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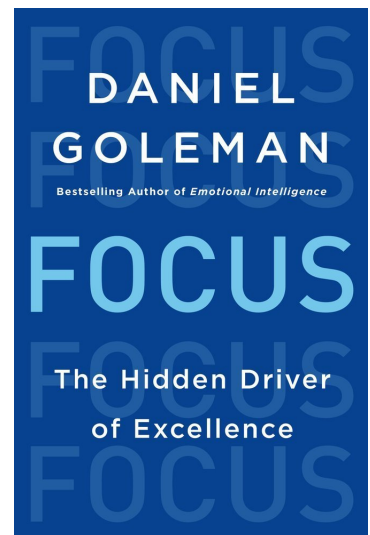


Debunking the Myth of the 10,000-Hours Rule: What It Actually Takes to Reach Genius-Level Excellence

by **Maria Popova**

How top-down attention, feedback loops, and daydreaming play into the science of success.

The question of what it takes to excel — to reach genius-level acumen at a chosen endeavor — has occupied psychologists for decades and philosophers for centuries. Groundbreaking research has pointed to “**grit**” as a better predictor of success than IQ, while psychologists have admonished against the dangers of **slipping into autopilot** in the quest for skill improvement. In recent years, one of the most persistent pop-psychology claims has been the myth of the “10,000-hour rule” — the idea that this is the amount of time one must invest in practice in order to reach meaningful success in any field. But in *Focus: The Hidden Driver of Excellence* ([public library](#)), celebrated psychologist and journalist **Daniel Goleman**, best-known for his influential 1995 book *Emotional Intelligence*, debunks the 10,000-hour mythology to reveal the more complex truth beneath the popular rule of thumb:

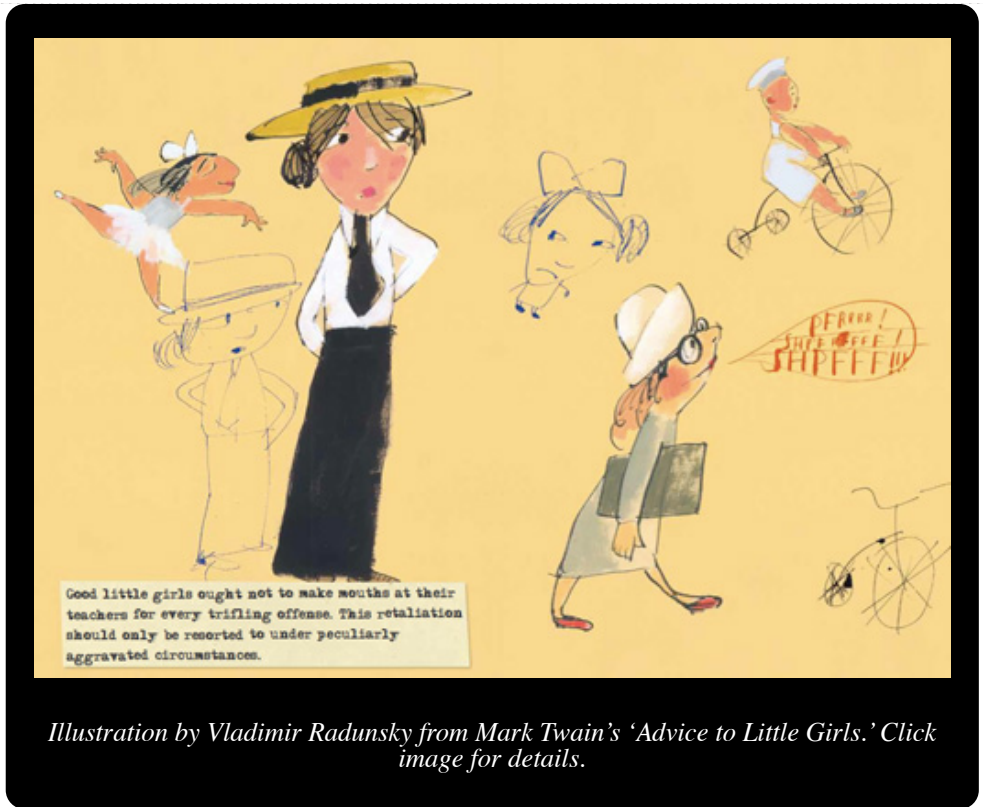
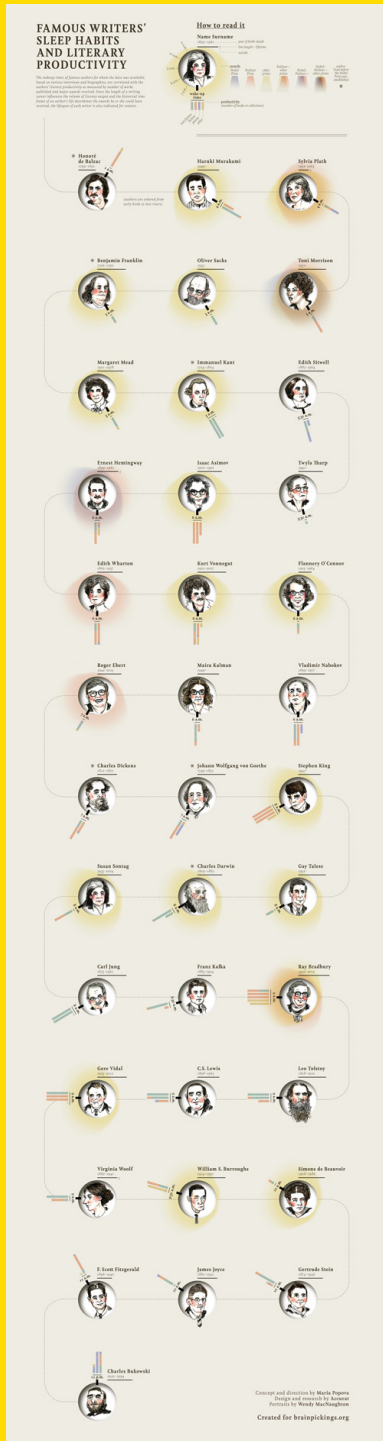


““ The “10,000-hour rule” — that this level of practice holds the secret to great success in any field — has become sacrosanct gospel, echoed on websites and recited as litany in high-performance workshops. The problem: it's only half true. If you are a duffer at golf, say, and make the same mistakes every time you try a certain swing or putt, 10,000 hours of practicing that error will not improve your game. You'll still be a duffer, albeit an older one.

No less an expert than Anders Ericsson, the Florida State University psychologist whose research on expertise spawned the 10,000-hour rule of thumb, told me, “You don't get benefits from mechanical repetition, but by adjusting your execution over and over to get closer to your goal.”

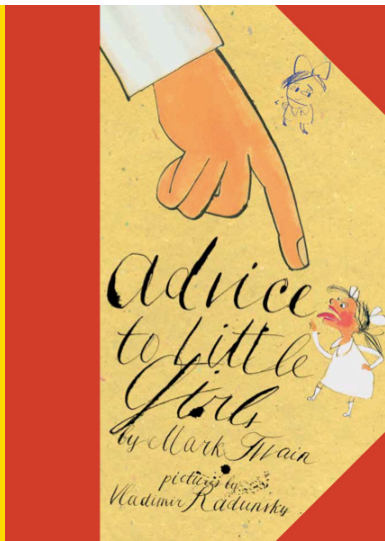
“You have to tweak the system by pushing,” he adds, “allowing for more errors at first as you increase your limits.”

labors of love



The secret to continued improvement, it turns out, isn't the *amount* of time invested but the *quality* of that time. It sounds simple and obvious enough, and yet so much of both our formal education and the informal ways in which we go about pursuing success in skill-based fields is built around the premise of sheer time investment. Instead, the factor Ericsson and other psychologists have identified as the main predictor of success is *deliberate practice* — persistent training to which you give your full concentration rather than just your time, often guided by a skilled expert, coach, or mentor. It's a qualitative difference in how you pay attention, not a quantitative measure of clocking in the hours. Goleman writes:

“Hours and hours of practice are necessary for great performance, but not sufficient. How experts in any domain pay attention while practicing makes a crucial difference. For instance, in his **much-cited study of violinists** — the one that showed the top tier had practiced more than 10,000 hours — Ericsson found the experts did so with full concentration on improving a particular aspect of their performance that a master teacher identified.



“Anxiety is love’s greatest killer. It creates the failures. It makes others feel as you might. When a drowning man holds on to you. You want to save him, but you know he will strangle you with his panic.”
 -Anais Nin, February, 1947

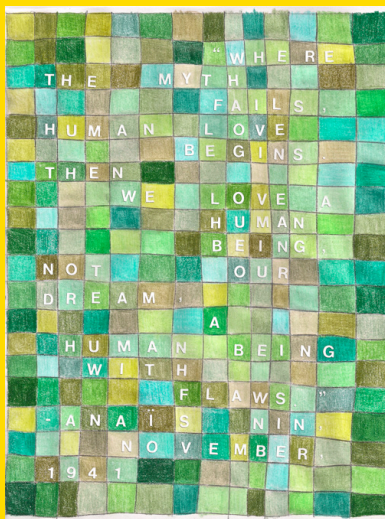


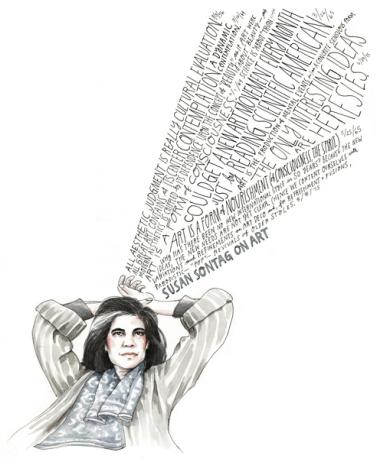
Illustration by Maurice Sendak from Ruth Krauss’s ‘Open House for Butterflies.’
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Goleman identifies a second necessary element: a *feedback loop* that allows you to spot errors as they occur and correct them, much like ballet dancers use mirrors during practice. He writes:

“Ideally that feedback comes from someone with an expert eye and so every world-class sports champion has a coach. If you practice without such feedback, you don’t get to the top ranks.

The feedback matters and the concentration does, too — not just the hours.

Additionally, the optimal kind of attention requires top-down focus. While daydreaming **may have its creative benefits**, in the context of deliberate practice it only dilutes the efficiency of the process. Goleman writes:



66

Daydreaming defeats practice; those of us who browse TV while working out will never reach the top ranks. Paying full attention seems to boost the mind's processing speed, strengthen synaptic connections, and expand or create neural networks for what we are practicing.

At least at first. But as you master how to execute the new routine, repeated practice transfers control of that skill from the top-down system for intentional focus to bottom-up circuits that eventually make its execution effortless. At that point you don't need to think about it — you can do the routine well enough on automatic.

THIS IS YOUR LIFE.
 DO WHAT YOU LOVE,
 AND DO IT OFTEN.
 IF YOU DON'T LIKE SOMETHING, CHANGE IT.
 IF YOU DON'T LIKE YOUR JOB, QUIT.
 IF YOU DON'T HAVE ENOUGH TIME, STOP WATCHING TV.
 IF YOU ARE LOOKING FOR THE LOVE OF YOUR LIFE, STOP;
 THEY WILL BE WAITING FOR YOU WHEN YOU
 START DOING THINGS YOU LOVE.
 STOP OVER ANALYZING, ALL EMOTIONS ARE BEAUTIFUL.
 WHEN YOU EAT, APPRECIATE
LIFE IS SIMPLE. EVERY LAST BITE.
 OPEN YOUR MIND, ARMS, AND HEART TO NEW THINGS
 AND PEOPLE, WE ARE UNITED IN OUR DIFFERENCES.
 ASK THE NEXT PERSON YOU SEE WHAT THEIR PASSION IS,
 AND SHARE YOUR INSPIRING DREAM WITH THEM.
TRAVEL OFTEN; GETTING LOST WILL
 HELP YOU FIND YOURSELF.
 SOME OPPORTUNITIES ONLY COME ONCE, SEIZE THEM.
 LIFE IS ABOUT THE PEOPLE YOU MEET, AND
 THE THINGS YOU CREATE WITH THEM.
 SO GO OUT AND START CREATING.
**LIFE IS LIVE YOUR DREAM
 SHORT. AND SHARE
 YOUR PASSION.**

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HOW TO FIND YOUR PURPOSE AND DO WHAT YOU LOVE



THE BEST BOOKS OF 2013

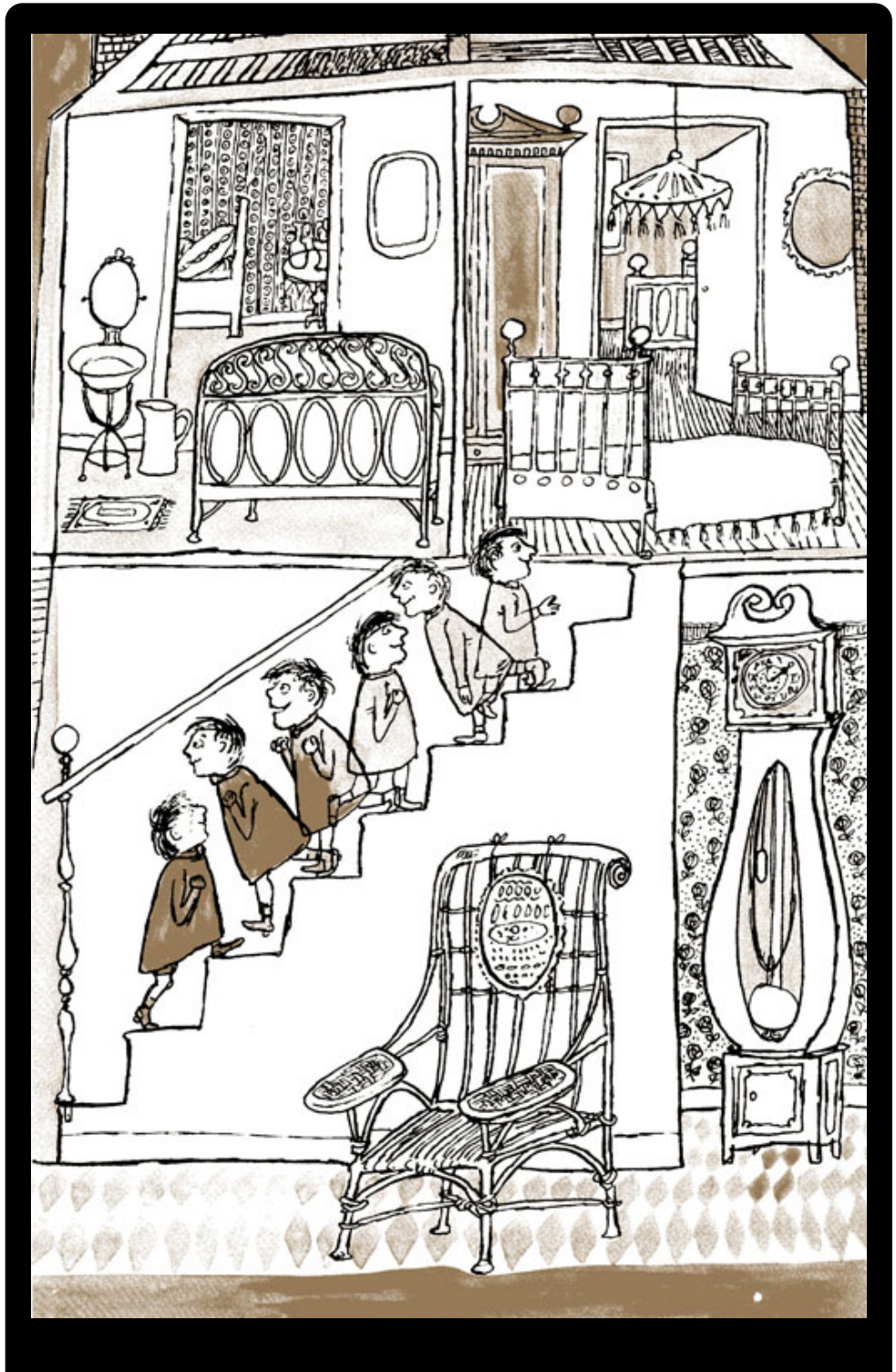
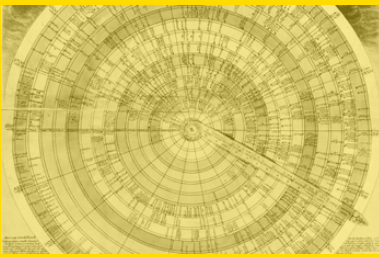


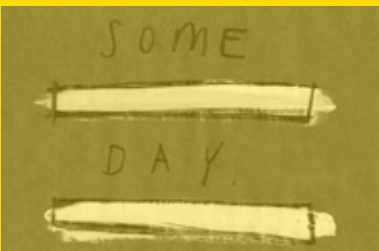
Illustration from 'Little Boy Brown' by André François. Click image for details.



WHY TIME SLOWS DOWN WHEN WE'RE AFRAID,
SPEEDS UP AS WE AGE, AND GETS WARPED
WHILE ON VACATION



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LOSS, AND WHAT IT MEANS TO BE HUMAN

“

Amateurs are content at some point to let their efforts become bottom-up operations. After about fifty hours of training — whether in skiing or driving — people get to that “good-enough” performance level, where they can go through the motions more or less effortlessly. They no longer feel the need for concentrated practice, but are content to coast on what they’ve learned. No matter how much more they practice in this bottom-up mode, their improvement will be negligible.

The experts, in contrast, keep paying attention top-down, intentionally counteracting the brain’s urge to automatize routines. They concentrate actively on those moves they have yet to perfect, on correcting what’s not working in their game, and on refining their mental models of how to play the game, or focusing on the particulars of feedback from a seasoned coach. Those at the top never stop learning: if at any point they start coasting and stop such smart practice, too much of their game becomes bottom-up and their skills plateau.



Illustration from 'The Shrinking of Treehorn' by Edward Gorey. Click image for details.

But even with the question of quality resolved, there’s still that of quantity: Just how much “deliberate practice” is enough? Focused attention, like willpower, is like a muscle



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and gets fatigued with exertion:

“

Ericsson finds world-class champions — whether weight-lifters, pianists, or a dog-sled team — tend to limit arduous practice to about four hours a day. Rest and restoring physical and mental energy get built into the training regimen. They seek to push themselves and their bodies to the max, but not so much that their focus gets diminished in the practice session. Optimal practice maintains optimal concentration.

In the rest of **Focus**, Goleman goes on to explore how concepts like attention-chunking, emotional empathy, and system blindness influence the pursuit of excellence. Complement it with **how grit predicts achievement** and **the science of the “winner effect.”**

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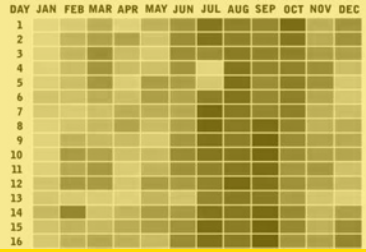


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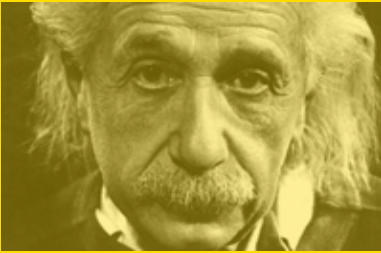
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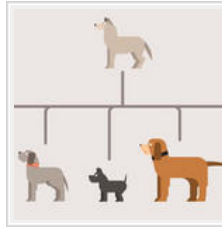
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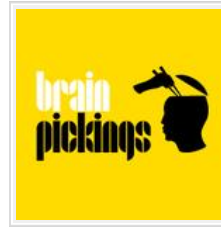
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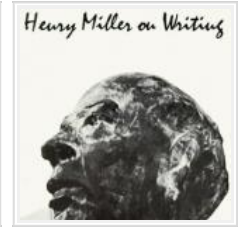
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