

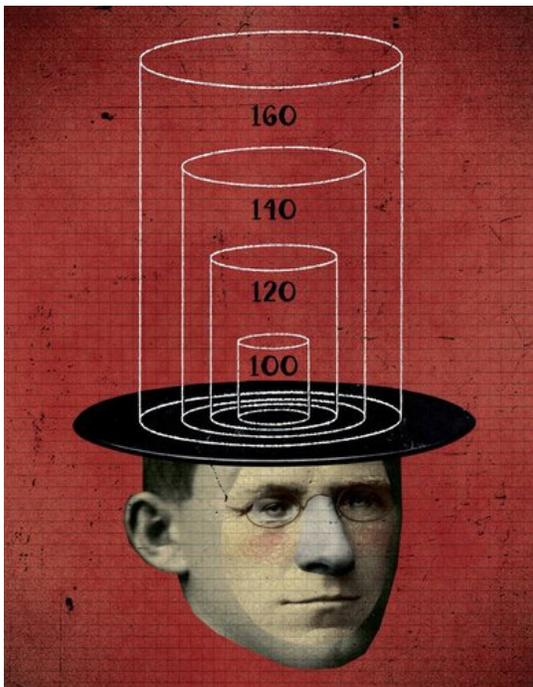
GRAY MATTER

Sorry, Strivers: Talent Matters

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HOW do people acquire high levels of skill in science, business, music, the arts and sports? This has long been a topic of intense debate in psychology.



Research in recent decades has shown that a big part of the answer is simply practice — and a lot of it. In a pioneering study, the Florida State University psychologist K. Anders Ericsson and his colleagues asked violin students at a music academy to estimate the amount of time they had devoted to practice since they started playing. By age 20, the students whom the faculty nominated as the “best” players had accumulated an average of over 10,000 hours, compared with just under 8,000 hours for the “good” players and not even 5,000 hours for the least skilled.

Those findings have been enthusiastically championed, perhaps because of their meritocratic appeal: what seems to separate the great from the merely good is hard work, not intellectual ability. Summing up Mr.

Ericsson’s research in his book “Outliers,” Malcolm Gladwell observes that practice isn’t “the thing you do once you’re good” but “the thing you do that makes you good.” He adds that intellectual ability — the trait that an I.Q. score reflects — turns out not to be that important. “Once someone has reached an I.Q. of somewhere around 120,” he writes, “having additional I.Q. points doesn’t seem to translate into any measureable real-world advantage.”

David Brooks, the New York Times columnist, restates this idea in his book “The Social Animal,” while Geoff Colvin, in his book “Talent Is Overrated,” adds that “I.Q. is a decent predictor of performance on an unfamiliar task, but once a person has been at a job for a few years, I.Q. predicts little or nothing about performance.”

But this isn't quite the story that science tells. Research has shown that intellectual ability matters for success in many fields — and not just up to a point.

Exhibit A is a landmark study of intellectually precocious youths directed by the Vanderbilt University researchers David Lubinski and Camilla Benbow. They and their colleagues tracked the educational and occupational accomplishments of more than 2,000 people who as part of a youth talent search scored in the top 1 percent on the SAT by the age of 13. (Scores on the SAT correlate so highly with I.Q. that the psychologist Howard Gardner described it as a “thinly disguised” intelligence test.) The remarkable finding of their study is that, compared with the participants who were “only” in the 99.1 percentile for intellectual ability at age 12, those who were in the 99.9 percentile — the profoundly gifted — were between *three and five times* more likely to go on to earn a doctorate, secure a patent, publish an article in a scientific journal or publish a literary work. A high level of intellectual ability gives you an enormous real-world advantage.

In our own recent research, we have discovered that “working memory capacity,” a core component of intellectual ability, predicts success in a wide variety of complex activities. In one study, we assessed the practice habits of pianists and then gauged their working memory capacity, which is measured by having a person try to remember information (like a list of random digits) while performing another task. We then had the pianists sight read pieces of music without preparation.

Not surprisingly, there was a strong positive correlation between practice habits and sight-reading performance. In fact, the total amount of practice the pianists had accumulated in their piano careers accounted for nearly half of the performance differences across participants. But working memory capacity made a statistically significant contribution as well (about 7 percent, a medium-size effect). In other words, if you took two pianists with the same amount of practice, but different levels of working memory capacity, it's likely that the one higher in working memory capacity would have performed considerably better on the sight-reading task.

It would be nice if intellectual ability and the capacities that underlie it were important for success only up to a point. In fact, it would be nice if they weren't important at all, because research shows that those factors are highly stable across an individual's life span. But wishing doesn't make it so.

None of this is to deny the power of practice. Nor is it to say that it's impossible for a person with an average I.Q. to, say, earn a Ph.D. in physics. It's just unlikely, relatively speaking. Sometimes the story that science tells us isn't the story we want to hear.

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