

The 10,000-Hour Rule

"IN HAMBURG, WE HAD TO PLAY FOR EIGHT HOURS."

For almost a generation, psychologists around the world have been engaged in a spirited debate over a question that most of us would consider to have been settled years ago. 'The question is this: is there such a thing as innate talent? The obvious answer is yes. ...Achievement is talent plus preparation. The problem with this view is that the closer psychologists look at the careers of the gifted, the smaller the role innate talent seems to play and the bigger the role preparation seems to play.

Exhibit A in the talent argument is a study done in the early 1990s by the psychologist K. Anders Ericsson and two colleagues at Berlin's elite Academy of Music. With the help of the Academy's professors, they divided the school's violinists into three groups. In the first group were the stars, the students with the potential to become world-class soloists. In the second were those judged to be merely "good." In the third were students who were unlikely to ever play professionally and who intended to be music teachers in the public school system. All of the violinists were then asked the same question: over the course of your entire career, ever since you first picked up the violin, how many hours have you practiced?

Everyone from all three groups started playing at roughly the same age, around five years old. In those first few years, everyone practiced roughly the same amount, about two or three hours a week. But when the students were around the age of eight, real differences started to emerge. The students who would end up the best in their class began to practice more than everyone else: six hours a week by age nine, eight hours a week by age twelve, sixteen hours a week by age fourteen, and up and up, until by the age of twenty they were practicing—that is, purposefully and single-mindedly playing their instruments with the intent to get better—well over thirty hours a week. In fact, by the age of twenty, the elite performers had each totaled ten thousand hours of practice. By contrast, the merely good students had totaled eight thousand hours, and the future music teachers had totaled just over four thousand hours.

Ericsson and his colleagues then compared amateur pianists with professional pianists. The same pattern emerged. The amateurs never practiced more than about three hours a week over the course of their childhood, and by the age of twenty they had totaled two thousand hours of practice. The professionals, on the other hand, steadily increased their practice time every year, until by the age of twenty they, like the violinists, had reached ten thousand hours.

The striking thing about Ericsson's study is that he and his colleagues couldn't find any "naturals," musicians who floated effortlessly to the top while practicing a fraction of the time their peers did. Nor could they find any "grinds," people who worked harder than everyone else, yet just didn't have what it takes to break the top ranks. Their research suggests that once a musician has enough ability to get into a top music school, the thing that distinguishes one performer from another is how hard he or she works. That's it. And what's more, the people at the very top don't work just harder or even much harder than everyone else. They work much, much harder.

The idea that excellence at performing a complex task requires a critical minimum level of practice surfaces again and again in studies of expertise. In fact, researchers have settled on what they believe is the magic number for true expertise: ten thousand hours.

"The emerging picture from such studies is that ten thousand hours of practice is required to achieve the level of mastery associated with being a world-class expert—in anything," writes the neurologist Daniel Levitin. "In study after study, of composers, basketball players, fiction writers, ice skaters, concert pianists, chess players, master criminals, and what have you, this number comes up again and again. Of course, this doesn't address why some people get more out of their practice sessions than others do. But no one has yet found a case in which true world class expertise was accomplished in less time. It seems that it takes the brain this long to assimilate all that it needs to know to achieve true mastery."

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