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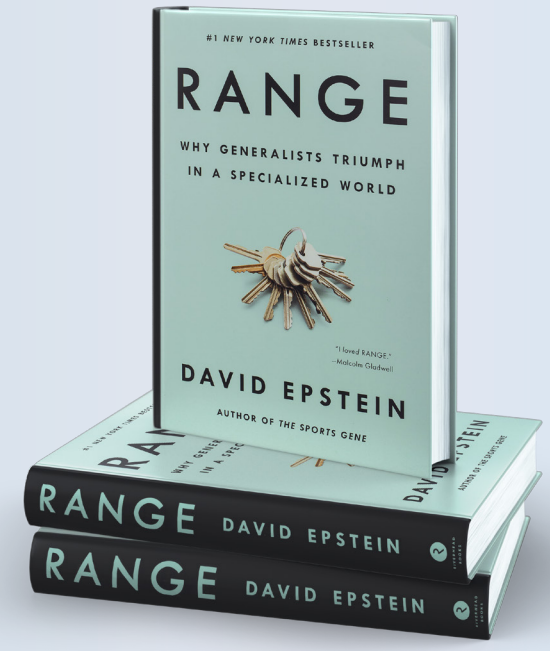

Range
By David Epstein

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Broaden Your Horizons and Embrace the Future

From our earliest educational and athletic days, we are pushed to find an art, sport, or skill in which we show potential and to hyper focus in that area until we reach peak performance. We are told that the best way to achieve at the highest level and to be our very best is to spend all of our energies on that one thing, clocking countless hours of practice and conditioning in constant pursuit of near perfection. But what if we have been taking the exact wrong approach?

In ***Range: Why Generalists Triumph in a Specialized World,*** two-time New York Times bestselling author David Epstein challenges readers to reconsider everything they think they know about how to become great. He lays out a nearly irrefutable case for going against the specialization grain and instead, becoming skilled and adept at any and every thing that is of interest. Achievement through specialization, he argues, is the exception, not the rule. Anchored by the latest research on highly complex and competitive fields such as sports, music, science, and art and bolstered by writing that is nothing short of exceptional, Epstein urges managers, parents, and individuals themselves to broaden their horizons and make themselves happier, more successful, and ready for whatever the future brings.

Specialization vs. Sampling

There exists a rule of thumb regarding the development of expertise in any skilled pursuit. It spawned from a study of thirty violinists and it states that expertise can be achieved through "deliberate practice" to the tune of ten thousand total hours. Deliberate practice, according to this now-ubiquitous rule, happens when learners are "given explicit instruction about the best method" by an instructor that provides "immediate informative feedback and knowledge of the results of their performance" and they "repeatedly perform the same or similar tasks."

Tiger Woods is a quintessential example of this theory and an accompanying edict that one must start deliberately practicing as early, or young, as possible. As our ability to obtain information and connectivity increased, humans have responded with an "increasingly narrow focus" and "unwavering specialization" that begins at a very young age. This trend extends far beyond

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the world of sports, where it's ubiquity is near complete. We see it in music, art, science, and beyond. However, when the available data on athletes is examined more closely, we see a different story.

"Eventual elites typically devote less time early on to deliberate practice in the activity in which they will eventually become experts. Instead, they undergo what researchers call a "sampling period." They play a variety of sports, usually in an unstructured or lightly structured environment; they gain a range of physical proficiencies from which they can draw; they learn about their own abilities and proclivities; and only later do they focus in and ramp up technical practice in one area."

As it turns out, research showed that a sampling period leads to greater achievement in the tech sector as well as for artistic creators. And further still, Epstein's anecdotal evidence showed the same benefits from "late specializers and career changers" in the "wider world of work." The more Epstein dove into the research, the more evidence he uncovered that it is far more common for someone to develop a personal and professional range over a longer time frame, than for someone equally elite to have started specializing early. It is less efficient and takes longer to get to elite performance this way but the research shows that "it is worth it."

The deeper Epstein looked into this revelation, the more surprised he became. He discovered that people who are highly specialized "become so narrow minded that they actually get worse with experience, even while becoming more confident–a dangerous combination." Most shocking of all was the idea he was led to by cognitive psychologists about how learning itself is optimized. The experts Epstein consulted opened his eyes to a vast body of research that shows that "learning itself is best done slowly to accumulate lasting knowledge, even when that means performing poorly on tests of immediate progress." In other words, learning at its best looks inefficient. A person may appear to be falling behind, but they are actually learning optimally.

Everything we fervently believe about becoming the best just might be wrong. Epstein implores us to embrace "breadth, diverse experience, interdisciplinary thinking, and delayed concentration in a world that increasingly incentivizes, even demands, hyperspecialization." What the world needs now are generalists with a wide array of experiences and perspectives. The world needs "people with range."

Thinking Outside Experience

The saying "think outside of the box" became so overused in modern work culture that it was rendered trite. Despite the phrase falling out of favor, the spirit behind it remains ever relevant. Epstein recounts the work of a 25-year-old astronomer named Johannes Kepler, who exemplified the then-revolutionary mode of thinking beyond your personal experience.

The year was 1596 and many thinkers of the time had come to accept the theory Copernicus put forth that the planets orbit the sun. Kepler found himself consumed with curiosity over why planets further away from the sun moved more slowly than those close to it. Asking the question itself was "so far outside the bounds of previous thought that there was no evidence in existence for him to work from." Having no experience to draw from, he started making analogies. And he made many, many of them before forming his theory that correctly identified the laws of planetary motion.

Analogical thinking requires us to analyze ideas or objects or scenarios that seem to have nothing in common but that have "ceonceptual similarities" that can be recognized. This way of thinking is a powerful tool that humans can apply to the "wicked problems" of modern life. Relational thinking is, in no small part, responsible for the dominant position humans hold on our planet. "Analogical thinking takes the new and makes it familiar, or takes the familiar and puts it in a new light, and allows humans to reason through problems they have never seen in unfamiliar contexts." It also enables us to comprehend that which we cannot see at all.

For example, students learning about how molecular motion, which cannot be seen with the eye, can begin to understand it through an analogy of how billiard balls collide and bounce off of each other. The basic elements of electricity can be taught with an analogy of how water runs through a plumbing system. These types of surface level analogies are made with some background experience or knowledge. Kepler relied on analogies that did not draw on previous experience and that level of creativity is the kind we need to solve new world problems.

Being Late to Start is Actually Right on Time

Epstein shares several examples of phenomenally successful people in creative pursuits who got their start in the artistic endeavor of their choosing quite late in life. The likes of Vincent Van Gogh and J.K. Rowling are among them. He acknowledges that one could cherry pick such stories from the annals of history, but he didn't. That is because stories like these, in which the best of the best in any particular profession came to their path with a late start, are the rule, not the exception. Epstein says, "they aren't exceptions by virtue of their late starts, and those late starts did not stack the odds against them. Their late starts were integral to their eventual success."

In a highly relatable analogy of his own creation, Epstein likens professional and educational sampling to dating. Students in higher education who are forced to choose a specialization early on, oftentimes find themselves "divorced" from that career path early on, too. It would be like asking a high school senior to decide before graduation whether or not she would marry her high school sweetheart. She may think that's the best choice at the time, but later on she may realize that they are not the best suited for long term success. In love, like in life, trying out a variety of partners and potential mates with an eventual choice later in life is far more likely to succeed and provide fulfillment than hitching your wagon to the first horse that comes along. "If we treated careers more like dating, nobody would settle down so quickly."

Ideally, people just beginning their careers will pursue a wide variety of interests, including jobs that may seem risky or too

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bold for those more advanced in their profession lives. Newcomers, with less experience to draw on, should go big. They should seek out those big risk, big reward opportunities like we find in arts, entertainment, and entrepreneurship. That is because these experiences have "high informational value."

"Thanks to constant feedback and an unforgiving weed-out process, those who try will learn quickly if they might be a match, at least compared to jobs with less constant feedback. If they aren't, they go test something else, and continue to gain information about their options and themselves." In the long run, people who leap frog around will eventually land on something that is the perfect fit, in which they can leverage that breadth of experience, skill, and knowledge they gained in the process. And that leads to a more fulfilling life as well.

Fooled by Expertise

One of the biggest problems with our tendency to specialize is that it breeds a very particular kind of thinking. Those who become highly specialized in their field eventually run the risk of missing critical pieces of information outside of the scope of specialization. They become entirely entrenched in their own microworld of focus and when presented with ideas that are contrary to their understanding, which are discovered or invented or progressed towards, they draw worse and worse conclusions and make mistakes. Different specialists in the same field can present "facts" that are "perfetly contradictory to one another and impervious to counterarguments." It is as if they are blinded by "their mental representation of the world" and cannot see the larger forest for their own highly-specialized trees.

This remarkable penchant for poor prediction making peaked the curiosity of psychologist and political scientist Philip Tetlock during the Cold War. He gathered and studied "short- and long-term forecasts from 284 highly educated experts who averaged more then twelve years of experience in their specialities." Over the course of twenty years, he posed predictive questions to this group about international politics and economics, ammassing a collection of "82,361 probability estimates about the future." And the results showed that the average expert was not just slightly off the mark from time to time. They were horrifically bad at forecasting.

Results were equally off regardless of the predictor's area of specialty, years of experience, or even access to classified information. And even more striking, when faced with the failure of their prediction, many would "never admit systemic flaws in their judgment." When their prediction failed to materialize, it was because of one small detail they got wrong, resulting in a "near miss." On the flip side, when they were right, it was entirely because of "their own merits." "Victories were total victories, and defeats were always just a touch of bad luck away from having been victories too." In the mind of the experts, they remained undefeated even though they were, in reality, constantly losing.

Perhaps most quizzical of all, experts become incredibly worse at making long-term predictions in their own area of specialization. Instead of taking in a whole view with all relevant information, old and new, they hold firm to their worldview. The more credentialed, quoted, or interviewed an expert becomes, the more they find any way possible to cram their prediction through "their preferred keyhole." In terms of creating notoriety, this does have a distinct advantage. "Viewing every world event" through their finely-tuned lens makes it quite "easy to fashion compelling stories about anything that occurs" and to tell those stories "with adamant authority." In other words, they make for great television.

Epstein's work in the area of specialization versus generalization began in the sports world. When he would speak to a group of parents about the fallacy of childhood sports specialization, pointing out that the world's elite athletes are more often late starters with wide experience in a variety of athletic pursuits than early-start specialists, he was usually met with disbelief. We are so conditioned to the idea of specialization that we ourselves cannot accept the truth of the facts when presented with hard data that is not in line with our firmly-held beliefs. Time and again parents, reluctantly coming to at least consider Epstein's supposition, would ask Epstein to sum up his advice for the best path forward in one single sentence. "What began as a search for one sentence of advice ended in this book."

The central question Epstein set out to answer was "how to capture and cultivate the power of breadth, diverse experience, and interdisciplinary exploration, within systems that increasingly demand hyperspecialization, and would have you decide what you should be before first figuring out who you are." In composing that single sentence, Epstein succeeds in perfectly capturing the essence of his book and inspires us to reach wide, rather than deep. But readers can be grateful that he didn't stop there as the entirety of Range is thought provoking, entertaining, insightful, and ridiculously well written. And it can change your life.