True Grit

March 29, 2013

“The only thing that I see that is distinctly different about me is I’m not afraid to die on a treadmill. I will not be outworked, period. You might have more talent than me, you might be smarter than me, you might be sexier than me, you might be all of those things — you got it on me in nine categories. But if we get on the treadmill together, there’s two things: You’re getting off first, or I’m going to die. It’s really that simple…” -Oscar-nominated actor and Grammy award-winning musician Will Smith

The metaphor of achievement as a race recalls Aesop’s fable of the tortoise and the hare. This oft-told story, which many of us heard as children in one form or another, preaches the value of plodding on, no matter how slow or uneven our progress, toward goals that at times seem impossibly far away. At the starting line, it is the hare who is expected to finish first. Sure enough, the hare quickly outpaces the tortoise, accumulating so great a lead that he lies down to take a nap mid-race. When the hare awakes, the tortoise, who all the while has been laboring toward his destination, is too close to the finish line to beat. Tortoise 1, hare 0.

It may be obvious that effort and stamina are required to accomplish anything worthwhile in life. But how easy is it to forget this fact in moments when we feel tortoise-like relative to our seemingly hare-like peers? Who among us presses on even as we are passed by those stronger, faster, and/or smarter? Who among us stays the course, running the race we committed to rather than choosing a different, new pursuit, after stumbling and losing ground? Who lives life as if it were a marathon, not a

sprint?

Measuring Individual Differences in Grit

Recognition of the necessity of hard work and persistence is age-old and universal. Nevertheless, individuals differ dramatically in their stamina for long-term goals. Gritty individuals are tortoise-like, distinguished by their propensity to maintain "effort and interest over years despite failure, adversity, and plateaus in progress" (Duckworth, Peterson, Matthews, & Kelly, 2007, p. 1088). Less gritty individuals are, in contrast, more easily discouraged, prone to take "naps" mid-course, and frequently led off track by new passions.

Early 20th-century psychologists attempted to measure trait-level persistence using tasks of physical fortitude (e.g., arm extension tasks) and mental effort (e.g., unsolvable anagrams). But whether perseverance in controlled laboratory challenges, lasting minutes or seconds, reflects the same trait that inclines individuals toward the dogged pursuit of their personally valued goals over the course of months and years is an unanswered question.

An alternative measurement approach, pioneered in the same historical era, entails asking respondents to judge their own or another individual's tendency to persist toward goals over time. For example, in one of the earliest published studies on personality, Edward Webb collected ratings by teachers of their undergraduate students on, among other items, the "tendency not to abandon tasks from mere changeability" and the "tendency not to abandon tasks in the face of obstacles." While Webb interpreted these items to mark a very general factor of strong character he termed will, re-analysis of Webb's data demonstrates that these items load on a more specific personality factor: Big Five Conscientiousness.

Following this tradition, we typically assess grit using self-report or informant-report questionnaires. The Brief Grit Scale, for example, comprises items describing consistency of interests (e.g., the reverse-coded item, "I often set a goal but later choose to pursue a different one") and long-term persistence of effort (e.g., "Setbacks don't discourage me," "I finish whatever I begin"). Consistent with the re-analysis of Webb's data, we find that grit clearly belongs to the Big Five Conscientiousness family, particularly overlapping with achievement motivation. Grit, however, is distinguished from the general tendency to be reliable, self-controlled, orderly, and industrious, with its emphasis on long-term stamina rather than short-term intensity.

Findings From Our Lab

Our research suggests that prodigious talent is no guarantee of grit. In fact, in most samples, grit and talent are either orthogonal or slightly negatively correlated. To the extent that talented people are, on average, less gritty, individuals who are both extremely talented and extremely gritty should be particularly rare. Indeed, objective measures of achievement are typically log-normal in distribution; the most accomplished scientists, novelists, artists and entrepreneurs are dramatically more successful than what would be expected were achievement distributed in a normal bell curve. A hypothesis we aim to test in future research is that talented individuals, for whom learning and advancement come easily, have fewer opportunities (or, more aptly, necessities) to develop a resilient approach to failure and setbacks.

In our cross-sectional analyses, grit increases monotonically throughout adulthood. One possibility is that people have a growing appreciation of the efficacy of effort as they age. Alternatively, consistent with the literature on identity formation, it may be that the value of specializing versus exploring diverse pursuits shifts as we age. Early in life, it may make more sense to privilege exploration over specialization. Until we develop a solid understanding of our own inherent interests and abilities, it may make sense to hold off on committing to lifelong goals. Later in development, it may be increasingly adaptive to stay with a particular vocational (or avocational) pursuit, especially since division of labor in our modern economy tends to reward specialization.

Most of our research on grit has taken the form of prospective longitudinal studies, in which we ask whether grit predicts a range of objective success outcomes, even after accounting for individual differences in ability. For instance, among West Point military cadets entering their first summer of training — a transition from civilian to military life known colloquially as "Beast Barracks" — grittier cadets were less likely to drop out. In contrast, an index of talent called the Whole Candidate Score, which integrates SAT scores, class rank, demonstrated leadership ability, and physical aptitude, did not predict retention.

What mechanisms link grit to achievement? One important behavioral mechanism is deliberate practice, defined as practice activities designed to improve specific aspects of performance. In a study of finalists in the Scripps National Spelling Bee, we found that grittier children completed more hours of deliberate practice, operationalized as the study and memorization of word spellings and word roots in solitude. A mediation analysis revealed that time spent on deliberate practice fully explained the prospective correlation between grit and spelling bee performance. Consistent with the broader literature on deliberate practice and skill acquisition, practice activities rated by spellers as more pleasurable and less effortful (e.g., reading for pleasure, being quizzed by their parents) were dramatically less predictive of spelling performance. Instead, it was the hardest, least pleasurable practice that really paid off — and the grittiest kids who were able to do more of it.

Getting Grittier

Paul Tough's recent bestseller, *How Children Succeed: Grit, Curiosity, and Hidden Power of Character*, has fueled popular interest in grit. As a consequence, we are frequently asked by parents and teachers how grit could be intentionally cultivated. Are there specific activities or classroom practices that encourage young people to commit to something they really care about and to maintain their commitments in the face of challenge? Can students be trained to develop greater tolerance for effortful, focused, and not-altogether-pleasant deliberate practice? We are just beginning to explore the psychological antecedents of grit, work which we hope will someday generate concrete recommendations and interventions for parents and educators who want to foster grit. Our first step in this direction has been to examine the relationship between grit and optimistic explanatory style. In a study of novice teachers surveyed before they entered the classroom, we found that more optimistic teachers (i.e., those who tended to attribute good events to global and stable causes and bad events to temporary and specific causes) rated themselves higher in both grit and life satisfaction. Grit and life satisfaction, in turn, predicted teacher effectiveness assessed at the end of the school year.

At present, we are investigating the link between grit and growth mindset, which is conceptually related to optimistic explanatory style but more specifically refers to the implicit belief that intelligence is

malleable rather than fixed. In as yet unpublished cross-sectional studies of school-age children, we have found moderate, positive associations between grit and growth mindset, suggesting that growth mindset, like optimistic explanatory style, may contribute to the tendency to sustain effort toward and commitment to goals. In separate work, APS Fellow Carol Dweck at Stanford University and colleagues have now accumulated an impressive body of correlational and experimental evidence demonstrating that a growth mindset encourages children to construe failures and setbacks as opportunities to learn and improve, rather than as evidence that they are permanently lacking in ability. Given this work and similarly conceived curricula aimed at teaching optimistic explanatory style, one promising direction for future research entails directly measuring the impact of directing attention to specific, changeable aspects of performance on trait-level grit.

Future Directions in Grit Research

Other than explanatory style and growth mindset, what else disposes individuals to be gritty? To pursue very long-term goals, sustaining effort and interest even when progress is halting, would seem to require the capacity to delay gratification. Thus, one intriguing possibility is that grit later in life is augured by early individual differences in the ability to forgo immediate pleasure for the sake of greater, deferred benefit. While this hypothesis has not been directly tested in prior research, it is consistent with the observation that preschool children who are better able to delay gratification tend to grow up to be more successful, competent adolescents and adults. It may also help to explain age-related increases in grit, since it is well-established that the capacity to delay gratification improves between childhood and adulthood. Thus, the growing experimental literature on strategies that facilitate regulation of attention, emotion, and behavior in the presence of immediate temptations, could be relevant to grit and its cultivation.

Another question we have pondered but not yet tested empirically is whether more grit is always better or, alternatively, whether there is some cost to being gritty that must be traded off against its benefits. There may be contexts in which grit begets lower achievement. For instance, grittier individuals may be more vulnerable to the sunk-cost fallacy, less open to information that contradicts their present beliefs, or otherwise handicapped by judgment and decision-making biases. Further, grittier individuals, by staying the course, may sometimes miss out on new opportunities because they are so focused on their original goal. Contrariwise, it is possible that a focus on valued long-term goals is compatible with active, open-minded judgment and decision making.

Moving Forward

In 1907, William James speculated, “We are making use of only a small part of our possible mental resources…men the world over possess amounts of resource, which only exceptional individuals push to their extremes of use” (James, 1907, p. 322-323). James advocated that psychologists direct their efforts at two main questions: First, what is the full range of human abilities? Second, through what diverse means are these abilities unleashed? In our view, the past century has witnessed more progress toward the first challenge than the second. Relatively less is known about traits that enable expression of the abilities in which we are now well-versed. We have, in other words, focused our attention on identifying and understanding the hares among us. It is time to think seriously about the tortoises and what keeps them going.