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OP-ED COLUMNIST

## Genius: The Modern View

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Some people live in romantic ages. They tend to believe that genius is the product of a divine spark. They believe that there have been, throughout the ages, certain paragons of greatness — Dante, Mozart, Einstein — whose talents far exceeded normal comprehension, who had an other-worldly access to transcendent truth, and who are best approached with reverential awe.

We, of course, live in a scientific age, and modern research pierces hocus-pocus. In the view that is now dominant, even Mozart's early abilities were not the product of some innate spiritual gift. His early compositions were nothing special. They were pastiches of other people's work. Mozart was a good musician at an early age, but he would not stand out among today's top child-performers.

What Mozart had, we now believe, was the same thing Tiger Woods had — the ability to focus for long periods of time and a father intent on improving his skills. Mozart played a lot of piano at a very young age, so he got his 10,000 hours of practice in early and then he built from there.

The latest research suggests a more prosaic, democratic, even puritanical view of the world. The key factor separating geniuses from the merely accomplished is not a divine spark. It's not I.Q., a generally bad predictor of success, even in realms like chess. Instead, it's deliberate practice. Top performers spend more hours (many more hours) rigorously practicing their craft.

The recent research has been conducted by people like K. Anders Ericsson, the late Benjamin Bloom and others. It's been summarized in two enjoyable new books: "The Talent Code" by Daniel Coyle; and "Talent Is Overrated" by Geoff Colvin.

If you wanted to picture how a typical genius might develop, you'd take a girl who possessed a slightly above average verbal ability. It wouldn't have to be a big talent, just enough so that she might gain some sense of distinction. Then you would want her to meet, say, a novelist, who coincidentally shared some similar biographical traits. Maybe the writer was from the same town, had the same ethnic background, or, shared the same birthday — anything to create a sense of affinity.

This contact would give the girl a vision of her future self. It would, Coyle emphasizes, give her a glimpse of an enchanted circle she might someday join. It would also help if one of her parents died when she was 12, infusing her with a profound sense of insecurity and fueling a desperate need for success.

Armed with this ambition, she would read novels and literary biographies without end. This would give her a core knowledge of her field. She'd be able to chunk Victorian novelists into one group, Magical Realists in another group and Renaissance poets into another. This ability to place information into patterns, or chunks, vastly improves memory skills. She'd be able to see new writing in deeper ways and quickly perceive its inner workings.

Then she would practice writing. Her practice would be slow, painstaking and error-focused. According to Colvin, Ben Franklin would take essays from *The Spectator* magazine and translate them into verse. Then he'd translate his verse back into prose and examine, sentence by sentence, where his essay was inferior to *The Spectator's* original.

Coyle describes a tennis academy in Russia where they enact rallies without a ball. The aim is to focus meticulously on technique. (Try to slow down your golf swing so it takes 90 seconds to finish. See how many errors you detect.)

By practicing in this way, performers delay the automatizing process. The mind wants to turn deliberate, newly learned skills into unconscious, automatically performed skills. But the mind is sloppy and will settle for good enough. By practicing slowly, by breaking skills down into tiny parts and repeating, the strenuous student forces the brain to internalize a better pattern of performance.

Then our young writer would find a mentor who would provide a constant stream of feedback, viewing her performance from the outside, correcting the smallest errors, pushing her to take on tougher challenges. By now she is redoing problems — how do I get characters into a room — dozens and dozens of times. She is ingraining habits of thought she can call upon in order to understand or solve future problems.

The primary trait she possesses is not some mysterious genius. It's the ability to develop a deliberate, strenuous and boring practice routine.

Coyle and Colvin describe dozens of experiments fleshing out this process. This research takes some of the magic out of great achievement. But it underlines a fact that is often neglected. Public discussion is smitten by genetics and what we're "hard-wired" to do. And it's true that genes place a leash on our capacities. But the brain is also phenomenally plastic. We construct ourselves through behavior. As Coyle observes, it's not who you are, it's what you do.