HHS Public Access

Author manuscript

J Posit Psychol. Author manuscript; available in PMC 2019 August 09.

Published in final edited form as:

J Posit Psychol. 2014 ; 9(4): 306–312. doi:10.1080/17439760.2014.898320.

Unpacking grit: Motivational correlates of perseverance and passion for long-term goals

Katherine R. Von Culin[a,*], **Eli Tsukayama**[b], **Angela L. Duckworth**[b]

[a]Department of Psychology, Yale University, Box 208205, New Haven, CT 06520, USA

[b]Department of Psychology, Positive Psychology Center, The University of Pennsylvania, 3701 Market Street, Suite 200, Philadelphia, PA 19104, USA

Abstract

In two cross-sectional studies, we explored the motivational orientations correlates of the character strength of grit and its two component facets: perseverance of effort and consistency of interests over time. Specifically, we examined how individual differences in grit are explained by distinct approaches to pursuing happiness in life: *pleasure* in immediately hedonically positive activities, *meaning* in activities that serve a higher, altruistic purpose, and *engagement* in attention-absorbing activities. In both samples, grit demonstrated medium-sized associations with an orientation toward engagement, small-to-medium associations with an orientation toward meaning, and small-to-medium (inverse) associations with an orientation toward pleasure. These motivational orientations differentially related to the two facets of grit: pursuing engagement was more strongly associated with perseverance of effort, whereas pursuing pleasure was more strongly (inversely) associated with consistency of interests over time. Collectively, findings suggest that individual differences in grit may derive in part from differences in what makes people happy.

Keywords

happiness; meaning; engagement; pleasure; grit; motivation; character

The adage ‘talent will out’ suggests that achievement follows spontaneously, ineluctably from ability. However, systematic investigation of achievement suggests otherwise. In one of the earliest such attempts, Galton (1869) studied eminent figures in politics, sport, art, music, and science, concluding that high achievement in all these domains can be explained by a ‘triple event, of ability combined with zeal and with the capacity for hard labour’ (p. 38). In response to Galton’s treatise, his cousin Darwin (correspondence on 23 December 1869) replied:

> You have made a convert of an opponent in one sense, for I have always maintained that, excepting fools, men did not differ much in intellect, only in zeal and hard work; and I still think this is an eminently important difference. (pp. 3–4)

*Corresponding author. katherine.vonculin@yale.edu.

More recently, the personality trait of grit, defined as the tendency to pursue long-term goals with sustained zeal and hard work, has been shown to predict achievement in academic, vocational, and avocational domains (Duckworth, Peterson, Matthews, & Kelly, 2007; Duckworth & Quinn, 2009; Duckworth, Quinn, & Seligman, 2009). Grit has two related (r= .45) but distinct facets: effort, measured using items such as 'I am diligent' and 'Setbacks don't discourage me' and interest, measured using items such as 'I often set a goal but later choose to pursue a different one (reversed)' and 'I have been obsessed with a certain idea or project for a short time but later lost interest (reversed)' (Duckworth et al., 2007). In talent, grittier individuals are typically equal or inferior to their less gritty counterparts (Duckworth et al., 2007). If not talent, what, then, gives rise to grit? The current investigation explores the relationship between motivational dispositions – particularly approaches to happiness in life – and the individual differences of grit and its facets.

Whereas personality traits such as grit describe tendencies to act, think, and feel that are relatively stable across time and situation, motivational traits describe enduring individual differences in what people want and need (Roberts, Harms, Smith, Wood, & Webb, 2006). Like personality traits, individual differences in motivation are relatively stable over time and situation, describing durable desires, values, goals and preferences rather than momentary wants and needs. For some people, happiness may mean ending up with the most toys; for others, happiness has less to do with hedonic pleasure than with, say, improving the lives of other people or, alternatively, becoming completely absorbed in challenging activities (Seligman, 2002).

Recently, Borghans, Duckworth, Heckman, and ter Weel (2008) formalized a general model of personality that locates the antecedents of personality traits in motivation and, in addition, capacities, information, and opportunity. In brief, this model proposes that how people behave, think, and feel is determined by what they want, in conjunction with what they can do, what they believe, and their situation. With respect to grit, this model predicts that individual differences in the tendency to pursue long-term goals with passion and perseverance derive in part from individual differences in motivation. In this investigation, we test associations between grit and approaches to happiness in life using two samples of adults recruited via the Internet. While the cross-sectional design of both studies precludes inferences about causal direction, we are eager to take this first step toward unpacking the motivational correlates of grit.

Orientations to happiness

According to Seligman (2002), happiness is a multi-faceted construct comprising three qualitatively distinct kinds of well-being: *pleasure*, *engagement*, and *meaning*. Seligman argued that these approaches to happiness could be pursued separately or in combination, and that individuals differed in their motivation to pursue one path vs. others. Seligman's theoretical contribution led to an empirical project by Peterson, Park, and Seligman (2005), who drew upon both historical and contemporary theory and research to develop a self-report questionnaire assessing these three distinct orientations to happiness. In a convenience sample of adults recruited through the Internet, Peterson and colleagues found evidence 'that these orientations are distinguishable, that they are not incompatible and thus able to be

pursued simultaneously, and that each is individually associated with life satisfaction' (p. 36). Below we elaborate on each of these orientations and speculate as to how they might relate to grit and its facets.

Perhaps the most obvious approach to happiness in Peterson and colleagues' framework is pleasure. The sovereign principle of maximizing pleasant experience while minimizing displeasure was the central tenet of the ancient doctrine of hedonism. Among others, Freud (1920) observed that infants and children do not need to be taught the pleasure principle; rather, they spontaneously and instinctively seek out experiences that feel good in the moment and avoid those that feel bad. Such a disposition would seem necessary for survival and, indeed, the experience of frequent positive affect prospectively predicts physical health (Cohen & Pressman, 2006) and job performance (Lyubomirsky, King, & Diener, 2005).

Meaning, the second route to happiness, can be traced to the Aristotelian notion of eudaemonia. Eudaemonia entails identifying and cultivating virtue, thereby living in harmony with one's good (*eu*) inner spirit (*daemon*). While hedonistic pursuits benefit the self, eudaemonic projects benefit others. In particular, Peterson et al. (2005) specify that a meaningful life is lived with a self-conscious sense of service to other people or, indeed, 'humanity writ large' (p. 26). A sense of meaning is positively associated with overall well-being (Adams, 2000; Peterson et al., 2005; Zika & Chamberlain, 1992) and negatively associated with anxiety and depression (Ho, Cheung, & Cheung, 2010). Moreover, meaning seems more robustly related than pleasure to the subjective sense that one is fulfilling one's potential in life (Waterman, 1993).

Because pleasure and meaning have long been recognized by Western thinkers as separate avenues to happiness, the unique contribution of Peterson and colleagues' (2005) motivational framework is the addition of engagement as a third, distinct pursuit. Here, Peterson et al. took inspiration from contemporary research on flow (Csikszentmihalyi, 1991), the state of complete absorption and full mastery in highly challenging, highly skilled activities first documented through interviews with experts in diverse fields (e.g. athletes, artists, surgeons). Flow is characterized by concentration so intense as to preclude self-awareness. In fact, because attention to the activity is so complete, flow is characterized by a distorted sense of the passing of time and, despite after-the-fact summary judgments of enjoyment, oftentimes a lack of in-the-moment hedonic pleasure. The frequent experience of flow is associated with achievement, work satisfaction, and creativity (Csikszentmihalyi, 1997a; Nakamura & Csikszentmihalyi, 2009). This approach to happiness is tapped by items such as 'In choosing what to do, I always take into account whether I can lose myself in it' and 'I seek out situations that challenge my skills and abilities.'

Overview and hypotheses

How might orientations to happiness relate to grit and its two facets? Because novelty is instantaneously pleasurable (Zuckerman, 2007), we conjectured that individuals motivated to seek happiness through immediate pleasure would be *less* inclined to maintain abiding, focused interests over time. Our rationale for this hypothesis is simple. Any focused interest sustained over time will provide its share of peaks and valleys, of both pleasurable rewards

and unpleasant setbacks. Seekers of pleasure, who prefer to ‘eat dessert first,’ should be less likely to self-regulate and persist through unpleasant moments and more likely to switch focus to a novel, and more pleasurable pursuit. In contrast, seekers of meaning must develop their best skills and virtues over time and put them to work in the service of the greater good (Peterson et al., 2005). Since both facets of grit facilitate the achievement of this type of very long-term goal (Duckworth et al., 2007), we expected individuals motivated by meaning to be more consistent in both effort and interests over time.

Finally, we expected individuals motivated by engagement in flow-producing activities to be especially likely to sustain effort toward long-term goals. Our reasoning was as follows: Hours and hours of effortful deliberate practice (Ericsson, Krampe, & Tesch-Römer, 1993) are required to build skill. Highly developed skill in an activity, in turn, enables individuals to experience flow (Csikszentmihalyi, 1997b). We conjectured that people motivated to experience flow must, by necessity, be willing to dedicate themselves assiduously to deliberate practice, an activity which entails working where challenges actually exceed (rather than meet) skills and, unlike flow, is not particularly enjoyable in the moment (Duckworth, Kirby, Tsukayama, Berstein, & Ericsson, 2010). To enjoy moments of flow, therefore, it appears necessary to sustain many hours of deliberate practice. Thus, indirectly, a desire to experience flow may incline individuals toward diligence and hard work. As indirect evidence for this supposition, grittier spelling bee competitors complete more hours of deliberate practice despite enjoying it less than other kinds of practice activities (Duckworth et al., 2010). Relatedly, a prior study has found that perseverance in the face of adversity is strongly associated with an orientation toward engagement, moderately associated with an orientation toward meaning, and only weakly associated with an orientation toward pleasure (Peterson, Ruch, Beermann, Park, & Seligman, 2007).

The current investigation

In two online samples of adults, we tested the hypothesis that grittier individuals would pursue happiness primarily through engagement and meaning rather than through pleasure. Second, although we expected the two facets of grit to be related to each orientation to happiness, we also expected the two facets to demonstrate distinct associations with orientations to happiness. In particular, we expected the effort facet of grit to be most strongly associated with the pursuit of engagement and, to a lesser degree, with the pursuit of meaning. We also expected the interest facet of grit to be most strongly (inversely) associated with the pursuit of pleasure.

Study 1

Study 1 was a cross-sectional study of adults that examined associations between three different orientations to happiness and the personality trait of grit. Specifically, we examined the extent to which pursuing engagement, meaning, and pleasure in life differentially explain variance in grit and its two facets: effort and interest. In this study, we capitalized upon a very large database of adults who had visited www.authentichappiness.com, a noncommercial website that provides a wide range of free articles and self-report questionnaires on ‘positive emotions, strengths-based character, and healthy institutions.’

Similar samples of this website's users have been used in other recent empirical studies (e.g. Peterson, Park, Hall, & Seligman, 2009; Tsukayama, Duckworth, & Kim, 2012 see Study 2).

Method

Participants—Participants in Study 1 were the $N = 15,874$ adults (64% female; mean age 38.88 years; SD = 13.32) who voluntarily completed questionnaires on www.authentichappiness.com between January 2008 and December 2010. This website offers users free information about psychology research and access to a wide range of optional self-report questionnaires. When registering, participants reported their gender and age. For participants who completed a questionnaire more than once, we used only their first set of responses.

Procedure and measures—Participants completed the self-report measures from the www.authentichappiness.com's selection of questionnaires.

Grit—The Short Grit Scale (Grit-S) (Duckworth & Quinn, 2009) comprises eight items endorsed using a 5-point scale (1 = *not like me at all*, 5 = *very much like me*). Four items describe the tendency toward sustained effort for long-term goals, and four other items describe abiding, focused interests (as opposed to frequently changing goals) over time. The observed internal reliability was $\alpha = .82$ for the overall grit scale, and .70 and .83 for the effort and interest subscales, respectively.

Orientations to happiness—The orientations to happiness scale (Peterson et al., 2005) identifies the extent to which respondents are motivated to pursue pleasure, meaning, and engagement in life. Accordingly, the scale comprises three subscales, each including six items endorsed on a 5-point scale (1 = *not like me at all*, 5 = *very much like me*): engagement (e.g. 'In choosing what to do I always take into account whether I can lose myself in it'), meaning (e.g. 'In choosing what to do I always take into account whether it will benefit other people'), and pleasure (e.g. 'In choosing what to do I always take into account whether it will feel pleasurable'). The observed internal reliability for the pleasure, engagement, and meaning subscales was .80, .72, and .81, respectively.

Results and discussion

As shown in Table 1, the three orientations to happiness were intercorrelated (rs from .25 to .50, ps < .001), as were the two facets of grit, $r = .51$, $p < .001$. To estimate the unique effects of each orientation on grit and its facets when controlling for the others, we fit two path models. Both path models included the three orientations to happiness as predictors as well the demographic covariates of gender and age. In the first model, grit was the sole outcome, and in the second model, effort and interest facets of grit (whose disturbances were allowed to covary) were both included as outcomes. Because we fit just-identified models (i.e. the number of estimated parameters equaled the number of degrees of freedom), model fit statistics are not available for our baseline models. To test differences in coefficients across grit's factors (e.g. the relationship between engagement and effort compared to the relationship between engagement and interest), we constrained the coefficients to be equal and conducted nested model comparisons. Nested model comparison tests produce chi-

square statistics that indicate whether or not constraints are plausible. In our models, a significant chi-square difference test would indicate that the constrained parameters are significantly different.

As shown in Table 2, the first model revealed that individuals who pursue happiness through engagement were especially gritty (β =.34, p < .001), as were individuals who pursue happiness through meaning (β =.15, p < .001). In contrast, individuals who pursue happiness through pleasure were lower in grit (β = −.10, p < .001) than their counterparts. As expected, the association between engagement and grit was significantly greater than the association between meaning and grit (p < .001), which in turn was significantly greater than the association between pleasure and grit (p < .001).

In the second path model, we assessed relationships between orientations to happiness and the effort and interest facets of grit. See Table 2. As predicted, individuals who sought engagement [$\Delta\chi^2(1) = 269.92$, p < .001], and to a lesser degree, meaning [$\Delta\chi^2(1) = 116.43$, p < .001], were more likely to exert effort than to have relatively consistent interests. Also, those who did not seek pleasure were significantly more likely to have relatively consistent interests than to exert effort [$\Delta\chi^2(1) = 111.29$, p < .001].

Study 2

Findings in Study 1 supported our hypotheses. However, separate research has found that registered users of www.authentichappiness.com are, on average, more depressed and less happy than the general population (Parks, Della Porta, Pierce, Zilca, & Lyubomirsky, 2012). Considering the possible limitations in external validity for Study 1, we replicated our findings in Study 2 in a sample of adults recruited from MTurk, a crowdsourcing website typically used for projects unrelated to psychological research.

Method

Participants—Participants in Study 2 were N = 317 adults (63% female; mean age 31.59 years; SD = 11.06) recruited through Amazon.com's Mechanical Turk (MTurk) system. MTurk is a public website that connects users, known as workers, with task creators. MTurk workers have been shown to be both more representative of the US population than standard Internet samples and more diverse than samples of American college students typically employed in psychology research (Buhrmester, Kwang, & Gosling, 2011). Participants were existing members of MTurk who chose to participate in the study after reading an advertisement posted on the site. The ad was only visible to MTurk workers over the age of 18 residing in the United States and showing an MTurk task approval rate of at least 95%. Each participant was paid $1 for their participation.

Procedure and measures—Participants completed online versions of the Grit-S (observed α = .82 for overall grit, .68 and .84 for the effort and interest subscales, respectively). In the same session, participants completed the Orientations to Happiness Scale (observed α's = . 82, .60, and .81, for the pleasure, engagement, and meaning subscales, respectively).

Results and discussion

Participants in Study 2 scored lower on all measured constructs than participants in Study 1, *d*s from .30 to 1.42, *p*s < .001. However, consistent with Study 1, orientations to happiness were intercorrelated (*r*s from .20 to .33, *p*s < .001), as were the interest and effort facets of grit ($r = .47$, $p < .001$). See Table 2. We fit path models to estimate the unique contribution of each orientation to grit when controlling for the other two orientations. These models were identical to those in Study 1 and included the same covariates of age and gender.

Consistent with Study 1, individuals who seek engagement in life were grittier ($\beta = .32$, $p < .001$), as were those who seek meaning ($\beta = .19$, $p < .001$), but individuals who seek pleasure in life were lower in grit ($\beta = -.24$, $p < .001$). See Table 2. As predicted, the effects of engagement and meaning were greater than the effect of pleasure (*p*s < .001 for the difference in betas).

The second path model assessed the effect of the orientations to happiness on facets of grit. As shown in Table 2, individuals who seek engagement were more likely to exert effort than have relatively consistent interests [$\Delta\chi^2(1) = 16.88$, $p < .001$], but those who sought meaning were no more likely to exert effort than to have consistent interests [$\Delta\chi^2(1) = 1.58$, $p = .21$]. Those who did not seek pleasure were more likely to have relatively consistent interests than to exert effort [$\Delta\chi^2(1) = 16.82$, $p < .001$].

General discussion

The goal of this investigation was to examine the associations between approaches to happiness and grit. In two cross-sectional online studies of adults, grittier individuals were more likely than less gritty individuals to seek happiness through engagement, with medium-sized effects in both samples. Grittier individuals were also more likely to seek meaning, though these associations were only small-to-medium in magnitude. Notably, individuals who seek pleasure in life were less gritty than their more stoic peers, again with small-to-medium-sized effects. The positive association between grit and engagement was driven primarily by the grit facet of effort, whereas the inverse association between grit and pleasure was driven primarily by the grit facet of interest. In other words, an orientation toward engagement may promote grit by encouraging sustained effort over time, whereas an orientation toward pleasure may impede grit by discouraging sustained interests over time.

A prior study by Schueller and Seligman (2010) found that more educated and professional successful adults are more likely to endorse engagement and meaning, and less likely to endorse pleasure, as their preferred paths to happiness. While we did not assess educational or professional attainment in the current study, we speculate that grit might mediate the effect of this motivational configuration on achievement outcomes. This supposition would comport with prospective, longitudinal research demonstrating the predictive validity of grit for educational attainment and job performance (Duckworth et al., 2007, 2009). To confirm the mediational role of grit, longitudinal studies are needed in which motivation, grit, and achievement outcomes are measured, ideally at several different points in the life course in order to estimate cross-lagged relations among variables.

More generally, an important limitation of the current investigation is its cross-sectional design. While the theoretical model of Borghans et al. (2008) specifies that motivation contributes to differences in personality, it is altogether possible that the causal arrow runs in the opposite direction. The observed associations are equally consistent with the possibility that grit casually determines orientations to happiness. Future investigations would benefit from longitudinal and experimental designs, not only to clarify directional influence but also to rule out third-variable confounds and to explore potential interaction effects (cf. Winter, John, Steward, Klohen, & Duncan, 1998). In such future work, assessments of orientations to happiness should, in our view, be carefully worded such that all items clearly indicate wants and desires rather than behaviors. As an astute reviewer of this manuscript pointed out, most of the items on the Orientations to Happiness scale describe what individuals choose or want to do, but some items could be interpreted as describing what they usually do. This shortcoming of the scale can and should be rectified in future research.

It is also worth acknowledging that our findings are necessarily limited in their external validity. While results were consistent across two samples, including nearly 16,000 adults who sought out online psychological questionnaires (in Study 1) and more than three hundred adults recruited from a crowdsourcing website (in Study 2), neither of these studies employed randomized sampling methods. Moreover, neither study recruited individuals in especially challenging achievement domains, a hallmark of prior grit research. Thus, additional research is needed to test whether the orientation toward engagement and meaning rather than pleasure characterizes the grittiest and accomplished individuals in society.

Although the internal reliability coefficients for the grit effort subscale (.68) and Orientations to Happiness engagement subscale (.60) in Study 2 were lower than conventional rules of thumb for reliability (i.e. <.70), we do not see this as a fatal limitation for the following reasons. First, we obtained the same general pattern of results in Studies 1 and 2. Second, the Orientations to Happiness engagement subscale is based on the theory of flow, which is a complex construct that combines levels of challenge, of skill, and the combination of challenge and skill level (Shernoff, Csikszentmihalyi, Shneider, & Shernoff, 2003). Although this complex structure necessarily lowers the internal consistency of measures of flow, such measures, including the Orientations to Happiness engagement subscale, remain valid. Third, Cronbach's α is a lower bound estimate of reliability, suggesting that the true value may be higher. Finally, in a recent study on the differential reliability and validity of facet scales from the NEO Inventories, McCrae and colleagues (2011) found that internal consistency was virtually unrelated to validity and concluded, '"Internal consistency of scales … appears to be of limited utility for evaluating the potential validity of developed scales" (p. 28). This may be, at least in part, because "Higher reliability may be attained by narrowness of content that can limit predictive validity" (p. 29)'.

Finally, in a revised version of his original theory, Seligman (2011) added to pleasure, engagement, and meaning two additional approaches to happiness: relationships and accomplishment. Certainly, positive relationships with friends and family have been widely documented as determinant of well-being across all ages and cultures (Diener & Biswas-

Diener, 2008). Likewise, accomplishment has been shown to predict and to be predicted by happiness (Lyubomirsky et al., 2005). Unfortunately, to our knowledge, a comprehensive questionnaire including all five of Seligman's (2011) proposed approaches to happiness has yet to be validated. When such a measure does become available, further research may reveal even stronger associations between grit and, for instance, need for accomplishment than any observed in the current investigation.

In sum, our findings suggest that the pursuit of engagement and meaning, as opposed to pleasure, comprise motivational correlates of grit. Further, whereas the desire for meaning and purpose in life seems to contribute to both facets of grit, the drive toward engagement and flow seems in particular to facilitate sustained effort over time, whereas the drive toward immediate pleasure seems in particular to undermine sustained, focused interests over time. This more nuanced understanding may someday inform interventions that increase grit by targeting the particular motivations underlying perseverance of effort and consistency of interest.

Acknowledgments

Funding

This research was supported by the National Institute on Aging (Duckworth, PI) [grant number K01-AG033182].

References

Adams TBB (2000). Conceptualization and measurement of the spiritual and psychological dimensions of wellness in a college population. Journal of American College Health, 48, 165–173. doi:10.1080/07448480009595692 [PubMed: 10650734]

Borghans L, Duckworth AL, Heckman JJ, & ter Weel B (2008). The economics and psychology of personality traits. Journal of Human Resources, 43, 972–1059.

Buhrmester M, Kwang T, & Gosling SD (2011). Amazon's Mechanical Turk: A new source of inexpensive, yet high-quality, data? Perspectives on Psychological Science, 6, 3–5. doi: 10.1177/1745691610393980 [PubMed: 26162106]

Cohen S, & Pressman SD (2006). Positive affect and health. Current Directions in Psychological Science, 15, 122–125. doi:10.1111/j.0963-7214.2006.00420.x

Csikszentmihalyi M (1991). Flow. New York, NY: HarperCollins.

Csikszentmihalyi M (1997a). Creativity: Flow and the psychology of discovery and invention. New York, NY: HarperCollins.

Csikszentmihalyi M (1997b). Finding flow: The psychology of engagement with everyday life. New York, NY: Basic Books.

Darwin CR (1869, 12 23). Letter to Francis Galton Darwin Correspondence Project (Letter 7302), Cambridge.

Diener E, & Biswas-Diener R (2008). Happiness: Unlocking the mysteries of psychological wealth. Malden, MA: Blackwell.

Duckworth AL, Kirby T, Tsukayama E, Berstein H, & Ericsson K (2010). Deliberate practice spells success: Why grittier competitors triumph at the National Spelling Bee. Social Psychological and Personality Science, 2, 174–181.

Duckworth AL, Peterson C, Matthews MD, & Kelly DR (2007). Grit: Perseverance and passion for long-term goals. Journal of Personality and Social Psychology, 92, 1087–1101. doi: 10.1037/0022-3514.92.6.1087 [PubMed: 17547490]

Duckworth AL, & Quinn PD (2009). Development and validation of the Short Grit Scale (Grit-S). Journal of Personality Assessment, 91, 166–174. doi:10.1080/00223890802634290 [PubMed: 19205937]

Duckworth AL, Quinn PD, & Seligman MEP (2009). Positive predictors of teacher effectiveness. The Journal of Positive Psychology, 4, 540–547. doi:10.1080/17439760903157232

Ericsson KA, Krampe RT, & Tesch-Römer C (1993). The role of deliberate practice in the acquisition of expert performance. Psychological Review, 100, 363–406.

Freud S (1920). A general introduction to psychoanalysis. New York, NY: W. W. Norton & Company.

Galton F (1869). Hereditary genius: An inquiry into its laws and consequences (p. 84). London: Macmillan.

Ho MY, Cheung FM, & Cheung SF (2010). The role of meaning in life and optimism in promoting well-being. Personality and Individual Differences, 48, 658–663. doi:10.1016/j.paid.2010.01.008

Lyubomirsky S, King L, & Diener E (2005). The benefits of frequent positive affect: Does happiness lead to success? Psychological Bulletin, 131, 803–855. doi:10.1037/0033-2909.131.6.803 [PubMed: 16351326]

McCrae RR, Kurtz JE, Yamagata S, & Terracciano A (2011). Internal consistency, retest reliability, and their implications for personality scale validity. Personality and Social Psychology Review, 15, 28–50. [PubMed: 20435807]

Nakamura J, & Csikszentmihalyi M (2009). Flow theory and research In Snyder CR & Lopez SJ (Eds.), Oxford handbook of positive psychology, oxford library of psychology (2nd ed.). (pp. 195–206). New York, NY: Oxford University Press.

Parks AC, Della Porta MD, Pierce RS, Zilca R, & Lyubomirsky S (2012). Pursuing happiness in everyday life: The characteristics and behaviors of online happiness seekers. Emotion, 12, 1222–1234. doi:10.1037/a0028587 [PubMed: 22642345]

Peterson C, Park N, Hall N, & Seligman ME (2009). Zest and work. Journal of Organizational Behavior, 30, 161–172.

Peterson C, Park N, & Seligman MEP (2005). Orientations to happiness and life satisfaction: The full life versus the empty life. Journal of Happiness Studies, 6, 25–41. doi:10.1007/s10902-004-1278-z

Peterson C, Ruch W, Beermann U, Park N, & Seligman MEP (2007). Strengths of character, orientations to happiness, and life satisfaction. The Journal of Positive Psychology, 2, 149–156. doi:10.1080/17439760701228938

Roberts B, Harms P, Smith J, Wood D, & Webb M (2006). Using multiple methods in personality psychology In Eid M & Diener E (Eds.), Handbook of multimethod measurement in psychology (pp. 321–335). Washington, DC: American Psychological Association.

Schueller SM, & Seligman MEP (2010). Pursuit of pleasure, engagement, and meaning: Relationships to subjective and objective measures of well-being. The Journal of Positive Psychology, 5, 253–263. doi:10.1080/17439761003794130

Seligman ME (2002). Authentic happiness. New York, NY: Free Press.

Seligman ME (2011). Flourish. New York, NY: Simon & Schuster.

Shernoff DJ, Csikszentmihalyi M, Shneider B, & Shernoff ES (2003). Student engagement in high school classrooms from the perspective of flow theory. School Psychology Quarterly, 18, 158–176.

Tsukayama E, Duckworth AL, & Kim B (2012). Resisting everything except temptation: Evidence and an explanation for domain-specific impulsivity. European Journal of Personality, 26, 318–334.

Waterman AS (1993). Two conceptions of happiness: Contrasts of personal expressiveness (eudaimonia) and hedonic enjoyment. Journal of Personality and Social Psychology, 64, 678–691. doi:10.1037/0022-3514.64.4.678

Winter DG, John OP, Stewart AJ, Klohnen EC, & Duncan LE (1998). Traits and motives: Toward an integration of two traditions in personality research. Psychological Review, 105, 230–250. [PubMed: 9577238]

Zika S, & Chamberlain K (1992). On the relation between meaning in life and psychological well-being. British Journal of Psychology, 83, 133–145. [PubMed: 1559144]

Zuckerman M (2007). Sensation seeking and risky behavior. Washington, DC: American Psychological Association.

Table 1.

Summary statistics and bivariate correlations in Studies 1 and 2.

	Study 1								Study 2	
Variable	***M***	**SD**	**1**	**2**	**3**	**4**	**5**	**6**	***M***	**SD**
1. Grit	3.55	.78	–	.83***	.89***	.32***	.25***	−.17**	2.83	.66
2. Effort	3.62	.81	.84***	–	.47***	.45***	.32***	.01	2.47	.68
3. Interest	3.48	.99	.90***	.51***	–	.13*	.13*	−.27***	3.18	.85
4. Engagement	3.16	.76	.39***	.46***	.24***	–	.33***	.24***	2.89	.55
5. Meaning	3.47	.96	.30***	.37***	.18***	.50***	–	.20***	2.66	.79
6. Pleasure	3.25	.87	.04***	.13***	−.04***	.34***	.25***	–	2.72	.71

Notes: Results from Study 1 (N = 15,874) reported below the diagonal and results from Study 2 (N = 317) reported above the diagonal.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 2.

Summary of standardized path coefficients from models predicting grit, effort, and interest.

	Grit		Effort		Interest	
Predictor	**Study 1**	**Study 2**	**Study 1**	**Study 2**	**Study 1**	**Study 2**
Engagement	.34***	.32***	.38***[a]	.41***[a]	.23***	.17**
Meaning	.15***	.19***	.19***[a]	.20***	.09***	.13*
Pleasure	−.10***	−.24***	−.04***	−.07	−.13***[a]	−.31***[a]

Note: Study 1 $N = 15{,}874$; Study 2 $N = 317$. Control variables included gender and age in both studies.

[a] In comparison to other grit subscale, significantly stronger relationship.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

J Posit Psychol. Author manuscript; available in PMC 2019 August 09.