

You can't teach speed: sprinters break 10-year rule

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Credit: Erik van Leeuwen/Wikipedia

New research shows world-class sprinters are born, not created. Grand Valley State University researchers found that exceptional speed prior to formal training is a prerequisite for becoming a world-class sprinter. The findings are published in the online journal *PeerJ*.

The research, conducted by Michael Lombardo, professor of biology,

and Robert Deaner, associate professor of psychology, shows that the developmental histories of elite sprinters contradict the popular [deliberate practice](#) model of expertise. According to this model, there is no such thing as innate talent. Instead, 10 years of deliberate practice (roughly 10,000 hours) are necessary and sufficient for anyone to become an expert in any field, including sports.

The researchers studied biographies of 26 world-class sprinters, including 15 Olympic gold medalists and the eight fastest men in U.S. history. The first major finding was that every expert sprinter, male or female, was recognized as exceptionally fast prior to beginning formal training. This contradicts the deliberate practice model, which assumes that initial performance and final performance in a domain will be unrelated. A second key finding was that, contrary to the 10-year rule, most sprinters achieved world class performances in less than five years, and more than half of the Olympic champions reached this level in three years or fewer.

In addition, Lombardo and Deaner surveyed 64 sprinters and throwers (i.e., shot put, javelin, discus) who qualified for the 2012 NCAA collegiate track and field outdoor championships. Sprinters recalled being faster as children, while throwers recalled greater strength and overhand throwing ability. Another key finding was that the collegiate sprinters' best performances in their first season of high school competition, generally the beginning of formal training or deliberate practice, were consistently faster than 95-99 percent of their peers.

"Rob and I both ran track in college, and we follow the sport pretty closely," said Lombardo. "So we expected that most sprint champions' biographies would indicate that they were always the fastest kid in their neighborhood, even before they did any formal training or received any coaching. But the consistency of the pattern was surprising – from Helen Stephens, a 1936 Olympian, to Usain Bolt, there were no exceptions.

Gathering the data systematically allowed us to see how strong the patterns were. It also allowed us to test and rule out alternative explanations."

The authors noted that because speed is crucial for many sports, the new results imply that talent is important for many sports besides track and field. The authors also pointed out that their behavioral data complement many genetic and physiological studies indicating individual variation in athletic talent.

"Our results won't come as a surprise to most biologists, sports scientists, or coaches—all of the previous data pointed to this conclusion," said Deaner. "But our results are important because the deliberate practice model and its '10-year rule' remains enormously popular among many social scientists and intellectuals. Our results are clear-cut and should require no scientific training to understand. So we hope they will finally put an end to the debate."

The researchers stressed that their results support an interactive model of expertise development. "Our point is not that talent trumps everything," said Lombardo. "Training is crucial, especially the kinds of training highlighted by the deliberate practice model. But in sports, innate talent is required too."

More information: You can't teach speed: sprinters falsify the deliberate practice model of expertise, *PeerJ*, peerj.com/articles/445/

Provided by Grand Valley State University

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