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Foresee the glory and train better: Narcissism, goal-setting and athlete training

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Abstract

Grandiose narcissism may be debilitating to athlete training because the opportunity for self-enhancement that motivates narcissists to strive is normally absent in training environments. However, this view ignores the divergent influences of the *self-inflated* (reflecting over-confidence) and *dominant* (reflecting willingness for dominance) facets of grandiose narcissism. We expected that self-inflated narcissism would undermine athlete training, but only when dominant narcissism was low. This is because dominant narcissism may serve as the catalyst that drives those with self-inflated narcissism to train well. We further considered goal-setting as a practical means of alleviating the negative influence of self-inflated narcissism in training. Goal-setting provides athletes with an exciting vision of the future and thus can be an important self-enhancement strategy to engage narcissistic athletes in training. In the present study, 321 athletes completed the Narcissistic Personality Inventory (NPI-40) and the goal-setting subscale in the Test of Performance Strategies-3 (TOPS-3). Coaches of these athletes assessed training behaviors using the Quality of Training Inventory (QTI). Self-inflated narcissism predicted higher levels of (coach-rated) distractibility and poorer quality of preparation only when both dominant narcissism and goal-setting were low (and not when either was high). The findings suggest that dominant narcissism and goal-setting protect against the adverse influences of self-inflated narcissism on athlete training. The work underscores the importance of considering grandiose narcissism as a multidimensional construct and supports goal-setting as a useful self-enhancement strategy.

Keywords: self-inflated narcissism, dominant narcissism, goal-setting, self-enhancement, training behaviors

Foresee the glory and train better: Narcissism, goal-setting and athlete training

High-quality training is essential to achieve peak performance (Hardy et al., 2017). Research has examined factors that might influence the quality of training, with several studies showing that personality is related to how well an athlete trains. For example, work using the Big Five model of personality has shown conscientiousness to positively influence the quality of preparation in training, whereas extraversion and neuroticism contribute to increased distractibility and impaired coping with adversity in training settings (Woodman, Zourbanos, Hardy, Beattie, & McQuillan, 2010; Zhang, Beattie, Pitkethly, & Dempsey, 2019). While these findings point to a potentially important role of personality in relation to training behaviors, much is still to be understood. Indeed, researchers within the performance domain have called for personality research to go beyond the Big Five and focus on other traits that have specific relevance to performance environments (e.g., Hill & Madjigan, 2017; Roberts & Woodman, 2017; Zhang, Woodman, & Roberts, 2018). With this call in mind, we explore here the role of grandiose narcissism on training behaviors.

Grandiose narcissism (hereafter narcissism) is a non-clinical personality trait encompassing a self-centered, self-aggrandizing, entitled, dominant, and manipulative interpersonal orientation (Morf, Horvath, & Torchetti, 2011). Hereafter, when we use the term *narcissist*, we refer to an individual scoring relatively highly in grandiose narcissism based on a sub-clinical measure of narcissism such as the Narcissistic Personality Inventory (NPI; Raskin & Hall, 1979), as opposed to those with narcissistic personality disorder (see American Psychiatric Association, 2013)¹.

While we investigate narcissism in relation to training, we also examine the facilitative role of goal-setting in athletic training contexts. According to Hardy, Jones and Gould's (1996) Pyramid Model of Peak Performance, athlete personality interacts with performance strategies (e.g., goal-setting) to lead to peak performance states. Previous work

investigating other aspects of personality has supported this theoretical position (e.g., Woodman et al., 2010). Indeed, Woodman et al. showed that while athlete extraversion is related to increased distractibility, goal-setting mitigates such a relationship. However, despite the conceptual grounding offered by Hardy et al.'s model and the wider empirical support for this model, knowledge of how narcissism may interact with goal-setting in athlete training is sparse. Further, no work has applied the personality \times performance strategy interaction to narcissism and training. In the present study, we explored this interaction perspective to understand how goal-setting might facilitate training for those athletes high in narcissism.

Narcissism in performance and training

Narcissism is related to an inflated, yet fragile, self-view (Morf et al., 2011). Narcissists believe they are superior to others (Gabriel, Critelli, & Ee, 1994) and are high in confidence even when facing failures (Campbell, Goodie, & Foster, 2004). Despite such an inflated self-view, narcissists normally do not perform any better or worse than their non-narcissistic counterparts (e.g., Ames & Kammrath, 2004); except when perceived opportunities for self-enhancement or personal glory are present. Specifically, Wallace and Baumeister's (2002) seminal work demonstrated that individuals high in narcissism excelled when situations offered self-enhancement opportunity (e.g., competition and reward) but performed poorly when no such opportunities were evident. These effects have since been replicated in a number of laboratory- and field-based studies in sport confirming that the quality of narcissists' performance is context-specific (see Roberts, Woodman, & Sedikides, 2018 for a review).

Narcissists' craving for the lionization of the self specifically in high-pressure and competitive environments may make them less likely to engage in the relatively mundane training environment. In contrast to the self-enhancement laden opportunities associated with

competition, training offers very little opportunity for glory; a relatively tiring and tedious environment in which thousands of hours of deliberate practice are required to develop expertise (Rees et al., 2016). Although training environments can be competitive especially in high-level sport (Vaughan, Madigan, Carter & Nicholls, 2019), the competitiveness within training settings does not offer the same level of self-enhancement opportunity (e.g., audience, rewards, performance pressure) as does competition. As such, narcissists might be less likely to strive in training because they perceive little opportunity for glory in the training environment (e.g., Roberts, Woodman, Lofthouse, & Williams, 2015).

A multidimensional conceptualization of narcissism

Based on the aforementioned theory and research, the relationship between narcissism and training performance is seemingly straightforward. However, one limitation of this view is that it fails to consider the multidimensional nature of narcissism. Indeed, evidence has supported the different nomological networks of *self-inflated* and *dominant* narcissism. *Self-inflated narcissism*, reflected by a sense of authority and self-sufficiency in the NPI, is related to greater extraversion, self-esteem, lower informant-rated conscientiousness, and captures personal qualities such as confidence and self-awareness (Ackerman et al., 2011). By contrast, *dominant narcissism* is related to higher levels of neuroticism, low empathy, and captures personal qualities such as a dominating orientation (Cai & Luo, 2018). Historically, self-inflated and dominant narcissism were known as adaptive and maladaptive narcissism, respectively. However, researchers have recently criticized these terms on a number of counts, not least because they focus on the hypothesized consequences of the trait rather than on the underlying psychological properties (see Cai & Luo, 2018; Zhang, Roberts, Woodman, & Cooke, 2020).

Although self-inflated and dominant narcissism appear to have different conceptualizations, the two constructs are moderately correlated with each other (Cai & Luo,

2018). Nevertheless, research indicates that self-inflated and dominant facets of narcissism serve different functions in social (e.g., Auckerman et al., 2011) and performance contexts (e.g., Zhang et al., 2020). As such, considering grandiose narcissism as a single, unitary construct can be misleading because it ignores the differences between the self-inflated and dominant facets of narcissism and treats narcissism as a homogeneous concept.

In the context of athlete training, *self-inflated narcissism* may be debilitating because of its link to overly inflated confidence (e.g., Beattie, Dempsey, Roberts, Woodman, & Cooke, 2017). Typically, athletes with high levels of self-inflated narcissism might not be fully engaged in training (as they are more easily distracted and engage less with the preparation for competition routines) and feel no need for hard work. Different from self-inflated narcissism, *dominant narcissism* reflects a desire for personal control and to dominate others (Washburn et al., 2004). In this sense, dominant narcissism may be particularly beneficial to athletic training because the desire to prevail derived from this facet of narcissism may help athletes to be aware that training is a valuable means to realize personal control and dominance in (future) competition or performance (e.g., Zhang et al., 2020). However, dominant narcissism is associated with neuroticism (Cai & Luo, 2018) that is typically detrimental to athlete training (Woodman et al., 2010; Zhang et al., 2019). Given these contrasting viewpoints, one would not expect a simple relationship between dominant narcissism and athlete training.

Self-inflated and dominant narcissism: An interactionist perspective

Narcissism can reflect either high levels of self-inflated narcissism, high levels of dominant narcissism, or high levels of both. As such, it is important to consider how these facets of narcissism might interact to understand the influences of narcissism on athlete training. Given that the overconfidence linked to self-inflated narcissism leads to decreased effort (e.g., Beattie et al., 2017), athletes who hold an inflated self-view (i.e., high only in

self-inflated narcissism) may not engage well in training especially when they do not have a willingness to strive for dominance. Dominant narcissism may be the catalyst that makes athletes more likely to seek validation of their self-view in performance settings (e.g., Zhang et al., 2020). As such, from an interactionist perspective, dominant narcissism may well attenuate the possible negative relationship between self-inflated narcissism and training. Specifically, when dominant narcissism is low, self-inflated narcissism will likely have a negative impact on training because of the lack of effort and motivation inherent in the inflated self (e.g., Roberts et al., 2015). However, when there is a concomitant desire to dominate (dominant narcissism), one would expect the negative influence of self-inflated narcissism on training to be mitigated because the strong willingness for dominance leads athletes to strive to be exceptional in order to validate their grandiose self-view (Zhang et al., 2020). Such an interactionist perspective suggests that dominant narcissism likely protects against the adverse effects of self-inflated narcissism on athlete training.

Goal-setting as an aid to self-enhancement

Despite the clear importance of considering personality in optimizing performance, most researchers accept that personality is difficult to change. As such, it is paramount to investigate strategies that might help athletes maximize their training environment within the confines of their personality. Goal-setting is a clear candidate in this regard. Indeed, Woodman et al. (2010) found that goal setting mitigated extraverted athletes' distraction in training. Similar beneficial effects might be expected for those high in self-inflated narcissism. Specifically, despite the relative lack of opportunity for glory in athletic training environments (Roberts et al., 2018), goal-setting facilitates self-enhancement because goals create inspiring visions to engage athletes to commit to their training (Smith, Arthur, Hardy, Callow, & Williams, 2013). Such an inspiring vision can help athletes to foresee the opportunity for glory afforded by the training environment. Also, according to Hardy,

Roberts, Thomas, and Murphy (2010), goal-setting in training is not only linked to athletes' operation of specific performance goals and evaluation of possible future achievement but also a reflection of how athletes may initiate actions to fulfil desired performance states. As such, goal-setting in practice should bridge the link between training and the future performance opportunities, and should help athletes high in self-inflated narcissism to strive.

In relation to the interactionist perspective of self-inflated and dominant narcissism, the potential utility of goal-setting is even more evident. Self-inflated narcissism is underpinned by an inflated self-view without a solid and clear grounding in reality (Zhang et al., 2020). Goal-setting sets out a clear path of required actions in order to achieve one's aspiration (Kingston & Wilson, 2008). If that aspiration is to dominate others, then a goal-setting program can provide the path to maximize the likelihood of that desired outcome. As such, goal-setting offers a realistic path to perceived success and thus is vital to make self-inflated narcissists strive, especially when these individuals are concomitantly low in dominant narcissism (reflecting a lack of willingness to validate their grandiose self-view).

In line with these theoretical positions, we extended our earlier interactionist position relating to self-inflated and dominant narcissism in the context of athlete training, to a three-way interaction (self-inflated narcissism \times dominant narcissism \times goal-setting). Specifically, when goal-setting use was low, we expected self-inflated narcissism to have adverse effects on athlete training behaviors only when dominant narcissism was low. However, when goal-setting use was high, we predicted that the potential negative influences of self-inflated narcissism to be mitigated regardless of the levels of dominant narcissism. Figure 1 displays the proposed three-way interaction.

The present study

To date, it is unknown how multidimensional narcissism (e.g., self-inflated and dominant narcissism) might interact with goal-setting to predict athlete training. In the

present study, we examined the hypothesized *self-inflated* \times *dominant narcissism* \times *goal-setting* interaction on two important aspects of athlete training, namely distractibility and quality of competition preparation. Low distractibility (i.e., concentrating on training despite distractions) and high-quality competition preparation (i.e., focusing on specific plans and routines that form a competition or training preparation strategy) are vital to achieving optimal performance states (Woodman et al., 2010), and scores on these variables discriminate between higher- and lower-level athletes (Zhang et al., 2019). Importantly, narcissism is associated with high extraversion and low conscientiousness (Ackerman et al., 2011) that contributes to increased distractibility and poorer quality of preparation, respectively (Woodman et al., 2010). As such, distractibility and quality of preparation are the aspects of training most likely to be undermined by athlete narcissistic characteristics.

In the present research, we investigated the interactionist proposition using a large sample of athletes from different sports and at different levels. We obtained multiple-source data (i.e., athlete-rated narcissism and goal-setting, and coach-rated distractibility and quality of preparation) to enhance the trustworthiness of the study findings. Collecting multiple source data allowed us to avoid problems associated common method variance (Chang, Van Witteloostuijn, & Eden, 2010) and socially desirable responding (Vazire, 2006), which are present in studies relying on single-source, self-report questionnaires.

Method

Participants

Power analysis (G*Power 3; Faul, Erdfelder, Lang, & Buchner, 2007) indicated that we needed a minimum sample of 316 participants to have adequate power (.80) to detect a small interaction effect (i.e., Cohen's $f^2 = .025$, alpha set at .05) at the within-team level (level 1). With institutional approval, we recruited 321 athletes ($n = 153$ men, 168 women; $M_{\text{age}} = 21.88$, $SD = 5.72$). Participants competed in 8 different sports ($n = 2$ individual sports,

6 team sports) and at different levels, including university ($n = 7$ teams), regional clubs ($n = 15$ teams), premier leagues ($n = 2$ teams), and national ($n = 3$ teams). These athletes had received formal training in their respective sport for an average of 8.31 years ($SD = 6.05$). To provide informant ratings of athlete training behaviors, the head coaches of all participating teams ($n = 20$ men, 7 women; $M_{age} = 36.1$, $SD = 10.65$) also took part in this research. They had a mean of 10 years' coaching experience ($SD = 7.07$) and had coached their respective athletes for a mean of 3.5 years ($SD = 3.33$). All participants provided written consent.

Measures

Narcissism

We used the NPI (Raskin & Hall, 1979), which is a 40-item forced-choice inventory that asks participants to choose between one narcissistic and one non-narcissistic statement for each item (e.g., "I will be a success" vs "I am not too concerned about success"). The NPI is considered the most appropriate assessment of the grandiose form of narcissism because it captures many of the central narcissistic qualities such as dominance, immodesty, noncompliance and manipulateness more fully than other measures of narcissism (Miller et al., 2012). For the same reason the NPI has also been widely used in sport research (e.g., Arthur et al., 2011; Roberts et al., 2010, 2013, 2019; Woodman et al., 2011; Zhang et al., 2020). We generated mean scores for *self-inflated* (14 items; e.g., "I am more capable than other people") and *dominant* (18 items; e.g., "If I rule the world, it would be a better place") narcissism items from the NPI following recommendations (i.e., Barry et al., 2003; Zhang et al., 2020; see Supplementary Tables for a list of self-inflated and dominant narcissism items derived from the NPI-40 and item factor loadings for both the two-factor and unidimensional NPI model). Confirmatory Factor Analysis (CFA) of the proposed two-factor model provided support for an acceptable factor structure²; Robust $\chi^2 = 702.10$, $df = 463$, $CFI = .87$, $RMSEA = .04$ (90% CI [.03, .05]), $SRMR = .10$. Further, when compared against a single-factor

solution (i.e., NPI at a global level; Robust $\chi^2 = 804.11$, $df = 464$, CFI = .80, RMSEA = .05 (90% CI [.04, .06]), SRMR = .11), the two-factor model represented a significantly better model fit (adjusted $\Delta\chi^2 = 44.35$, $df = 1$, $p < .001$). The composite reliability for self-inflated and dominant narcissism in this study was .84 and .86, respectively.

Goal-setting

We used the goal-setting items from the practice subscale of the Test of Performance Strategies (TOPS-3; Arthur, Fitzwater, Roberts, Hardy, & Arthur, 2017). The practice subscale of the TOPS-3 assesses the use of different athlete performance strategies in training contexts. The TOPS-3 is an updated version of the widely used TOPS-2 (Hardy, Roberts, Thomas, & Murphy, 2010). Goal-setting items from the TOPS-3 practice subscale (4 items; e.g., “I set goals to help me use practice time effectively”) ask athletes to rate how frequently they use the strategy in training on a 5-point Likert-scale from 1 (*never*) to 5 (*always*). CFA of the goal-setting items revealed an excellent model fit to a single-factor structure; Robust $\chi^2 = 6.76$, $df = 2$, CFI = .98, RMSEA = .03, SRMR = .03. The composite reliability for the goal-setting items in the present study was .79.

Coach-rated quality of training

Coaches provided ratings of their athletes’ training behaviors. We used an adapted version of the Quality of Training Inventory (QTI, Woodman et al., 2010). The QTI assesses three core training behaviors including distractibility (5 items; e.g., “I am easily distracted by other people in training”), coping with adversity (4 items; e.g., “When my training session isn’t going well, I try to overcome the problem”), and quality of preparation (4 items; e.g., “I always have a competition plan that covers all eventualities”). The QTI asks athletes to respond to a Likert scale from 1 (*strongly disagree*) to 9 (*strongly agree*). In this study, we focused on the distractibility and quality of preparation subscales as these are likely the most relevant aspects of athlete training undermined by narcissism (Roberts et al., 2018). To

enable coaches to rate their athletes we changed the QTI items to a third-person narrative (see also Zhang et al., 2019). Considering the nested nature of the data (athletes nested within teams/coaches), we conducted multilevel CFA for the coach-rated QTI and demonstrated a good model fit to the three-factor structure suggested by Woodman et al. (2010); Robust $\chi^2 = 159.18$, $df = 62$, $CFI = .90$, $RMSEA = .07$, $SRMR = .07$. The composite reliability for the distractibility, quality of preparation, and coping with adversity⁴ subscales ranged from .86-.89.

Procedure

We contacted coaches or team managers from sports teams in the UK. Via the initial email, we provided detailed information about our research and invited prospective teams to participate. We proceeded only when the coach agreed to take part. Once coaches gave consent to approach their athletes, we asked the coach to arrange a post-training session for us to brief the athletes and to ask them to complete the survey. Athletes were encouraged to raise any questions they had before participating and were free not to participate. After confirming voluntary participation, all participants (athletes and coaches) received a questionnaire pack containing an information sheet, written consent form, and the questionnaires. We were also available to answer any questions. At the end of the session, we collected all completed questionnaire packs.

Data analyses

We first checked for missing data and outliers (i.e., scores more than three standard deviations from the mean; Jaccard & Turrisi, 2003) for each of the study variables. Following that, we assessed the zero-order correlation among study variables.

We used Mplus 8 (Muthén & Muthén, 2015) for the main analyses. Given the nested nature of our data, we adopted a multilevel approach to examine our hypotheses (see Hox, 1995) and used a random intercept fixed slope model to test the hypothesized three-factor

interaction between athlete self-inflated and dominant narcissism and goal-setting. We modelled self-inflated narcissism as the focal predictor, dominant narcissism as the first moderator, and goal-setting as the second moderator, at Level 1 (within-team). To deal with the nested nature of the data (i.e., athletes nested within teams while using coach-rated training as dependent variables), we modelled coach-rated training behaviors to cross Level 1 (within-team) and Level 2 (between-team). Such a multilevel approach allows intercepts in the specified regression model at Level 1 (within-team) to vary across Level 2 variable (i.e., team) and thus remove between-team differences on any within-team effect.

Consistent with procedures set out by Hox (1995), we applied *z*-score transformation to all the predictors prior to testing the specified multilevel model to reduce possible collinearity and provide a common metric to aid interpretability and used the Robust Full Information Maximum Likelihood (FIML) estimator (i.e., MLR in Mplus; see Muthén & Muthén, 2015). We assessed the Intraclass Correlation (ICC) to estimate the proportion of between-team variance at Level 2 (i.e., between-team). We report standardized coefficients (β) and analyzed simple slopes at $Mean \pm 1SD$ for the hypothesized three-factor interaction at Level 1 (i.e., within-team). Lower and upper bound 95% confidence intervals (CI) that do not encompass zero indicate significance at the .05 level. Alpha was set at .05.

Results

Preliminary analyses

All individual scores on study variables were within three standard deviations of the mean. Five participants could not be identified from their sport team information and thus were coded as missing for their respective sport team. However, these participants were included for the main analyses because the FIML approach used by the MLR estimator enables inclusion of these random missing data. Correlations revealed that athlete age, sex, and years of training experience were unrelated to athlete narcissistic traits and training

behaviors. NPI and self-inflated and dominant narcissism were not correlated to goal-setting use. NPI and dominant narcissism were weakly but positively related to athlete distractibility. We present the descriptive statistics and zero-order correlations in Table 2.

Main analyses

Distractibility

The ICC for distractibility was .18, suggesting that 18% of the variance in coach-rated athlete distractibility was at the between-team level. The regression analysis yielded a non-significant main effect for self-inflated narcissism ($\beta = .04, p = .65, 95\% \text{ CI } [-.13, .18]$) but significant main effects for dominant narcissism ($\beta = .15, p = .02, 95\% \text{ CI } [.02, .28]$) and goal-setting ($\beta = -.13, p = .02, 95\% \text{ CI } [-.25, -.02]$). More importantly, the hypothesized three-factor interaction between self-inflated narcissism, dominant narcissism, and goal-setting was significant ($\beta = .21, p < .01, 95\% \text{ CI } [.13, .28]$; see Figure 2 left panel). The nature of the interaction was consistent with our theorizing. Specifically, when goal-setting use was low, self-inflated narcissism predicted higher distractibility when dominant narcissism was low ($\beta = .47, p < .01, 95\% \text{ CI } [.29, .66]$) but not high ($\beta = -.11, p = .26, 95\% \text{ CI } [-.30, .08]$). However, when goal-setting use was high, self-inflated narcissism did not predict distractibility regardless of whether dominant narcissism was low ($\beta = -.19, p = .23, 95\% \text{ CI } [-.51, .12]$) or high ($\beta = .02, p = .93, 95\% \text{ CI } [-.36, .40]$). In sum, these findings indicate that athletes high in self-inflated narcissism were more distractible in training when low in dominant narcissism and when they failed to engage in goal-setting. However, those athletes engaging in goal-setting had no such problems with distractibility.

Quality of preparation

The ICC for quality of preparation was .47, suggesting that 47% of the variance in coach-rated athlete quality of preparation was at the between-team level. At the within-team level, main effects for self-inflated narcissism ($\beta = .12, p = .05, 95\% \text{ CI } [.00, .24]$) and goal-

setting ($\beta = .11, p = .08, 95\% \text{ CI } [-.01, .24]$) approached significance while dominant narcissism ($\beta = -.12, p = .14, 95\% \text{ CI } [-.27, .04]$) did not predict quality of preparation. Importantly, the three-factor interaction, that goal-setting would moderate the *self-inflated* \times *dominant narcissism* interaction on quality of training, was significant ($\beta = -.20, p < .01, 95\% \text{ CI } [-.34, -.07]$). Probing the three-factor interaction again yielded findings consistent with our theorizing (see Figure 2 right panel). To expand, when goal-setting use was low, self-inflated narcissism demonstrated impaired quality of preparation when dominant narcissism was low ($\beta = -.14, p = .24, 95\% \text{ CI } [-.39, .10]$) but enhanced quality of preparation when dominant narcissism was high ($\beta = .32, p < .01, 95\% \text{ CI } [.12, .52]$). In contrast, when goal-setting use was high, self-inflated narcissism predicted improved quality of preparation only when dominant narcissism was low ($\beta = .31, p = .09, 95\% \text{ CI } [-.06, .68]$) but not high ($\beta = .05, p = .70, 95\% \text{ CI } [-.21, .31]$). Taken together, these findings demonstrate that athletes high in self-inflated narcissism had poorer quality of preparation when low in dominant narcissism and when they failed to engage in goal setting. However, such an adverse influence was buffered when either dominant narcissism or goal-setting was high.

Discussion

Narcissism may be debilitating to athlete training because the opportunity for self-enhancement that motivates narcissists to strive for their best is usually absent in training environments. However, this view fails to consider the likely divergent effects of the *self-inflated* and *dominant* facets of narcissism and also ignores the potential of performance strategies to mitigate any adverse influence of narcissistic qualities on athlete training. The present research provided the first evidence that self-inflated narcissism, dominant narcissism, and goal-setting interactively predict athlete distractibility in training and quality of preparation. We hypothesized that, when goal-setting was low, athletes high in self-inflated narcissism might demonstrate impaired training (i.e., increased distractibility and

poorer quality of preparation) when dominant narcissism was low, but that this effect would disappear when dominant narcissism was also high. We further predicted that, when goal-setting was high, self-inflated narcissism would not undermine athlete training, regardless of the levels of dominant narcissism. The study results supported these hypotheses. The findings suggest that dominant narcissism and goal-setting seem to protect against the adverse effects of self-inflated narcissism on athlete concentration and quality of preparation for competition. In effect, the desire to dominate combined with a willingness to confront oneself with reality (via goal-setting) increases the confident narcissist's focus on the importance of training to achieve his/her competition aspirations.

Theoretical and practical implications

Several implications warrant attention. First, the data support the use of a multidimensional conception of narcissism, which involves *self-inflated* and *dominant* components. The terms *self-inflated* and *dominant* are more appropriate than the previously used *adaptive* and *maladaptive* narcissism monikers, as they focus on the psychological qualities involved in the constructs as opposed to the social and interpersonal outcomes associated with narcissism (see Barry & Malkin, 2010). These terms do not pre-suppose that one aspect of narcissism is necessarily more socially desirable than any other type (as opposed to the adaptive/maladaptive distinction, see also Cai & Luo, 2018). Indeed, our findings clearly show that self-inflated narcissism undermines the quality of training. In contrast, dominant narcissism appears particularly beneficial as it offsets some of the problems associated with self-inflated narcissism and low goal-setting use. Overall, the findings demonstrate that self-inflated narcissism is not as 'adaptive' as it was previously termed (cf. Barry & Malkin, 2010), and that dominant narcissism may be more beneficial in performance settings than its prior impression, at least when self-inflated narcissism is high.

Moreover, goal-setting appears to be a useful self-enhancement strategy to aid athlete training, especially for those high in self-inflated narcissism. As training environments offer low opportunity for self-enhancement, narcissists, particularly those high in self-inflated narcissism, are less likely to strive during training (Roberts et al., 2018). However, the present study reveals that athletes high in self-inflated narcissism train better via committing to goal-setting, probably due to the facilitative role of goals in allowing one to better foresee the opportunity for glory afforded by training environments. This particular finding dovetails other work showing that coach-created performance climates create a sense of self-enhancement and increase narcissistic athletes' effort in training (Roberts et al., 2015). While Roberts et al. suggested that fostering a performance climate or making practice more of a competition can be particularly beneficial to athletes high in narcissism, the current study offers support for goal-setting as an alternative self-enhancement strategy to optimize training. Nonetheless, although performance climate and goal-setting use seem to have similar self-enhancement effects for athlete training, the former reflects more a top-down or coach-oriented strategy while the latter reflects more a bottom-up or athlete-driven approach. Researchers and practitioners would do well to consider the use of goal-setting as an effective self-enhancement strategy in athlete training, either as a supplement to or in combination with other approaches.

Furthermore, the findings indicate that while athletes high in self-inflated narcissism seem to take advantage of goal-setting in their training, the use of such a performance strategy seems less beneficial to those high in dominant narcissism. Typically, the results showed that when dominant narcissism was low, goal-setting use mitigated the association of self-inflated narcissism and poorer training (see dotted lines in Figure 2). However, when dominant narcissism was high, such effects become less apparent or indeed failed to emerge (see solid lines in Figure 2). As goal-setting is considered an important self-enhancement

strategy, the findings indicate that perceived opportunity for self-enhancement does not always motivate individuals to strive, especially when one is high in dominant narcissism. It is possible that self-inflated narcissism might be more associated with impulsivity or a focus on short-term reward that self-enhancement might bring, whereas dominant narcissism might be more related to a long-term desire to gain benefit and to achieve control over situations. Consequently, some self-enhancement strategies may not add extra motivation to those high in dominant narcissism because such strategies may provide a short-term sense of glory but do not help achieve dominance and personal control in the long term.

Alternatively, it is possible that narcissists in general tend to set short-term goals. As such, narcissists may be more likely to use goal-setting as a short-term strategy that only benefits those focusing on short-term reward (i.e., high in self-inflated narcissism) rather than long-term dominance (i.e., high in dominant narcissism). Also, if individuals high in dominant narcissism focus more on the long-term “gain”, any short-term strategies such as creating a sense of self-enhancement might simply be less effective. Future research should consider using short- and long-term focus of interests to further distinguish between self-inflated and dominant narcissism in relation to training. This future direction would contribute to the theoretical development of these different narcissistic facets along with the exploration of individualized strategies to enhance athlete training.

In addition, from a wider perspective, the potentially different roles of self-inflated and dominant narcissism in athletic training suggest that a 2 (i.e., high vs low self-inflated narcissism) \times 2 (i.e., high vs low dominant narcissism) framework encapsulating the varying within-person combinations of self-inflated and dominant narcissism is a fruitful direction for theoretical advancement in multidimensional narcissism research. Our findings provide partial support for a 2×2 framework in relation to athlete training, as self-inflated narcissism was detrimental to training when dominant narcissism was low, but not high. However, it

would be premature to suggest a full picture of the possible distinctive effects among the tetrads of narcissism (i.e., high/low self-inflated narcissism \times high/low dominant narcissism). Future research should consider testing the 2×2 framework in sport and beyond⁵.

Finally, the ICC was particularly large for coach-rated quality of preparation (.47). The high ICC suggests a salient variation of coach-rated quality of preparation between the different participating sport teams. The varied coach-rating is not a surprise given the fact that the study samples involved athletes from different levels (university, premier leagues, national teams) and sport types (team and individual sports). However, it is also possible that how coaches rate athlete quality of preparation is particularly subject to their interpretation of the questionnaire items. Researchers and practitioners should be mindful of this issue when analyzing coach-rated quality of preparation in future work.

Limitations

The present research is not without limitations. First, the cross-sectional design of the present research may invite concern regarding causality between our study variables. However, the effects are clear, novel, well-powered, and meaningful for advancing theory and practice in relating to the understanding of narcissism and the utilization of goal-setting in athlete training settings. Despite its correlational nature, the present research also offers insights into valuable directions for future research.

Another limitation points to the measure of goal-setting. That is, the TOPS-3 (Arthur et al., 2017) assesses global goal-setting use and does not detail the use of different goal types. The literature suggests that there are at least three types of goals including outcome, performance, and process goals (see Kingston & Wilson, 2008). Treating the different goal types as homogeneous in the TOPS-3 may not offer information on which roles the different goals may play within the relationship between narcissism, goal-setting, and training. Since process goals are thought to be essential stepping stones to the fulfilment of

performance/outcomes goals (Kingston & Wilson, 2008), failing to distinguish between the different goals makes it difficult to evaluate the extent to which athletes may link the (present) practice to (future) performance when engaging in goal-setting⁶. Also, the use of TOPS-3 to measure goal-setting means one cannot distinguish between the different goal orientations such as mastery vs performance, or approach vs avoidance goals (e.g., Elliot & McGregor, 2001). Indeed, it is possible that self-inflated and dominant narcissism may relate to different goal orientations (see also Elliot & Thrash, 2001), which may conduce to different outcomes. Future research should consider the roles of different goal types and orientations when examining narcissism and goal-setting in training contexts.

Moreover, as this study focused solely on goal-setting, we ignored other psychological skills that may contribute to narcissists' training. Roberts et al. (2010, 2013) demonstrated that narcissistic individuals performed well in competition only when they used imagery, relaxation, and self-talk. Further, Roberts et al. also found that relatively non-narcissistic individuals performed well in competition when they had good emotional control skills but received no benefit from using self-talk and relaxation. However, it is unclear about the extent to which these psychological skills facilitate narcissistic athletes' training. Future research should consider examining the effects of different psychological skills in relation to narcissism and training.

Finally, the conceptualizations and discussions on narcissism in the present research are only relevant to its grandiose and agentic form; different forms of narcissism also likely play different roles in athlete training. For example, vulnerable narcissism reflects hypersensitivity and hypervigilance to criticism and failure (Miller et al., 2011); athletes high in vulnerable narcissism may struggle to cope with setbacks during training. Future research would do well to examine the potential negative influence of vulnerable narcissism in athlete training and explore ways to protect against them.

Conclusions

Training environments are relatively low in the opportunity for self-enhancement, and the present research demonstrates that self-inflated narcissism can negatively impact athlete training behaviors. However, dominant narcissism, and the performance strategy of goal-setting helps athletes to foresee the opportunity for glory. In athlete training, although self-inflated narcissism may not be particularly ‘adaptive’, dominant narcissism can be beneficial. Future research would do well to explore strategies for optimal training while taking athlete individual differences into account.

References

- Ackerman, R. A., Witt, E. A., Donnellan, M. B., Trzesniewski, K. H., Robins, R. W., & Kashy, D. A. (2011). What does the narcissistic personality inventory really measure? *Assessment*, 18, 67–87. DOI:10.1177/1073191110382845
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (5th ed.)*. Arlington, VA: American Psychiatric Publishing.
- Ames, D. R., & Kammrath, L. K. (2004). Mind-reading and metacognition: Narcissism, not actual competence, predicts self-estimated ability. *Journal of Nonverbal Behavior*, 28, 187–209. DOI:10.1023/B:JONB.0000039649.20015.0e
- Arthur, C. A., Woodman, T., Ong, C. W., Hardy, L., & Ntoumanis, N. (2011). The role of athlete narcissism in moderating the relationship between coaches' transformational leader behaviors and athlete motivation. *Journal of Sport & Exercise Psychology*, 33, 3–19. DOI:10.1123/jsep.33.1.3
- Arthur, R. A., Fitzwater, J., Roberts, R., Hardy, J., & Arthur, C. A. (2017). Psychological skills and “the Paras”: The indirect effects of psychological skills on endurance. *Journal of Applied Sport Psychology*, 29, 449–465. DOI:10.1080/10413200.2017.1306728
- Barry, C. T., Frick, P. J., & Killian, A. L. (2003). The relation of narcissism and self-esteem to conduct problems in children: a preliminary investigation. *Journal of Clinical Child and Adolescent Psychology*, 32, 139–152. DOI:10.1207/S15374424JCCP3201
- Barry, C. T., & Malkin, M. L. (2010). The relation between adolescent narcissism and internalizing problems depends on the conceptualization of narcissism. *Journal of Research in Personality*, 44, 684–690. DOI:10.1016/j.jrp.2010.09.001
- Beattie, S., Dempsey, C., Roberts, R., Woodman, T., & Cooke, A. (2017). The moderating role of narcissism on the reciprocal relationship between self-efficacy and performance. *Sport, Exercise, and Performance Psychology*, 6, 199–214. DOI:10.1037/spy0000092

- 507 Brown, T. (2006). *Confirmatory factor analysis for applied research*. New York: Guildford.
- 508 Cai, H., & Luo, Y. L. L. (2018). Distinguishing between Adaptive and Maladaptive
 509 Narcissism. In A. D. Hermann, A. B. Brunell, & J. D. Foster (Eds.), *Handbook of trait*
 510 *narcissism* (pp. 97–104). New York, NY: Springer International Publishing.
- 511 Campbell, W. K., Goodie, A. S., & Foster, J. D. (2004). Narcissism, confidence, and risk
 512 attitude. *Journal of Behavioral Decision Making*, 17, 297–311. DOI:10.1002/bdm.475
- 513 Chang, S. J., Van Witteloostuijn, A., & Eden, L. (2010). From the Editors: Common method
 514 variance in international business research. *Journal of International Business Studies*,
 515 41, 178–184. DOI:10.1057/jibs.2009.88
- 516 Elliot, A. J., & McGregor, H. A. (2001). A 2 X 2 achievement goal framework. *Journal of*
 517 *Personality and Social Psychology*, 80, 501–519. DOI:10.1037/0022-3514.80.3.501
- 518 Elliot, A. J., & Thrash, T. M. (2001). Narcissism and motivation. *Psychological Inquiry*, 12,
 519 216–219. DOI:10.1023/A:1009009018235
- 520 Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G* Power 3: A flexible statistical
 521 power analysis program for the social, behavioral, and biomedical sciences. *Behavior*
 522 *Research Methods*, 39, 175–191. DOI:10.3758/bf03193146
- 523 Gabriel, M. T., Critelli, J. W., & Ee, J. S. (1994). Narcissistic illusions in self-evaluations of
 524 intelligence and attractiveness. *Journal of Personality*, 62, 143–155. DOI:10.1111/1467-
 525 6494.ep9406221282
- 526 Hardy, L., Barlow, M., Evans, L., Rees, T., Woodman, T., & Warr, C. (2017). Great British
 527 medalists: Psychosocial biographies of Super-Elite and Elite athletes from Olympic
 528 sports. In V. Walsh, M. Wilson, & B. B. T.-P. in B. R. Parkin (Eds.), *Sport and the*
 529 *Brain: The Science of Preparing, Enduring and Winning* (pp. 1–119). Cambridge, MA:
 530 Academic Press, Elsevier.

- 531 Hardy, L., Jones, G., & Gould, D. (1996). *Understand Psychological Preparation for Sport:*
 532 *Theory and Practice of Elite Performers*. Hoboken NJ: John Wiley & Sons, Inc.
- 533 Hardy, L., Roberts, R., Thomas, P. R., & Murphy, S. M. (2010). Test of Performance
 534 Strategies (TOPS): Instrument refinement using confirmatory factor analysis.
 535 *Psychology of Sport and Exercise*, 11, 27–35. DOI:10.1016/j.psychsport.2009.04.007
- 536 Hill, A. P., & Madigan, D. J. (2017). A short review of perfectionism in sport, dance and
 537 exercise: out with the old, in with the 2×2 . *Current Opinion in Psychology*, 16, 72–77.
 538 DOI: 10.1016/j.copsyc.2017.04.021
- 539 Hox, J. J. (1995). *Applied Multilevel Analysis*. Amsterdam: TT-Publikaties.
- 540 Jaccard, J., & Turrisi, R. (2003). *Interaction effects in multiple regression* (2nd ed.). Sage
 541 University Papers series on Quantitative Applications in the Social Sciences, 07–072.
 542 Thousand Oaks, CA: Sage.
- 543 Kingston, J. M., & Wilson, K. (2008). The application of goal-setting in sport. In S. D.
 544 Mellalieu & S. Hanton (Eds.), *Advances in applied sport psychology: A review* (pp. 75–
 545 123). London: Routledge.
- 546 Miller, J. D., Hoffman, B. J., Gaughan, E. T., Gentile, B., Maples, J., & Campbell, W. K.
 547 (2011). Grandiose and vulnerable narcissism : A nomological network analysis. *Journal*
 548 *of Personality*, 79, 1013-1042. DOI:10.1111/j.1467-6494.2010.00711.x
- 549 Miller, J. D., Price, J., & Campbell, W. K. (2012). Is the Narcissistic Personality Inventory
 550 still relevant? A test of independent grandiosity and entitlement scales in the assessment
 551 of narcissism. *Assessment*, 19, 8–13. DOI:10.1177/1073191111429390
- 552 Morf, C. C., Horvath, S., & Torchetti, L. (2011). Narcissistic self-enhancement: Tales of
 553 (successful?) self-portrayal. In M. D. Alicke & C. Sedikides (Eds.), *Handbook of self-*
 554 *enhancement and self-protection* (pp. 399–424). New York: Guilford.

- 555 Muthén, L. K., & Muthén, B. O. (2015). *Mplus User's Guide* (Seventh). Los Angeles, CA:
556 Muthén & Muthén. DOI:10.1111/j.1532-5415.2004.52225.x
- 557 Newton, M., Duda, J. L., & Yin, Z. (2000). Examination of the psychometric properties of
558 the perceived motivational climate in sport questionnaire-2 in a sample of female
559 athletes. *Journal of Sports Sciences*, 18, 275–290. DOI:10.1080/026404100365018
- 560 Raskin, R. N., & Hall, C. S. (1979). A narcissistic personality inventory. *Psychological*
561 *Reports*, 45, 590. DOI:10.2466/pr0.1979.45.2.590
- 562 Rees, T., Hardy, L., Güllich, A., Abernethy, B., Côté, J., Woodman, T., ... Warr, C. (2016).
563 The Great British Medalists Project: A Review of Current Knowledge on the
564 Development of the World's Best Sporting Talent. *Sports Medicine*, 46, 1041–1058.
565 DOI:10.1007/s40279-016-0476-2
- 566 Roberts, R., Callow, N., Hardy, L., Woodman, T., & Thomas, L. (2010). Interactive effects of
567 different visual imagery perspectives and narcissism on motor performance. *Journal of*
568 *Sport & Exercise Psychology*, 32, 499–517.
- 569 Roberts, R., Cooke, A., Woodman, T., Hupfeld, H., Barwood, C., & Manley, H. (2019).
570 When the going gets tough, who gets going? An examination of the relationship
571 between narcissism, effort, and performance. *Sport, Exercise, and Performance*
572 *Psychology*, 8, 93–105. DOI:10.1037/spy0000124
- 573 Roberts, R., & Woodman, T. (2015). Contemporary personality perspectives in sport
574 psychology. In S. Mellalieu & S. Hanton (Eds.), *Contemporary advances in sport*
575 *psychology: A review* (pp. 1–27). London: Routledge.
- 576 Roberts, R., & Woodman, T. (2017). Personality and performance: moving beyond the Big 5.
577 *Current Opinion in Psychology*, 16, 104–108. DOI:10.1016/j.copsyc.2017.03.033

- 578 Roberts, R., Woodman, T., Hardy, L., Davis, L., & Wallace, H. M. (2013). Psychological
 579 skills do not always help performance: The moderating role of narcissism. *Journal of*
 580 *Applied Sport Psychology*, 25, 316–325. DOI:10.1080/10413200.2012.731472
- 581 Roberts, R., Woodman, T., Lofthouse, S., & Williams, L. (2015). Not all players are equally
 582 motivated: The role of narcissism. *European Journal of Sport Science*, 15, 536–542.
 583 DOI:10.1080/17461391.2014.987324
- 584 Roberts, R., Woodman, T., & Sedikides, C. (2018). Pass me the ball: Narcissism in
 585 performance settings. *International Review of Sport and Exercise Psychology*, 11, 190–
 586 213. DOI:10.1080/1750984X.2017.1290815
- 587 Smith, M. J., Arthur, C. a., Hardy, J., Callow, N., & Williams, D. (2013). Transformational
 588 leadership and task cohesion in sport: The mediating role of intrateam communication.
 589 *Psychology of Sport and Exercise*, 14, 249–257. DOI:10.1016/j.psychsport.2012.10.002
- 590 Vaughan, R., Madigan, D. J., Carter, G. L., & Nicholls, A. R. (2019). The dark triad in male
 591 and female athletes and non-athletes: Group differences and psychometric propoerties of
 592 the Short Dark Triad (SD3). *Psychology of Sport & Exercise*, 43, 64-72. DOI:
 593 10.1016/j.psychsport.2019.01.002
- 594 Vazire, S. (2006). Informant reports: A cheap, fast, and easy method for personality
 595 assessment. *Journal of Research in Personality*, 40, 472–481.
 596 DOI:10.1016/j.jrp.2005.03.003
- 597 Washburn, J. J., McMahon, S. D., King, C. A., Reinecke, M. A., & Silver, C. (2004).
 598 Narcissistic features in young adolescents: Relations to aggression and internalizing
 599 symptoms. *Journal of Youth and Adolescence*, 33, 247–260.
 600 DOI:10.1023/B:JOYO.0000025323.94929.d9

- 601 Woodman, T., Roberts, R., Hardy, L., Callow, N., & Rogers, C. H. (2011). There is an “I” in
 602 TEAM: Narcissism and social loafing. *Research Quarterly for Exercise and Sport*, 82,
 603 285–290. DOI:10.5641/027013611X13119541883988
- 604 Woodman, T., Zourbanos, N., Hardy, L., Beattie, S., & McQuillan, A. (2010). Do
 605 performance strategies moderate the relationship between personality and training
 606 behaviors? An exploratory study. *Journal of Applied Sport Psychology*, 22, 183–197.
 607 DOI:10.1080/10413201003664673
- 608 Zhang, S., Beattie, S., Pitkethly, A., & Dempsey, C. (2019). Lead me to train better:
 609 Transformational leadership’s moderation of the negative relationship between athlete
 610 personality and training behaviours. *The Sport Psychologist*, 33, 119–128.
 611 DOI:10.1123/tsp.2018-0055
- 612 Zhang, S., Roberts, R., Woodman, T., & Cooke, A. (2020). I am great, but only when I also
 613 want to dominate: Maladaptive narcissism moderates the relationship between adaptive
 614 narcissism and performance under pressure. *Journal of Sport and Exercise Psychology*,
 615 42, 323–335. DOI:10.1123/jsep.2019-0204
- 616 Zhang, S., Woodman, T., & Roberts, R. (2018). Anxiety and fear in sport and performance.
 617 In *Oxford research encyclopedia of psychology*. New York, NY: Oxford University
 618 Press. DOI: 10.1093/acrefore/9780190236557.013.162

Notes

1. As a supplement to our view, it might be more appropriate to use the phrase “individual high in narcissism” as opposed to “narcissist”. We used the two phrases interchangeably in the manuscript to avoid unnecessary repeats of terms and emphasized that extrapolating categorical labels (e.g., narcissist vs non-narcissist) is an inappropriate practice and a mis-use of the NPI.
2. We used the diagonally weighted least squares (WLSMV in the Mplus) approach for the CFAs. The WLSMV is a robust estimator and does not assume normally distributed variables and is considered the best option for modelling such data (Brown, 2006). Given the dichotomous nature of the NPI items, WLSMV is a more appropriate approach compared to the MLR (robust maximum likelihood) or ML (maximum likelihood) approaches that usually deal with continuous data.
3. Chi-Square value for the WLSMV and other robust estimations (e.g., MLR) cannot be used for Chi-Square difference testing in the regular way. We used the DIFFTEST option that is designed for WLSMV difference testing in Mplus (see Muthén & Muthén, 2015).
4. Based on a suggestion from an anonymous reviewer, we direct interested readers to the Supplementary Table S3 for the full details of regression statistics and the analysis on coping with adversity. We did not hypothesize any effects on coping with adversity because narcissists are generally overoptimistic and thus are less likely to set goals to help them cope. However, to retain the integrity of the QTI we kept these items in the measure. For completeness we analyzed the data and report the findings in Table S3.
5. We thank an anonymous reviewer for this point.
6. We thank an anonymous reviewer for this point.

Table 1
Descriptive statistics and zero-order correlations between study variables

Measure	1	2	3	4	5	6	7	8	9
(1) Age (Yrs)	-	-.05	.47**	-.11	.05	-.11	-.01	-.04	-.02
(2) Sex (1-male, 0-female)		-	.21	.04	.03	.08	-.02	-.02	-.01
(3) Training experience (Yrs)			-	-.01	.04	.01	.01	-.23	.05
(4) NPI total score				(.84)	.79**	.86**	.09	.16*	-.04
(5) Self-inflated narcissism					(.74)	.47**	.17	.10	.04
(6) Dominant narcissism						(.72)	.01	.15*	-.06
(7) Goal-setting							(.83)	-.06	.04
(8) Distractibility								(.89)	-.22*
(9) Quality of preparation									(.91)
Mean	21.88	.48	8.31	.38	.49	.30	3.33	4.07	6.13
SD	5.72	.53	6.05	.17	.21	.18	.73	1.35	1.51

Note. NPI = Narcissistic Personality Inventory. Cronbach's alphas are in parentheses.

The possible mean score range is 0-1 for NPI total score, Self-inflated narcissism and Dominant narcissism, 1-5 for Goal-setting, and 1-9 for Distractibility and Quality of Preparation.

* $p < .05$; ** $p < .01$

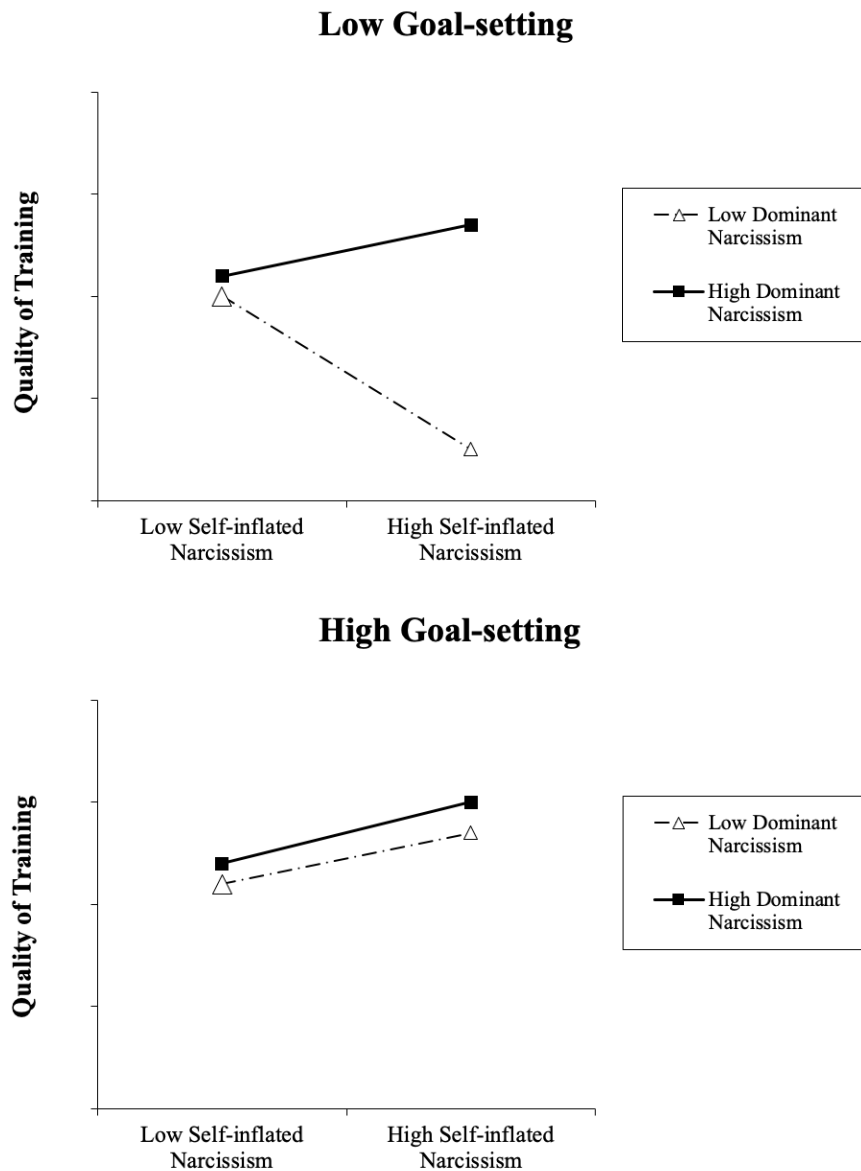


Figure 1. The hypothesized three-way interaction between self-inflated narcissism, dominant narcissism, and goal-setting on athlete quality of training.

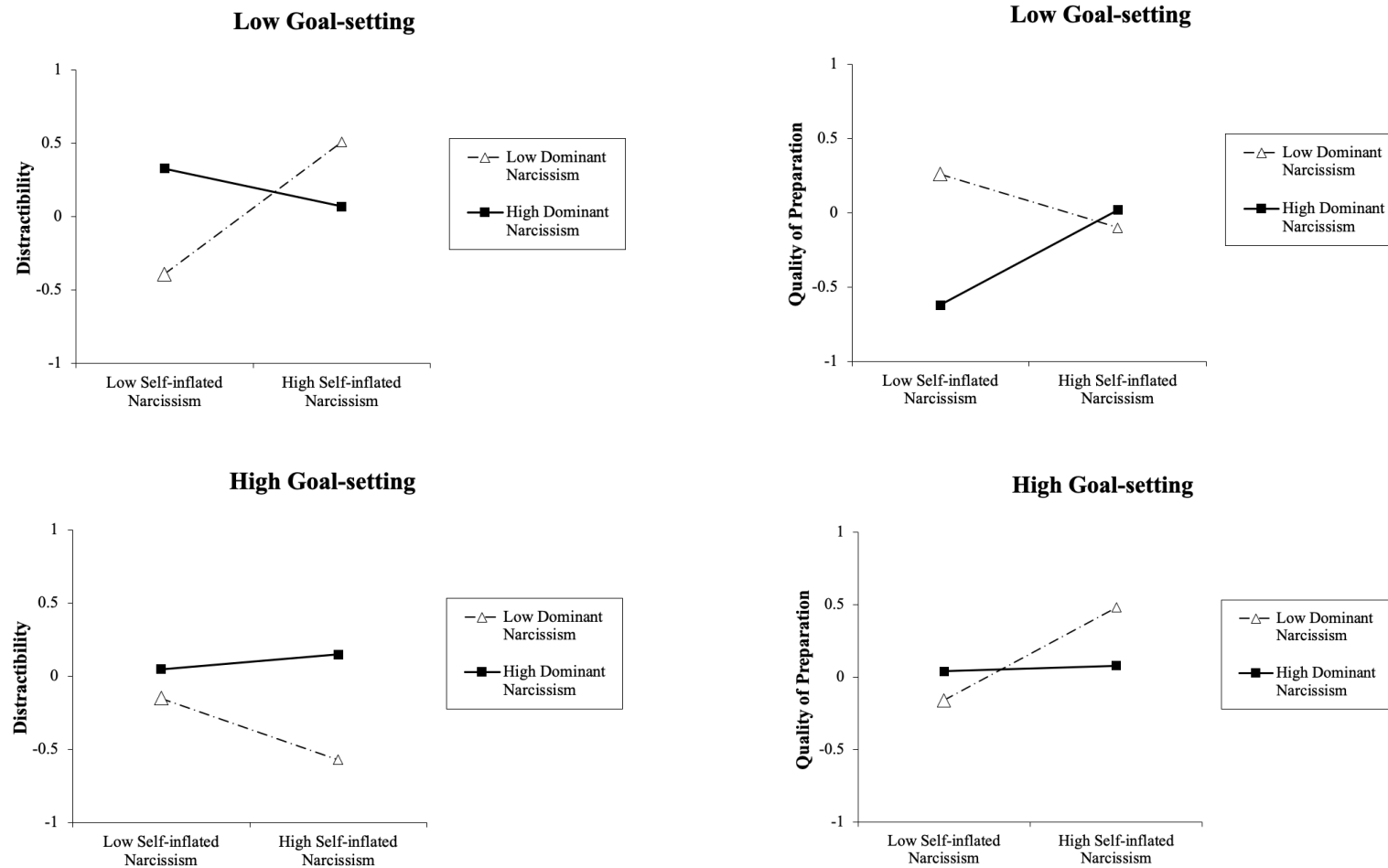


Figure 2. The nature of the self-inflated \times dominant narcissism \times goal-setting interaction on athlete distractibility (left panel) and quality of preparation (right panel) at the within-team level. All variables were standardized. Regression slopes were derived from regression equations with hypothetical individuals who are one standard deviation below or above the mean.