activity that's intended to improve performance, that reaches for objectives just beyond one's level of competence, provides feedback on results and involves high levels of repetition.
- 13 For example: Simply hitting a bucket of balls is not deliberate practice, which is why most golfers don't get better. Hitting an eight-iron 300 times with a goal of leaving the ball within 20 feet of the pin 80 percent of the time, continually observing results and making appropriate adjustments, and doing that for hours every day - that's deliberate practice.
- 14 Consistency is crucial. As Ericsson notes, "Elite performers in many diverse fields have been found to practice, on the average, roughly the same amount every day, including weekends."
- 15 Evidence crosses a remarkable range of fields. In a study of 20-year-old violinists by Ericsson and colleagues, the best group (judged by conservatory teachers) averaged 10,000 hours of deliberate practice over their lives; the next-best averaged 7,500 hours; and the next, 5,000. It's the same story in surgery, insurance sales, and virtually every sport. More deliberate practice equals better performance. Tons of deliberate practice equals great performance.

Real-world examples

- 16 All this scholarly research is simply evidence for what great performers have been showing us for years. To take a handful of examples: Winston Churchill, one of the 20th century's greatest orators, practiced his speeches compulsively. Vladimir Horowitz supposedly said, "If I don't practice for a day, I know it. If I don't practice for two days, my wife knows it. If I don't practice for three days, the world knows it." He was certainly an obsessive practicer, but the same quote has been attributed to world-class musicians like Ignace Paderewski and Luciano Pavarotti.

- 17 Many great athletes are legendary for the brutal discipline of their practice routines. In basketball, Michael Jordan practiced intensely beyond the already punishing team practices. (Had Jordan possessed some mammoth natural gift specifically for basketball, it seems unlikely he'd have been cut from his high school team.) In football, all-time-great receiver Jerry Rice—passed up by 15 teams because they considered him too slow—practiced so hard that other players would get sick trying to keep up.
- 18 Tiger Woods is a perfect example of what the research shows. Because his father introduced him to golf at an extremely early age—18 months—and encouraged him to practice intensively, Woods had racked up at least 15 years of practice by the time he became the youngest-ever winner of the U.S. Amateur Championship, at age 18. Also in line with the findings, he has never stopped trying to improve, devoting many hours a day to conditioning and practice, even remaking his swing twice because that's what it took to get even better.
- 19 The evidence, scientific as well as anecdotal, seems overwhelmingly in favor of deliberate practice; and deliberate practice is all about how you do what you're already doing - you create the practice. This, though, requires a few critical changes. The first is going at any task with a new goal: Instead of merely trying to get it done, you aim to get better at it.

Adopting a new mindset

- 20 Again, research shows that this difference in mental approach is vital. For example, when amateur singers take a singing lesson, they experience it as fun, a release of tension. But for professional singers, it's the opposite: They increase their concentration and focus on improving their performance during the lesson. Same activity, different mindset. Feedback, too, is crucial and, if you aren't lucky enough to get it, seek it out.

Be the ball

- 21 That's a lot to focus on for the benefits of deliberate practice - and worthless without one more requirement: Do it regularly, not sporadically.

Why?

- 22 These extra steps are so difficult and painful they almost never get done. If great performance were easy, it wouldn't be rare. Which leads to possibly the deepest question about greatness. While experts understand an enormous amount about the behavior that produces great performance, they understand very little about where that behavior comes from.
- 23 The authors of one study conclude, "We still do not know which factors encourage individuals to engage in deliberate practice." Or as University of Michigan business school professor Noel Tichy puts it after 30 years of working with managers, "Some people are much more motivated than others, and that's the existential question I cannot answer—why?"

- 24 The critical reality is that we are not hostage to some naturally given level of talent. We can make ourselves what we will. Strangely, that idea is not popular. People hate abandoning the notion that they would coast to fame and riches if they found their talent. But that view is tragically limiting, because when they hit life's bumps in the road, they conclude that they just aren't gifted and give up.
- 25 Maybe we can't expect most people to achieve greatness. It's just too demanding. But the striking, liberating news is that greatness isn't reserved for a small few who—gifted with natural talent—were born to be great. It is available to you and to everyone.

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