The winner takes it all: The mediating role of competitive orientations in the Dark Triad and sport task performance relationship

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Abstract

The Dark Triad traits (Machiavellianism, narcissism, and psychopathy) are prevalent in athletes. However, currently, we do not know whether the Dark Triad confers any competitive advantages in sport. To address this issue, the present study had two aims. First, to examine whether the Dark Triad predicted task performance in a basketball free throw task. Second, to examine whether competitive orientations explained (i.e., mediated) this relationship. A sample of 189 athletes (mean age = 19.11 years) completed measures of the Dark Triad, competitive orientations, and task performance (basketball free throw task). Regression analyses indicated that the Dark Triad predicted better task performance. In addition, mediation analyses indicated that the Dark Triad-performance relationship was explained by both hypercompetitive and self-developmental competitive orientations. The present study provides the first evidence that the Dark Triad may lead to better task performance in sport, and that this effect may be driven by athletes' competitive orientations.

Keywords: Personality; Machiavellianism; Narcissism; Psychopathy; Competition Orientation; Basketball Free Throw Performance.

Introduction

Personality traits play in an important role in athlete success (Allen, Greenless, & Jones, 2013). This includes direct and indirect effects on sports performance (Allen et al., 2013). Recent reviews suggests that personality may also form an integral part of elite athlete development (Hardy et al., 2017). In this regard, one particularly relevant set of personality traits is the Dark Triad (Paulhus & Williams, 2002). So far, research has only examined the prevalence of these traits in athletes, with athletes reporting higher levels of the Dark Triad than non-athletes (Vaughan, Madigan, Carter, & Nicholls, 2019). However, it is also possible that these traits may confer performance advantages in sport (Hardy et al., 2017). Based on this proposition, the aim of the present study was to provide a first examination of the relationships between all aspects of the Dark Triad and performance in sport. In doing so, and based on previous work (e.g., Madigan, Stoeber, Culley, Passfield, & Hill, 2018), we focused on sport task performance. We also sought to test the explanatory role of competitive orientations in this relationship.

The Dark Triad

The Dark Triad are the three separate, but interrelated traits of narcissism, Machiavellianism, and psychopathy. In context of the Dark Triad, narcissism reflects grandiosity, entitlement, and superiority (rather than vulnerability; Maples, Lamkin, & Miller, 2014), Machiavellianism is defined by manipulation, self-service, and deceit, and psychopathy is indicative of an impulsive, unempathetic, and anxious individual (Paulhus & Williams, 2002). Taken together, the Dark Triad describes a disagreeable, callous, and antagonistic character (Furnham, Richards, Rangel, & Jones, 2014). As a consequence, these traits are typically considered maladaptive. For example, they show positive correlations with interpersonal aggression, amoral decision-making, and difficulty maintaining relationships (Muris, Merckelbach, Otgaar, & Meijer, 2017).

However, high levels of the Dark Triad may confer some advantages (Vaughan, Carter, Cockroft & Maggiorini, 2018). For example, they may enable individuals to get ahead and achieve personal goals by disregarding others' objectives and emotions, increasing chances of individual success (Carter, Montanaro, Linney, & Campbell, 2015). They may also be beneficial in situations where personal or professional gains are possible through deceit and/or self-interest (Furnham, Richards, & Paulhus, 2013; Furnham et al., 2014). Indeed, the Dark Triad appears to have many implications for individuals across a range of contexts such as work, education, and health (e.g., Jonason, Baughman, Carter, & Parker, 2015; O'Boyle, Forsyth, Banks, & McDaniel, 2012). In this regard, the Dark Triad has been proposed as an important predictor of workplace behaviour (e.g., counter productivity), educational behaviour (e.g., plagiarism offences), and interpersonal behaviour (e.g., favourable first impressions) emphasising its application as a predictor of real-world outcomes (Furnham et al., 2013; 2014).

As separate constructs, Machiavellianism and psychopathy have received relatively little attention in sport – particularly their association with performance. Cruickshank and Collins (2015) suggested that elements of Machiavellianism may be advantageous for elite team leaders and that athletes may report lower levels of psychoticism (conceptually similar to psychopathy; Nia & Besharat 2010). However, narcissism has been the subject of much interest (Roberts, Woodman, & Sedikides, 2018). This is perhaps due to its relevance to competitive outcomes where opportunities for personal glory and self-enhancement are evident (Roberts et al., 2019).

Although in its infancy, research is beginning to examine the Dark Triad in sport. For example, research has shown that athletes differ on levels of the Dark Triad, with men scoring higher than women, individual sport athletes scoring higher than team sport athletes, and those with greater expertise scoring higher than those with less expertise (Vaughan et al.,

2019). Athletes with higher levels of narcissism, Machiavellianism and psychopathy also possess greater mental toughness (a disposition characterized by unshakeable belief, coping effectively with pressure and adversity, being resilient, thriving on pressure, being committed, and having superior concentration skills; Vaughan, Hanna, & Breslin, 2018) and engage in more physical activity (Vaughan et al., 2018).[1] Moreover, Manley, Jarukasemthawee, and Pisitsungkagarn, (2019) reported that agentic narcissism (i.e., admiration, associated with positive outcomes such as assertiveness) was positively related and antagonistic narcissism (i.e., rivalry, associated with negative outcomes such as arrogance) negatively related to both athlete self-report and coaches ratings of mental toughness in a sample of elite athletes. The Dark Triad may also be particularly relevant for athletes when it comes to doing whatever it takes to win (Nicholls, Madigan, Backhouse, & Levy, 2017). Specifically, aspects of the Dark Triad predict favourable attitudes towards doping and actual cheating behaviour in athletes (Nicholls et al., 2017; 2019). Taken together, this work suggests that athletes high in Dark Triad traits may be mentally tough and highly competitive in their pursuit of winning at all costs (Petróczi, 2007). In line with this thinking, many studies have examined how the Dark Triad traits (individually and combined) are related to performance in a range of contexts.

The Dark Triad and Performance

Research suggests that performance domains (e.g., sport) constitute the ideal laboratory for studying narcissism as they provide an opportunity for self-enhancement and affirmation of grandiose beliefs, which are central tenets for those high in narcissism (Roberts

[1]It should be noted that the psychometric properties of the Mental Toughness Questionnaire have been subject to criticism with athletes (Vaughan, Hanna, & Breslin, 2018).

et al., 2018). A recent review by Roberts et al. (2018) suggests that the relationship between narcissism and performance is fully dependent on the perceived opportunity for glory. For example, the relationship between narcissism and performance is usually only positive when self-enhancement is present and either null or negative when self-enhancement is absent (Roberts et al., 2019). Moreover, athletes high in narcissism perform better when perceived pressure is high but not when pressure is low. It is possible that those high in narcissism exert greater effort when the opportunity to promote self-beliefs and dominate others is presented. Research outside of sport suggests an agency-communion model of narcissism differentiating between those who satisfy grandiose, self-esteem, entitlement, and power beliefs in agentic and communal domains (Gebauer, Sedikides, Verplanken, & Maio, 2012). Thus, those high in narcissism may perform better to satisfy their motives across contexts. However, work outside of sport also suggests that those high in narcissism do not perform better than those low in narcissism (e.g., supervisor ratings of work performance; Judge et al., 2006). It is therefore possible that narcissism on its own is not a strong predictor of performance, but rather energises certain behaviours (e.g., competitiveness) which manifest and facilitate performance only in competitive scenarios (Roberts et al., 2018; 2019).

Research has reported a complex relationship between psychopathy and performance. For example, Kosson (1996) reported no differences on attention task accuracy between those who score high or low in psychopathy. Blickle and Schütte (2017) reported that higher psychopathy combined with a high educational level predicts task performance, whereas when combined with a low educational level it predicts counterproductive work behaviours. However, other research has shown a positive relationship between psychopathy and task performance (e.g., decision-making via the Wisconsin Card Sorting Task; Pera-Guardiola et al., 2016). In addition, research has shown a positive relationship between psychoticism (conceptually similar to psychopathy) and creativity (Abraham, Windmann, Daum, &

Güntürkün, 2005). When considered in relation to competitiveness, Ten Brinke, Black, Porter, and Carney (2015) reported that higher psychopathy improved performance in competitive negotiations but hindered performance in cooperative negotiations. Similar to agentic narcissism, the relationship between psychopathy and performance appears context dependent. For example, situations that require less socialisation or more agency appear primed for those with higher levels of psychopathy. That is, those who score higher on agentic narcissism place higher value on agency (i.e., getting ahead) akin to those who score higher on psychopathy who also value getting a head of others (Rauthmann & Kolar, 2013). This aligns to the power motive whereby facets such as aggression, fearlessness, risk-taking and other central tenets of psychopathy seem to facilitate performance (Blickle & Schütte, 2017).

Machiavellianism has been linked to job performance. For example, Machiavellianism has been shown to be negatively related to the quality of job performance, but positively related to competitiveness (O'Boyle et al., 2012). Zettler and Solga (2013) suggest that the relationship between Machiavellianism and job performance may be curvilinear. That is, both low and high levels result in poorer performance compared to moderate levels of Machiavellianism. This curvilinear association may be potentially explained by a balancing between the benefits and detriments of Machiavellianism (i.e., both high and low levels of Machiavellianism have positives and negatives for job performance). That is, high Machiavellianism can increase job performance over the short-term with favourable first impressions or increased social reputation, but such benefits are offset by manipulative and cynical interpersonal interactions over the long-term (Smith & Webster, 2017; Zettler & Solga, 2013). However, other work suggests a positive relationship between Machiavellianism and aspects of job performance that benefit from social undermining (i.e., any behaviour aimed at impeding an individual’s interpersonal relationships, success, and

reputation, such as playing down a co-workers success in work; Smith & Webster, 2017). It is therefore likely that the relationship between Machiavellianism and performance is also situation specific, for instance, it may be positive in the short-term but negative in the long-term (Furnham et al., 2013; 2014).

The relationship between the Dark Triad and performance is clearly complex. Research seems to suggest that the observed context is key to positive versus negative performance effects. Trait activation theory supports this proposition (Tett & Gutterman, 2000). This theory describes an interactionist perspective whereby a trait becomes activated given trait-relevant situational cues (situation relevance such as competition), resulting in the activation of trait-specific behaviours. In context of the Dark Triad, this may include an increased desire to win in order to satisfy core motives such as social dominance (Jones & Figueredo, 2013). Geukes, Mesagno, Hanrahan, and Kellmann (2012) examined the application of this theoretical approach in sport and found that athletes high in narcissism and self-consciousness excel in high pressure performance situations and that these characteristics are irrelevant in low pressure situations. However, despite theoretical and empirical reasons to do so, no study has yet examined the relationship between the Dark Triad traits together and sport task performance. A sport task with observers provides ideal context to examine these traits as it provides opportunity to satisfy motives linked to core aspects of the Dark Triad such as grandiosity, self-interest, and disregard via displaying better performance than others (Jones & Paulhus, 2014; Paulhus & Williams, 2002). As a consequence, the first aim of the present study was to do this. As a second goal of the present study, given its importance to the Dark Triad and performance link outside of sport, we also sought to determine whether competitive orientations may explain this relationship.

Competitive Orientations

Competitiveness is important for sports performance (Ryckman, Thornton, & Gold, 2009). Researchers have differentiated multiple competitive dimensions or orientations. In context of the present study, those that reflect facilitative aspects of competitive behaviour are particularly relevant. According to Orosz and colleagues (2018), athletes can be driven towards a hypercompetitive (a strong outcome orientation in which the end justifies the means) or self-developmental (focused on self-improvement and not concerned with others/rivals) approach towards competition.[2] In line with the broader literature examining competitiveness (Orosz et al., 2018), initial research suggest that the facets of competitiveness are differentially related to constructs important for sports performance. For example, self-developmental competition is positively related to achievement motivation and positivity and hypercompetitiveness is positively related to achievement motivation and high standards of perfectionism (e.g., Hill, Mallinson-Howard, & Jowett, 2018; Lochbaum & Gottardy, 2015). Also, the approach-based orientations such as hypercompetitive and self-developmental competitiveness have been linked with personality traits such as extroversion and neuroticism which have overlap with the Dark Triad traits (Furnham et al., 2014; Lochbaum, Jean-Noel, Pinar, & Gilson, 2017).

The Dark Triad, Competitive Orientations, and Performance

Research adopting evolutionary theory has suggested that individuals high in the Dark Triad would adopt competitive attitudes and behaviours in order to negate drawbacks

[2]The model by Orosz et al. (2018) proposes four orientations, however, because the Dark Triad does not align well with avoidant or amotivated competitive behaviours from a theoretical perspective such as those common with the broader Achievement Goal Theory (Nicholls, 1989) or existing empirical work (Lochbaum et al., 2017) these were not the focus of the present study.

associated with higher levels of Dark Triad traits (e.g., poorer mental health; Jonason et al., 2015). This idea was supported in a large sample of women where composite and subscale scores of the Dark Triad positively predicted both sexual competition (e.g., self-promotion) and hypercompetitiveness (Carter et al., 2015). Similarly, composite and subscale scores of narcissism, Machiavellianism and psychopathy were positively related to a competitive psychological climate in a large sample of German employees (Spurk & Hirschi, 2018). In addition, Jonason, Li, and Teicher (2010) reported a positive relationship between a composite Dark Triad score and competitiveness. These authors suggest that individuals high in the Dark Triad use their agentic nature to get ahead by demonstrating assertiveness, competitiveness, independence, courageousness, and mastery in achieving their goals while being admired and respected, but not necessarily liked by others (Jones & Figueredo, 2013). These factors may also be tied to successful sports performance (Roberts et al., 2018).

The Present Study

To date, no study has examined the links between the Dark Triad, competitive orientations, and sports performance. Consequently, the present study had two aims. First, based on previous work in this area (e.g., Madigan et al., 2018), we examined whether the Dark Triad predicted task performance in sport. Second, we examined whether competitive orientations explained (i.e., mediated) this relationship. Based on theory and previous research, we expected all three Dark Triad traits (narcissism, Machiavellianism, and psychopathy) to positively predict sport task performance. We also expected hypercompetitive and self-developmental competitive orientations would explain the relationship between the Dark Triad and sport task performance (see Figure 1).

Methods

Participants

Participants were 189 athletes from a range of basketball teams in the United Kingdom (M_{age} = 19.11 ± SD = 1.62; 58.38% male). All athletes were regularly involved in weekly training and competition for at least 8 years. Power analysis using MedPower (Kenny, 2017) indicated that 160 participants were required for detecting a moderate indirect effect (partial r for all paths = .25, alpha = .05 and power = .80).

Materials

Dark Triad. The 27-item Short Dark Triad questionnaire (SD3; Jones & Paulhus, 2014) was used to assess Dark Triad traits. Nine items each assess; narcissism (e.g., "People see me as a natural leader"), Machiavellianism (e.g., "I like to use clever manipulation to get my way"), and psychopathy (e.g., "It's true that I can be mean to others"), on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Research has provided support for the reliability and validity of this scale (Vaughan et al., 2019).

Competitive Orientations. The 12-item Multidimensional Competitive Orientation Inventory (MCOI; Orosz et al., 2018) was used to assess competitive orientations. We focused on hypercompetitive (3 items; e.g., "The most important thing is winning, no matter what") and self-developmental orientations (3 items; e.g., "I enjoy competition as it allows me to discover my abilities") subscales. Athletes responded on a 6-point Likert scale, ranging from 1 (not true to me at all) to 6 (completely true to me). Research has provided support for the reliability and validity of this scale (Orosz et al., 2018).

Sports Task Performance. The basketball free-throw task (i.e., unopposed shots at the basketball hoop from behind the centre of the free throw line) used by Madigan and colleagues (2018) was used as a measure of task performance. Participants performed 10 series of two shots with a 30-second rest period between each set to simulate the sport-specific conditions of a basketball free-throw. Scoring followed Madigan et al. (2018); three points for scoring without the ball touching the rim, two points for scoring with the ball

touching the rim, one point for having the ball hit the rim but not score, and zero points for a shot that missed and did not touch the rim. With this, participants could score between 0 to 60 points with higher points indicating better performance.[3]

Procedure

Participants were recruited via sports coaches as gatekeepers. The study was approved by a university ethics committee in the United Kingdom. Before participants began, they read information sheets and provided informed consent. Participants first completed the SD3 and MCOI followed by the sport performance task. Together this procedure lasted approximately 20 minutes. Data was collated and entered into SPSS (version 26.0) for preliminary analysis.

Design and Analysis

Only a small number of cases (1.1%) were missing, therefore, ipsatised item replacement was used (i.e., replaced with the mean; Tabachnick & Fidell, 2007). A Box's *M* test assessing differences between the variance–covariance matrices of male and female participants was non-significant and thus analyses were collapsed across gender. In addition, age did not correlate significantly with any study variable and therefore was not entered as a covariate. Multivariate skewness and kurtosis coefficients (Muthén & Muthén, 2017) indicated no departure from normality ($p > .05$). Internal consistency was acceptable in all variables ($\Omega > .70$; Dunn, Baguley, & Brunsden, 2014))

Multiple Regression

[3]We also calculated an alternative score based only on successful shots which awarded one point for scoring without the ball touching the rim and any other variation or miss received a score of 0 resulting in a range of 0 to 20.

To examine the direct relationship between the Dark Triad and sports task performance, we ran a multiple regression analysis whereby each of the Dark Triad traits were entered simultaneously as predictors of task performance.

Path Analysis

Path analysis with MPlus 7.4 (Muthén & Muthén, 2017) was used to examine the mediating role of competitive orientations on the Dark Triad-performance relationship. The analysis was conducted using robust maximum likelihood estimation (Muthén & Muthén, 2017). To evaluate model fit, several fit indices in combination with the likelihood ratio statistic were adopted. A model was deemed acceptable if the Root Mean Square Error of Approximation (RMSEA) with 95% Confidence Intervals (CI) and Standardised Root Mean Residual (SRMR) is .06 or less, and each of the Comparative Fit Index (CFI) and Tucker Lewis Index (TLI) are .90 or greater (Hu & Bentler, 1999). To assess mediation effects, bias-corrected bootstrapping was used. The mean of 1000 estimated indirect effects was calculated by creating 1000 bootstrap samples via random sampling with replacement. If the 95% confidence intervals (CI) of the indirect effect did not include zero, a significant mediation effect was inferred.

Results

Preliminary Analyses

Descriptive statistics and bivariate correlations were inspected (see Table 1). In line with previous research, the Dark Triad and competitive orientations showed large positive inter-correlations. All three Dark Triad traits were positively correlated with hypercompetitive and self-developmental competitive orientations and task performance reporting a range of small to medium effects. In addition, hypercompetitive and self-developmental competitive orientations were positively correlated with task performance

with medium effect sizes. The correlations with successful performance were positive but generally smaller in size.

Multiple Regression

A multiple regression analysis controlling for the overlap between the Dark Triad traits indicated that Narcissism (β = .21, $p < .01$), Machiavellianism (β = .17, $p < .01$), and psychopathy (β = .14, $p < .01$) explained 19% of the variance in sport task performance (R^2 = .193, $p < .01$). All three Dark Triad traits were positively related to sport task performance with narcissism reporting the largest contribution.

Path Analysis

Our hypothesised model provided acceptable model fit: χ^2 (9) = 14.33, $p < .01$, RMSEA = .051 (CI = .047-.055), SRMR = .049, TLI = .919, CFI = .911. Parameter estimates indicated all paths were significant suggesting that hypercompetitive and self-developmental competitive orientations may mediate the relationship between the Dark Triad and sport performance. Specifically, Machiavellianism (β = .10, *SE* = .09, $p < .01$), narcissism (β = .14, *SE* = .05, $p < .01$), and psychopathy (β = .08, *SE* = .07, $p < .01$) were positively related to a hypercompetitive competitive orientation. Machiavellianism (β = .11, *SE* = .06, $p < .01$), narcissism (β = .15, *SE* = .03, $p < .01$), and psychopathy (β = .09, *SE* = .05, $p < .01$) were also positively related to a self-developmental competitive orientation. A hypercompetitive (β = .13, *SE* = .08, $p < .01$) and self-developmental competitive orientation (β = .16, *SE* = .03, $p < .01$) were both positive predictors of task performance (see Figure 1).

Mediation Analysis

To test mediation, we examined the indirect effects from our model. These effects can be found in Table 2. All indirect effects were significant. These findings suggest that the effects of the Dark Triad on task performance occurred via hypercompetitive and self-developmental competitive orientations.

Discussion

The present study had two aims. First, to examine the relationship between the Dark Triad and sport task performance. Second, to determine whether competitive orientations mediated this relationship. The findings supported our expectations and align to previous work examining the relationships between the Dark Triad, competitiveness and performance (Blickle & Schütte, 2017; Guekes et al., 2012; Jonason et al., 2010; Roberts et al., 2018; Smith & Webster, 2017). All Dark Triad traits positively predicted task performance and these relationships were mediated by hypercompetitive and self-developmental competitive orientations.

Dark Triad and Sport Task Performance

Previous work has suggested that the relationship between the Dark Triad and performance is complex (Blickle & Schütte, 2017; Judge et al., 2006; Zettler & Solga, 2013). The present findings however indicate that narcissism, Machiavellianism and psychopathy are all positively associated with sport task performance. Explanations for this clearer relationship may lie with the nature and context of the task we employed (Roberts et al., 2018; 2019). For example, previous work has mainly used cognitive measures that examine specific aspects of an individual's functioning (e.g., decision-making via the Wisconsin Card Sorting Task; Pera-Guardiola et al., 2016) or highly subjective tasks consisting of several components (e.g., business negotiations with others; Ten Brinke et al., 2015). Cognitive measures will largely ignore context and other situation-based tasks may be too complex. The basketball free throw task, while context specific, provides a more objective assessment of motor performance – a key individual differences factor which has important implications for athlete performance (Roberts et al., 2018). Taken together, and for the first time, we show that the Dark Triad traits together, may confer an advantage for sport task performance.

Mediating Role of Competitive Orientations

We also found certain competitive orientations to explain the relationship between the Dark Triad and sport task performance. This finding is supported by previous work. First, it is well documented that higher levels of narcissism coincide with processes such as self-improvement akin to self-developmental competitive orientations (Roberts et al., 2018; Ryckman et al., 2009). Second, those who participate in competitive sport are typically more self-confident, goal-orientated, and competitive, which correlate highly with the Dark Triad and successful sports performance (Furnham et al., 2013; 2014; Nicholls et al., 2017; 2019; Vaughan et al., 2018; 2019). It is possible that advantageous competitive orientations (i.e., hypercompetitive and self-developmental) counteract other aspects associated with the Dark Triad which may impede performance in other contexts (Jonason et al., 2015). Likewise, these advantageous competitive orientations may energise other aspects associated with the Dark Triad which improve performance (e.g., fearless dispositions, agentic strategies, and increased effort; Jonason et al., 2015).

An inspection of the path coefficients from our model indicates that a self-developmental competitive orientation showed the strongest relationship with better performance (Franken et al., 1994; Petróczi, 2007; Ryckman et al., 2009). This is in line with theoretical propositions which suggest that a focus on self-enhancement is likely to have beneficial performance effects (Orosz et al., 2018). We note that self-improvement may be one way to gain self-enhancement (as improving one's abilities means that one is likely to be able to better demonstrate ones talents to others), and this may be the case for those high in Dark Triad traits. The paths from psychopathy however showed the weakest relationships with better performance. It is possible that compared to narcissism and Machiavellianism, those high in psychopathy may be less inclined to perform basketball free throws due to greater impulsivity and lower concentration (Paulhus & Williams, 2002; Kosson, 1996). Nonetheless, all paths suggested performance benefits for the Dark Triad traits.

It is too early to claim whether the Dark Triad are related to performance benefits in sport, but if so, researchers and practitioners need to take into account that some aspects of personality that are associated with interpersonal costs may confer some performance benefits. For the Dark Triad, such costs may relate to an inclination to cheat, take drugs, and be antisocial (Nicholls et al., 2019). Exploring the circumstances under which these more negative attributes emerge is crucial for a full understanding of the Dark Triad in sport. Future research may wish to provide athletes high in the Dark Triad with an opportunity to cheat so as to help understand these relationships further (see Nicholls et al., 2019, for a recent example).

Limitations and Future Direction

The present study has several limitations. First, the study took place during a single session. This limits prospective claims regarding the effect of the Dark Triad on sport task performance. Future research should therefore seek to examine these relationships over a longer time scale (e.g., competitive season). Second, although novel in a sport context, recent work has extended the Dark Triad framework to include other traits such as sadism (Buckels, Jones, & Paulhus, 2013). Therefore, future work may wish to extend and assimilate this line of enquiry into the sport context. Third, future research could further test trait activation of the Dark Triad traits by manipulating the level of competition in the study to include additional influences (e.g., financial award; Tett & Gutterman, 2000). Fourth, the present study focused exclusively on basketball players and a basketball-specific task. Consequently, it is important to determine if the present findings replicate in other sports and using other performance tasks. The initial findings we report will hopefully spur such research. Furthermore, previous research indicates that the Dark Triad and indeed performance may differ as a function of expertise (e.g., Vaughan et al., 2019). Future research with athletes should examine for the possible moderating role expertise. In addition, alternate mechanisms

may explain the present findings. For example, the findings suggest that trait competitiveness alone may not be sufficient to predict sport-related outcomes. Future work should therefore examine other factors and traits that may interact with competitiveness, this work could include avoidance competitive orientations. We also note that the observed effects could be considered small. However, small effects can be meaningful if they accumulate over time, as may be the case with the Dark Triad traits (e.g., Hardy et al., 2017; Jonason et al., 2015; Muris et al., 2017).

Conclusion

We provide the first examination of the relationship between all aspects of the Dark Triad and sport task performance. In this regard, we found that the Dark Triad predicted better performance. In addition, we found that this effect was explained by athletes' competitive orientations.

References

Abraham, A., Windmann, S., Daum, I., & Güntürkün, O. (2005). Conceptual expansion and creative imagery as a function of psychoticism. *Consciousness and Cognition, 14*(3), 520-534.

Allen, M. S., Greenlees, I., & Jones, M. V. (2013). Personality in sport: A comprehensive review. *International Review of Sport and Exercise Psychology,* 6, 184–208.

Blickle, G., & Schütte, N. (2017). Trait psychopathy, task performance, and counterproductive work behavior directed toward the organization. *Personality and Individual Differences, 109*, 225-231.

Buckels, E. E., Jones, D. N., & Paulhus, D. L. (2013). Behavioral confirmation of everyday sadism. *Psychological Science, 24*(11), 2201-2209.

Carter, G. L., Montanaro, Z., Linney, C., & Campbell, A. C. (2015). Women's sexual competition and the Dark Triad. *Personality and Individual Differences, 74*, 275-279.

Cruickshank, A., & Collins, D. (2015). Illuminating and applying 'the dark side': Insights from elite team leaders. *Journal of Applied Sport Psychology, 27*(3), 249–267.

Dunn, T. J., Baguley, T., & Brunsden, V. (2014). From alpha to omega: A practical solution to the pervasive problem of internal consistency estimation. *British Journal of Psychology, 105*, 399–412.

Franken, R. E., Hill, R., & Kierstead, J. (1994). Sport interest as predicted by the personality measures of competitiveness, mastery, instrumentality, expressivity, and sensation seeking. *Personality and Individual Differences, 17*(4), 467-476.

Furnham, A., Richards, S. C., & Paulhus, D. L. (2013). The Dark Triad of Personality: A 10 Year Review. *Social and Personality Psychology Compass, 7*(3), 199-216.

Furnham, A., Richards, S., Rangel, L., & Jones, D. N. (2014). Measuring malevolence: Quantitative issues surrounding the Dark Triad of personality. *Personality and Individual Differences, 67*, 114-121.

Gebauer, J. E., Sedikides, C., Verplanken, B., & Maio, G. R. (2012). Communal narcissism. *Journal of Personality and Social Psychology, 103*(5), 854-878.

Geukes, K., Mesagno, C., Hanrahan, S. J., & Kellmann, M. (2012). Testing an interactionist perspective on the relationship between personality traits and performance under public pressure. *Psychology of Sport and Exercise, 13*(3), 243–250.

Hardy, L., Barlow, M., Evans, L., Rees, T., Woodman, T., & Warr, C. (2017). Great British medalists: Psychosocial biographies of super-elite and elite athletes from Olympic sports. In *Progress in Brain Research* (Vol. 232, pp. 1-119). Elsevier.

Hill, A. P., Mallinson-Howard, S. H., & Jowett, G. E. (2018). Multidimensional perfectionism in sport: A meta-analytical review. *Sport, Exercise, and Performance Psychology, 7*(3), 235.

Hu, L. T., & Bentler, P. M. (1999). Cut off criteria for fit indexes in covariance structural analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal, 6*, 1-55.

Jonason, P. K., Baughman, H. M., Carter, G. L., & Parker, P. (2015). Dorian Gray without his portrait: Psychological, social, and physical health costs associated with the Dark Triad. *Personality and Individual Differences, 78*, 5-13.

Jonason, P. K., Li, N. P., & Teicher, E. A. (2010). Who is James Bond? The Dark Triad as an agentic social style. *Individual Differences Research, 8*(2), 111-120.

Jones, D. N., & Figueredo, A. J. (2013). The core of darkness: Uncovering the heart of the Dark Triad. *European Journal of Personality, 27*(6), 521-531.

Jones, D. N., & Paulhus, D. L. (2014). Introducing the short dark triad (SD3) a brief measure 382 of dark personality traits. *Assessment, 21*(1), 28-41.

Judge, T. A., LePine, J. A., & Rich, B. L. (2006). Loving yourself abundantly: Relationship of the narcissistic personality to self- and other perceptions of workplace deviance, leadership, and task and contextual performance. *Journal of Applied Psychology, 91*, 762–776.

Kenny, D. A. (2017). MedPower: An interactive tool for the estimation of power in tests of mediation [Computer software]. Retrieved from https://davidakenny.shinyapps.io/MedPower/.

Kosson, D. S. (1996). Psychopathy and dual-task performance under focusing conditions. *Journal of Abnormal Psychology, 105*(3), 391.

Lochbaum, M., & Gottardy, J. (2015). A meta-analytic review of the approach-avoidance achievement goals and performance relationships in the sport psychology literature. *Journal of Sport and Health Science, 4*(2), 164-173.

Lochbaum, M., Jean-Noel, J., Pinar, C., & Gilson, T. (2017). A meta-analytic review of Elliot's (1999) Hierarchical Model of Approach and Avoidance Motivation in the sport, physical activity, and physical education literature. *Journal of Sport and Health Science, 6*(1), 68-80.

Madigan, D. J., Stoeber, J., Culley, T., Passfield, L., & Hill, A. P. (2018). Perfectionism and training performance: The mediating role of other-approach goals. *European Journal of Sport Science, 18*(9), 1271-1279.

Maples, J. L., Lamkin, J., & Miller, J. D. (2014). A test of two brief measures of the dark triad: The dirty dozen and short dark triad. *Psychological Assessment, 26*(1), 326–331.

Manley, H., Jarukasemthawee, S., & Pisitsungkagarn, K. (2019). The effect of narcissistic admiration and rivalry on mental toughness. *Personality and Individual Differences, 148*, 1-6.

Muris, P., Merckelbach, H., Otgaar, H., & Meijer, E. (2017). The malevolent side of human nature: A meta-analysis and critical review of the literature on the dark triad (narcissism, Machiavellianism, and psychopathy). *Perspectives on Psychological Science, 12*(2), 183-204.

Muthén, L. K. & Muthén, B. O. (2017). *Mplus User's Guide*. Los Angeles, CA: Muthén & Muthén.

Nia, M. E., & Besharat, M. A. (2010). Comparison of athletes' personality characteristics in individual and team sports. *Procedia-Social and Behavioral Sciences, 5*, 808-812.

Nicholls, J. G. (1989). *The Competitive Ethos and Democratic Education*. Cambridge, MA: Harvard University Press.

Nicholls, A. R., Madigan, D. J., Backhouse, S. H., & Levy, A. R. (2017). Personality traits and performance enhancing drugs: The Dark Triad and doping attitudes among competitive athletes. *Personality and Individual Differences, 112*, 113-116.

Nicholls, A. R., Madigan, D. J., Duncan, L., Hallward, L., Lazuras, L., Bingham, K., & Fairs, L. R. (2019). Cheater, cheater, pumpkin eater: The Dark Triad, attitudes towards doping, and cheating behavior among athletes. *European Journal of Sport Science*, 1-19.

O'Boyle, E. H., Forsyth, D. R., Banks, G. C., & McDaniel, M. A. (2012). A meta-analysis of the dark triad and work behavior: A social exchange perspective. *Journal of Applied Psychology, 97*(3), 557–579.

Orosz, G., Tóth-Király, I., Büki, N., Ivaskevics, K., Bőthe, B., & Fülöp, M. (2018). The Four Faces of Competition: The Development of the Multidimensional Competitive

Orientation Inventory. *Frontiers in Psychology, 9*. https://doi.org/10.3389/fpsyg.2018.00779

Paulhus, D. L., & Williams, K. M. (2002). The Dark Triad of personality: Narcissism, Machiavellianism, and psychopathy. *Journal of Research in Personality, 36*(6), 556-563.

Pera-Guardiola, V., Batalla, I., Bosque, J., Kosson, D., Pifarré, J., Hernández-Ribas, R., ... & Cardoner, N. (2016). Modulatory effects of psychopathy on Wisconsin Card Sorting Test performance in male offenders with Antisocial Personality Disorder. *Psychiatry Research, 235*, 43-48.

Petróczi, A. (2007). Attitudes and doping: a structural equation analysis of the relationship between athletes' attitudes, sport orientation and doping behaviour. *Substance Abuse Treatment, Prevention, and Policy, 2*(34), 1-15.

Rauthmann, J. F., & Kolar, G. P. (2013). Positioning the Dark Triad in the interpersonal circumplex: The friendly-dominant narcissist, hostile-submissive Machiavellian, and hostile-dominant psychopath?. *Personality and Individual Differences, 54*(5), 622-627.

Roberts, R., Cooke, A., Woodman, T., Hupfeld, H., Barwood, C., & Manley, H. (2019). When the going gets tough, who gets going? An examination of the relationship between narcissism, effort, and performance. *Sport, Exercise, and Performance Psychology, 8*(1), 93-105.

Roberts, R., Woodman, T., & Sedikides, C. (2018). Pass me the ball: Narcissism in performance settings. *International Review of Sport and Exercise Psychology, 11*(1), 190-213.

Ryckman, R. M., Thornton, B., & Gold, J. A. (2009). Assessing competition avoidance as a basic personality dimension. *The Journal of Psychology, 143*(2), 175-192.

Smith, M. B., & Webster, B. D. (2017). A moderated mediation model of Machiavellianism, social undermining, political skill, and supervisor-rated job performance. *Personality and Individual Differences, 104*, 453-459.

Spurk, D., & Hirschi, A. (2018). The Dark Triad and competitive psychological climate at work: A model of reciprocal relationships in dependence of age and organization change. *European Journal of Work and Organizational Psychology, 27*(6), 736-751.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics*. Boston: Allyn and Bacon.

Ten Brinke, L., Black, P. J., Porter, S., & Carney, D. R. (2015). Psychopathic personality traits predict competitive wins and cooperative losses in negotiation. *Personality and Individual Differences, 79*, 116-122.

Tett, R. P., & Gutterman, H. A. (2000). Situation trait relevance, trait expression, and cross-situational consistency: testing a principle of trait activation. *Journal of Research in Personality, 34*, 397-423.

Vaughan, R., Carter, G. L., Cockroft, D., & Maggiorini, L. (2018). Harder, better, faster, stronger? Mental toughness, the dark triad and physical activity. *Personality and Individual Differences, 131*, 206-211.

Vaughan, R., Hanna, D., & Breslin, G. (2018). Psychometric properties of the Mental Toughness Questionnaire 48 (MTQ48) in elite, amateur and nonathletes. *Sport, Exercise, and Performance Psychology, 7*(2), 128–140.

Vaughan, R., Madigan, D. J., Carter, G. L., & Nicholls, A. R. (2019). The Dark Triad in male and female athletes and non-athletes: Group differences and psychometric properties of the Short Dark Triad (SD3). *Psychology of Sport and Exercise, 43*, 64-72.

Zettler, I., & Solga, M. (2013). Not enough of a ‘dark’trait? Linking Machiavellianism to job performance. *European Journal of Personality, 27*(6), 545-554.

Table 1

Descriptive statistics, omegas, and bivariate correlations

Variable	*M* (*SD*)	Ω					
			1	2	3	4	5
1.Machiavellianism	25.67 (5.23)	.73					
2.Narcissism	24.31 (5.87)	.76	.42**				
3.Psychopathy	21.44 (5.08)	.77	.48**	.37**			
4.Hypercompetitive	3.67 (1.37)	.71	.29**	.43**	.35**		
5.Self-Development	4.36 (1.54)	.73	.31**	.46**	.24**	.32**	
6.Sport Task Performance	41.22 (6.31)	–	.12*	.16**	.13**	.26**	.34**
7.Succesful Shots	14.74 (3.06)	-	.10*	.13*	.11*	.19**	.23**

Note. $N = 189$. * $p < .05$; ** $p < .01$.

Table 2

Bootstrapping indirect effects and 95% confidence intervals for the mediation model

Model Pathway	Estimate	95% Confidence Interval	
		Lower	Upper
Machiavellianism → Hypercompetitive → Performance	.036	.022	.061
Narcissism → Hypercompetitive → Performance	.041	.018	.065
Psychopathy → Hypercompetitive → Performance	.024	.003	.054
Machiavellianism → Self-developmental → Performance	.048	.021	.072
Narcissism → Self-developmental → Performance	.056	.032	.079
Psychopathy → Self-developmental → Performance	.029	.008	.061

Note. $N = 189$. All indirect effects are significant ($p < .05$).

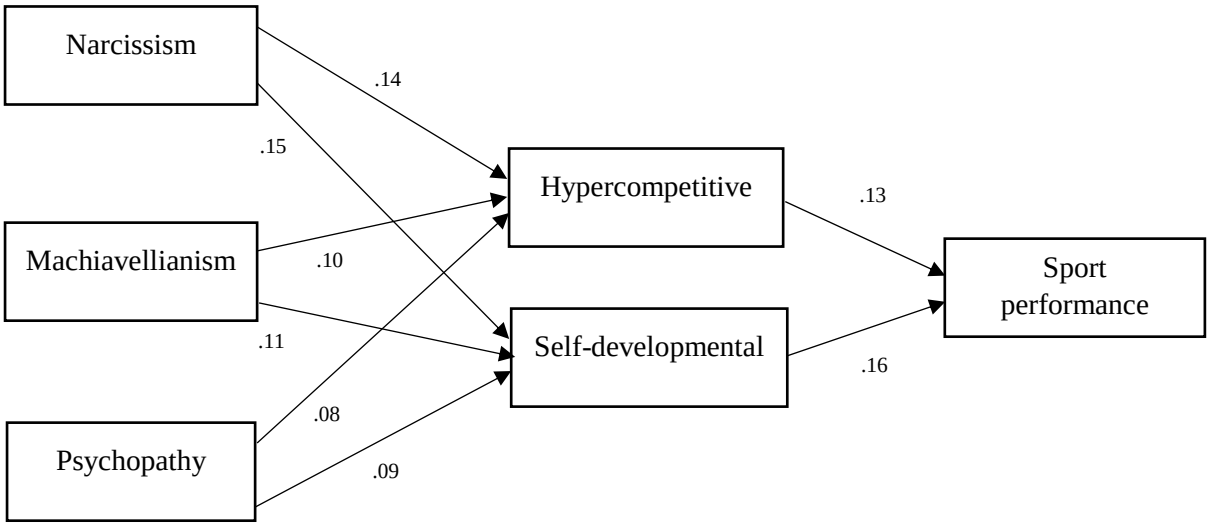

Figure 1. Path model displaying relationships between the Dark Triad, competitive orientations, and sport performance (all coefficients are significant; $p < .05$).