

Personality, Grit and Sporting Achievement

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Abstract: *The role of personality traits in sporting achievement has generated interests among sport researchers and practitioners, however, studies on the relationship between sporting achievement and personality traits have yielded no clear evidence of a cause - effect relationship. Instead, psychological skills and attitudes have shown evidence of influence over sporting achievement. This study explored the possibility that grit, which is a behavioural element, would be more related to sporting achievement than personality traits. In total, 142 sport men & women (Mean age = 24.7 S= 3.5) completed the Grit Scale (Duckworth, Matthews & Kelly 2007) and the BFI-10 (Rammstedt & John, 2007), the level at which participant play in their sports was used as a measure of achievement. Multivariate analysis of variance (MANOVA) revealed that Grit was a predictor of sporting achievement while personality traits showed no significant differences. The result also indicated that age differences may affect the levels of Extraversion, Conscientiousness, and Agreeableness of the Big Five Personality traits as well as the Ambition sub-scale of the Grit scale.*

Keywords: *Sporting achievement, Personality traits, Grit, BFI-10, Multivariate analysis of variance*

I. Introduction

Efforts to unearth the factors that underpin sporting achievement have been focused on linking personality traits to sporting success from the early years of sport psychology (Raglin, 2001). Even before the inception of scientific research in sports, people held the believe that successful athletes have a set of common personality traits that predisposes them to sport participation as evidenced in early reports (i.e. Dudley, 1888; Cooper, 1969), since then, researchers have continued to show interests in the role of personality in sport performance (Allen *et al.*, 2011). However, the beginning of empirical studies of the relationship between personality traits and sporting achievement was characterized by criticism of the idea that personality traits are crucial to sport performance. For instance, early researchers (e.g. Morgan, 1978, 1985; Eysenck, 1992; Smith, 1997; Singer *et al.*, 1977; Martins, 1975) were opposed to this idea mainly because they argued that such conclusions were unscientifically reached. More recently, other researchers (i.e. Aidman, 2007; Gee *et al.*, 2011; Allen *et al.*, 2011) expressed disbelief in the use of traits to predict sporting achievement because of the methodological shortfalls and low predictive power associated with personality studies. Alternatively, they argued in favour of psychological skills and attitudes. For instance, Eagleton and colleagues (2007) employed the Eysenck Personality Inventory to measure Extraversion and Neuroticism scores of undergraduate team & individual sport participants, and nonparticipants (N=90, M age =20.3 years) and found that team sport participants were more Extraverted than both individual sports participants and nonparticipants, however, this study only involved undergraduate students, and hence, may not reveal the exact circumstances among the entire sporting populations (Allen *et al.*, 2011), again, the study only compared participants against non-participants and does not differentiate among success rates. Similarly, Sheard & Golby (2010) measured the 3Cs (commitment, control & challenge) that constitute the hardiness construct among 16 different sports participants competing at international, national, county/provincial, or club/regional levels (N=1566; M age =21.7 years; SD=4.2), the authors reported that the 3Cs are correlates of levels of sport participation, however, the matter of whether the 3Cs are personality traits or elements of behaviour is open to further investigation.

In another development, research has investigated the effects of psychological skills and attitudes (as opposed to personality traits) on sporting achievement and interestingly, there is sufficient evidence to suggest that psychological skills and attitudes can differentiate between levels of sporting achievement (Baker and Côté, 2003; Schraw & Ericsson, 2005; Ward & colleagues, 2007; Duckworth, Matthews & Kelly 2007). One example of such psychological skills and attitudes is grit, which is defined as perseverance and passion for long-term goals (Duckworth *et al.*, 2007). While personality traits refer to innate talents or abilities, grittiness entails working strenuously towards challenges, maintaining one's efforts and interests over a long period (years) despite failure, adversity, and plateaus in progress. A gritty person is predisposed to take achievement as a marathon using his/her stamina as the source of motivation, while, less gritty individuals are deterred from achievement by disappointments, delay in getting to one's goal or boredom. Though relatively new in sport psychology literature, research has suggested that grit may account for some of the missing ingredients in the studies of the psychological factors of sporting performance and achievement (Duckworth, Peterson, Matthews

& Kelly, 2007). The aged studies of personality traits as the predictors of achievement have at best leave researchers with a continuous search for a missing link between research findings and the variance in sporting achievement. In the past, Researchers have invested huge efforts into discovering the factors that are responsible for differences in sporting achievement with the invention of various tests of personality traits and intelligence quotient, however, one area that seems lacking in these efforts is whether or not individuals utilize their ability to it limits through sustained efforts and consistent hard work towards achieving a particular goal (Kelly, 2007).

Therefore, while personality traits may endow an individual with some innate abilities or talents, merely possessing such talents would not lead to sporting success, whereas, a gritty person (with or without innate talents) will acquire expertise in his or her sport through sustained efforts, commitment, and motivation towards deliberate practice. Previous studies have shown that personality differences and cognitive abilities only account for very little percentage in the variance in human achievement (Terman and Oden, 1947), Terman & Oden have reported in their study of mentally gifted children that the most successful individuals only scored 5 points higher than the least successful people in intelligence quotient. While this study is not intended to dispute that people who get to the peak of their career with records of exceptional performances share some common characteristics, it is equally important to stress that innate talents or traits have to be complemented by consistent hard work if success is to be achieved. For instance, successful athletes are believed to possess some innate capabilities that enable them to outperform their competitors but beside these innate abilities and talents, athletes have always recognized hard work and deliberate practice as playing significant roles in their success story. According to Duckworth *et al.* (2007) gritty individuals defile all setbacks and difficulties they encounter on the pathway to success by being consistently committed to the achievement of their goals. After an unsuccessful effort, they motivate themselves and continue to pursue of their goals. Whereas, people who are not, or less gritty would simply change their goals after some unsuccessful efforts. This argument explains why some people are more accomplished than their peers of equal abilities, similar traits and talents. Though the hypothesis that grit will be the factor responsible for a good percentage of the variance in performance and achievement is still new and has yet to be tested in sporting context, Duckworth and colleagues (2007) reported that grit accounts for an average of 40% in success in other performance domains, such as, educational achievement among adults, graded point average among undergraduates students, retention in two classes of United States Military Academy, and Ranking in the National Spelling Bee. The authors also reported no relationship between grit and intelligence quotient but opined that grit is correlated with conscientiousness in the Big Five Personality model. Interestingly, grit was argued to predict success more accurately than both intelligence quotient and the Big Five Conscientiousness; hence, this study is aimed at investigating whether grit and not personality traits would predict success in sporting context.

II. Methods

Participants

Participants included 142 individuals (84 males and 58 females) ranging in age from 18 to 88 years ($M = 24.79$, $SD = 9.995$). One hundred and twenty one of the participants were students' athletes (undergraduate & postgraduate) of Edinburgh Napier University, while the remaining 21 played their different sports at club levels. Among the participants, 8 were athletes, 2 were playing golf, 4 boxers, 4 gymnasts, 5 dancers, 10 swimmers, 4 rock climbers, 1 played squash, 13 cricketers, 31 footballers, 1 played Judo, 8 rugby players, 4 hockey players, 10 basket ballers, 3 netball players, 5 cyclists, 1 played aussie rules, 3 tennis players, 3 martial artists, 4 cheer loaders, 4 mountain bikers, 5 weight lifters, 2 marathoners, 1 badminton player, 1 played skiing, and 4 bowlers. 64 of the participants were classified as high achievers in their sports while the remaining 60 were classified as low achievers, classifications were based on the level at which participants played in their sports (international, regional/county, club, recreation etc.). The high achievers' group included participant who had represented their clubs, county or region at either national or international levels or both, while the low achievers' group comprised of the participants who were yet to participate at either national or international competitions.

Measures

Grittiness was assessed using the Grit Scale (Duckworth *et al.*, 2007). The Grit Scale is a 17-item inventory developed by Duckworth, Matthews & Kelly (2007) to measure two factors of grit: consistency of interests (CI) and perseverance of efforts (PE). Answer to the 17 items followed a 5-point scale of Very much like me, mostly like me, somewhat like me, not much like me and Not at all like me. The Grit Scale has demonstrated adequate levels of validity and reliability across a range of diverse populations (e.g. Duckworth, Peterson, Matthews & Kelly, 2007)

Personality traits were assessed using the BFI-10 Scales (Rammstedt & John, 2007). The BFI-10 is an abbreviated version of the 44-item Big Five Inventory developed to make personality assessment more participant friendly and less time consuming. This tool assesses the Big-Five personality traits of neuroticism,

extraversion, conscientiousness, agreeableness, and openness to new experience. Responses to the items follow a 5-point scale ranging from 1 (disagree strongly) to 5 (agree strongly). The BFI-10 has been shown to retain significant levels reliability and validity (Rammstedt & John, 2007); this is in addition to its participants' friendliness and time management efficiency.

Procedure

Ethics approval was received from a University ethics committee. All participants gave informed consent prior to the questionnaires being supplied to them, general information on the study were given to the participants both orally and in writing, they were assured of confidentiality, and that their responses will be fully anonymous. Participants were well instructed on how to complete the questionnaires and they were encouraged to ask questions if anything was unclear to them. The questionnaires took between 15-20 minutes to complete.

Statistical Analysis

A multivariate analysis of variance (MANOVA) was performed using the Big-Five personality traits (extraversion, neuroticism, conscientiousness, agreeableness & openness to new experience), and the three factors of grit (perseverance, consistency & ambition) as dependent variables. Independent variables included level of sporting achievement (high or low), age (18-22, 23-30 or 31-88), and gender (male or female).

III. Results

The grit scale revealed a significant difference between high and low sport achievers in consistency of interests $F(1) = 4.822, P < .05$, and perseverance $F(1) = 4.671, P < .05$, while there was no significant difference between the two groups in ambition $F(1) = 2.990, P > .05$, there were no significant differences between high and low sport achievers in the Big-Five personality factors; extraversion $F(1) = .190, P > .05$, agreeableness $F(1) = .412, P > .05$, conscientiousness $F(1) = 2.200, P > .05$, neuroticism $F(1) = 2.548, P > .05$, and openness to new experience $F(1) = .631, P > .05$.

On the relationship between grit, personality and the age of participants, the result revealed no significant differences among the three age groups studied in consistency and perseverance sub-scales of the Grit questionnaire, while there was a significant difference between the age groups in the ambition sub-scale ($p = .007$). The result also indicated significant difference between age groups and the levels of extraversion ($p = .048$), conscientiousness ($p = .004$) and agreeableness ($p = .006$) sub-scales of the Big Five personality inventory. Therefore, the study revealed that the level of ambitiousness increased with age among the participants. On the personality scale, extraversion was observed to increase with age while the levels of agreeableness and conscientiousness were shown to decrease as the athletes advance in age.

Finally, on the relationship between gender, personality traits and grittiness, there were significant differences between gender and Agreeableness of the Big Five personality scale, and the Ambition sub-scale of the Grit scale.

IV. Discussion

The above finding is consistent with the researcher's hypothesis that grittiness and not personality traits will be a determining factor of sporting achievement; the finding also supports Duckworth *et al.* (2007) who concluded that grittiness could differentiate between levels of achievement. Similarly, the current finding is in accord with several other studies (i.e. Holt & Dunn, 2004; Ward & colleagues, 2007; Baker and Côté, 2003; Van Yperen, 2009), which showed that psychological skills/attitudes and other behavioral factors differentiate successful athletes from their less successful counterparts. Van Yperen (2009) for instance identify psychological behaviors including goal commitment, engagement in problem-focused coping behaviours and seeking social support among factors that predict career success. These factors are similar to both consistency and perseverance sub-scales of grit which is shown in the current finding to differentiate between high and low achievers. Consistency refer to the tendency not to shift attention and efforts away from a long-term goal but remaining committed to the achievement of the set goals by working hard and enduring the difficulties associated with training by adopting the necessary coping behaviour as noted by Van Yperen (2009) to overcome the challenges of development.

In the same vein, perseverance is that ability and willingness not to allow setbacks and failure to deter you from pursuing your goals, the lack of this quality make people to simply change their focus by pursuing alternative goals, which may require lesser efforts and commitment to achieve. It not surprising that the result of this study indicate no difference between high and low achievers in their levels of ambitiousness, this is because it is reasonable to expect that everyone taking part in sport aspires to get to the top, however, the difference between those who succeed and those who do not is in how they pursue such ambitions. The current finding further supports the long existing theory that personality traits do not play any significant role in achievement (e.g., Elshout & Veenman, 1992; Harris, 1940; Neisser *et al.*, 1966; Sternberg & Kaufman, 1998). However, this

finding is at variance with some earlier findings which suggest that the Big-Five personality traits are important predictors of sporting achievements, for instance, Kilkcaldy, (1982) concluded that top athletes are more extraverted and less agreeable compared to less successful athletes and nonathletic population. This position was later supported by Barrick and Mount (1991) who concluded that Conscientiousness (one of the Big-Five personality factors) is highly related to achievement using job performance as a case study. Similarly, a body of literature had considered the Big-Five personality factors as a framework for many contemporary studies of the relationship between personality traits and success (Goldberg, 1990; John & Srivastava, 1999; McCrae & Costa, 1987), however, Duckworth and colleagues (2007) had concluded that at best, any personality trait may not account for more than 2% of variance in achievement, the authors had suggested that instead grittiness was more related to achievement. However, it is important to stress that caution should be taken in interpreting the current finding regarding the relationship between age and grittiness; this is because there is need for more investigations to establish the pattern of relationship between the two variables.

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