Copyright © 2018, New Forums Press, Inc., P.O. Box 876, Stillwater, OK 74076. All Rights Reserved.

Grit 2.0: A Review with Strategies to Deal with Disappointment, Rejection, and Failure

By Ronald A. Berk*

DISCLAIMER: If you were expecting this article to be written in the form of rap music like the Broadway multiracial, smash musical *Hamilton*, you will be disappointed. I tried a hip-hop review of the research, bouncing three rhymes in two couplets off the word "grit," but it just didn't work. Others have tried (Kim, 2018). Instead, you will have to endure my signature percussive éclat laced with humor. Maybe my next article will provide a better fit.

"Success consists of going from failure to failure without loss of enthusiasm." Winston Churchill

Introduction

Let's get serious about success. What is your long-term goal? Full professor? Department chair? Faculty developer? Dean? President? Nobel Laureate? Queen of England? Why do some colleagues succeed more than others? Are they smarter? Maybe. However, we have all seen others with the IQ of a starfish and charisma of a battering ram who represent the antithesis of greatness also succeed. They are definitely not Mensa material, and they may even have their own "bobblehead day." How does that happen? Are there noncognitive factors that can explain those differences? Absolutely! *Grit* can be one of those factors.

I do not want to be a "Debbie Downer," but, let's face it: What we do in our college or university job is jam-packed with occasions to get professionally whacked by students, administrators, colleagues, reviewers of conference and grant proposals, editors and reviewers of journal articles and books, colleagues on IRB, fellowship, internship, promotion, and awards committees, consulting agencies, meeting planners, and speakers' bureaus. Negative feedback occurs with regularity throughout our careers. It can crush you like a bug and derail your success. Moreover, as you have heard many times, "There's no crying in academe!"

Being discouraged by your chair or dean for executing innovative teaching methods, risky, cutting-edge research or program initiatives, or other creative activities can be added to that list. Whackings can even continue into retirement with speaking, consulting, publishing, and other academic pursuits. The opportunities for rejection are endless.

If you are a member of an underrepresented or marginalized group, such as women, African- and Asian-Americans, Latinx, Muslims and Jews, and LGBTQ individuals, rejections and failures will occur with greater frequency than those involving White male heterosexuals (Boyd, Caraway, & Niemann, 2017; Caplan, 1993; Gutgold & Linse, 2016; Gutiérrez y Muhs *et al.*, 2012; Rockquemore & Laszloffy, 2008). Many such experiences will be in the form of microaggressions (Berk, 2017a, 2017b; Sue, 2010). When gender, racial, ethnic, religious, and sexual orientation issues are layered on top of the sources of adversity that come with

^{*}The author is extremely grateful to *Angela R. Linse, PhD,* Executive Director and Associate Dean, Schreyer Institute for Teaching Excellence, Penn State University, *Gregg W. Wentzell, PhD, Associate Director, Original Lilly* Conference and Center for Teaching Excellence, Miami University, and Managing Editor, *Journal on Excellence in College Teaching, and Neil A. Davidson, PhD,* Professor Emeritus, Curriculum and Instruction, University of MD, College Park, for their very comprehensive reviews of an earlier draft of this article. I also thank *Stuart H. Weinstein, PhD,* Protecte Leader, Instructional Systems, Suntiva LLC, *Christopher L. Heiliger, MS,* Regional Vice President & Executive Partner, Gartner Inc., *Corinne T. Heiliger, MS, LGPC,* Psychotherapist, New Lens Counseling, and *Marissa C. Berk-Smith, MA,* Communications & Outreach Coordinator, Towson University, for providing thoughtful feedback and support on this project. None of these reviewers should be held responsible for the content and grittiness expressed herein. Ultimately, any mistakes should be blamed on the U.S. Congress.

an academic position, the challenges can become overwhelming.

How many of you have ever experienced disappointment, rejection, or failure from any of the preceding sources in pursuit of your academic goal? Keep your hands up so I can count. Okay, put your hands down. According to my calculations, rounded to six decimal points, I counted all of you.

So how do we survive the barrage of attacks? How should we respond? Well, help is on the way. Over the past decade, research on the characteristic of *grit* holds promise for a rebooting of old concepts with new options. It is blowing across the academic landscape like a miniature tornado that can suck up some of the toughest parts of our job in its path. You will be safe in your office.

The purposes of this article are to (1) define grit, (2) briefly review the research highlights, and (3) suggest applications of grit to academia. Non-grit-related coping strategies, such as humor, meditation, exercise, therapy, spirituality, medications, intoxication, shopping, and eating, will not be covered.

What Is Grit?

When you read or hear the word "grit," what image pops into your mind?

- A. the abrasive, sand-like particles in the toothpaste your dentist uses to clean your teeth
- B. the grinding, clenching, or gnashing of your teeth with a grating sound
- C. the scratchy, coarse granules that accumulate between your toes or webbed feet
- D. John Wayne with an eye patch in the 1969 film *True Grit*
- E. the oatmeal-like breakfast cereal (WAIT! That's "grits" not "grit." My bad.)

Once these images stop popping, we can move on. Have they stopped? Great. Any one of those answers represents an era in Grit World that dates back to prehistoric times, except "E" which is even older.

Definition

Grit is "perseverance and passion for longterm goals...[and] entails working strenuously toward challenges, maintaining effort and interest over years despite failure, adversity, and plateaus in progress" (Duckworth, Peterson, Matthews, & Kelly, 2007b, pp. 1087–1088). Two dimensions of grit are involved: Consistency of Interest and Perseverance of Effort.

Eye-patch-wise, the lifetime of *grit* can be split into two unequal time periods: pre-2007 and 2007– present. In 2007 the Grit World was shaken by a tsunami of research. Actually, it was one article containing six studies by Duckworth *et al.* (2007b). This publication opened up a floodgate of research on the topic over the next decade for Grit 2.0, which investigated the new trait on the block.

The popularity of "grit" spiked with Professor Angela Duckworth's TED talks (Duckworth, 2013), interviews (Duckworth, 2016a; Perkins-Gough, 2013), and her book (Duckworth, 2016b) based on her 2007 article (Duckworth *et al.*, 2007b). The mainstream media pushed the need to grow grit in adults and children with specific interventions and training programs (Shechtman *et al.*, 2013).

Jingle-Jangle Fallacies

Is *grit* a unique trait or redundant with other personality characteristics? This question relates to the *"jingle-jangle fallacies"* in psychological research (Kelley, 1927, pp. 62–65; Reschly & Christenson, 2012). Over 100 years ago, Thorndike (1904) described the *jingle fallacy* as the occurrence of two constructs with identical names referencing different real-world phenomena. Subsequently, Kelley (1927) named the companion *jangle fallacy*, which occurs when different construct names are used to refer to the same real-world phenomena. Those fallacies were renamed the "Construct Identity Fallacy" (CIF) by Larson and Bong (2016).

The *jangle fallacy* drove the direction of the research on grit because there were so many other variables that involve exerting effort to attain specific goals, overcoming disappointments, adversity, setbacks, and failure, and sustaining interest and commitment with persistence to attain long-term goals. Grit joins a spate of personality traits treading similar terrain on which there are buckets of research, such as the Big Five personality model (conscientiousness, openness to experience, extraversion, agreeableness, neuroticism) (John & Srivastava, 1999). Other noncognitive variables include "perseverance," "tenacity," "persistence," "determination," "diligence," "self-regulation," "hardiness," "resilience", "motivation," "ambition,"

"consistency," "self-control," "need for achievement," and "work ethic."

These variables are not like strands of spaghetti you throw against the wall along with grit to see which ones stick. Their relationships have been studied systematically. This grit literature review should not be a stultifying endeavor. Most of the research on grit has concentrated on two issues: (1) How does grit relate to the current "jangling" pool of personality traits?, and (2) How well does grit predict long-term performance and success compared to cognitive ability and other factors?

It is time to take stock of what we know about grit and whether it can improve the quality of our lives as academicians. The trajectories of our careers have different directions and stages or seasons. Grit can enter at any stage. It punctuates the importance of your commitment to cross the goal line for "success" and the hard work necessary despite the obstacles in the way (Duckworth, & Eskreis-Winkler, 2015). How do you "deal" with those challenges and adversity on the path to promotion in your career? Is it survival of the grittiest? Let's consider the...

Measurement of Grit

A self-report five-point, Likert-type, 12-item Original Grit Scale (Grit-O) was developed by Duckworth *et al.* (2007a, 2007b). It was divided into two subscales: Consistency of Interest and Perseverance of Effort. The Grit-O was subsequently revised into the more efficient eight-item Short Grit Scale (Grit-S) by Duckworth and Quinn (2009a, 2009b) with the same subscales, just fewer items: Consistency of Interest (Grit-S items 1, 3, 5, 6) and Perseverance of Effort (Grit-S items 2, 4, 7, 8) (see https://angeladuckworth.com/research/). The bulk of the research on grit has used the Grit-S scale.

Psychometric equivalent Grit-S scales have been translated into Chinese (Li *et al.*, 2016), Japanese (Nishikawa, Okugami, & Amemiya, 2015; Yoshitsu & Nishikawa, 2013), Korean (Kim & Lee, 2015), Spanish (Arco-Tirado, Fernández-Martin, & Hoyle, 2018), Filipino (Datu, Valdez, & King, 2016a), German (Fleckenstein, Schmidt, & Möller, 2014), Russian (Tyumeneva, Kuzmina, & Kardanova, 2014), Turkish (Akin *et al.*, 2011), and Polish (Wyszyńska *et al.*, 2017). A Triarchic Model of Grit Scale (TMGS) three-factor scale was also developed and validated with the added dimension of Adaptability to Situations (Datu, Yuen, & Chen, 2017a). Copies of these translated scales are available online (https://angeladuckworth.com/research/ and corresponding references).

Research Highlights

Most of the research on grit has taken the form of cross-sectional and longitudinal studies based on self-reports and/or interviews. Indeed, more longitudinal studies and experimental designs would provide greater precision and information. However, at this point, it would be useful to briefly examine what we know about grit and its potential for dealing with the issues in academe. This section provides a summary of the research samples, results predicting long-term or life success, and overall conclusions.

Samples

A variety of samples from different gender, racial, ethnic, student, and occupational groups were selected for the grit studies. Most were high school and college students. The samples included the following:

- 1. U.S. Military Academy cadets (Duckworth *et al.*, 2007b; Maddi *et al.*, 2012)
- Army Special Operations Forces (ARSOF) (Eskreis-Winkler, Shulman, Beal, & Duckworth, 2014a)
- Employees in a variety of occupations (Eskreis-Winkler *et al.*, 2014a; Fite *et al.*, 2017; Ion, Mindu, & Gorbănescua, 2017; Meriac, Slifka, & LaBat, 2015; Suzuki, Tamesue, Asahi, & Ishikawa, 2015)
- Police detectives (Eskreis-Winkler, Shulman, & Duckworth, 2014b)
- Athletes at the collegiate, professional, and Olympic levels (Hodges, Ford, Hendry, & Williams, 2017; Larkin, O'Connor, & Williams, 2016; Meyer, Markgraf, & Gnacinski, 2017; Reed, Pritschet, & Cutton, 2013; Tedesqui & Young, 2018)
- Novice classroom teachers (Duckworth, Quinn, & Seligman, 2009; Robertson-Kraft & Duckworth, 2014)
- High school students (Christensen & Knezek, 2014; Datu, 2016; Datu, Valdez, & King, 2016b; Eskreis-Winkler *et al.*, 2014a; Ivcevic & Brackett, 2014; MacCann & Roberts, 2010; Rimfeld,

Kovas, Dale, & Plomin, 2016)

- 8. At-risk high school students (Guerrero *et al.*, 2016)
- 9. National Spelling Bee finalists (Duckworth *et al.*, 2007b; Duckworth *et al.*, 2011)
- College undergraduates (Akin, Arslan, & Çitemel, 2013; Bazelais, Lemay, & Doleck, 2016; Bowman, Hill, Denson, & Bronkema, 2015; Chang, 2013; Duckworth *et al.*, 2007b; Flanagan, & Einarson, 2017; Hill, Burrow, & Bronk, 2016; Lucas, Gratch, Cheng, & Marsella, 2015; Silvia *et al.*, 2013; Singh & Jha, 2008; Strayhorn, 2014; Wolters & Hussain, 2015)
- 11. Pharmacy students (Hammond, 2017; Pate *et al.*, 2017)
- 12. Nursing students (Robinson, 2015)
- 13. Medical students (Halliday *et al.*, 2017; Shih & Maroongroge, 2017)
- 14. Medical residents (general surgery, ENT surgeons, surgical trainees, registrars, and consultants) (Burkhart *et al.*, 2014; Fink & Taekman, 2014; Halliday *et al.*, 2017; Ray & Brown, 2015; Salles, Cohen, & Mueller, 2014; Walker, Hines, & Brecknell, 2016)
- 15. Practicing physicians (GPs, hospital consultants) (Halliday *et al.*, 2017; McCain *et al.*, 2017)
- 16. Married men and women (Eskreis-Winkler et al., 2014a)

Results Predicting Long-term or Life Success

The cross-sectional and longitudinal studies of grit defined success with different outcome variables, especially academic performance and motivation. Here are some of the major findings based on levels of grit measured in the preceding samples:

Persons with higher levels of grit have

 Higher levels of academic performance, graduation, and education (Batres, 2011; Bazelais et al., 2016; Bowman et al., 2015; Chang, 2013; Datu, Valdez, & King, 2016b; Duckworth et al., 2011; Eskreis-Winkler et al., 2014a; Flanagan & Einarson, 2017; Goodwin & Miller, 2013; Hammond, 2017; Hochanadel & Finamore, 2015; Ivcevic & Brackett, 2014; MacCann & Roberts, 2010; Pate et al., 2017; Ray & Brown, 2015; Rimfeld et al., 2016; Shih & Maroongroge, 2017; Strayhorn, 2014; Walker *et al.*, 2016; Wang *et al.*, 2018; Wolters & Hussain, 2015)

- Higher levels of academic motivation (Eskreis-Winkler et al., 2014a; Von Culin, Tsukayama, & Duckworth, 2014)
- Higher levels of job performance (Duckworth et al., 2009; Fink & Taekman, 2014; Maddi et al., 2012; Robertson-Kraft & Duckworth, 2014)
- 4. *Higher levels of engagement in work* (Eskreis-Winkler *et al.*, 2014b; Robinson, 2015; Suzuki *et al.*, 2015)
- Higher levels of retention and lower drop-out rates (Burkhart et al., 2014; Eskreis-Winkler et al., 2014a; Maddi et al., 2012; Robertson-Kraft & Duckworth, 2014)
- 6. *Fewer career changes* (Duckworth *et al.*, 2007b)
- Higher levels of life-satisfaction, happiness, and well-being (Batres, 2011; Datu et al., 2016b; Salles et al., 2014; Singh & Jha, 2008)
- 8. A stronger sense of relatedness to social partners but not peers (Datu, 2016)
- Lower levels of burnout and depression (Datu, King, Valdez, & Eala, in press; Halliday et al., 2017; McCain et al., 2017; Salles et al., 2014; Walker et al., 2016)
- Higher levels of intensity of exercise and sportspecific engagement (Hodges et al., 2017; Larkin et al., 2016; Reed et al., 2013; Tedesqui & Young, 2018)
- 11. Lower levels of substance use and at-risk and delinquent behaviors (Guerrero et al., 2016)
- 12. Longer marriages (men only) (Eskreis-Winkler et al., 2014a)
- The ability to indirectly buffer suicide over time through negative life events and enhance meaning in life (Anestis & Selby, 2015; Blalock, Young, & Kleiman, 2015; Datu et al., 2018; Kleiman, Adams, Kashdan, & Riskind, 2013)

In addition to the above, higher levels of grit predicted high academic performance for use in academic admissions (Chang, 2014; Pate *et al.*, 2017; Strayhorn, 2013), identified at-risk students for early intervention programs to decrease attrition rates (Guerrero *et al.*, 2016; Mills, 2017; Pate *et al.*, 2017), and served as a metacognitive tool to encourage students' self-reflection to use a goals hierarchy to establish more concrete plans (Akin *et al.*, 2013; Duckworth & Gross, 2014; Pate *et al.*, 2017; Wolters & Hussain, 2015).

Conclusions

There have been several reviews and largescale studies of grit: (a) Duckworth *et al*'s. (2007b) original multiple studies, (b) Rimfeld *et al.*'s (2016) large-scale study of 4,642 16-year-old twins in the United Kingdom, (c) Datu, Yuen, and Chen's (2017b) review of the research, (d) Credé, Tynan, and Harms' (2017) meta-analysis of 73 studies with 88 unique samples and 66,807 individuals, and (e) Shechtman *et al*'s. (2013) U.S. Department of Education report reviewing 50 programs and models for promoting grit, tenacity, and perseverance. There are also other studies that may have fallen through the review cracks. With nearly 100 studies on grit, the preceding results need to be tempered by the following conclusions:

- 1. Grit is not related to *intelligence* or *cognitive ability* (r = .02-.20).
- 2. Grit consists of two component factors: *perseverance of effort* and *consistency of interest*, which related differently to other constructs.
- 3. Revised Grit-S 8-item scale and subscales have lower reliabilities ($\alpha = .60-.82$) than the original Grit-O 12-item scale and subscales (α = .78-.85), and they are influenced by social desirability bias.
- 4. *Perseverance* and *consistency* are moderately related on the Grit-S scale (r = .59-.66) and weakly on the Grit-O scale (r = .17).
- 5. *Perseverance* (four items on the Grit-S scale) has stronger relationships to various outcome variables than *consistency* and *total grit score*.
- 6. *Total Grit* and *perseverance* are strongly related to *conscientiousness* (r = .61-.97) among the components of the "Big Five personality model," along with *persistence* (r = .89).
- Total Grit and perseverance explain a trivial percentage of the variance (.5%—4.8%) (incremental validity) beyond IQ, Big Five, self-control, age, and gender in academic performance and other measures of *success* (compared to the *SAT* or high school GPA which explains about 25–30% of the variance of college GPA and other academic outcomes [Shaw, 2015]).

- 8. *Grit-S* has a neural link with *academic performance* (Wang *et al.*, 2017).
- 9. *Perseverance* is a weak to moderate predictor of various measures of *success* compared to *Total Grit* and *consistency*.
- 10. *Grit* is a borderline "jangle fallacy" with *conscientiousness* and *perseverance*.
- 11. *Grit interventions* can increase grit-related skills and scores to improve *performance*, *intensity*, and *retention*.
- 12. *Growth mindset* serves as a mediator variable to facilitate level *of grit* (Wang *et al.*, 2018).

BOTTOM LINES:

- The four items measuring perseverance on the Grit-S scale represent the best indicator of grit and are a weak predictor of success.
- The internal consistency reliability of the perseverance subscale is adequate for research purposes but unacceptably low for individual interpretations.
- The degree to which individuals overcome adversity while sustaining their drive to achieve long-term goals contributes more to grittiness than the consistency of their interests over months or years.
- The stamina in being able to tackle difficult tasks and bounce forward from challenges in the long haul distinguishes grit from conscientiousness.
- Grit can compensate for lower levels of intelligence, cognitive ability, or talent to attain success.
- A growth mindset and specific interventions can improve grittiness, which can improve academic-related outcomes.

Applications of Grit to Academia

The foregoing bottom lines are especially encouraging within the context of the adversity one must face in academia. If you have not faced any obstacles, just wait. There will be *Jaws*-like thumping, ominous music to warn you that something seismic is about to happen. Beware! When it happens, "You're going to need a bigger paragraph." You probably know colleagues who have experienced thumping.

Despite the modest predictive power of total grit and perseverance and the empty bucket of grit studies with academic personnel, there is potential to ponder. The generic recommendations by Duckworth (2016b) and the findings from the numerous investigations on academic success and job performance in other professions have direct implications for how grit may help academicians.

This section will examine: (1) how to grow grit, (2) how to deal with adversity, and (3) how to respond to rejection and failure.

How to Grow Grit

Duckworth (2016b, pp. 91–92)) described four ingredients to grow grit organically:

1. *Interests*, which are the seeds of passion ("I love what I do."): You can learn to discover, develop, and deepen your interests. Pick courses, research and service projects, and writing topics that excite you and motivate you to excel and pour your heart into what you do. Approach what you do with alacrity.

A quotation by Lin-Manuel Miranda (2017) captures the spirit of this ingredient in doing work that you love: "Basically I have the best job in the world because I fall in love for a living. I write musicals, and musicals take a long time to write [six years to write *Hamilton*]. So when you have an idea, you really have to fall in love with it."

- 2. *Practice* to get better and better ("Whatever it takes, I want to improve."): Resist complacency and devote yourself to being the best teacher, researcher, writer, or administrator you can be with the discipline of constant practice that leads to mastery. That commitment to practice, in turn, will inspire others to challenge themselves.
- 3. *Purpose* ("My work is important to me and others."): Your work should be personally interesting and meaningful plus contribute to the well-being of others. The purpose of serving others to benefit their professional or personal lives raises the value of your work. *Why* you do what you do becomes more important than *what* you do. You can cultivate a sense of purpose and meaning.
- 4. *Hope* ("I can overcome challenges and adversity."): This is a rise-to-the-occasion kind of perseverance to be able to tackle the most difficult tasks and challenges you will encounter. You can teach yourself to hope. Hope rests on a

growth mindset (see next section), the expectation that you can improve to make tomorrow better than today which can be aided by singing "Tomorrow" from *Annie* over and over again.

The gritty mentality is akin to the military battle cry of "Oorah" (U.S. Marines), "Hooah" (U.S. Army & Air Force), or "Hooyah" (U.S. Navy). They all mean *charge*. That is what gritty people do. When the going gets tough... Oorah!

How to Deal with Adversity

Do any of you remember the 1950s original Timex watch commercial? Of course not. That is way before many of you Net Geners and Gen Xers were created! The tagline for Timex was: "Takes a licking and keeps on ticking"? Picture this: Dapper spokesperson John Cameron Swayze would throw a Timex watch off a cliff and then, moments later, show you the watch with its guts smashed to smithereens and springs popping out, but still ticking. It had not ticked its last tock. It was designed to withstand any punishment. This watch was gritty during Grit 1.0. Can you relate to that watch?

One common denominator of virtually all academic positions is the *peer review and feedback process*. It is also a primary source for "taking a licking" from the disappointment, rejection, and feelings of failure experienced by faculty and administrators. Peer review is deeply ingrained in the academic culture. It provides the credibility to our ideas, teaching effectiveness, research contributions, and publications (Kreuter, 2014).

Professional feedback can produce fist pumping and football end-zone-type celebratory dances. However, formal reviews and rejections by journal, book, conference, and grant reviewers and editors can also furnish a regular diet of disappointments throughout faculty members' and administrators' careers. In fact, this diet at colleges and research universities often begins with graduate students (Meyers, 2012; Poorman, 2018; Shives, 2014). Colleagues' IRB and inhouse reviews of research proposals, peer reviews of teaching, and committee reviews for promotion and tenure, fellowships, and teaching/research awards can also result in similar setbacks.

Negative peer reviews and other sources of adversity may generate the same level of popularity as head lice. For some faculty, they may be perceived as a necessary evil. Those individuals who cannot cope with that adversity will eventually disappear like the teenagers in a *Friday the 13th* movie. If a supportive environment were created by department chairpersons, other administrators, mentors, and faculty peers where grit was encouraged to tackle these challenges in academia (see, for example, Smith *et al.*, 2018), maybe Jason Voorhees would stop slashing faculty. A sense of community and support can be critical (Bonfiglio, 2017).

What strategies can you use "to keep on ticking"? The research related to grit suggests three approaches: (1) adopt a growth mindset, (2) reflect on past failures and setbacks, and (3) consider a hierarchical-goal perspective.

Adopt a growth mindset. The growth mindset (Dweck, 2016) considers intelligence as malleable, and that one may "grow" their intelligence and abilities to achieve their goals through hard work and dedication (see the meta-analyses by Burnette *et al.*, 2013, and Sisk *et al.*, 2018). It is consistent with the research evidence on *neuroplasticity*, which is the ability of the brain to change and build new synaptic connections throughout our lives (Doidge, 2007). In contrast, a *fixed mindset* is based on the belief that intelligence or talent is simply a fixed trait that cannot be changed; it alone can lead to success.

A growth mindset can play an essential role in cultivating one's level of grit (Wang *et al.*, 2018). It has low to moderate positive correlations with grit (Kench, Hazelhurst, & Otulaja, 2016; Myers *et al.*, 2016; Tucker-Drob *et al.*, 2016). That mindset can help develop grit by fostering goal commitment, positive affect, and sustained effort to increase academic success (Fitzgerald & Laurian-Fitzgerald, 2016; Hill *et al.*, 2016; Hochanadel & Finamore, 2015; Yeager & Dweck, 2012).

Adopting a growth mindset, as opposed to a fixed mindset, can change the way you respond to a negative review or rejection. A positive perspective toward constructive feedback and criticism (oral or written) can (1) improve and add to your abilities, (2) provide the opportunity to learn from weaknesses, mistakes, and failures, and (3) furnish specific information to revise your contributions, so they are significantly better than the originals. After the shock and panic of rejection have subsided, this mindset allows you to be receptive to corrective feedback and attentive to each comment, error, and mistake (Moser *et al.*, 2011; Myers *et al.*, 2016).

A positive view of challenges and adversity can neutralize the potentially hurtful response to negative feedback. A growth mindset with the preceding responses forms the spine of grit that enables you to deflect or help you tackle the challenges you may encounter. A fixed mindset with a defeatist attitude makes you the victim, not the victor.

Reflect on past failures and setbacks. Surprisingly, DiMenichi and Richmond (2015) found that reflecting on past failures increases grit, produces immediate improvements in performance on behavioral outcomes, and increases perseverance with cognitive tasks. That reflection has diagnostic value which enables you to search for the reasons to justify the rejection, but not to obsess over those reasons for self-flagellation. Dwelling on the negative reviews may serve as a more significant motivating force to revise your manuscript and improve its quality than reflecting on your past successes.

In a study of super-elite athletes, Hodges *et al.* (2017) found grit to be a defining characteristic of their personalities along with increased motivation seemingly caused by the obstacles and setbacks they experienced. The bigger the failure, the more you can learn from it. That failure can propel you to turbo-charge your efforts to succeed the next time a challenge presents itself. Although these findings are counterintuitive, the notion of leveraging failures and setbacks to work harder to stay on course toward your goals is probably worth testing in our academic careers.

Consider a hierarchical-goal perspective. A long-term superordinate goal impels gritty individuals. When that goal seems unfeasible or unreachable or when setbacks derail you from pursuing that goal, search for viable alternative lower-order goals or actions (Duckworth & Gross, 2014). Sprout a new hierarchical-goal perspective (Eskreis-Winkler, Gross, & Duckworth, 2016). For example, on your publishing journey, if the editor of the most prestigious journal rejects your manuscript, submit it to one or more lower-prestige journals. Ask colleagues for advice on which journals. Find alternatives that will still keep you on track for the ultimate prize.

How to Respond to Rejection and Failure

There are only two primary responses to negative feedback: *Buck up* and view it as an opportunity to improve OR *shut down*, see it as a threat, ignore it, and engage in the blame game. The former is consistent with grit and a growth mindset; the latter misdirects one's abilities and concentrates on positive feedback only (aka "confirmation bias").

The preceding strategies can be incorporated into real-life rejection scenarios. There are at least three major areas of rejection and failure: (1) publication, conference, and grant proposal rejections, (2) students' rejections, and (3) job failures.

Publication, conference, and grant proposal rejections. Considering an initial manuscript submission as unflawed and final is unrealistic. You pour your heart and soul (aka "passion") into a piece of work that required grit to complete over several months or years. When you receive low scores, negative reviews, outright rejection, or any requests for revision, they represent a hit to your work and you (Halpern, 2016). That gut punch hurts. It can drive you up an ivy-covered wall. Trashing the manuscript is not on the grit menu.

You have choices. Do you cave under the requests for one or more revisions of your manuscript or hunker down to do whatever is needed to satisfy the reviewers and editor so that your work gets published? The latter requires grit. Keep your eyeballs on the long-term goal.

What are your options when an editor's verdict is "minor revision" or "major revision"? (*NOTE:* The "revision" decision is an opportunity, albeit a reprieve, not a reprimand, to make the changes to improve your work and publish it.) As you read the reviews for revision, do not assume that all reviewers are objective and correct (Misra & Lundquist, 2017). They are fallible, and so is the process (Gulliver, 2014; Kreuter, 2014). CAT scans reveal that most reviewers exhibit significant brain activity and blood flow, yet some may misunderstand, misinterpret, or misjudge your work. Here are your options:

- *1. No revision:* Ignore the reviews and send the manuscript to another journal or publisher.
- Partial revision: Carefully examine reviews and cherry-pick certain comments worth addressing in a revision. Send it to another journal (Stivers & Cramer, 2017b).
- 3. *Partial or complete revision:* Address every comment in the reviews either with manuscript changes or respond to unjustified comments in a carefully crafted cover letter that explains

why changes were not made. Resubmit it to the original journal (Stivers & Cramer, 2017a).

- 4. Second revision: If the same reviewers want additional changes, make them quickly and then resubmit.
- 5. *Third revision:* Yes, this is possible, particularly if different reviewers enter the process. You can be dragged through the mire of yet another revision. Just do it!

If the editor rejects the manuscript without giving you the opportunity to revise, options 1 and 2 are viable. Resubmit to another journal (Stivers & Cramer, 2017b). Conference and grant proposal rejections typically do not permit these actions. Once rejected with low scores, the process is over. You can then submit to another conference or other funding agencies or foundations that have issued similar RFPs.

Whatever option(s) you choose, commit to working on other projects to refocus your attention on new products and potential successes. Have multiple writing, research, conference, and grant activities in process and review to keep you on track to attain your long-term career target. Juggling several products in the hopper simultaneously and not knowing the verdict can keep your hopes up and sustain a positive attitude.

Notwithstanding the preceding responses to negative feedback, what can be done to ameliorate the difficulties inherent in the entire publication process? Who can improve your initial submission, reduce the sting of negative reviews, and console or commiserate when needed? A *support group* of like-minded colleagues and one or more *mentors* can come to the rescue (Smith *et al.*, 2018).

Form a support group and pick mentors from anywhere in the world—in your department, at another institution, at an outside company or industry, or in your house (Berk, 2010, 2011). They can provide incredible support and encouragement and a sounding board to improve your writing conceptually and mechanically before you submit and wise counsel after you receive the reviews (Jackson, 2018). The support group fosters a sense of community and engagement with others to furnish the connectivity and relatedness at a time when you need it most (Bonfiglio, 2017; Garcia, 2018).

When peer mentors are chosen with the ap-

propriate content or copy editing expertise, their reviews provide valuable input that can greatly improve your manuscript before you submit it for publication or presentation. Their input and that of the support group during the revision process can be very useful. They can advise on what journal, conference, publisher, or funding agency to submit to next. You can also consult with colleagues who have a winning record in obtaining grants.

Students' rejections. Rejection can occur in two ways in the classroom. First, in your teaching, how do you handle negative comments by students and low student ratings, especially written comments, some of which may be constructive and others that may be personal insults (Berk, 2017c)? And second, how do your students respond to your feedback and lower-than-expected test scores and grades? How can you and your students rise above the negative feedback and stay focused on your long-term goals?

Welcome back to "Feedback World"—the students' formative feedback to you on your teaching and your feedback to them on their learning. Focus on the constructive elements. What can be changed to improve your teaching and your students' learning?

Timely, accurate, and relevant feedback during and at the end of the course can be very informative and useful to guide your growth as a teacher. Consultative feedback on student ratings by faculty developers, peer mentors, and graduate students can lead to even greater positive changes (Marincovich, 1999; Penny & Coe, 2004). All of these sources can shape whom you will become as a teacher (Berk, 2013, 2018). Shrug off personal insults and encourage students to do the same and concentrate instead on your long-term goals.

Job failures. What can be worse? Maybe watching reruns of the *Smurfs*! The disappointment and feeling of failure associated with being fired can be devastating. It depletes rather than expands your emotional bandwidth. As an administrator or faculty member, the psychological and physical consequences of being terminated, not promoted, denied tenure, or rejected for a new position, fellowship, or internship can pack a wallop (Horn, 2017; June, 2017). It can be life-changing if you let it. Those forms of failure can provoke you to enter the blame game which just worsens the impact.

How are you supposed to grow after these failures and bounce forward to keep working or find a new job? If you are a member of an underrepresented or marginalized group, the higher frequency of those failures can have a stronger effect on your ability to function effectively (Berk, 2017b; Boyd *et al.*, 2017; Caplan, 1993; Gutgold & Linse, 2016; Gutiérrez y Muhs *et al.*, 2012; Rockquemore & Laszloffy, 2008). Failure may be the ultimate test of grit. However, grit is not a "deficit ideology" that is intended to compensate or address the reasons for that marginalization and equity issues (Gorski, 2016).

Grit is one strategy to bounce forward from failure. A failure does not define who you are; you are not a failure. You have not lost your purpose or goals. *Failure can be the springboard to inform, motivate, and jolt you into action*. Springing will be involved. Just as failure manifests in a variety of forms, so can your responses:

- 1. *Request clarification of any criticisms* to assess the merits of the criticism and whether you need to correct your behavior.
- 2. Scrutinize the negative evaluations and all relevant documentation in your personnel file for the contract renewal, promotion, or tenure reviews to sleuth for the specific reasons for rejection.
- 3. Solicit the reasons for job rejections if the institution will share that information. Carefully reflect on those reasons. Determine which ones are valid that you can address.

Do not automatically jump to self-blame and your inadequacies when confronted with failure. Women faculty, in particular, are intensively socialized to blame themselves for failure (Caplan, 1993). Your self-esteem and confidence have just taken a hit. Redirect that blame by cross-examining the negative reviewers. Extract any nuggets of advice from them to bolster your skills and better prepare for future opportunities. However, also look for signs of bias, unfairness, and inappropriate procedures in the review process. A grievance or legal action may be warranted.

Remember the growth mindset and to search for alternatives in your goal and action hierarchy. Now is the time to shift those alternatives into gear and make adjustments. Learn from the rejection. Ask colleagues who succeeded with contract renewal, promotion, or tenure to share their portfolios and support documents (Garcia, 2018; Ockene *et al.*, 2017). Examine the form and substance of what they submitted. What tricks of the trade do you find in those materials that explain where they went right, and you went wrong?

Apply for several different positions within your wheelhouse so there is hope one might take. There are a variety of non-tenured, full- and parttime faculty and administrative jobs in academia you can pursue to get your foot in the door before you need to kick it down, such as post-doctoral research and training, soft-money research, project managers, program directors, temporary positions where a faculty member is on sabbatical or another type of leave, and part-time teaching (Caplan, 1993). These are opportunities to make contacts, survey the field, add to your vitae, and continue producing while you wait for the job you want.

Consider the applications and interviews as part of your growth. Approach them with gusto. What weaknesses do you need to address? You will keep learning as you engage in the job-hunting process, improve as a candidate, and add to your skills as long as you continue to look for ways to improve. Apply Winston Churchill's quotation on the title page: "Success consists of going from failure to failure without loss of enthusiasm."

Epilogue

The academic environment requires grit to endure the slings and arrows of outrageous attacks on our work and person and to climb out of the pedagogical potholes into which we may fall. However, grit is not a panacea to deflect all of the arrows or some of the slings. It is a single trait with weak to moderate predictive power of certain outcome variables. Moreover, it is a welcome addition to the arsenal of tools we need to grapple with the sources of adversity we encounter throughout our careers.

Grit is within everyone's grasp which, along with other characteristics and a community of support, can move you from survives in a job you love to thrive beyond your wildest imagination. Yet, as we unspooled the previous decade of research, we found weaknesses in the methodologies regarding the Grit-S scale, sample selection, statistical analysis, and research design that require attention. Unfortunately, there is also a gaping hole in that research that needs to be filled with studies involving academic administrators, faculty, and staff. We must build on the potential suggested by the research reviewed herein.

Before the lickings we endure take their toll on our tickings, we need to act to prevent a premature final tock. To capture the spirit of grit and the verbal blunt-force trauma many of us have experienced and will continue to experience, consider the gritty advice Rocky gave his son in the 2006 film *Rocky Balboa*:

"I don't care how tough you are. It [life] will beat you to your knees and keep you there permanently if you let it. You, me, or nobody is going to hit as hard as life.

But it ain't about how hard you hit; it's about how hard you can get hit, and keep movin' forward. How much you can take and keep movin' forward. That's how winning is done.

Now if you know what you're worth, now go out and get what you're worth. But you gotta be willing to take the hits and not pointin'fingers, sayin'you're not where you wanna be because of him or her or anybody. Cowards do that and that ain't you. You're better than that."

If you reached this last paragraph by slogging through this article riddled with Rocky's and my metaphors, you must have a nontrivial level of grit. I encourage you to take the Grit-S scale (see https://angeladuckworth.com/research/) to properly measure where you are now and project where you want to be. It is time for you to concentrate on your career goal and "grittisize" anything in its path. As for me, I need to learn a proper British accent in case there's an opening for King at Buckingham Palace.

References

- Akin, A., Abaci, R., Arici, N., Uysal, R., & Uysal, Ç. K. (2011, September 8–10). *Revised Grit Scale: The validity and reliability study.* Paper presented at the National Education Symposium, Burdur, Turkey.
- Akin, A., Arslan, S., & Çitemel, N. (2013). The predictive role of grit on metacognition in Turkish university students. *Studia Psychologica*, 55, 311–320. doi: 10.21909/sp.2013.04.645. Retrieved from http://www.studiapsychologica.com/uploads/ARSLAN_SP_4_ vol.55_2013_pp.311-320.pdf

- Anestis, M. D., & Selby, E. A. (2015). Grit and perseverance in suicidal behavior and non-suicidal self-injury. *Death Studies*, 39(4), 211–218. Retrieved from https://doi.org/10.1080/07481187.2014.946629
- Arco-Tirado, J. L., Fernández-Martin, F. D., & Hoyle, R. H. (2018). Development and validation of a Spanish version of the Grit-S scale. *Frontiers* in Psychology, 9. doi: 10.3389/fpsyg.2018.00096
- Batres, I. (2011). The relationship of grit, subjective happiness and meaning in life on alternative education students' GPA and attendance. (Unpublished doctoral dissertation). University of La Verne, La Verne, CA.
- Bazelais, P., Lemay, D. J., & Doleck, T. (2016). How does grit impact college students' academic achievement in science? *European Journal of Science and Mathematics Education*, 4(1), 33–43.
- Berk, R. A. (2010). Top 10 "secret writing tips" to boost your productivity: Part 1. Journal of Faculty Development, 24(3), 47–50.
- Berk, R. A. (2011). Top 10 "secret writing tips" to boost your productivity: Part 2. Journal of Faculty Development, 25(1), 54–57.
- Berk, R. A. (2013). Top 10 flashpoints in student ratings and the evaluation of teaching: What faculty and administrators must know to protect themselves in employment decisions. Sterling, VA: Stylus Publishing.
- Berk, R. A. (2017a). Microaggressions trilogy: Part 1. Why do microaggressions matter? *Journal of Faculty Development*, 31(1), 63–73.
- Berk, R. A. (2017b). Microaggressions trilogy: Part 2. Microaggressions in the academic workplace. *Journal of Faculty Development*, 31(2), 69–83.
- Berk, R. A. (2017c). Microaggression Trilogy: Part 3. Microaggressions in the classroom. *Journal of Faculty Development*, 31(3), 95–110.
- Berk, R. A. (2018). Start spreading the news: Use multiple sources of evidence to evaluate teaching. *Journal of Faculty Development*, 32(1), 73–81.
- Blalock, D. V., Young, K. C., & Kleiman, E. M. (2015). Stability amidst turmoil: Grit buffers the effects of negative life events on suicidal ideation. *Psychiatry Research*, 228(3), 781–784. Retrieved from https://doi.org/10.1016/j.psychres.2015.04.041
- Bonfiglio, R. A. (2017, November-December). Grit is not enough. *About Campus*, 29–31. doi: 10.1002/abc.21304
- Bowman, N. A., Hill, P. L., Denson, N., & Bronkema, R. (2015). Keep on truckin' or stay the course? Exploring grit dimensions as differential predictors of educational achievement, satisfaction, and intentions. *Social Psychological and Personality Science*, 6(6), 639–645. Retrieved from https://doi.org/10.1177/1948550615574300
- Boyd, B., Caraway, S. J., & Niemann, Y. F. (Eds.). (2017). Surviving and thriving in academia: A guide for members of marginalized groups. Washington, DC: American Psychological Association. Retrieved from http://psyciq.apa.org/wp-content/uploads/2017/03/SURVIVING-AND-THRIVING-IN-ACADEMIA-A-Guide-for-Members-of-Marginalized-Groups.pdf
- Burkhart, R. A., Tholey, R. M., Guinto, D., Yeo, C. J., & Chojnacki, K. A. (2014). Grit: A marker of residents at risk for attrition? *Surgery*, 155(6), 1014–1022. doi: 10.1016/j.surg.2014.01.015
- Burnette, J. L., O'Boyle, E. H., VanEpps, E. M., Pollack, J. M., & Finkel, E. J. (2013). Mind-sets matter: A meta-analytic review of implicit theories and self-regulation. *Psychological Bulletin*, 139(3), 655–701. doi: 10.1037/a0029531
- Caplan, P. J. (1993). *Lifting a ton of feathers: A woman's guide to surviving in the academic world* (2nd ed.). Toronto, Canada: University of Toronto Press, Scholarly Publishing Division.
- Chang, W. (2014, December). *Grit and academic performance: Is being grittier better?* (Unpublished doctoral dissertation). University of Miami (Open Access Dissertations), Coral Gables, FL. Retrieved from http://scholarlyrepository.miami.edu/oa_dissertations/1306 OR https://scholarlyrepository.miami.edu/cgi/viewcontent. cgi?article=2319&context=oa_dissertations
- Christensen, R., & Knezek, G. (2014). Comparative measures of grit, tenacity and perseverance. *International Journal of Learning, Teaching* and Educational Research, 8(1), 16–30. Retrieved from https:// www.researchgate.net/publication/268207633_Comparative_Measures_of_Grit_Tenacity_and_Perseverance
- Credé, M., Tynan, M. C., & Harms, P. D. (2017). Much ado about grit: A meta-

analytic synthesis of the grit literature. *Journal of Personality & Social Psychology, 113*(3), 492–511. doi: 10.1037/pspp0000102. Retrieved from http://www.ippanetwork.org/wp-content/uploads/2016/06/ MuchAdoAboutGrit.pdf

- Datu, J. A. D. (2016). Sense of relatedness is linked to higher grit in a collectivist setting. *Personality and Individual Differences*, 105, 135–138. doi: 10.1016/j.paid.2016.09.039
- Datu, J. A. D., Valdez, J. P. M., & King, R. P. (2016a). Perseverance counts but consistency does not! Validating the Short Grit Scale in a collectivist setting. *Current Psychology*, 35(1), 121–130. Retrieved from https:// doi.org/10.1007/s12144-015-9374-2
- Datu, J. A. D., Valdez, J. P. M., & King, R. B. (2016b). The successful life of gritty students: Grit leads to optimal educational and wellbeing outcomes in a collectivist context. In R. B. King & A. B. I. Bernardo (Eds.), *The psychology of Asian learners: A festschrift in honor of David Watkins* (pp. 503–516). Singapore: Springer Asia. Retrieved from https://link.springer.com/chapter/10.1007% 2F978-981-287-576-1_31
- Datu, J. A. D., Valdez, J. P. M., King, R. B., & Eala, M. S. (in press). Grit is associated with lower depression via meaning in life among Filipino high school students. *Youth & Society.*
- Datu, J. A. D., Yuen, M., & Chen, G. (2017a). Development and validation of the Triarchic Model of Grit Scale (TMGS): Evidence from Filipino undergraduate students. *Personality and Individual Differences*, 114(1), 198–205. Retrieved from https://doi.org/10.1016/j. paid.2017.04.012Ge OR http://www.sciencedirect.com/science/article/ pii/S0191886917302623
- Datu, J. A. D., Yuen, M., & Chen, G. (2017b). Grit and determination: A review of literature with implications for theory and research. *Journal of Psychologists and Counsellors in Schools*, *27*(2), 168–176. doi: 10.1017/jgc.2016.2. Retrieved from https://www.cambridge.org/core/journals/journal-of-psychologists-and-counsellors-in-schools/article/grit-and-determination-a-review-of-literature-with-implications-for-theory-and-research/18D53CDF39D2C7F4D729FA01C885B884
 OR https://www.researchgate.net/publication/289976612_Grit_and_Determination_A_Review_of_Literature_With_Implications_for_Theory_and_Research
- DiMenichi, B. C., & Richmond, L. L. (2015). Reflecting on past failures leads to increased perseverance and sustained attention. *Journal of Cognitive Psychology*, 27(2), 180–193. Retrieved from http://dx.doi. org/10.1080/20445911.2014.995104
- Doidge, N. (2007). The brain that changes itself: Stories of personal triumph from the frontiers of brain science. New York, NY: Viking.
- Duckworth, A. L. (2013, May 9). Grit: The power of passion and perseverance. TED talk retrieved from https://youtu.be/H14bBuluwB8
- Duckworth, A. L. (2016a, May 22). Angela Duckworth with Amy Cuddy: The power of passion and perseverance. Retrieved from https://youtu. be/IGdKMNQrXmI
- Duckworth, A. L. (2016b). *GRIT: The power of passion and perseverance*. New York, NY: Scribner.
- Duckworth, A. L., & Eskreis-Winkler, L. (2015). Grit. In J. D. Wright (Ed.), International encyclopedia of the social and behavioral sciences (2nd ed., pp. 397–401). Oxford, UK: Elsevier.
- Duckworth, A. L., & Gross, J. J. (2014). Self-control and grit: Related but separable determinants of success. *Current Directions in Psychological Science*, 23(5), 319–325. doi: 10.1177/0963721414541462
- Duckworth, A. L., Kirby, T. A., Tsukayama, E., Berstein, H., & Ericsson, K. A. (2011). Deliberate practice spells success: Why grittier competitors triumph at the national spelling bee. *Social Psychological and Personality Science*, 2(2), 174–181. Retrieved from https://doi. org/10.1177/1948550610385872
- Duckworth, A. L., Peterson, C., Matthews, M. D., & Kelly, D. R. (2007a). Original grit scale (Grit-O). Retrieved from http://simplebetterenglish. com/wp-content/uploads/2016/01/Grit-Scale.pdf OR https://www. americanbar.org/content/dam/aba/marketing/women/grit_toolkit_test. authcheckdam.pdf
- Duckworth, A. L., Peterson, C., Matthews, M. D., & Kelly, D. R. (2007b). Grit: Perseverance and passion for long-term goals. *Journal of Per-*

sonality and Social Psychology, 92(6), 1087-1101. Retrieved from https://doi.org/10.1037/0022-3514.92.6.1087

- Duckworth, A. L., & Quinn, P. D. (2009a). Development and validation of the short grit scale (Grit-S) *Journal of Personality Assessment*, 91(2), 166–174. Retrieved from https://doi.org/10.1080/00223890802634290 OR https://globaled.gse.harvard.edu/files/geii/files/validation_grit_ scale_duckworth_jpa_m__figueroa-2.pdf
- Duckworth, A. L., & Quinn, P. D. (2009b). Short grit scale (Grit-S). Retrieved from http://www.sjdm.org/dmidi/files/Grit-8-item.pdf
- Duckworth, A. L., Quinn P. D., & Seligman, M. E. P. (2009). Positive predictors of teacher effectiveness. *Journal of Positive Psychology*, 19, 540–547.
- Dweck C. S. (2016). *Mindset: The new psychology of success*. New York, NY: Ballantine Books.
- Eskreis-Winkler, L., Gross, J. J., & Duckworth, A. L. (2016). Grit: Sustained self-regulation in the service of superordinate goals. In K. D. Vohs & R. F. Baumeister (Eds.), *Handbook of self-regulation: Research, theory* and applications (3rd ed., pp. 380–395). New York, NY: Guilford.
- Eskreis-Winkler, L., Shulman, E. P., Beal, S. A., Duckworth, A. L. (2014a). The grit effect: Predicting retention in the military, the workplace, school and marriage. *Frontiers in Psychology*, 5(36)1–12. doi: 10.3389/fpsyg.2014.00036. Retrieved from https://www.frontiersin. org/articles/10.3389/fpsyg.2014.00036/full
- Eskreis-Winkler, L., Shulman, E. P., & Duckworth, A. L. (2014b). Survivor mission: Do those who survive have a drive to thrive at work? *Journal* of *Positive Psychology*, 9(3), 209–218. doi:10.1080/17439760.2014. 888579. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/ PMC3987915/pdf/nihms-563963.pdf
- Fink, R. J., & Taekman, J. M. (2014). Grit and residency success a pilot study. Retrieved from http://www.asaabstracts.com/strands/asaabstracts/ abstract.htm:jsessionid=FA2832FAAB83570D90A800693F5CE99F ?year=2014&index=12&absnum=3307
- Fite, R. E., Lindeman, M. I. H., Rogers, A. P., Voyles, E., Durik, A. M. (2017). Knowing oneself and long-term goal pursuit: Relations among selfconcept clarity, conscientiousness, and grit. *Personality and Individual Differences*, 108, 191–194. Retrieved from https://doi.org/10.1016/j. paid.2016.12.008
- Fitzgerald, C. J., & Laurian-Fitzgerald, S. (2016). Helping students enhance their grit and growth mindsets. *Journal Plus Education/Educatia Plus*, 1452–1467.
- Flanagan, K. M., & Einarson, J. (2017). Gender, math confidence, and grit: Relationships with quantitative skills and performance in an undergraduate biology course. *CBE Life Sciences Education*, 16(3), ar47. doi: 10.1187/cbe.16-08-0253. Retrieved from https://www.ncbi.nlm. nih.gov/pmc/articles/PMC5589427/
- Fleckenstein, J., Schmidt, F. T. C., & Möller, J. (2014). Wer hat Biss? Beharrlichkeit und beständigesInteresse von lehramt studierenden: eine deutsche adaptation der 12-Item grit scale [Who's got grit? Perseverance and consistency of interest in pre-service teachers: A german adaptation of the 12-Item grit scale]. *Psychology Erziehung Unterricht* 61, 281–286. doi: 10.2378/peu2014.art22d
- Garcia, N. M. (2018, April 8). We regret to inform you... Diverse: Issues in Higher Education. Retrieved from http://diverseeducation.com/ article/113966/?utm_campaign=DIV1804%20DAILY%20NEWS-LETTER%20APR9&utm_medium=email&utm_source=Eloqua
- Goodwin, B., & Miller, K. (2013). Grit + talent = student success. *Educational Leadership*, 71(1), 74–76.
- Gorski, P. C. (2016) Poverty and the ideological imperative: A call to unhook from deficit and grit ideology and to strive for structural ideology in teacher education. *Journal of Education for Teaching*, 42(4), 378–386. doi: 10.1080/02607476.2016.1215546. Retrieved from http://dx.doi. org/10.1080/02607476.2016.1215546
- Guerrero, L. R., Dudovitz, R., Chung, P. J., Dosanjh, K. K., & Wong, M. D. (2016). Grit: A potential protective factor against substance use and other risk behaviors among Latino adolescents. *Academic Pediatrics*, *16*(3), 275–281. doi: 10.1016/j.acap.2015.12.016. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4821776/

- Gulliver, K. (2014, April 14). Removing the blindfold. *Inside Higher Ed.* Retrieved from https://www.insidehighered.com/views/2014/04/14/ essay-flaws-peer-review
- Gutgold, N. D., & Linse, A. R. (Eds.). (2016). Women in the academy: Learning from our diverse career pathways. Lanham, MD: Lexington Books.
- Gutiérrez y Muhs, G., Niemann, Y. F., González, C. G., & Harris, A. P. (Eds.). (2012). Presumed incompetent: The intersections of race and class for women in academia. Boulder, CO: Utah State University Press & University Press of Colorado.
- Halliday, L., Walker, A., Vig, S., Hines, J., & Brecknell, J. (2017). Grit and burnout in UK doctors: A cross-sectional study across specialties and stages of training. *Postgraduate Medical Journal*, 93(1101), 389–394. doi: 10.1136/postgradmedj-2015-133919.
- Halpern, F. (2016, April 21). 10 Tips for getting published. *Inside Higher Ed.* Retrieved from https://www.insidehighered.com/advice/2016/04/21/ advice-getting-published-scholarly-journal-essay
- Hammond, D. A. (2017). Grit: An important characteristic in learners. Currents in Pharmacy Teaching and Learning, 9(1), 1–3. Retrieved from https://doi.org/10.1016/j.cpt1.2016.08.048
- Hill, P. L., Burrow, A. L., & Bronk, K. C. (2016). Persevering with positivity and purpose: An examination of purpose commitment and positive affect as predictors of grit. *Journal of Happiness Studies*, 17(1), 257–269. doi:10.1007/s10902-014-9593-5
- Hochanadel, A., & Finamore, D. (2015). Fixed and growth mindset in education and how grit helps students persist in the face of adversity. *Journal of International Education Research*, 11(1), 47–50. Retrieved from http://ezproxy.liberty.edu/login?url=https://search-proquest-com. ezproxy.liberty.edu/doc view/1655539157?accountid=12085
- Hodges, N. J., Ford, P. R., Hendry, D. T., & Williams, A. M. (2017). Getting gritty about practice and success: Motivational characteristics of great performers. *Progress in Brain Research*, 232, 167–173. doi: 10.1016/ bs.pbr.2017.02.003
- Horn, D. (2017, August 30). Conversations about failure. *Inside Higher Ed.* Retrieved from https://www.insidehighered.com/blogs/universityvenus/conversations-about-failure
- Ion, A., Mindu, A., & Gorbănescua, A. (2017). Grit in the workplace: Hype or ripe? *Personality and Individual Differences*, 111, 163–168. Retrieved from https://doi.org/10.1016/j.paid.2017.02.012
- Ivcevic, Z., & Brackett, M. (2014). Predicting school success: Comparing conscientiousness, grit, and emotion regulation ability. *Journal* of Research in Personality, 52, 29–36. Retrieved from https://doi. org/10.1016/j.jrp.2014.06.005
- Jackson, D. F. (2018, February 15). Combating isolation through peer writing groups. Retrieved from https://www.insidehighered.com/blogs/ gradhacker/combating-isolation-through-peer-writing-groups
- John, O. P., & Srivastava, S. (1999). The big-five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (Vol. 2, pp. 102–138). New York, NY: Guilford Press.
- June, A. W. (2017, July 28). When a bid for tenure fails, this is what bouncing back looks like. *The Chronicle of Higher Education*. Retrieved from https://www.chronicle.com/article/When-a-Bid-for-Tenure-Fails/240795?cid=wsinglestory_hp_3
- Kelley, T, L. (1927). Interpretation of educational measurements. Yonkerson-Hudson, NY: World Book Company.
- Kench, D., Hazelhurst, S., & Otulaja, F. (2016). Grit and growth mindset among high school students in a computer programming project: A mixed methods study. In S. Gruner (Ed.), ICT education. SACLA. *Communications in computer and information science* (Vol. 642, pp. 187–194). Heidelberg, Germany: Springer International.
- Kim, J. (2018, April 8). Hamilton's online education rap battle #1. Inside Higher Ed. Retrieved from https://www.insidehighered.com/blogs/ technology-and-learning/hamiltons-online-education-rap-battle-1
- Kim, Y. J., & Lee, C. S. (2015). Effects of grit on the successful aging of the elderly in Korea. *Indian Journal of Science and Technology*, 8, 373–378. doi: 10.17485/ijst/2015/v8iS7/70421

- Kleiman, E. M., Adams, L. M., Kashdan, T. B., & Riskind, J. H. (2013). Gratitude and grit indirectly reduce risk of suicidal ideations by enhancing meaning in life: Evidence for a mediated moderation model. *Journal of Research in Personality*, 47, 539–546. doi: 10.1016/j.jrp.2013.04.007. Retrieved from http://www.sciencedirect.com/science/article/pii/ S0092656613000597?via%3Dihub
- Kreuter, N. (2014, September 14). Peer review and careers. *Inside Higher Ed.* Retrieved from https://www.insidehighered.com/advice/2014/09/15/ essay-art-peer-reviewing-and-why-it-matters-academic-careers
- Larkin, P., O'Connor, D., & Williams, E. M. (2016). Does grit influence sportspecific engagement and perceptual-cognitive expertise in elite youth soccer? *Journal of Applied Sport Psychology*, 28(2), 129–138. Retrieved from http://dx.doi.org/10.1080/10413200.2015.1085922
- Larson, K. R., & Bong, C. H. (2016). A tool for addressing construct identity in literature reviews and meta-analyses. *MIS(Management Information Systems) Quarterly* 40(3), 529–551, A1–A20. doi: 10.25300/ MISQ/2016/40.3.01. Retrieved from https://www.researchgate.net/ publication/287878556_A_Tool_for_Addressing_Construct_Identity in Literature Reviews and Meta-Analyses
- Li, J., Zhao, Y., Kong, F., Du, S., Yang, S., & Wang, S. (2016, October). Psychometric assessment of the short grit scale among Chinese adolescents. *Journal of Psychoeducational Assessment*, 1–6. doi: 10.1177/0734282916674858. Retrieved from https://www.researchgate.net/publication/309517796_Psychometric_Assessment_of_the_ Short Grit_Scale Among_Chinese_Adolescents
- Lucas, G. M., Gratch, J., Cheng, L., & Marsella, S. (2015). When the going gets tough: Grit predicts costly perseverance. *Journal of Research in Personality*, 59, 15–22. doi:10.1016/j.jrp.2015.08.004
- MacCann, C., & Roberts, R. (2010). Do time management, grit, and selfcontrol relate to academic achievement independently of conscientiousness? In R. Hicks (Ed.), *Personality and individual differences: Current directions* (pp. 79–90). Bowen Hills, QLD, AUS: Australian Academic Press.
- Maddi, S. R., Matthews, M. D., Kelly, D. R., Villarreal, B., & White, M. (2012). The role of hardiness and grit in predicting performance and retention of USMA cadets. *Military Psychology*, 24(1), 19–28.
- Marincovich, M. (1999). Using student feedback to improve teaching. In P. Seldin & Associates (Eds.), *Changing practices in evaluating teaching:* A practical guide to improved faculty performance and promotion/ tenure decisions (pp. 45–69). Bolton, MA: Anker.
- McCain, R. S., McKinley, N., Dempster, M., Campbell, W. J., & Kirk, S. J. (2017). A study of the relationship between resilience, burnout and coping strategies in doctors. *Postgraduate Medical Journal*. Retrieved from http://dx.doi.org/10.1136/postgradmedj-2016-134683
- Meriac, J. P., Slifka, J. S., & LaBat, L. R. (2015). Work ethic and grit: An examination of empirical redundancy *Personality and Individual Differences* 86, 401–405. Retrieved from https://doi.org/10.1016/j. paid.2015.07.009
- Meyer, B. B., Markgraf, K. M., & Gnacinski, S. L. (2017). Examining the merit of grit in women's soccer: Questions of theory, measurement, and application. *Journal of Applied Sport Psychology*, 29(3), 353–366. Retrieved from https://doi.org/10.1080/10413200.2016.1255277
- Meyers, K. (2012, February 6). Finding joy in failure. Gradhacker. Retrieved from http://www.gradhacker.org/2012/02/06/finding-joy-in-failure/
- Mills, M. (2017, December 31). Reconsidering grit as a two-edged sword for at-risk students. GCScored, 1(2). Retrieved from http://everypiecematters.com/jget/volume01-issue02/reconsidering-grit-as-a-two-edgedsword-for-at-risk-students.html OR https://scholarworks.iu.edu/ journals/index.php/joget/article/download/24390/30017
- Miranda, L-M. (2017, April 18) How Lin-Manuel Miranda gets things done. Grammarly Blog. Retrieved from https://www.grammarly.com/blog/ lin-manuel-miranda-productivity-tips/
- Misra, J., & Lundquist, J. (2017, January 12). How to slam-dunk a revision. Inside Higher Ed. Retrieved from https://www.insidehighered.com/ advice/2017/01/12/how-get-most-out-revising-your-publication-essay
- Moser, J. S., Schroder, H. S., Heeter, C., Moran, T. P., & Lee, Y. H. (2011). Mind your errors: Evidence for a neural mechanism linking growth mind-set to adaptive posterror adjustments. *Psychological Science*,

22(12), 1484-1489. doi: 10.1177/0956797611419520.

- Myers, C. A., Wang, C., Black, J. M., Bugescu, N., & Hoeft, F. (2016). The matter of motivation: Striatal resting-state connectivity is dissociable between grit and growth mindset. *Social Cognitive and Affective Neuroscience*, 11(10), 1521–1527. doi: 10.1093/scan/nsw065
- Nishikawa, K., Okugami, S., & Amemiya, T. (2015). Development of the Japanese grit scale (Grit-S). *Japanese Journal of Personality*, 24, 167–169. doi: 10.2132/personality.24.167
- Ockene, J. K., Milner, R. J., Thorndyke, L. E., Congdon, J., & Cain, J. M. (2017). Peers for promotion: Achieving academic advancement through facilitated peer mentoring. *Journal of Faculty Development*, 31(3), 5–14.
- Pate, A. N., Payakachat, N., Harrell, T. K., Pate, K. A., Caldwell, D. J., & Franks, A. M. (2017). Measurement of grit and correlation to student pharmacist academic performance. *American Journal of Pharmacy Education*, 81(6), 105. doi: 10.5688/ajpe816105. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5607715/
- Penny, A. R., & Coe, R. (2004). Effectiveness of consultation on student ratings feedback: A meta-analysis. *Review of Educational Research*, 74, 215–253.
- Perkins-Gough, D. (2013). The significance of grit: A conversation with Angela Lee Duckworth. *Educational Leadership*, 71(1), 14–20.
- Poorman, M. (2018, April 3). Responding to reviewers. *Inside Higher Ed.* Retrieved from https://www.insidehighered.com/blogs/gradhacker/ responding-reviewers
- Powell, K. (2013). Higher education: On the lookout for true grit. *Nature*, *504*(7480), 471–473.
- Ray, R., & Brown, J. (2015). Reassessing student potential for medical school success: Distance traveled, grit, and hardiness. *Military Medicine*, 180(4 Suppl), 138–141.
- Reed, J., Pritschet, B. L., & Cutton, D. M. (2013). Grit, conscientiousness, and the transtheoretical model of change for exercise behavior. *Journal of Health Psychology*, 18(5), 612–619. doi: 10.1177/1359105312451866.
- Reschly, A. L., & Christenson, S. L. (2012). Jingle, jangle, and conceptual haziness: Evolution and future directions of the engagement construct. In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.) Handbook of research on student engagement (pp. 3–19). New York, NY: Springer.
- Rimfeld, K., Kovas, Y., Dale, P. S., & Plomin, R. (2016). True grit and genetics: Predicting academic achievement from personality. *Journal of Personality and Social Psychology*, 111(5), 780–789. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4981570/
- Robertson-Kraft, C. & Duckworth, A. L. (2014). True grit: Trait-level perseverance and passion for long-term goals predicts effectiveness and retention among novice teachers. *Teachers College Record*, 116(3), 1–27. Retrieved from http://www.tcrecord.org/Content.asp?
- Robinson, W. L. (2015). Grit and demographic characteristics associated with nursing student course engagement (unpublished doctoral dissertation). Bloomington: Indiana University.
- Rockquemore, K. A., & Laszloffy, T. (2008). *The black academic's guide to winning tenure--Without losing your soul.* Boulder, CO: Lynne Rienner Publishers.
- Salles, A., Cohen, G. L., & Mueller, C. M. (2014). The relationship between grit and resident well-being. *American Journal of Surgery*, 207(2), 251–254. doi: 10.1016/j.amjsurg.2013.09.006
- Shaw, E. J. (2015, January). An SAT validity primer (College Board Research Report). New York, NY: College Board. Retrieved from https:// research.collegeboard.org/sites/default/files/publications/2015/6/ research-report-sat-validity-primer.pdf
- Shechtman, N., DeBarger, A. H., Dornsife, C., Rosier, S., & Yarnall, L. (2013). Promoting grit, tenacity, and perseverance: Critical factors for success in the 21st century. Washington, DC: U.S. Department of Education, Office of Educational Technology. Retrieved from http:// pgbovine.net/OET-Draft-Grit-Report-2-17-13.pdf
- Shih, A. F., & Maroongroge, S. (2017). The importance of grit in medical training. *Journal of Graduate Medical Education*, 9(3), 399. doi: 10.4300/JGME-D-16-00852.1

- Shives, K. (2014, October 30). Failing forward. *Inside Higher Ed.* Retrieved from https://www.insidehighered.com/blogs/gradhacker/failingforward
- Silvia, P. J., Eddington, K. M., Beaty, R. E., Nusbaum, E. C., Kwapil, T. R. (2013). Gritty people try harder: Grit and effort-related cardiac autonomic activity during an active coping challenge. *International Journal of Psychophysiology*, 88, 200–205. Retrieved from https:// doi.org/10.1016/j.ijpsycho.2013.04.007
- Singh, K., & Jha, S. D. (2008). Positive and negative affect, and grit as predictors of happiness and life satisfaction. *Journal of the Indian Academy* of Applied Psychology, 34, 40–45. Retrieved from http://medind.nic. in/jak/t08/s1/jakt08s1p40.pdf
- Sisk, V. F., Burgoyne, A. P., Sun, J., Butler, J. L., & Macnamara, B. N. (2018). To what extent and under which circumstances are growth mind-sets important to academic achievement? Two meta-analyses. *Psychological Science*. Retrieved from http://journals.sagepub.com/ doi/abs/10.1177/0956797617739704
- Smith, D. K., Martinez, A-M. D., Lanigan, J, Wells-Moses, K., & Koehler, C. (2018). Scholarly mentor program: Supporting faculty in the writing and publication process. *Journal of Faculty Development*, 32(1), 45–50.
- Stivers, J., & Cramer, S. F. (2017a). From rejected to accepted: Part 1— Strategies for revising and resubmitting a manuscript. *Journal of Faculty Development*, 31(1), 57–59.
- Stivers, J., & Cramer, S. F. (2017b). From rejected to accepted: Part 2—Preparing a rejected manuscript for a new journal. *Journal of Faculty Development*, 31(2), 63–65.
- Strayhorn T. L. (2014). What role does grit play in the academic success of Black male collegians at predominantly white institutions? *Journal* of African American Studies, 18(1), 1–10. Retrieved from https://doi. org/10.1007/s12111-012-9243-0
- Sue, D. W. (2010). *Microaggressions in everyday life: Race, gender, and sexual orientation*. Hoboken, NJ: Wiley.
- Suzuki, Y., Tamesue, D., Asahi, K., & Ishikawa, Y. (2015). Grit and work engagement: A cross-sectional study. *PLoS One*, 10(9). e0137501. Retrieved from https://doi.org/10.1371/journal.pone.0137501
- Tedesqui, R. A. B., & Young, B. W. (2018). Comparing the contribution of conscientiousness, self-control, and grit to key criteria of sport expertise development. *Psychology of Sport & Exercise*, 34, 110–118. doi: 10.1016/j.psychsport.2017.10.002
- Thorndike, E. (1904). An introduction to the theory of mental and social measurements. New York, NY: Science Press.
- Tucker-Drob, E. M., Briley, D. A., Engelhardt, L. E., Mann, F. D., & Harden, K. P. (2016). Genetically-mediated associations between measures of childhood character and academic achievement. *Journal of Personality* and Social Psychology, 111, 790–815. Retrieved from http://dx.doi. org/10.1037/pspp0000098
- Tyumeneva, Y., Kuzmina, J., & Kardanova, E. (2014). *IRT analysis and validation of the Grit Scale: A Russian investigation* (Working Paper BRP 24/PSY/2014). Higher School of Economics, National Research University. Retrieved from http://www.hse.ru/data/2014/11/19/11010 23281/24PSY2014.pdf
- Von Culin, K. R., Tsukayama, E., & Duckworth, A. L. (2014). Unpacking grit: Motivational correlates of perseverance and passion for longterm goals. *The Journal of Positive Psychology*, 9(4), 306–312. doi: 10.1080/17439760.2014.898320

- Walker, A., Hines, J., & Brecknell, J. (2016). Survival of the grittiest? Consultant surgeons are significantly grittier than their junior trainees. *Journal of Surgical Education*, 73(4), 730–734. doi: 10.1016/j. jsurg.2016.01.012
- Walker, C. O. (2017). Exploring the contributions of grit and personality in the prediction of self- and other-forgiveness. *Journal of Individual Differences*, 38(3), 196–202. Retrieved from http://dx.doi.org/10.1027/1614-0001/a000236
- Wang, S., Dai, J., Li, J., Wang, X., Chen, T., Yang, X., He, M., & Gong, Q. (2018). Neuroanatomical correlates of grit: Growth mindset mediates the association between gray matter structure and trait grit in late adolescence. *Human Brain Mapping*. doi: 10.1002/hbm.23944
- Wang, S., Zhou, M., Chen, T., Yang, X., Chen, G., Wang, M., & Gong, Q. (2017). Grit and the brain: Spontaneous activity of the dorsomedial prefrontal cortex mediates the relationship between the trait grit and academic performance. *Social Cognitive Affective Neuroscience*, 12(3), 452–460. doi: 10.1093/scan/nsw145. Retrieved from https://www. ncbi.nlm.nih.gov/pmc/articles/PMC5390743/
- Wolters, C. A., & Hussain, M. (2015). Investigating grit and its relations with college students' self-regulated learning and academic achievement. *Metacognition and Learning*, 10(3), 293–311. Retrieved from https:// doi.org/10.1007/s11409-014-9128-9
- Wyszyńska, P., Ponikiewska, K., Karaś, D., Najderska, M., & Rogoza, R. (2017). Psychometric properties of the Polish version of the short grit scale. *Polish Psychological Bulletin, 48*(2), 229–236. doi: 10.1515/ ppb-2017-0026. Retrieved from https://www.researchgate.net/publication/318011595_Psychometric_Properties_of_the_Polish_Version_of_the_Short_Grit_Scale
- Yeager, D. S., & Dweck, C. S. (2012). Mindsets that promote resilience: When students believe that personal characteristics can be developed. *Educational Psychologist*, 47(4), 302–314. doi: 10.1080/00461520.2012.722805
- Yoshitsu, J., & Nishikawa, K. (2013). Development of the Japanese Grit Scale [in Japanese]. Japanese Journal of Research on Emotion, 20, 12.

Ronald A. Berk, PhD, is professor emeritus, biostatistics and measurement, and former assistant dean for teaching at The Johns Hopkins University. Pertinent to this article, the author has published 130 journal articles in 87 different journals, but has accumulated enough negative reviews and rejection letters to wallpaper his office. He has also published 45 book chapters and 14 books, and has served on 7 editorial boards and as an occasional reviewer for 20 journals. Grit-wise, he is still a writer, reviewer, and a speaker, but he is patiently waiting for a position in Buckingham Palace. He can be contacted at rberk1@jhu.edu, www.ronberk.com, or www. linkedin.com/in/ronberk/.