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Linking narcissism, Motivation and Doping Attitudes in Sport: A Multilevel Investigation Involving Coaches and Athletes

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Abstract

Research on coaching (Bartholomew, Ntoumanis, & Thøgersen-Ntoumani, 2009) has shown that coaches can display controlling behaviors that have detrimental effects on athletes' basic psychological needs and quality of sport experiences. The current study extends this literature by considering coach narcissism as a potential antecedent of coaches' controlling behaviors. Further, the study tests a model linking coaches' (n = 59) own reports of narcissistic tendencies with athletes' (n = 493) perceptions of coach controlling behaviors, experiences of need frustration, and attitudes toward doping. Multilevel path analysis revealed that coach narcissism was directly and positively associated with athletes' perceptions of controlling behaviors, and was indirectly and positively associated with athletes' reports of needs frustration. Additionally, athletes' perceptions of coach behaviors were positively associated—directly and indirectly—with attitudes toward doping. The findings advance understanding of controlling coach behaviors, their potential antecedents, and their associations with athletes' attitudes toward doping.

Keywords:

Coach personality, controlling coaching, self-determination theory, need frustration, multilevel path analysis

According to self-determination theory (SDT; Ryan & Deci, 2002), individuals in positions of authority may display a controlling interpersonal style of communication, which is likely to be motivationally detrimental to those with whom they interact. Controlling interpersonal style is a result of a controlling socialization under which one feels pressured by others (e.g., deadlines, punishment, or rewards) or by oneself (e.g., feelings of guilt and shame; Soenes & Vansteenkiste, 2010). In sport, controlling coaches frequently act in a forceful pressuring manner, coercing ways of thinking, feeling, and behaving upon their athletes (Bartholomew et al., 2009). These coaches use numerous strategies to influence their athletes, such as yelling, imposing opinions, making normative comparisons, issuing calculating statements, and offering contingent affection (Bartholomew et al., 2009). Such a controlling interpersonal style can frustrate athletes' basic psychological needs, undermine their self-determined motivation, and produce maladaptive affective, cognitive, and behavioral outcomes, including favorable attitudes toward doping (Bartholomew et al., 2009; Hodge, Hargreaves, Gerrard, & Lonsdale, 2013).

Unfortunately, there is a scarcity of SDT-based empirical research on antecedents of such a controlling interpersonal style in sport domain (for a review and an integrative model of such antecedents, see Matosic, Ntoumanis, & Quested, 2016). We believe that it is important to understand not only how coaches shape athletes' sporting experience, but also why coaches might behave in a controlling manner (Occhino, Mallet, Ryanne, & Carlisle, 2014). Hence, the purpose of this study was to examine —whether coaches' reports of their narcissism, empathic concern, and dominance are associated with athletes' perceptions of controlling coach behaviors, and whether the latter are associated with athletes' frustrated needs and positive attitudes toward

doping. These interrelated research questions were tested in an integrative fashion via multilevel path analysis.

Narcissism as an Antecedent of Controlling Behaviors

Based on the Mageau and Vallerand (2003) coach–athlete relationship model, Matosic et al. (2016) reviewed, across several life domains, three categories of antecedent variables thought to influence behaviors of individuals in positions of authority. These categories are context (e.g., administrative pressure), perceptions of others' motivation (e.g., self-determined or controlled motivation), and personal characteristics (e.g., personality factors; Pelletier, Seguin-Levesque, & Legault, 2002; Stebbings, Taylor, Spray, & Ntoumanis, 2012). The last category, personal characteristics (i.e., personality and stable beliefs), has received scarce attention in the sport domain (Matosic et al., 2016). As such, limited empirical research has been conducted investigating whether personality factors predict coach use of controlling behaviors.

As an exception to this status quo, Matosic et al. (2015) asked whether narcissism qualifies as a potential antecedent of coaches' controlling interpersonal style. Narcissism is a self-centered, self-aggrandizing, dominant, and manipulative interpersonal orientation (Emmons, 1987; Sedikides, Rudich, Gregg, Kumashiro, & Rusbult, 2004). Narcissistic individuals strive to assume leadership positions that allow them to be recognized as leaders. They seek attention and admiration, and focus on gaining personal benefit even when undermining others (Campbell, Hoffman, Campbell, & Marchisio, 2011). Narcissistic individuals look relentlessly for validation and pursue situations where they can exert authority and superiority over others (Morf & Rhodewalt, 2001). Narcissism has been linked with negative leadership qualities and lack of leadership effectiveness (Schoel, Stahlberg, & Sedikides, 2015). Narcissistic leaders utilize manipulations and conceit that culminate in abusive supervision behaviors (e.g., anger outbursts,

taking credit for subordinate success; Keashly, Trott, & MacLean, 1994; Keller Hansbrough & Jones, 2014). As coaching provides an opportunity for leadership and power, it may attract narcissistic individuals. Matosic et al. (2015) showed that narcissistic coaches report greater use of controlling behaviors toward athletes in situations in which coaches experience self-threat.

Empathic Concern and Dominance as Mediators of the Relation between Narcissism and Controlling Behaviors

A potential explanation for the possible negative relation between narcissism and controlling behaviors is reduction in empathic concern among narcissistic individuals (Hepper, Hart, Meek, Cisek, & Sedikides, 2014; Rosenthal & Pittinsky, 2006). Empathic concern is a component of empathy that describes a person's ability to experience others' emotions, and feel sympathy and compassion (Davis, 1983). Importantly, a negative association between narcissism and empathic concern has been identified in the literature (Trumpeter, Watson, O'Leary, & Weathington, 2008). Coaches with increased narcissism and lower levels of empathic concern may be less able to anticipate the negative feelings experienced by their athletes when these coaches act in a controlling manner. Consistent with this possibility, Matosic et al. (2015) demonstrated that reduced empathic concern mediated a positive predictive effect of narcissism on controlling behaviors among sport coaches. However, this study was based solely on coaches' reports of their controlling behaviors. As such, it is not known whether empathic concern mediates any effects of narcissism on athletes' perceptions of their coach's controlling behaviors; the current study explores this issue. There is an evidence to suggest that coach and athlete reports may be weakly related. Indeed, research has found a weak association between coach interpersonal style and athletes' perceptions of their coach's interpersonal style (Smoll, Smith, & Cumming, 2007).

Narcissistic individuals are also high in need for dominance. Dominance is the self-aggrandizing component of power that regulates subordinates' resources and establishes superiority over them (Emmons, 1984; Keltner, Gruenfeld, & Anderson, 2003). Narcissistic leaders may dominate their subordinates through displays of harassment (Horton & Sedikides, 2009). As such, narcissistic coaches may seek to establish superiority over their athletes via the enactment of pressuring and intimidating (i.e., controlling) behaviors (Bartholomew et al., 2009). Support for this contention can be found in the non-sport literature, which suggests that dominance mediates the effect of narcissism on indicators of controlling behaviors (e.g., aggression, hostility; Ojanen, Findley, & Fuller, 2012; Raskin, Novacek, & Terry, 1991). However, although Matosic et al. (2015) found coach narcissism to be a strong positive predictor of dominance, dominance was not associated with controlling behaviors. Given that this latter finding contradicted Matosic et al.'s hypothesis and, importantly, is inconsistent with the non-sport literature, we aimed in the current research to re-examine the relations among coach narcissism, dominance, and controlling behaviors. In contrast to Matosic et al., though, we assessed controlling coach behaviors via athlete report rather than coach report.

Athlete Perceptions of Controlling Behaviors, Need Frustration, and Doping Attitudes

Experiencing controlling behaviors in sport can have undermining and pathogenic effects on athletes' three basic psychological needs of autonomy, competence, and relatedness (Ntoumanis, 2012). Autonomy is the need to feel volitional about participating in one's sport, competence is the need to feel skilled when engaging in that sport, and relatedness is the need to feel connected and accepted by the sport milieu (e.g., teammates or coach). Satisfaction of these basic psychological needs is crucial, because it contributes to individuals feeling autonomous, efficacious, and connected with others (Ryan & Deci, 2000). As such, need satisfaction is linked

to individuals' optimal functioning and well-being, such as positive affect (Bartholomew, Ntoumanis, Ryan, Bosch, &Thøgersen-Ntoumani, 2011a). On the contrary, perceptions of the basic psychological needs as being actively damaged is referred to as need frustration (Bartholomew, Ntoumanis, Ryan, &Thøgersen-Ntoumani, 2011b). When their basic psychological needs are frustrated, individuals feel oppressed, inadequate, and rejected by others (Ryan & Deci, 2000). As such, need frustration is linked to individuals' suboptimal functioning and ill-being, such as self-injurious behaviors (e.g., eating disorders; Bartholomew et al., 2011a; Vansteenkiste, Claes, Soenens, & Verstuyf, 2013). Specifically, athletes who experience frustration of their basic psychological needs are more likely to engage in eating disorders (Bartholomew et al., 2011a).

Factors that influence need frustration, such as controlling behaviors, are important to understand in order to clarify further the link between need frustration and detrimental outcomes. Recent research has reported a positive relation between athletes' perceptions of controlling coach interpersonal style and need frustration (Balaguer et al., 2012). In particular, the more coaches adopted controlling strategies, the more athletes perceived their needs to be undermined. Putting pressure and intimidating athletes to gain personal benefit could make them feel oppressed and inadequate. Hence, and in view of the aforementioned expected relations between narcissism and controlling behaviors, we hypothesize that coaches higher in narcissism enact more frequently controlling behaviors toward their athletes, and, as such, frustrate the latter's needs. Such a hypothesis has not been previously tested in the literature.

One self-injurious behavior in sport that may be influenced by need frustration is the intentional use of performance-enhancement drugs (PEDs; ergogenic substances ingested for performance enhancement; WADA, 2015), often referred to as doping. Many PEDs have side

effects with potentially serious health consequences (Petróczi, 2013a; WADA, 2015); in this way doping represents a form of self-injurious behavior. Further, doping is banned in most sports and therefore constitutes a form of cheating. Attitudes toward doping are a key psychological predictor of doping use and intentions to dope in athletes, and, as such, are considered an alternate for doping behavior when obtaining data on the latter is not feasible (Lazuras, Barkoukis, Rodafinos, & Tzorbatzoudis, 2010; Ntoumanis, Ng, Barkoukis, & Backhouse, 2014; Petróczi & Aidman, 2009).

Favorable attitudes toward doping depict the use of performance enhancement drugs as beneficial, useful, or ethical (Petróczi & Aidman, 2009). These attitudes are influenced by one's social environment. As such, athletes who experience frustration of their needs in controlling environments may develop more positive attitudes toward doping, because they feel oppressed or rejected and consider "doping" a mean to satisfy their needs. Those athletes may be tempted to do anything to perform well and satisfy their coaches' expectations, and may thus be likely to form positive attitudes toward doping.

Hodge et al. (2013) reported that athletes' perceptions of controlling coach interpersonal style predicted athletes' positive attitudes toward doping. Hodge et al. also examined the role of non self-determined motivation in relation to athletes' perceptions of controlling behaviors and attitudes toward doping, but obtained null effects. Evidence suggests that basic psychological needs explain variance in sport-related outcomes over and above variance explained by motivational regulations (Felton & Jowett, 2015). Hence, in an attempt to extend the Hodge et al. findings, we tested whether controlling coach behaviors predict positive athlete attitudes toward doping via the frustration of athletes' psychological needs. Links between need frustration and doping-related variables have not been previously tested in the SDT literature.

When investigating the effects of coach behavior on athletes, it is important to examine effects at both the group (between) and individual (within) levels. Research involving data from coaches and athletes within teams is inherently multilevel because athletes are nested within teams/coaches (Arthur & Tomsett, 2015). As such, relations occur at more than one level, the individual (within-level) and the group level (between-level). Variables can also be measured at different levels, such as athletes' perceptions of coach behaviors (within-level) and coaches' self-reports (between-level). Furthermore, observations (i.e., athletes) are not independent, which is an assumption that underlies analysis of variance and ordinary least squares regression. These issues highlight the need to account for the non-independence among observations using multilevel analysis (Hox, 2010). Individuals in a group or context tend to be more similar on many variables (e.g., attitudes, behavior) compared to individuals in different groups or contexts (Heck & Thomas, 2015). As such, it is important to account for associations at both levels when analyzing nested data (Byrne, 2012).

Aims and Hypotheses

Our primary aim was to test a hypothesized multilevel model (Figure 1) proposing (1) positive relations between coach narcissism and dominance, and between athlete-reported controlling coach behaviors, need frustration, and attitudes towards doping at the between-level, as well as (2) negative relations between coach narcissism and empathic concern, and between coach empathic concern and athlete-reported controlling coach behaviors at the between-level, and (3) positive relations between athlete-reported controlling coach behaviors, need frustration, and attitudes towards doping at the within-level. In addition to these direct effects, we hypothesized positive indirect effects from (1) coach narcissism to athlete-reported controlling coach behaviors via coach empathic concern and dominance at the between-level, (2) coach

narcissism to athlete need frustration via athlete-reported controlling coach behaviors at the between-level, as well as (3) athlete-reported controlling coach behaviors to attitudes toward doping via need frustration at the between- and within-level, respectively.

Method

Participants

Participants were 493 athletes (328 male, 165 female; age ranging between 16-53 years, M_{age} = 21.22, SD_{age} = 3.65,) and 59 accredited coaches (48 males, 11 females; age ranging between 20-68 years, M_{age} = 35.90, SD_{age} = 12.71) from different levels of competition (e.g., regional, national, international) across the UK; each athlete was linked to only one coach. A variety of sports (e.g., rugby, soccer, swimming) were represented. On average, coaches had 12.71 (*SD* = 9.24) years of coaching experience, and athletes had practiced their sport for an average of 7.10 (*SD* = 5.11) years.

Measures

Narcissism. We assessed coach narcissism with the 40-item Narcissistic Personality Inventory (NPI; Raskin & Terry, 1988), which uses a forced-choice approach whereby participants are required to choose, for each item, between a narcissistic (e.g., "I like having authority over people") or a non-narcissistic (e.g., "I don't mind following orders") statement. NPI scores range from 0 to 40, with higher scores reflecting increased narcissism. We scored each narcissistic statement as 1, and each non-narcissistic statement as 0. We calculated the total score by adding up the narcissistic responses. The NPI has high construct validity and internal consistency (Raskin & Terry, 1988).

Dominance. We assessed coach dominance with the 11-item International Personality Item Pool (IPIP: Goldberg et al., 2006), which is based on the California Personality Inventory

(CPI; Wink & Gough, 1990). Response options ranged from 1 (*very inaccurate*) to 5 (*very accurate*). A sample item is: "Lay down the law to others." The stem for dominance was: "Describe yourself as you generally are now, not as you wish to be in the future, in relation to other people you know of the same sex and roughly the same age". The IPIP has high construct validity and internal consistency (Goldberg et al., 2006).

Empathic concern. We assessed coach empathy with the 7-item empathic concern subscale of the Interpersonal Reactivity Scale (IRI; Davis, 1983). Response options ranged from 0 (*does not describe me well*) to 4 (*describes me well*). A sample item is: "I am often quite touched by things that I see happen." The scale has good construct validity and internal consistency (Davis, 1983).

Controlling coach behaviors. We assessed athletes' perceptions of their coach's controlling behaviors using the 15-item Controlling Coach Behaviors Scale (CCBS; Bartholomew, Ntoumanis, & Thøgersen-Ntoumani, 2010). Response options ranged from 1 (*strongly disagree*) to 7 (*strongly agree*). A sample item is: "My coach tries to control what I do during my free time." The scale has good construct validity and internal consistency (Bartholomew et al., 2011a).

Need frustration. We assessed need frustration using the 12-item Psychological Need Thwarting Scale (PNTS; Bartholomew et al., 2011b) scale. The PNTS includes three subscales corresponding to athletes' autonomy, competence, and relatedness needs. Response options ranged from 1 (*strongly disagree*) to 7 (*strongly agree*). A sample item is: "I feel I am rejected by those around me." The scale has high construct validity and internal consistency (Bartholomew et al., 2011a).

Attitudes toward doping. Finally, we assessed athletes' attitudes toward doping with the 5-item modified version of the Performance Enhancement Attitude Scale (PEAS; Petróczi & Aidman, 2009) used by Gucciardi, Jalleh, and Donovan (2011). A sample item is: "The risks related to doping are exaggerated." Response options ranged from 1 (*strongly disagree*) to 6 (*strongly agree*). This scale has satisfactory construct validity and acceptable internal consistency ($\alpha = .67$; Gucciardi et al., 2011).

Procedure

We recruited coaches and athletes via sport club websites and existing contacts. After gaining approval from the ethics board of the first author's institution, we explained the purpose and procedure of the study to coaches and athletes, and obtained written consent to participate from both parties. We reminded them that their participation was voluntary, and all information provided would be completely confidential. The first author and three trained research assistants collected the data.

Data Analyses

First, we calculated intraclass correlation coefficients (ICC) for relevant variables to determine whether there was enough between-level variance to support their decomposition into within- and between-levels (Preacher, Zyphur, & Zhang, 2010). Then, we used multilevel path analysis via Mplus 7.3 software (Muthén & Muthén, 1998-2015). In MSEM, regression paths among the variables are included at the within- (athlete) and between- (coach and athlete aggregate scores) levels, allowing examination of indirect effects for both within- and between-level components, with each controlling for the other. We estimated simultaneously the direct and indirect effects at the within- and between-levels. The analysis provided standard errors and chi-square tests of model fit that accounted for the non-independence of observations due to the

clustering of athletes within coaches (Muthén & Muthén, 1998-2015). We used the robust maximum likelihood (MLR) estimation (Muthén & Muthén, 1998-2015) and assessed model fit using χ^2 goodness-of-fit index, root mean-square error of approximation (RMSEA), comparative fit index (CFI), Tucker-Lewis index (TLI), and square root mean residual (SRMR) at both the within- and between-levels (Preacher et al., 2010). By default, Mplus software performs an implicit latent group-mean centering of the latent within-level variable (Muthén & Muthén, 1998-2015). Therefore, no centering was needed prior to conducting the MSEM analyses.

We calculated indirect effects using the RMediation package via the distribution-of-the-product method (Tofighi & McKinnon, 2011). We used this method, because it can account for correlations between *a* (predictor-mediator) and *b* (mediator-outcome) paths (Tofighi & McKinnon, 2011); not doing so can produce inaccurate indirect effects, because of the covariance between the two paths (Kenny, Bolger, & Korchmaros, 2003). We calculated the indirect effects as the product of the *a* and *b* paths. We determined the statistical significance of the indirect effects via 95% confidence intervals (CIs). A 95% CI not containing zero indicates a statistically significant indirect effect (Preacher & Hayes, 2008). We calculated effect sizes for indirect effects via kappa squared (κ^2; Preacher & Kelley, 2011). κ^2 is the ratio of the obtained indirect effect to the maximum possible indirect effect (Preacher & Kelley, 2011). κ^2 is standardized and bounded using an interpretable metric (0 to 1), is independent of sample size and, with bootstrap methodology, allows for confidence interval construction. According to Preacher and Kelley (2011), κ^2 ratios are interpreted based on Cohen's (1998) guidelines with effect sizes ranging from small (.01), through medium (.09), to large (.25).

Results

We present descriptive statistics and inter-correlations for all study variables in Table 1. Correlation coefficients were in the expected direction and ranged in effect size from small to medium. The ICC for athletes' perceptions of controlling behaviors, need frustration, and attitudes toward doping variables ranged from .05 to .30. The fit indices for our *a priori* hypothesized model indicated very good model fit: $\chi^2(5) = 8.10$, $p = 0.15$, CFI = .98, TLI = .94, RMSEA = .04, SRMR (within) = .00, SRMR (between) = .09. We measured coach narcissism, empathic concern, and dominance at the between-level only (i.e., coach data); we decomposed athletes' perceptions of controlling coach behaviors, need frustration, and attitudes toward doping into latent within- (level 1) and between-level (level 2) components[1]. We report all direct and indirect effects, *p* values, κ^2, and 95% CIs in Figure 1 and Table 2.

With respect to the first aim of the study, the findings at the between-level showed that coach narcissism was positively associated with athletes' perceptions of controlling coach behaviors and dominance, and athletes' perceptions of controlling coach behaviors were positively associated with need frustration. However, the effects of dominance on athletes' perceptions of controlling coach behaviors, the effects of need frustration on attitudes toward doping, as well as athletes' perceptions of controlling coach behaviors on athlete attitudes toward doping, were not statistically significant. With respect to the second aim of our study, the findings at the between-level showed that the effects of coach narcissism on empathic concern, as well as empathic concern on athletes' perceptions of controlling coach behaviors were not statistically significant. With respect to the third aim of our study, the findings at the within-level showed that athletes' perceptions of controlling behaviors were positively associated with need frustration, and need frustration was positively related to attitudes toward doping. Additionally,

athletes' perceptions of controlling coach behaviors were positively related to athletes' attitudes toward doping.

We obtained a statistically significant indirect effect at the between-level; this was the effect of coach narcissism on athlete need frustration through athletes' perceptions of controlling coach behaviors (*a*b* = .85, [.02, .1.79]); the effect size was large (κ^2= .50; Table 2). Further, the indirect effect of athletes' perceptions of controlling coach behaviors on athlete attitudes toward doping through athlete need frustration was statistically significant (*a*b* = .08, [.03, .13]) and had a small effect size (κ^2 = .07; see Table 2).

Discussion

We addressed the role of narcissism as an antecedent of coach controlling behaviors. To that effect, we proposed a multilevel model linking coach controlling behaviors with athletes' frustrated needs and positive attitudes toward doping use (an indicator of compromised athlete functioning). In the tested model, we used coach and athlete data to examine the direct and indirect associations between coach reported narcissism, dominance, and emphatic concern, and athletes' perceptions of controlling coach behaviors at the group level. We also examined associations between athletes' perceptions of controlling coach behaviors, need frustration, and attitudes towards doping in sport at the group and individual levels, respectively.

Coach Narcissism, Coach Controlling Behaviors, and Athletes' Need Frustration at the Group Level

Coach narcissism was positively associated with athletes' perceptions of controlling coach behaviors at the group level. As such, the higher the narcissism coaches reported, the more frequently athletes perceived them to engage in controlling behaviors (e.g., punishing their athletes, imposing deadlines, and using task-engagement rewards). This is consistent with recent

findings that coach narcissism positively predicts coaches' self-reported controlling behaviors (Matosic et al., 2015). Here, we replicated this finding using athletes' perceptions of coach controlling behaviors. Thus, coaches who report narcissistic elements such as authority, self-sufficiency, entitlement, or exhibitionism are rated by themselves and others as more controlling.

Although narcissism – as expected – was positively related to dominance, we found no effect of dominance on athletes' perceptions of controlling behaviors at the group level. This pattern parallels that of Matosic et al. (2015). Taken together, these two studies suggest that, although coach dominance is positively predicted by narcissism, any effect of narcissism on coaches' controlling behaviors may be direct rather than operating through dominance. Future research in sport will do well to examine other possible mediators, such as beliefs about the normalcy and effectiveness of controlling behaviors (Reeve et al., 2014).

Empathic concern did not mediate the relation between coach narcissism and athletes' perceptions of controlling coach behaviors at the group level. Specifically, coach narcissism did not relate to empathic concern, and empathic concern did not relate to athletes' perceptions of controlling behaviors. This is contrary to the work of Matosic et al. (2015), in which such effects were significant. Interestingly, research outside of sport has reported mixed findings when examining the relation between narcissism and empathic concern (Hepper et al., 2014; Trumpeter et al., 2008). Of particular note, Hepper et al. (2014) found that narcissism did not directly relate to empathic concern, but cognitive components of empathy (i.e., perspective taking) did. Future empirical efforts could focus on cognitive components of empathy alongside its emotional components to tease out the possible mediating role of empathic concern in the coach narcissism-controlling behaviors relation.

Coach narcissism was indirectly linked to athletes' frustrated needs via athletes' perceptions of controlling coach behaviors at the group level. This indirect effect was large and extends previously reported direct effects between narcissism and controlling coach behaviors (Matosic et al., 2015), and between athletes' perceptions of controlling coach behaviors and need frustration (Bartholomew et al., 2011a). Hence, it seems that, when narcissistic coaches exhibit external controlling characteristics such as imposing deadlines, punishing athletes, and using engagement-contingent rewards, athletes are more likely to feel oppressed, inadequate, or rejected.

Predicting Attitudes toward Doping at the Group and Individual Levels

Athletes' perceptions of controlling coach behaviors did not have an effect on athletes' attitudes toward doping at the group level, either directly or via need frustration. Although athletes' perceptions of controlling coach behaviors positively predicted need frustration, the latter was not associated with athletes' attitudes toward doping. However, this relation was in the anticipated direction and had a moderate effect size. Thus, the lack of statistical significance may have been due to the limited amount of variance in doping attitudes to be explained at the group level (i.e., ICC = .05). The minimal variance in doping attitudes may in turn be due to the private and secretive nature of doping. In other words, attitudes toward doping are infrequently shared with others, which may prevent the formation of group level doping attitudes (Petróczi, 2013a).

At the individual level, however, athletes' perceptions of controlling coach behaviors were positively related to athletes' attitudes toward doping. This is consistent with the findings of Hodge et al. (2013), namely that athletes' perceptions of controlling coach climates positively predict athletes' doping attitudes. Athletes who experience pressure to perform at their best from their coach may be likely to have more positive attitudes towards doping. This is possibly

because athletes view ethically questionable means of performance enhancement more favorably given that those may help them satisfy their coach's demands for high performance (Hodge et al., 2013; Smith et al., 2010).

We extended the work of Hodge et al. (2013) by showing that need frustration was a mediator of the relation between athletes' perceptions of controlling behaviors and athletes' attitudes toward doping. Athletes who perceive their coaches as controlling could feel oppressed, inadequate, or rejected (Balaguer et al., 2012). Feeling inadequate and rejected may lead athletes to develop more positive attitudes toward doping (and potentially use illegal performance enhancing substances), as a result of their desire to increase their competence and relatedness (feelings of acceptance by the coach) by accomplishing success. Such need restoration efforts (cf. Radel, Pelletier, Sarrazin, & Milyavskaya, 2011) are important to address in future research on doping.

Summary, Limitations, and Future Directions

The results of the current study make novel contributions to the literature by testing the proximal and distal antecedent role of coach narcissism on athletes' perceptions of controlling coach behaviors and feelings of compromised psychological needs. We showed that these antecedents can positively predict a highly topical issue, athletes' positive attitudes toward doping. We further extend previous literature by examining the relations among coach personality, coach and athlete motivational factors, and athlete doping attitudes via obtaining reports from both coaches and athletes and via testing such relations simultaneously within a multilevel path analysis framework.

We acknowledge several limitations, which point to research directions. The study was based on self-report data, which are amenable to socially desirable responding (Gonyea, 2005).

Future research may consider alternative assessments, such as observational methods for coach behaviors and implicit measures for doping attitudes (Petróczi, 2013b). Additionally, given the low internal consistency of the attitudes toward doping measure (Gucciardi et al., 2011), future research should test the replicability of the current findings using different measures of attitudes toward doping (e.g., full 17-item PEAS; Petróczi & Aidman, 2009). Further work should also employ longitudinal designs to examine the temporal ordering of the relations among the study variables, with particular emphasis on testing need restoration efforts via engaging in doping use. Additionally, researchers could examine the moderating role of sport type on the effect of controlling coach behaviors on attitudes toward doping. Controlling behaviors may have a stronger effect on doping attitudes in some sports (e.g., strength based, endurance based) because doping is seen as more effective for the key performance attributed in those sports compared to others.

Our study was concerned with the relation between grandiose narcissism (i.e., NPI narcissism) and controlling interpersonal style. Future research could test the relations between other forms of narcissism, such as vulnerable narcissism (Gregg & Sedikides, 2010) and coach controlling interpersonal style. Additionally, researchers could address other components of the dark triad beyond narcissism (i.e., Machiavellianism, psychopathy; Paulhus & Williams, 2002). The "dark triad" factors share common traits such as self-promotion, lack of empathy, and aggressiveness, and hence they might also serve as proximal and distal antecedents of coach controlling behaviors, athletes' frustrated needs, and attitudes toward doping. Finally, researchers could examine the interplay between coach and athlete narcissism (Arthur, Woodman, Ong, Hardy, & Ntoumanis, 2011). For example, it would be interesting to test how athletes high and

low on narcissism experience need frustration when interacting with narcissistic coaches, or the types of behaviors coaches use when interacting with narcissistic athletes.

Footnote

[1] A reviewer requested to investigate the role of each need frustration (i.e., need for competence, autonomy, and relatedness) and each controlling behavior (i.e., controlling use of rewards, intimidation, negative conditional regard, and excessive personal control) independently in the model. We ran such models but they produced inadmissible solutions. As an alternative, we have tested for the correlations between each need frustration subscale with and attitudes toward doping, and between each controlling behaviors subscales and doping attitudes, at both the within- and between-levels. The correlation matrix for the individual need frustration subscales showed similar correlations compared to the correlations between overall need frustration and doping attitudes. Similarly, the correlation matrix for the controlling subscales showed similar correlations compared to the correlations between overall controlling behaviors and doping attitudes (with the exception of the controlling use of rewards-doping attitudes correlation which was non-significant). These results are available from the first author upon request.

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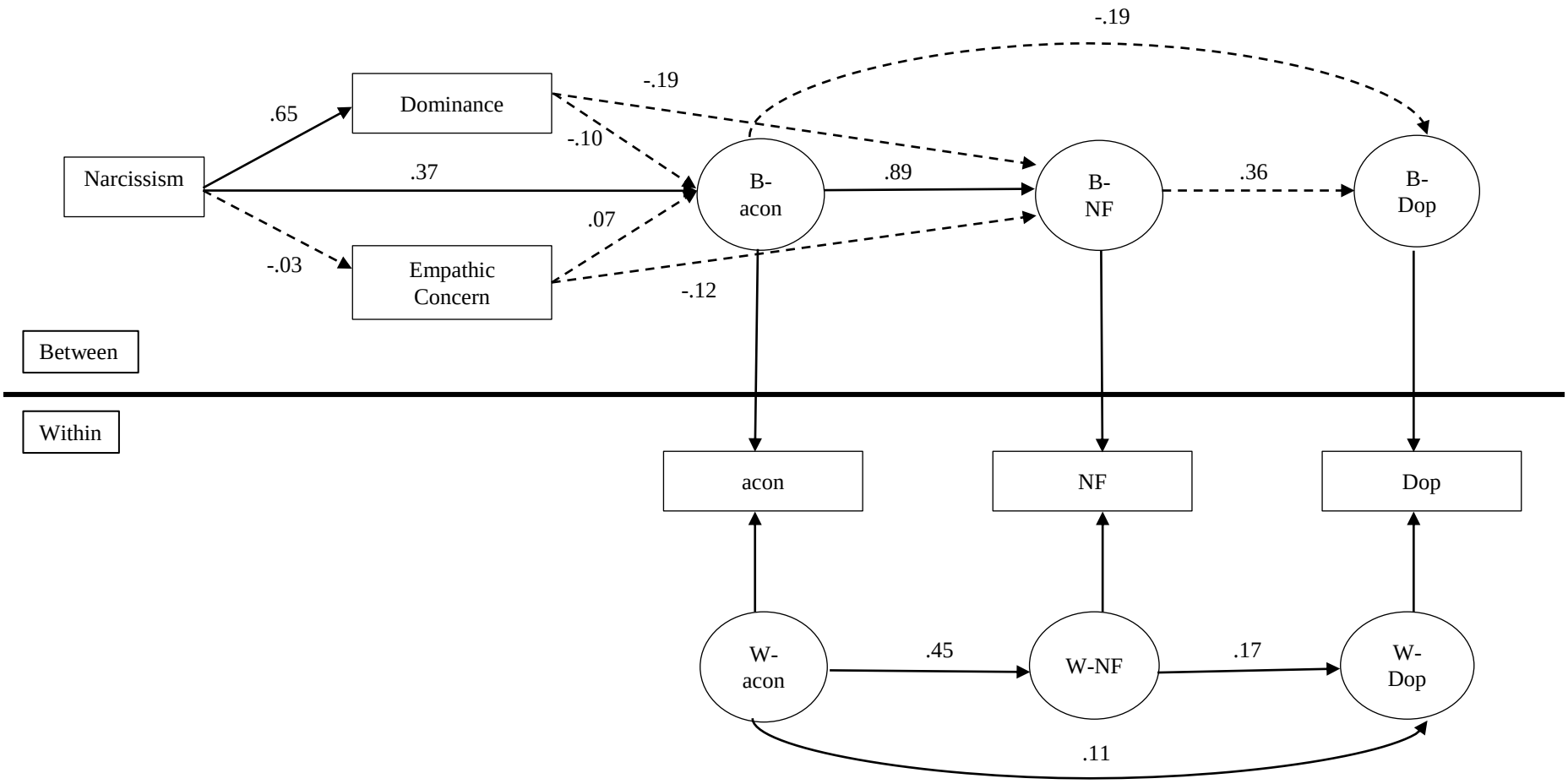

Figure 1. Multilevel path analysis model testing coach narcissism, dominance and empathic concern in relation to athletes' perceptions of coach behaviors, need frustration, and attitudes toward doping

Note: Model displays results of both within- and between-level analyses. Dashed lines represent non-significant relations. acon = athletes' perceptions of coach controlling behaviors; NF = athlete need frustration; dop = athlete attitudes toward doping; W = within-level; B = between-level; $*p < .05$, $**p < .01$.

Table 1

Descriptive Statistics, Between-level and Within-level Correlations between Study Variables and Intraclass Correlations

	Variable	1	2	3	4	5	6	ICC
1.	Narcissism	**.85**						-
2.	Dominance	.65**	**.86**					-
3.	Empathic Concern	-.03	-.15	**.78**				-
4.	Athletes' perceptions of controlling behaviors	.31*	.14	.07	**.90**	*.45***	*.19***	.30
5.	Need frustration	.06	-.05	-.03	.86**	**.91**	*.21***	.17
6.	Attitudes toward doping	-.09	.26	-.14	.13	.37	**.63**	.05
	Possible Range	0-40	1-5	0-4	1-7	1-7	1-6	
	M	14.23	3.11	3.09	2.67	2.53	2.46	
	SD	6.74	.52	.40	1.07	1.11	.85	
	Skewness	.962	-.125	-.529	.336	.389	.353	
	Kurtosis	.997	-.224	.046	-.682	-.553	- .235	

Note. ICC = Intraclass correlation coefficients. Raykov (2009) composite reliability coefficients are in bold along the diagonal. Between-level correlations coefficients are represented on the left side of diagonal. Within-level correlation coefficients are represented on the right side of diagonal and are in italics. *$p < .05$, **$p < .01$.

Table 2

Indirect Effects and Asymmetric CIs

	Estimate[a]	*SE*	95 % CI		κ^2
			LL	UL	
Within					
Acon→NF→dop	0.08	0.03	0.03	0.13	0.07
Between					
Narc→dom→acon	0.22	0.42	-1.05	0.59	0.05
Narc→empat→acon	-0.01	0.09	-0.21	0.16	0.00
Narc→acon→NF	0.85	0.45	0.02	1.79	0.50
dom→acon→NF	0.05	0.10	-0.25	0.14	0.15
empat→acon→NF	0.04	0.10	-0.15	0.24	0.14
acon→NF→dop	0.12	0.33	-0.52	0.77	0.13

Note. [a]unstandardized estimate. SE = standard error; CI = confidence interval; LL = lower limit; UL = upper limit; κ^2= kappa squared; acon = athletes' perceptions of coach controlling behaviors; NF = athlete need frustration; dop = athlete attitudes toward doping; Narc = coach narcissism; dom = coach dominance; empat = coach empathic concern.