

A game-to-game investigation of the relation between need-supportive and need-thwarting coaching and moral behavior in soccer



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ABSTRACT

Objective: Although perceived need-supportive and need-thwarting coaching have received considerable attention, the question whether coach behavior fluctuates from game to game, with resulting associations with players' moral behavior has not been examined.

Design and method: A Belgian sample of soccer players ($N = 197$; $M = 26.57$) was followed during five competition games, with players completing measures both prior to and following each game assessing, pre-game and on-game perceived coaching as well as athletes' moral behavior.

Results: Results of multilevel analyses indicated that there exists substantial variation in perceived need-thwarting and need-supportive coaching behavior from game to game. The game-to-game variation in perceived pre-game need-thwarting coaching behavior related positively to variation in the adoption of an objectifying stance, which, in turn, related to variation in antisocial behavior oriented towards the opponent, the referee, and even their own teammates. Variation in perceived on-game need-supportive and need-thwarting coaching behavior yielded an additional relation to team-related moral outcomes. Finally, supplementary analysis indicated that these effects also held for an objective marker of moral functioning (i.e., number of yellow cards) and that players' level of competition-contingent pay related to their antisocial behavior via an objectifying stance.

Conclusion: The discussion highlights the fluctuating and dynamic nature of motivating coaching behavior, and its association with players' moral functioning.

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1. Introduction

Sport plays an important educational and social role (European Commission, 2007, White paper section 1) as it constitutes an ideal context where players can learn to follow rules, to constructively deal with authority figures (e.g., the referee) and to engage in prosocial behaviors. These prosocial behaviors, defined as voluntary acts that aim to help or benefit others, together with the absence of antisocial behaviors, defined as voluntary acts that disadvantage or harm others, are indicative of individuals' moral functioning in sports (Bandura, 1999; Kavussanu & Boardley, 2009; Sage & Kavussanu, 2007). Players' display of both prosocial and antisocial behaviors may vary substantially from game to game. While players may act prosocial during some games, they may

verbally and physically aggress the referee, opponents, or even their teammates (e.g., Bredemeier, 1994) during other games, and as such display antisocial behaviors.

Certainly, such antisocial behaviors are not warranted and to optimize sports' educational and social role, we need to better understand the factors that promote prosocial or moral behaviors (such as helping an injured opponent) and make players vulnerable for the display of antisocial or immoral behaviors (such as retaliating after a bad foul). Among those factors coaches play a key role, as they constitute one of the primary socializing agents for players (e.g., Bartholomew, Ntoumanis, & Thøgersen-Ntoumani, 2010; Nucci & Kim, 2005). That is, coaches may prevent the occurrence of antisocial or immoral behavior, but they may also actively encourage or elicit such behavior, for instance by being critical or by inducing pressure to win, which can result in a winning-at-all cost attitude and a lack of respect and concern for the opponent, the rules of the game, and the officials (Nucci & Kim, 2005; Vallerand, Brière, Blanchard, & Provencher, 1997). Indeed, although players

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possess the self-regulatory capacity to refrain from antisocial behavior and instead engage in prosocial behavior (Bandura, 1991, 1999), under psychological need-thwarting circumstances players' vulnerability for antisocial play may get evoked (Vansteenkiste & Ryan, 2013). In the context of a soccer game, the combination of a pressuring coach and a competitive environment may constitute such a need-thwarting context.

Recent cross-sectional research has linked coaching behavior with athletes' moral behavior (e.g., Hodge & Gucciardi, 2015), nevertheless the question whether game-to-game variation in coaching behavior relates to game-to-game variation in players' moral behavior has, to the best of our knowledge, not received any prior attention. Yet, given that the pressure imposed on players and the focus on winning at all costs may vary from game to game, it is sensible to expect that also players' capacity to engage in prosocial behavior as well as their vulnerability for displaying antisocial behavior varies from game to game. Therefore, in the present study, grounded in Self-Determination Theory (Deci & Ryan, 2000; Vansteenkiste & Ryan, 2013), we adopted a dynamic perspective towards coaching, thereby investigating whether players' engagement in prosocial and antisocial behavior varies from game to game depending, among other factors, on the need-supportive and need-thwarting style used by the coach both prior to and during the game.

1.1. Need-supportive and need-thwarting coaching

Within the SDT-perspective, a distinction is made between two broader coaching styles, that is, need-supportive and need-thwarting coaching. When need-supportive, coaches nurture athletes' basic psychological needs for autonomy (i.e., experience a sense of volition), competence (i.e., feeling effective) and relatedness (i.e., experience a warm relationship; Vansteenkiste & Ryan, 2013), thereby creating an ideal environment for athletes to benefit affectively (e.g., well-being; Adie, Duda, & Ntoumanis, 2012), cognitively (e.g., learning; Pope & Wilson, 2012), and behaviorally (e.g., prosocial behavior; Hodge & Lonsdale, 2011).

When need-supportive, coaches take their athletes' perspective, provide choices and stimulate initiative, as well as provide their athletes with meaningful rationales for assigned roles, tasks, or exercises (Mageau & Vallerand, 2003; Reeve, 2016). They also create a predictable and competence-enhancing environment, for instance by providing clear instructions, encouragements, and showing confidence in their athletes' abilities (Mageau & Vallerand, 2003; Reeve, 2009). Finally, when need-supportive, coaches are warm, helpful, and available to their athletes as to address their worries and anxieties (Williams, Whipp, Jackson, & Dimmock, 2013). Several studies have convincingly shown the presence of a "bright pathway" (see Bartholomew, Ntoumanis, Ryan, Bosch, & Thøgersen-Ntoumani, 2011) where coach need support relates to better adjustment and performance because athletes' psychological needs get better met (Mageau & Vallerand, 2003).

In contrast, some recent studies have revealed a "dark pathway" where coach need thwarting relates to need frustration which, in turn, relates to suboptimal or even maladaptive outcomes (Bartholomew, Ntoumanis, Ryan, Bosch, et al., 2011) among which is antisocial behavior (Hodge & Gucciardi, 2015). Need thwarting – which does not simply mean the absence of need support (see Vansteenkiste & Ryan, 2013) as it engenders feelings of pressure (i.e., autonomy frustration), inferiority or failure (i.e., competence frustration) and social alienation and loneliness (i.e., relatedness frustration) – actively undermines athletes' basic psychological needs (Bartholomew, Ntoumanis, Ryan, & Thøgersen-Ntoumani, 2011; Haerens, Vansteenkiste, Aelterman, & Van den Berghe, 2016).

In particular, athletes' need for autonomy gets frustrated when

their coach forces them to act, think, and feel in a prescribed way, for instance by using intimidation, displaying conditional regard, or exerting excessive control (Bartholomew et al., 2010; Reeve, 2009). Likewise, athletes' needs for competence and relatedness are thwarted when their coach is critical and destructive as well as distant and cold (Bartholomew, Ntoumanis, Ryan, Bosch, et al., 2011). Such need frustrating experiences, in turn, relate to suboptimal or negative athlete outcomes such as a greater probability of burnout, depressive symptoms (Balaguer et al., 2012; Bartholomew, Ntoumanis, Ryan, Bosch, et al., 2011) and antisocial behavior (Hodge & Gucciardi, 2015).

1.2. Coaching and moral behavior

As suggested by Bandura (1999) morality implies not only doing good to others (i.e. prosocial behaviors), but also avoiding provoking harm to others (i.e., absence of antisocial behaviors), a distinction which has been shown to be relevant in the context of sport (e.g., Hodge & Lonsdale, 2011). To illustrate, in soccer, players may display prosocial behavior by helping an injured opponent or encouraging a team mate. In contrast, they may exhibit antisocial behavior by deliberately injuring an opponent or being critical towards teammates. Moreover, the social context – and therefore in part also the coach – can influence players' capacity to apply moral standards (Bandura, 1991,1999) such that players' more natural tendency to act prosocial may get supported or overridden.

Consistent with the presumed role of coaches, a few cross-sectional studies have shown perceived coach autonomy support to relate negatively to athletes' antisocial behavior towards both their own teammates and the opponent, and positively to prosocial behavior towards the teammates (Hodge & Lonsdale, 2011; see also; Ntoumanis & Standage, 2009). In another cross-sectional study, Hodge and Gucciardi (2015) found perceived controlling coaching to relate positively to antisocial behavior towards both the opponents and teammates. In that study, these associations could be accounted for by athletes' moral disengagement, which refers to the psychological maneuvers that individuals use to transgress moral standards without experiencing negative affect (Bandura, 2002). One such maneuver is dehumanization, the process by which individuals perceive others not as humans but rather as animals (i.e., animalistic dehumanization) or objects (i.e., objectification). Concerning the latter, Vansteenkiste, Mouratidis, and Lens (2010), found that soccer players' objectification of the opponent helped to explain why their experienced pressure to outperform their opponents related positively to antisocial behavior towards these opponents. Apparently, the pressure to win may lead soccer players to treat their opponents as barriers to be removed in the service of winning, thereby lowering the threshold to aggress opponents.

Another source of pressure may constitute of the monetary rewards soccer players receive for winning a game. According to Cognitive Evaluation Theory (CET; Deci, 1975), one of the mini-theories of SDT, tangible extrinsic rewards could be a potential source of pressure especially if the reward is made contingent upon the outcome of the behavior (Reeve & Deci, 1996; Vansteenkiste & Deci, 2003). Presumably, the higher the competition-contingent bonus players receive, the more they may feel pressured to win the game. Such heightened pressure may lead players to engage in any possible means necessary to attain the outcome of winning, even engaging in antisocial behavior. The threshold to engage in such antisocial behavior would be more easily achieved if the more the opponent is denied of human-like properties, that is, the more the opponent is objectified, a process that is more likely to occur if higher stakes are at play (i.e., if more money can be gained; see Vansteenkiste et al., 2010). Given that competition-contingent

financial rewards are a very common practice in Belgium, even in the lowest leagues, it is worth exploring this issue.

1.3. Towards a more dynamic view on coaching

Most of the studies we reviewed herein focused on interpersonal differences in coaching behaviors, presuming that some coaches may be more need-supportive than others. Yet, the emphasis on these interpersonal differences overlooks the possibility that coaches' behavior may vary considerably from training to training and from game to game. We argue that by taking into account the variation in perceived coaching behavior of a given coach, we avoid the bias that infiltrates when peoples' behavior is assessed through summary accounts over an extended period of time (Bolger, Davis, & Rafaeli, 2003), and it allows to more properly consider the complexities and subtleties of sport coaching. Despite coaches' reliance on a particular coaching style, coaches may display considerable variation around their own average as a function of changing circumstances (e.g., the pressure upon the game). If such intrapersonal variation would be found, it would allow us to adopt a more dynamic (instead of static) perspective on coaching.

Two lines of research provide indirect support for the existence of game-to-game variation in coaching style. First, intervention research indicates that a need-supportive and need-thwarting coaching style is malleable (for an overview see Su & Reeve, 2011), with coaches being capable to adopt a more need-supportive approach during the intervention (e.g., Cheon, Reeve, Lee, & Lee, 2015). Second, in a longitudinal study, Stebbings, Taylor, and Spray (2015) asked coaches three times in an eleven-month period to report on their coaching behavior. Results showed that approximately 30% of the variance in both autonomy-supportive and controlling coaching was situated at the within-person level. On a more short-term base, Vansteenkiste, Mouratidis, Van Riet, and Lens (2014) found considerable (approximately 50%) game-to-game variation in the motivation of volley-ball players. Following the premises of SDT that player motivation is highly dependent on coaching behavior, the findings regarding the game-to-game variation in motivation can serve as indirect evidence for the dynamic nature of coaching behaviors as well. In short, although anecdotic evidence suggests that coaches need-supportive and need-thwarting coaching style would vary considerable across games, to date, there is only indirect evidence for this claim.

1.4. The present study

If we want to optimize sports' educational and social role, we need to better understand the growth-promoting factors that relate to prosocial behaviors (e.g., encouraging a teammate) as well as the risk factors that make players vulnerable for engaging in antisocial behaviors (e.g., retaliating after a bad foul). In the current study, we argue that coaches' motivating style and in particular the extent to which the coach is perceived to be need-supportive and need-thwarting, both prior to and during the game, may play a key role herein.

Specifically, we aimed to build on the existing literature (Hodge & Gucciardi, 2015; Hodge & Lonsdale, 2011; Vansteenkiste et al., 2010) in two ways. First, rather than using a one-shot assessment to study perceived coaching behavior and its relation to players' prosocial and antisocial behavior, our aim was to shed light on the game-to-game dynamics of coaching. To do so, we followed soccer players for five competition games, thereby assessing the perceived need-supportive and need-thwarting coach behaviors closely before players entered the pitch (i.e., after the coach's pre-game

speech) and directly following the end of the game, while also obtaining assessments of prosocial and antisocial behavior after the game. Next, in light of the increasing evidence that the absence of need-supportive coaching does not necessarily denote the presence of need-thwarting coaching (e.g., Bartholomew et al., 2011; Vansteenkiste & Ryan, 2013), our second aim was to examine their independent contribution in the prediction of both the prosocial and antisocial outcomes, targeting the opponent, the referee as well as teammates (see also Van der Kaap-Deeder, Vansteenkiste, Soenens, & Mabbe, 2017) and to examine, in particular, whether the adoption of an objectifying stance, as an aspect of moral disengagement (Bandura, 1999), would play an explanatory role herein. Three hypotheses were formulated.

First, in parallel with previous studies indicating substantial game-to-game variation in athletes' motivation (e.g., Vansteenkiste et al., 2014), we hypothesized that there would be a similar game-to-game variation in the perception of need-supportive and need-thwarting coaching behavior before and during the game. Further, as players' capacity to apply moral standards and engage in moral self-censure may vary as a function of the social context (Bandura, 1991, 1999), we expected a similar game-to-game variation in players' objectifying stance (as assessed prior to each game) and their prosocial and antisocial behavior (as reported after the game).

Second, consistent with previous studies providing evidence for the growth-promoting role of need-supportive coaching and the detrimental effects of need-thwarting coaching (e.g., Bartholomew et al., 2011; Haerens, Aelterman, Vansteenkiste, Soenens, & Van Petegem, 2015; Haerens et al., 2016), we hypothesized that perceived game-to-game variation in pre-game need-thwarting (but not need-supportive) coaching would relate to game-to-game variation in antisocial behavior towards the opponent. With respect to the latter, we expected that the reason why need-thwarting coaching would relate to antisocial play is because need-thwarting coaching would lead players to adopt an objectifying stance towards their opponents (Vansteenkiste et al., 2010). Indeed, such an objectifying stance would lower players' threshold for displaying antisocial behavior as the opponent is denied of human-like features, and meanwhile is being reduced to an object that can be removed in the service of meeting external pressures. In a more explorative way, we examined whether the negative consequences of an objectifying attitude, as reported prior to the game, would generalize to antisocial behavior oriented towards the referee and, perhaps, even teammates (see Vansteenkiste et al., 2010).

Third, as we did not only assess perceived need-supportive and need-thwarting coaching prior to the game, but also tapped into players' perceived coaching style during the game itself (once the game was over), we examined whether need-supportive and need-thwarting coaching during the game would yield a supplementary contribution in the prediction of moral behaviors above and beyond pre-game coaching. Congruent with the presumed "bright" and "dark" pathways, we expected that game-to-game variation in need-supportive coaching during the game would especially relate to game-to-game variation in prosocial behavior towards their own teammates, while game-to-game variation in need-thwarting coaching during the game would relate to game-to-game variation in antisocial behavior oriented towards the opponent.

Finally, in a more explorative way, we investigated whether the same process of perceived need-thwarting coaching and objectification would be associated with a higher risk for players to receive a yellow or red card during the game, which can serve as an objective marker of moral functioning. Likewise, we explored the monetary reward players receive after a victory as a possible objective antecedent of the proposed process, assuming that such contingent reward acts as an external pressure for a player to win (Reeve & Deci, 1996; Vansteenkiste & Deci, 2003).

2. Method

2.1. Participants and procedure

Eleven out of the 45 Belgian soccer teams, that were initially approached, agreed to participate in the study. One of the authors visited each of these participating clubs to explain the procedure of the study (e.g., that participants would have to complete a baseline questionnaire and five shorter questionnaires just before and after five competition games). The author ensured participation to be anonymous and volitional, and emphasized the players' right to quit at any time. Only few players denied participation and in total 197 participating players completed the baseline questionnaire. Following a baseline assessment that took place the earliest on the tenth game and the latest on the 14th game of the season ($M = 11.52$, $SD = 1.25$), a weekly game assessment occurred during five weeks (i.e., November and December 2013). All players including substitutes that were part of the squad for that particular game completed the pre- and postgame questionnaires, each of which took about 5 min. Questionnaires were completed privately in the changing room. Players filled out the pre-game measure after the head coach's pre-game speech right before they entered the pitch, while the post-game measure, filled out by the players who participated in the game, was completed within a period of 30 min after the final whistle. Players completed the questionnaires with their head coach in mind. After finishing the last assessment, all players were debriefed, thanked, and received feedback on the importance of need-supportive coaching behavior. Also, in the months following the termination of the study, one of the authors informed the players on the main findings of the study during a club meeting. All participants received a free drink at the end of the data collection. The study was in line with the ethical recommendations of the host University.

The 197 male soccer players ($M = 26.57$ years, $SD = 5.97$) belonged to 11 different Belgian soccer clubs. 11 participants (5.6%) played in fourth national division, while 34 (17.3%), 58 (29.4%), and 39 (19.8%) played, respectively in the second, third, and fourth provincial league; also 55 (27.9%) players played in amateur league. On average, participants had been playing soccer for 19 years ($M = 19.07$, $SD = 5.73$), had 18 years ($M = 18.28$, $SD = 5.96$) of competition experience and had been playing with their current team for almost 5 years ($M = 4.71$, $SD = 4.74$). The number of training hours ranged from 0 to 11 h per week ($M = 2.99$, $SD = 1.93$). At baseline, players had received on average one yellow card during the games preceding the measurements ($M = 0.91$, $SD = 1.47$). The players that informed us on their remuneration earned an average of 43.89 Euros ($SD = 58.58$) for a victory.

2.2. Measures

Because of the game-to-game study design and the measurements taking place repeatedly just before and after each game, the assessments were kept as short as possible to avoid fatigue in answering the questions¹.

2.3. Pre-game questionnaire

2.3.1. Pre-Game coaching

Three items from the Health Care Climate Questionnaire (HCCQ; Williams, Grow, Freedman, Ryan, & Deci, 1996) were adapted to the sport context to assess perceived need support during the pre-

game speech of the coach (i.e., During the pre-game speech, the coach: "... was interested in how I would handle the game"; "... confirmed confidence in my abilities as a soccer player"; "... encouraged me to ask for clarification if instructions were unclear"; $\alpha = 0.84$). Likewise, inspired by the Controlling Coach Behavior Scale (CCBS; Bartholomew et al., 2010) and the parental psychological control scale (Barber, 1996), three items were created to assess need-thwarting coaching, thereby fitting the items to the particular situation at hand, namely the pre-game speech (i.e., "The coach pressured me by stressing the importance of a good result"; "The coach clearly indicated to be disappointed with a poor result"; "The coach was critical of past performances"; $\alpha = 0.93$). All the items were answered on a 5-point Likert-type scale ranging from 1 (*totally disagree*) to 5 (*strongly agree*).

2.3.2. Objectification

Players' objectification of the opponent was assessed through three, 5-point Likert-type scale items (1 = *Totally disagree*; 5 = *Strongly agree*), taken from the study of Vansteenkiste et al. (2010). An example item was "Today, I do not consider the opponents as a person but as an enemy" ($\alpha = 0.87$).

2.4. Post-game questionnaire

2.4.1. On-Game Coaching

Similar to the pre-game assessment, the players were asked to report their perception of coaching during the game. Specifically, the stem "During the past game..." was followed by four adapted items from the HCCQ tapping into need-supportive (i.e., "the coach explained why he/she wanted to change things"; "the coach tried to positively encourage me"; "the coach gave clear instruction concerning my game play"; "the coach was clear about how I could handle a specific game situation"; $\alpha = 0.94$) and four items tapping into need-thwarting (i.e., "the coach pressured me", "the coach blamed me for mistakes", "the coach was critical about my game"; "the coach clearly showed his/her disappointment when I failed an attempt"; $\alpha = 0.86$) coaching behavior.

2.4.2. Prosocial and antisocial behavior

The 20-item "Prosocial and Antisocial Behavior in Sport Scale (PABSS, Kavussanu & Boardley, 2009) was used to assess players' moral behavior during the game. The instrument consists of four components and the players indicated to what extent they exhibited (1) prosocial behavior towards teammates (e.g., "congratulated a teammate for good play"; $\alpha = 0.97$), (2) prosocial behavior towards the opponent (e.g., "asked to stop play when an opponent was injured"; $\alpha = 0.96$), (3) antisocial behavior towards teammates (e.g., "criticized a teammate"; $\alpha = 0.92$) and (4) antisocial behavior towards the opponent (e.g., "retaliated after a bad foul"; $\alpha = 0.96$). These components were assessed by various items and scored on a scale of 1 (*not at all*) to 4 (*always*).

Soccer players' resentment toward the referee was assessed with the stem "During the past game..." followed by two self-created items (e.g., "... I felt irritated when I was disadvantaged" and "... errors of the referee made me angry"; $\alpha = 0.91$). Players answered on a 5-point Likert scale from 1 (never) to 5 (very often). Finally, to include a more objective indicator of antisocial behavior, we also asked players whether they received a yellow or red card. During the period of assessment, a total of 57 yellow cards but not one red card was administered. Therefore, in subsequent analyses we only focused on yellow cards.

2.5. Plan of analyses

Given the nested structure of the data (as the repeated-

¹ Results of Confirmatory Factor Analysis and test of factorial invariances of all used variables are presented in Appendix A

measures were nested within the players), we tested our hypotheses through multilevel modeling (Hox, 2010), with the repeated measures representing the within-player, game-to-game variability (Level 1). This analysis enabled us to examine the amount of variance lying at the within-player level (and thus, the degree of game-to-game variation). All models were estimated through full information maximum likelihood (FIML) with robust standard errors. First we inspected the data for missing values. Twelve players (6%) were omitted from our analyses because they failed to sufficiently complete the survey. This resulted in a final sample of 185 players, who played at least one out of five games ($M = 2.86$, $SD = 1.41$, range from 1 to 5).

Next, we specified two multilevel Structural Equation Models to test our hypotheses, one for the continuous variables of prosocial and antisocial behavior and another one for the categorical variable of yellow cards (0 = no; 1 = yes). Although the results would remain virtually unchanged if we put all the variables in a single model, we opted to split our analyses in two models to get a fit estimate of our model with the continuous variables as outcomes – this option is unavailable when categorical variables are included as outcome. All predictors were centered around each player's mean score (group-mean centered). Further, for the sake of model parsimony, we removed the hypothesized paths that were statistically nonsignificant and we did the same for the non-significant correlations among the dependent variables. Model fit was evaluated using Root Mean Square Error of Approximation ($RMSEA < 0.05$), Standardized Root Mean Square Residual ($SRMR < 0.06$) and Comparative Fit Index ($CFI > 0.95$; Hu & Bentler, 1999). Hypotheses were tested in conservative manner by controlling for the outcome of the game which was uncentered (with 0, -1 and 1 standing for tie, loss, and victory, respectively).

3. Results

3.1. Preliminary analyses

Table 1 shows the correlations among the measured variables at the within-player level, with the last row displaying the variance lying at the within-person level (i.e., the game-to-game variance) as obtained through the estimation of the Intraclass Correlations. As can be seen, soccer players' objectification and moral behaviors as well as perceived coaching behaviors varied substantially from game to game, supporting our expectations.

3.2. Pre-game coaching behavior, objectification and moral behavior

To analyze whether this variation from game to game in pre-game coaching behavior could account for variation in players' objectification and moral behavior, we specified a two-level Structural Equation Model at the within-players level, containing paths from pre-game coaching to all variables of moral functioning (i.e., objectification, prosocial and antisocial behavior towards the opponent and the team and resentment towards the referee) and paths from objectification to all variables of moral behavior during the game. This model, depicted in Fig. 1, showed excellent fit ($\chi^2_{[24]} = 30.34$, $p = 0.174$; $CFI = 0.979$; $SRMR = 0.039$; $RMSEA = 0.021$). The model showed as expected positive relations between game-to-game perceived pre-game need-thwarting coaching behavior and game-to-game objectification of the opponent which in turn, related positively to game-to-game resentment to the referee and antisocial behavior towards both the opponent and the teammates, and negatively to prosocial behavior towards the opponents. Perceived pre-game need-supportive coaching did not contribute to this model, while supplementary analyses showed no direct relation between need-thwarting coaching to any of the moral behaviors. These findings suggest that the more the soccer players perceived their coach to display more need-thwarting behaviors prior to the game, the more they tended to objectify their opponents during that particular game and, as a result, the more they tended to behave antisocially.

3.3. On-game coaching and moral behavior

Next, we entered on-game coaching in the model as predictor of all variables of moral behavior (i.e., prosocial and antisocial behavior towards the opponent and the team and aggression towards the referee). Furthermore, we allowed correlations between pre-game coaching and on-game coaching behaviors. This model (Fig. 2) showed an adequate fit ($\chi^2_{[36]} = 65.613$, $p = 0.002$; $CFI = 0.925$, $SRMR = 0.045$ and $RMSEA = 0.037$) and accounted for in total 35% of the within-player variance in soccer players' outcomes. In line with the previous model, perceptions of pre-game coaching related to players' moral functioning via objectification of the opponent. Further, the more the soccer players perceived their coach to be need-supportive during the game, the more prosocial and the less antisocial behavior towards teammates they exhibited. The opposite pattern of relations was found for on-game

Table 1
Bivariate correlations at the within-person level and the game-to-game variance.

| Variables | M | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|--|-------|-------|----------|---------|---------|----------|---------|---------|----------|---------|---------|-------|-------|
| <i>Background variable</i> | | | | | | | | | | | | | |
| 1. Outcome game | – | – | – | | | | | | | | | | |
| <i>Pre-game measures</i> | | | | | | | | | | | | | |
| 2. Need-supportive coaching | 3.14 | 0.58 | 0.07 | – | | | | | | | | | |
| 3. Need-thwarting coaching | 3.19 | 0.68 | 0.13** | 0.07 | – | | | | | | | | |
| 4. Objectification | 2.99 | 0.90 | -0.13** | 0.03 | 0.07 | – | | | | | | | |
| <i>Post-game measures</i> | | | | | | | | | | | | | |
| 5. Need-supportive coaching | 3.34 | 0.57 | 0.18** | 0.26*** | 0.10* | 0.02 | – | | | | | | |
| 6. Need-thwarting coaching | 2.48 | 0.56 | -0.04 | -0.06 | 0.17*** | 0.04 | 0.11** | – | | | | | |
| 7. Antisocial behavior - opponent | 1.55 | 0.43 | -0.03 | 0.04 | 0.06 | 0.43*** | 0.03 | 0.05 | – | | | | |
| 8. Prosocial behavior - opponent | 1.72 | 0.62 | 0.18*** | 0.03 | 0.04 | -0.20*** | 0.06 | 0.06 | 0.17*** | – | | | |
| 9. Antisocial behavior - team | 1.62 | 0.39 | -0.21** | -0.01 | 0.06 | 0.24*** | -0.12** | 0.14*** | 0.31**** | 0.14*** | – | | |
| 10. Prosocial behavior - team | 2.80 | 0.47 | 0.21*** | 0.11** | 0.02 | -0.03 | 0.21*** | -0.07 | 0.09 | 0.24*** | -0.06 | – | |
| 11. Resentment - referee | 2.44 | 0.58 | -0.29*** | 0.06 | 0.02 | 0.36*** | -0.01 | 0.13** | 0.33*** | -0.11** | 0.31*** | -0.03 | – |
| 12. Monetary reward for winning ⁺ | 43.89 | 58.58 | – | 0.24* | 0.46* | 0.16 | 0.32** | 0.15 | 0.20 | -0.02 | 0.18 | 0.07 | 0.26* |
| Game-to-game variance | | | – | 0.45% | 43% | 27% | 49% | 49% | 33% | 41% | 42% | 50% | 46% |

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. +Correlations of Between-person Level variable 'Monetary reward' with the aggregated scores of the Within-person Level variables.

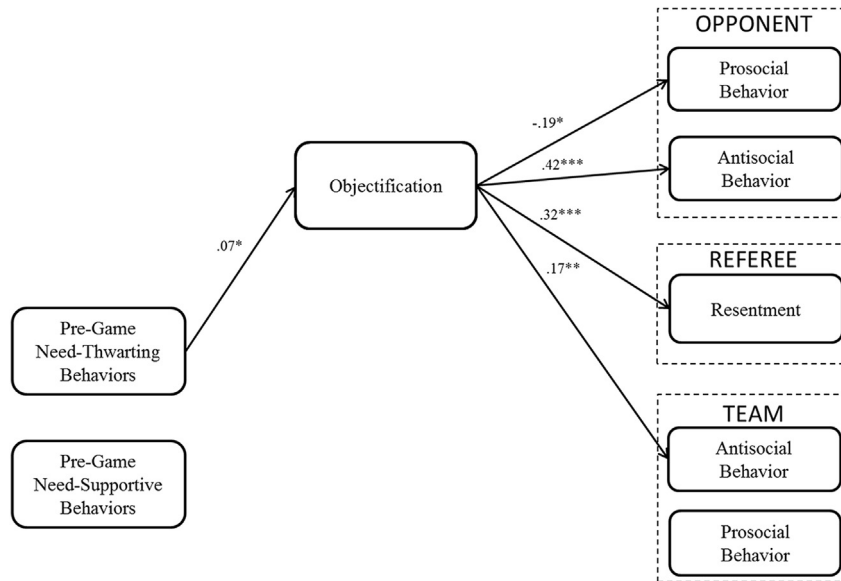


Fig. 1. Multi-level Model displaying the Association between Game-to-game Variation in Pre-Game Need-supportive and Need-thwarting coaching, Objectification and moral outcomes. The outcome of the game is controlled for; non-significant paths are not depicted and coefficients are standardized. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

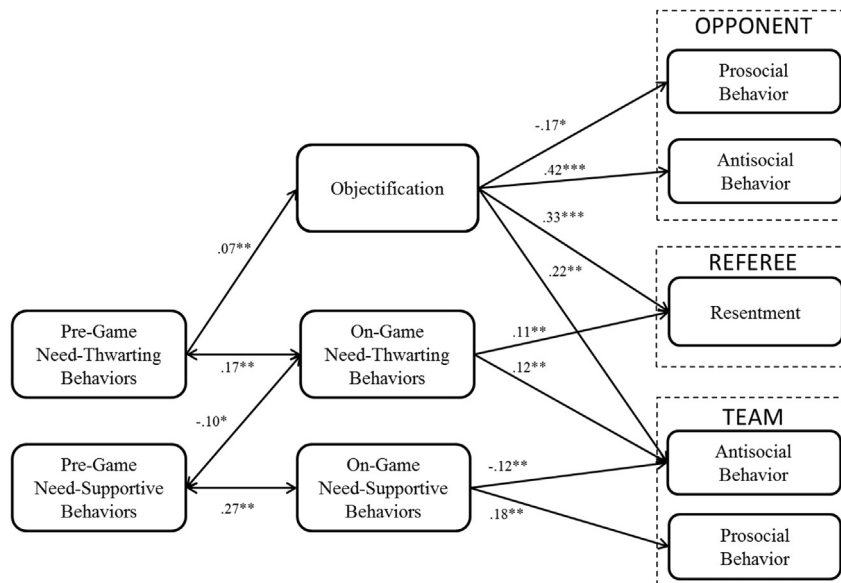


Fig. 2. Multi-level Model displaying the Association between Game-to-game Variation in Pre-game and Post-Game Need-supportive and Need-thwarting coaching, Objectification and Moral Outcomes. The outcome of the game is controlled for; non-significant paths are not depicted and coefficients are standardized. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

need-thwarting behaviors. Finally, game-to-game perceived need-thwarting coaching was positively related to game-to-game resentment vis-à-vis the referee.

Notably, all the above significant relations emerged above and beyond the influence of the result of the game (not shown in Fig. 2). Specifically, winning a particular game was related positively to prosocial behaviors towards the opponents ($\beta = 0.15$, $SE = 0.05$, $p = 0.002$) and the teammates ($\beta = 0.16$, $SE = 0.05$, $p = 0.001$) and negatively to antisocial behavior towards the teammates ($\beta = -0.16$, $SE = 0.05$, $p = 0.001$) and resentment towards the referee ($\beta = -0.25$, $SE = 0.04$, $p < 0.001$) during that specific game.

4. Supplementary analyses

4.1. Yellow cards as an outcome

Consistent with our expectations, we found that during games players step on the pitch holding a more objectifying attitude, they had a greater likelihood of receiving yellow cards ($\beta = 0.16$, $SE = 0.07$, $p = 0.027$), with the odds being 1.36 times higher for players who scored high (i.e., 1 SD above the mean) in objectification. Neither the outcome of the game ($\beta = -0.05$, $SE = 0.08$, $p = 0.503$), nor perceived on-game need-supportive ($\beta = 0.01$,

$SE = 0.07, p = 0.926$) or need-thwarting coaching ($\beta = -0.04, SE = 0.07, p = 0.639$) were statistically significant correlates of yellow cards. Finally, given that objectification was positively associated with perceived pre-game need-thwarting coaching, we examined whether game-to-game variation in perceived pre-game need-thwarting coaching would indirectly relate to receiving yellow cards by means of objectification. The indirect effect appeared marginally significant ($B = 0.05, SE = 0.03, p = 0.072$), suggesting that objectification could be a mechanism through which perceived pre-game need-thwarting coaching relate to on-game misbehaviors that result in a yellow card. Further, no red cards were administered during the period of assessment and thus we were deemed to refrain from these analyses.

4.2. The role of monetary rewards

Finally, we investigated in the subsample (not all players agreed to share their remuneration) for which we had the relevant information (N of players = 83; Mean of played games per player = 3.46), whether monetary reward as a between-person (grand-centered) predictor after a victory would relate to objectification or any kind of prosocial or antisocial behavior. The model showed that money received after a victory positively related to game-to-game objectification ($\beta = 0.25, SE = 0.10, p = 0.009$), resentment towards the referee ($\beta = 0.30, SE = 0.12, p = 0.013$), and antisocial behavior towards the opponent ($\beta = 0.25, SE = 0.11, p = 0.020$). Taken together, these findings suggest that the more money players were promised to receive after a desired outcome, the more they tended to objectify their opponent, the more they behaved antisocially towards the opponent, and the more they resented the referee.

5. Discussion

In the present prospective, repeated-measures study we adopted a dynamic view on coaching and sought to investigate whether (1) there was game-to-game variation in soccer players' perceived need-supportive and need-thwarting coaching behaviors, as assessed prior to and directly following the game; (2) game-to-game perceived pre-game coaching would relate to soccer players' moral behavior as displayed during the game via the adoption of an objectifying stance; (3) game-to-game perceived on-game coaching would explain game-to-game variation in moral behavior above and beyond players' perceived pre-game coaching behavior.

5.1. Game-to-game variation in perceived coaching behavior

The current findings showing substantial variations in players' perceptions of their coaches' need-supportive and need-thwarting behavior resemble those reported by Tsai, Kunter, Lüdtkke, Trautwein, and Ryan (2008) in the academic domain, who found students' perceived autonomy-supportive and controlling teaching behavior to vary substantially from one lesson to another.

Such findings suggest that it may be inaccurate to exclusively classify or portray coaches as being either need-supportive or need-thwarting. Although soccer players picked up differences in the coaching behavior between coaches, as about half of the variance was situated at the between-person level, the substantial game-to-game variance suggests that both need-supportive and need-thwarting behaviors could belong to coaches' behavioral repertoire. Said differently, perceived coaching behavior is fairly dynamic in nature, with all coaches undergoing fluctuations around their own average across games. Such game-to-game fluctuation may result from various personal (e.g., coach's need-satisfaction; e.g.,

Mabbe, Soenens, Vansteenkiste, Van der Kaap-Deeder, & Mouratidis, 2016) and situational sources (e.g., importance of a particular game) that future research may want to unveil.

5.2. Pre-game coaching behavior and moral behavior

Concerning our second objective, we anticipated that soccer players who felt pressured and were reminded by the coach of their poor previous performance right before kick-off, would be more likely to perceive their opponents as obstacles on their way to success that should be removed at any means, even immoral ones. The present findings supported this hypothesis. During games that soccer players perceived their coach to be more need-thwarting during the pre-game speech, they were more likely to objectify their opponent and, in turn, to display more antisocial and less prosocial behavior towards their opponent during that particular game. Similar findings were reported in a cross-sectional study by Hodge and Gucciardi (2015), who found that athletes' perception of controlling coaching during the season was positively related to antisocial behavior via moral disengagement. The current results replicate these findings involving only one specific mechanism of moral disengagement (i.e., objectification) and in the context of specific competitive games rather than the entire season. We acknowledge that, in the interpersonal context of a soccer game, other mechanisms of moral disengagement, which we did not assess, may be operative as well. Euphemistic labeling, for example, may play a role in that injuring an opponent in the service of winning is perceived to be "part of the game" on the soccer pitch. Alternatively, players may blame the opponents for playing aggressively as a way to justify their immoral behavior as a case of self-defense (i.e., attribution of blame; Bandura, 1991).

Notably, the harmful correlates of an objectifying stance in the current study also manifested using an objective indicator. During games that players treated their opponents as objects, they had a greater likelihood to receive a yellow card. Adopting an objectifying stance may lower the threshold for morally unacceptable behaviors because such behaviors may perhaps be considered 'an integral part of the soccer game' by those buying into such an objectifying attitude. Although referees can administer a yellow card for other reasons than aggression vis-à-vis the opponent (e.g., for contesting a decision of the referee), it is instructive to note that in the present study an objectifying attitude was related to this penalization marker.

Three additional findings deserve being highlighted. First, the antisocial behaviors displayed by players adopting an objectifying stance during a specific game were not limited to the opponent, but generalized to both the referee and even to teammates. The expressed resentment towards the referee is understandable given that referees decide on the penalization of antisocial behaviors. What seems striking is that the experienced pressure that forms the basis for adopting an objectifying stance during a particular game co-occurred with players showing a harsher and more critical attitude towards their own teammates. It appears that once players objectify their opponents, they might also turn against their teammates by shouting, swearing, or even condemning them for their poor performance. Antisocial behavior towards teammates may as well be explained by a spillover mechanism where the pressure to win may make players to transfer this pressure to their teammates, for example by being very critical of their teammates errors. As this is presumably the first study that documents evidence for such a spill-over phenomenon, this finding needs replication.

Second, while pre-game need-thwarting coaching positively related to various maladaptive outcomes, including objectifying stance, perceived pre-game need-supportive coaching did not

relate to these outcomes. The more pronounced role for need-thwarting as a correlate of maladjustment is consistent with recent theorizing and empirical work (Bartholomew et al., 2011; Haerens et al., 2015; Vansteenkiste & Ryan, 2013), which shows that dynamics of need thwarting and need support constitute two different pathways. Specifically, these studies show that need support is more likely to correlate positively with beneficial variables such as vitality, psychological growth and autonomous motivation, and less likely to correlate negatively with maladaptive variables such as amotivation and maladjustment. An opposite pattern was found for need-thwarting socialization. Taking into account the lack of negative association between need support and objectification, the current results are in line with this recent theorizing on the “bright” and “dark” side of human motivation (Bartholomew et al., 2011; Haerens et al., 2015).

Third, apart from the role of game-to-game variation in pre-game need-thwarting coaching behavior, also interpersonal differences in the monetary incentives involved in participating in the game were associated with objectification of the opponent. As the financial rewards increased, the stakes for winning got higher. Presumably, players who receive a greater competition-contingent bonus for winning the game may perceive greater pressure to win the game at all means, which relates to a greater tendency to objectify their opponents (Vansteenkiste et al., 2010). Such an objectifying stance, in turn, may lead them to engage in any kind of mean to get to the outcome of winning, even the display of anti-social behavior towards opponents and resentment towards the referee. Future research may want to directly examine the hypothesis that a higher competition-contingent bonus adds more pressure (see Reeve & Deci, 1996).

5.3. On-game coaching behavior and moral functioning

Not only the pre-game speech but also variation in perceived on-game need-supportive and need-thwarting coaching related to players' prosocial and antisocial behavior. The current results, which speak to the coaching-player dynamics at a game-to-game level, are in line with previous studies that link coaching behavior to moral functioning in sport on a cross-sectional level (Hodge & Gucciardi, 2015; Hodge & Lonsdale, 2011). Specifically, a perceived need-supportive approach by the coach seems to spill over to the way how players interact with each other, as teammates become more mutually supportive and helpful during a particular game in case their coach is supportive of their psychological needs and instead become critical of each other in case they perceive their coach to be need-thwarting. These are promising findings as prosocial behaviors are well known to foster team cohesion and subsequent team performance (Bray & Whaley, 2001), while the team cohesion will plummet and even result in conflictual relations in case players display antisocial behavior towards each other.

Interestingly, whereas on-game coaching related to prosocial and antisocial behavior towards teammates, it did not relate to players' reactions towards opponents, a finding which stands in contrast with the contribution of pre-game coaching. A number of reasons can be provided. First, on-game coaching may fail to relate to prosocial and antisocial behavior towards the opponent due to its operational definition in the current study. Items mainly focused on the encouragement or criticism of players' competence rather than on the pressure to beat the other team. As the target of the operationalization of on-game coaching lies within the own team, it is less likely that such coaching would relate to behavior towards the opponent. A second possibility is that other factors than the coach, such as the opponents' behavior during the game or the ranking of the other team, may play a more critical role in the prediction of players' prosocial and antisocial behavior towards

opponents, an issue that could be explored in greater detail in future research.

Although perceived on-game need-thwarting coach behaviors did not relate to the way soccer players interacted with their opponent, it did relate their reactions to referee decisions. In fact, players who perceived their coach as need-thwarting in a particular game resented more the referee during that game. When soccer players are subjected to need-thwarting environments, they may try compensating their need frustration by projecting their anger onto the referee. Indeed, under need-thwarting environments, people are at greater risk of suboptimal functioning (Vansteenkiste & Ryan, 2013). Presumably, the pressuring stance of the coach during the game may evoke a more defensive mode of functioning, as reflected by the expressed resentment against referee decisions. Important to note is that all the above-mentioned relations linking perceived coach behavior with moral behavior were found over and above the outcome of the game, as we controlled for the latter during model testing.

Although the perceived coaching style related to soccer players' moral functioning on a game-to-game basis, future research in sport may want to study other critical factors, including opponents' behavior as such or players' motivational functioning. Also, at the between-person level, it would be instructive to consider both players' more stable traits (e.g., dispositional motives, moral values etc.), which may either buffer against or exacerbate the harmful correlates of need-thwarting coaching as observed herein. By including a variety of other resources as well as interpersonal differences variables in athletes' functioning more credits could be given to the complex and dynamic nature of sport coaching.

5.4. Practical implications

The present study yields three important practical implications. First, it seems naïve to classify coaches as need-supportive or need-thwarting. Although coaches may have certain tendencies to act in a need-supportive or need-thwarting manner, their behavior seems to undergo substantial fluctuations from game to game. Such a more dynamic viewpoint towards coaching underscores the idea that need-supportive coaching behaviors belong to every coach's repertoire (although not always apparent), while coaches are also vulnerable to display need-thwarting behavior. Future research may want to shed light on the contextual factors (such as the importance of a particular game) that may foster (or circumvent) game-to-game need-supportive and need-thwarting coaching.

Second, the present findings suggest that once coaches realize the impact of their pre-game and on-game coaching on players' intra-team moral behavior, they may be even more willing to get trained to adopt a more need-supportive approach (see Cheon et al., 2015). Such training would urge coaches to avoid need-thwarting behaviors such as overly criticizing their players for their past performances and putting pressure upon them. Meanwhile, it would encourage them to instruct their players about how to handle specific game situations as the current results show that such need-supportive coaching behavior is associated with less conflicting and more positive, helpful and supportive intra-team dynamics, as evidenced by players' engagement in more prosocial and less antisocial behavior towards teammates.

Third, given the fact that monetary rewards were associated with an objectifying stance and antisocial play, it might be important to reconsider the role of such rewards in soccer. Apart from potentially killing the fun of the game (Deci, Ryan, & Koestner, 1999; Vansteenkiste & Deci, 2003), it seems that the monetary rewards, which are quite high in Belgium even among young players playing in amateur teams, might also influence players' moral functioning on the pitch. That is, despite their symbolic role,

as monetary rewards contain informative competence feedback and provide a confidence boost, they may as well add pressure upon the soccer players to win the game at all means.

5.5. Limitations

First, all variables (including the number of received yellow cards) were assessed through self-report, such that the observed associations may be driven by common method-variance. Although we treated receiving a yellow card as an objective indicator of aggressive and antisocial behavior, we need to acknowledge that in soccer a yellow card is not only administered to penalize such aggressive behavior. Further, one can argue that players' perceptions of on-game coaching was colored by the outcome of the game, as the former was assessed post-game, when the result of the game was known to the players. To counter this possibility, we tested our models conservatively, controlling for this covariate. Second, the observed associations between studied variables are correlational in nature. To infer causal conclusions, in future research soccer coaches could be trained how to give a need-supportive pre-game speech and to coach in a need-supportive way during the game to examine whether such manipulation will affect athletes' moral behavior during the game. Third, we did not assess relatedness-supportive or relatedness-thwarting coach behaviors in the current contribution. Future studies can focus on relatedness support as well as it may contribute to greater prosocial behavior (Pavey, Greitemeyer, & Sparks, 2011). Fourth, given the game-to-game study design, we aimed to keep the measurements as short as possible. However, future research may include a more comprehensive measure of need-supportive and need-thwarting coaching. Further, we made some adaptations to the anchors of the PABSS. Although the scale proved to be sufficiently valid, we recommend future research to use the common anchors of the scale. Fifth, the current contribution focused on objectification as one mechanism of moral disengagement. Nevertheless, drawing upon the work by Bandura (1991,1999) and Kavussanu and colleagues (2007, 2009), we acknowledge that future research might include a broader variety of mechanisms of moral disengagement, including the displacement of responsibility to their coach or co-players or the minimization of the detrimental impact of their behavior. Finally, given that all participants in the current study were male soccer players, caution is warranted when generalizing the results to non-soccer contexts and females.

6. Conclusion

Taking together, it appears that a perceived need-thwarting approach by the coach during a specific game may come with several costs. Perceiving the coach as more need-thwarting (i.e., pressuring towards a good result and being critical about past performance) before the game covaries with players' objectification, antisocial behavior, and hostility during the game. Further, when players perceive their coach to be need-thwarting during the game (i.e., blaming players for mistakes and showing disappointment in competencies) they pick up a similar attitude, as manifested by the display of similar antisocial behaviors (i.e., criticizing and verbal abuse) towards their own teammates as well as the referee. Coaches, however, can play as well a motivating role during the game by encouraging and instructing players in a need-supportive way, resulting in positive intra-team interactions (i.e., helping and supporting teammates).

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Appendix A

Pre-Game coaching. A multilevel Confirmatory Factor Analysis (CFA) showed good fit to the data ($\chi^2_{[16]} = 20.30, p = 0.207$; CFI = 0.988; RMSEA = 0.021; SRMR = 0.033). Also, a test of factorial invariance (where constraints were imposed on the structure of the model, the loadings of the items, and the correlation between the two latent factors) showed acceptable fit: $S-B\chi^2_{[60]} = 64.37, p = 0.326, CFI = 0.992, SRMR = 0.066, RMSEA = 0.028$ (90% CI: 0.000 - 0.072). This finding provided evidence that the expected fluctuation of perceived pre-game coaching from game to game might be only partly due to game-to-game measurement error. Further, as part of the baseline measure we assessed soccer players' general perception of coaching behavior by means of validated scales (i.e., Health Care Climate Questionnaire and Controlling Coaching Behavior Scale). We used this information on general coaching behavior to relate these validated measures to players' scores on their game-specific three-item reports. Results showed that general need-supportive coaching positively predicted mean levels of perceived pre-game need support ($\beta = 0.53, p < 0.001$), but not to pre-game need thwarting ($\beta = -0.03, p = 0.809$). Likewise, general need-thwarting coaching positively predicted mean levels of perceived pre-game need-thwarting coaching ($\beta = 0.37, p = 0.001$) but not pre-game need-supportive coaching ($\beta = 0.15, p = 0.139$).

Objectification. A multilevel CFA showed the following fit: $\chi^2_{[1]} = 0.54, p = 0.465$; CFI = 1.00; RMSEA = 0.000; SRMR = 0.002. A test of factorial invariance (with constraints being imposed on the structure of the model, and the loadings of the items) showed acceptable fit: $S-B\chi^2_{[8]} = 8.11, p = 0.423, CFI = 1.00, SRMR = 0.032, RMSEA = 0.010$ (90% CI: 0.000 - 0.103). This finding provided evidence that the expected fluctuation in objectification from game to game might be only partly due to game-to-game measurement error.

On-Game coaching. A Multilevel CFA showed acceptable fit to the data ($\chi^2_{[18]} = 31.50, p = 0.025$; CFI = 0.979; RMSEA = 0.036; SRMR = 0.035). Also, a test of factorial invariance (with constraints being imposed on the structure of the model, the loadings of the items, and the covariance between the two latent factors) showed reasonable fit ($S-B\chi^2_{[123]} = 209.62, p < 0.001, CFI = 0.928, SRMR = 0.089, RMSEA = 0.072$ (90% CI: 0.068 - 0.094)), providing evidence that the fluctuation from game to game might not be driven to large extent because of game-to-game measurement error. Further, general need-supportive coaching positively related to perceived on-game need-supportive coaching ($\beta = 0.55, p < 0.001$), but not on-game need-thwarting coaching ($\beta = 0.20, p = 0.137$). Likewise, general need-thwarting coaching was positively related to perceived on-game need-thwarting coaching ($\beta = 0.58, p < 0.001$) but not on-game need-supportive coaching ($\beta = -0.08, p = 0.514$).

Prosocial and antisocial behavior. A Multilevel CFA where we let the errors between two items from prosocial team behavior subscale ("... gave positive feedback to a teammate" and "... helped an opponent off the floor") to correlate at the between-person level showed acceptable fit ($\chi^2_{[256]} = 429.22, p = 0.001$; CFI = 0.913; RMSEA = 0.034; SRMR = 0.054). Also, a test of factorial invariance similar to the one described above showed reasonable fit $S-B\chi^2_{[908]} = 1116.02, p < 0.001, CFI = 0.939, SRMR = 0.095, RMSEA = 0.049$ (90% CI: 0.039 - 0.059). Again, this finding provides some evidence that the fluctuation from game to game was not driven to large degree because of game-to-game measurement error.

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