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Role of psychological ownership and authenticity strength in the relationship between authentic
leadership and sport team performance: a multilevel analysis.

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Abstract

Objectives: Understanding how and when authentic leadership (AL) is related to team performance is an important issue. The objective of the present study was to investigate the potential indirect role of psychological ownership (PO) in the relationship between AL and team sport performance for both athletes and coaches. We also hypothesized that AL perceived strength could moderate this relationship.

Design and Methods: 337 athletes (243 females) and their 44 coaches (3 females) completed questionnaires assessing AL and PO. Objective performance was assessed at the end of the season.

Results: There was a link between players' perception of AL as exogenous variables and team performance as dependent variable via player's perception of PO. Coach's perception of PO did not affect the relationship between coach's perception of AL and team performance. Results did not suggest a moderating effect of AL perception strength.

Conclusions: The current study provides the first **piece of** evidence of **a** relationship between AL and team performance through PO in team sports. However, this study did not support our hypothesis at the coach level. Theoretical and practical implications are discussed.

Key words: Group dynamics, team sport, multilevel analysis, coaching, performance

Role of psychological ownership and authenticity strength in the relationship between authentic leadership and sport team performance: a multilevel analysis.

Outside and within sport psychology, a growing body of research on leadership highlighted the importance of inquired behavior that inspires and challenges others, beyond feedbacks and instructions (Morton, Sylvester, Wilson, Lonsdale, & Beauchamp, 2014). Precisely, knowledge on positive forms of leadership in team sports have emerged over the last decade following studies on transformational leadership (e.g., Callow, Smith, Hardy, Arthur, & Smith, 2009; Smith, Arthur, Hardy, Callow, & Williams, 2013). Transformational leadership describes how a leader seeks to meet the higher-order needs of followers. This leader is, by definition, charismatic or inspirational. If transformational leaders can be “true” in the sense that they behave to meet followers’ needs, they can be also “pseudo” transformational (Bass & Steidlmeier, 1999). In this case, pseudo leaders manipulate followers so that they can internalize their own values. True transformational leadership needs to be authentic in their actions (Avolio & Gardner, 2005). In line with these studies, another framework (i.e., authentic leadership) has recently be inquired inside the sports field (Bandura & Kavassanu, 2018): *Authentic leadership* is considered as the most positive part of transformational leadership that is concerned with the development of followers’ sense of self (Avolio & Gardner, 2005).

Authentic leadership (AL) is defined as “a pattern of leader behavior that draws upon and promotes both positive psychological capacities and a positive ethical climate, to foster greater self-awareness, an internalized moral perspective, balanced processing of information, and relational transparency on the part of leaders working with followers, fostering positive self-development” (Walumbwa, Avolio, Gardner, Wersing, & Peterson, 2008, p. 98). According to

Walumbwa et al., AL has four components: 1) *balanced processing* refers to leader behavior that shows that a leader tries to analyze multiple perspectives prior to decision-making, 2) *internalized moral perspective* refers to self-regulation that is guided by strong moral convictions and values, 3) *relational transparency* refers to emphasizing open and transparent communication, and 4) *self-awareness* refers to demonstrating behaviors that indicate that the leader is aware of one's own strengths and weaknesses. Recent studies, based on a variety of contexts, highlight that these four factors contribute to a common core named AL (e.g., Caza, Bagozzi, Woolley, Levey, & Caza, 2010). Each dimension contributes to this central concept while presenting considerable overlaps among each other. Most of the research used and supported this common core of AL (e.g., Bandura & Kavassanu, 2018; Wang, Sui, Luthans, Wang, & Wu, 2014).

Authentic leaders would positively influence followers' attitudes (e.g., Laschinger, Wong, & Grau, 2012) and behavioral outcomes (Leroy, Anseel, Gardner, & Sels, 2015). Moreover, the seminal work on AL underlined the effects on AL on followers' performances (Avolio, Gardner, Walumbwa, Luthans, & May, 2004; Gardner, Avolio, Luthans, May, & Walumbwa, 2005; Ilies, Morgeson, & Nahrgang, 2005). Theoretically, authentic leaders improve the process of decision making by seeking the followers' inputs, analyze all the relevant information before making a decision, and ask for views that challenge positions (Walumbwa et al., 2008). Authentic leaders also develop a transparent relational base for "sustainable, veritable performance" (Avolio et al., 2004; p. 15) and several studies have validated the influence of AL on individual performance (e.g., Peterson, Walumbwa, Avolio, & Hanna, 2012; Ribiero, Gomes, & Kurian, 2018), work role performance (e.g., Leroy, Palanski, & Simons, 2012; Leroy, Anseel, Garnder, & Sels, 2015) and group performance (Lyubovnikova, Legood, Turner, & Mamakouka,

2017; Xiong & Fang, 2014). A recent meta-analysis (Banks et al., 2016) highlighted that authentic leadership demonstrates dominance over transformational leadership when predicting group performance (see, for a review about differences and similarity, Banks et al., 2016).

However, recently, Banks, Gooty, Ross, Williams, and Harrington (2018) proposed that moral leadership styles – especially LA – in the organizational context “are more predictive of higher-level outcomes such as unit performance” (p. 246). Nonetheless, given the small number of existing studies, these authors suggested to further explore these findings. In addition, Banks, McCauley, Gardner, & Guler (2016) suggested that authentic leaders, as integrity and equity role models, can have an indirect influence on performance. Understanding the process in which AL influences performance is thus an important issue (Dinh, Lord, Gardner, Meuser, Liden, & Hu, 2014).

Indirect role of psychological ownership

The concept of PO is defined as “a state of mind in which individuals feel the target of ownership (material or immaterial in nature) or a piece of it is ‘theirs’” (Pierce, Kostova, & Dirks, 2001; p. 299). Ownership is a “dual creation, part attitude, part object, part in the mind, part real” (Etzioni, 1991; p. 466). An [example of this feeling in sport](#) is the statement “this is MY team” which includes both affective and cognitive information. Feelings of PO emerges through three distinct routes: (1) knowledge and familiarity with the object, (2) control of the object, and (3) opportunities to create and invest physically, cognitively, and psychically with the object. Moreover, PO addresses three fundamental human needs (Pierce et al., 2001). First, the feeling of capability or self-efficacy (Bandura, 1997). Possession of an object (real or not) can enhance feelings of self-efficacy as they provide a sense of power, control, or influence (Pierce, O’Driscoll, & Coghlan, 2004). Second, the feeling of self-identity (Dittmar, 1992). Feeling of

possession helps individuals answer the questions “who am I?” (Porteus, 1976), “Who was I” (Cram & Paton, 1993), and “Who will I become”- to establish, maintain, reproduce, and transform individual’s self-identity (Dittmar, 1992). Third, the feeling of belongingness or sense of “having a place” (Duncan, 1981; Porteus, 1976). The feeling of having a preferred place and a fixed point of reference motivates individuals to invest their selves into them. Having such a place gives them the feeling of PO. In the context of sport, those fundamental human needs have been investigated separately, and not conjointly under the PO umbrella. For example, Fransen et al. (2015) explored the mediating role of team identification in the relationship between a team’s leader and performance. In sport PO could appear as a collective mechanism explaining the relationship between coach’s resources and performance, in the same vein as cohesion or collective efficacy.

Empirical research has highlighted the strong association between individuals participation in decision-making and PO (Chi & Han, 2008; Han, Chiang, & Chang, 2010). This is consistent with the “routes” to PO (Pierce et al., 2001) because participation in decision-making is likely to enhance the experience of control over the object of ownership. So, it is not surprising that positive forms of leadership have been conceptualized as major sources of PO. Thus, transformational leadership (Avey, Avolio, Crossley, & Luthans, 2009), ethical and transformational leadership (Avey, Wernsing, & Palanski, 2012; Bernhard & O’Driscoll, 2011) and participative leadership (Torp, & Nielsen, 2018) have been shown as sources of PO. Finally, AL positively predicts PO (Alok, 2013). This relationship can be explained in two ways. First AL develops the feeling of self-efficacy (Clapp-Smith, Vogelgesang, & Avey, 2009). Self-efficacy is a key component of PO. Second, the AL behavior develops the participation in the

decision making (i.e., balanced processing). Thus, AL represents a key aspect of “routes” to PO (Pierce et al., 2001).

Interestingly, if positive forms of leadership influences PO, this relationship in turn influences positive outcomes. For example, PO mediates the relationship between transformational leadership and organizational citizenship behavior (Bernhard & O’Driscoll, 2011), job satisfaction and affective commitment (Bernhard & O’Driscoll, 2011). Moreover, PO mediates the relationship between both ethical and transformational leadership and employee work attitudes (Avey et al., 2012). Finally, Torp and Nielsen (2018) showed that PO mediates the relationship between participative leadership and performance. However, it is surprising that PO has not been investigated as a mediator between AL and positive outcomes such as performance. AL develops the feeling of PO via autonomy in the decision making and perception of self-efficacy. PO, in turn, influences performance (Brown, Pierce, & Crossley, 2014; Torp & Nielsen, 2018). This last relationship can be explained by the fact that when individuals feel a sense of PO, they are willing to exert extra effort and thus are more motivated to promote positive performance (Torp & Nielsen, 2018).

Moderating role of AL perception’s strength

If recent calls has been made to understand the processes of AL, there is also a need to understand in which conditions those processes arise (Dinh et al., 2014). We suggest that authenticity strength in teams could play a moderating role into the relationship between AL and performance via PO. The effect of team perception can be more fully represented by assessing the general level of a phenomenon across the team (i.e., AL mean perception) but also the diversity or *strength* of this phenomenon across the team (i.e., AL variance inside the team). The

complementary of this approach has been used for personality traits (e.g., Prewet, Brown, Goswami, & Christiansen, 2016), perceived justice (e.g., Walumbwa, Wu, & Orwa, 2008), perceived cohesion (Kozlowski & Chao, 2012), and for leadership authenticity (Hannah, Walumbwa, & Fry, 2011). Teams with no diversity of AL perception would interact and perform differently than teams with a large heterogeneity of perception (Hannah et al., 2011). Moreover, the effect of perceived leadership on performance would be stronger if the team members shared the same vision of leadership (Hackman, 1990) whereas the effect would be weaker when team members present a heterogeneous perception of AL resulting in intra-team conflict (Hannah et al., 2011).

The present study

The present study is original for three reasons: from a theoretical point of view, from a statistical point of view and from the utilization of both athletes' and coaches' perceptions. Those three reasons are presented below.

First, Avolio (2007) suggested to consider context in the leadership's theory. Context can affect and be affected by leadership effectiveness. Thus, AL has been inquired in different organizational contexts such as health (e.g., Nelson, et al., 2014), education (e.g., Begley, 2001), benefit (Černe, Jaklič, & Škerlavaj, 2013), research (e.g., Peus, Wesche, Streicher, Braun, & Frey, 2012), or the military (Peterson et al., 2012). To the best of our knowledge there is only one published study that inquires AL in sport (Bandura & Kavussana, 2018) although the effect coach behaviors can have on athlete outcomes is a key component in sport (Morton, Sylvester, Wilson, Lonsdale, & Beauchamp, 2014). Moreover, AL has demonstrated dominance over other forms of leadership when predicting group performance (Banks et al., 2016). Bandura and Kavussana (2018) investigated the mediating effect of athletes' perceived autonomy and trust in

their coach, in the relationship between athletes' AL perception and enjoyment and commitment. Their results supported those relationships at the individual level in a population of 435 athletes. PO has been conceptualized in different contexts (Dawkins, Tian, Newman, & Martin, 2017) such as the feeling of ownership for a customers restaurant (Astryan & Oh, 2008), in the consumption of music streaming (Sinclair & Tinson, 2017), or for a specific object (Peck & Shu, 2008). Yet, if PO for team fans have been qualitatively inquired (Sumida, Wooliscroft, & Sam, 2015), no study has assessed PO for team sport players despite the central aspect of individual identity in team sports (Thomas et al., 2017).

Past research in organizational psychology has highlighted the relationship between AL and performance (e.g., Leroy et al., 2015). However, Peus et al. (2012) suggested using objective measures of performance to assess this relationship. Furthermore, several studies investigated the mechanism explaining this relationship such as collective efficacy (Xiong & Fang, 2014), team behavior (Hannah, Walumbwa, & Fry, 2011), trust in manager (Clapp-Smith, Vogelgesang, & Avey, 2009), predictability of the leader (Peus et al., 2012), or leader-member exchange (Wang, et al., 2014). However, a better understanding of the individual and contextual factors that may affect the relationship between AL and performance is still needed (Wang et al., 2014). Since an authentic leader develops self-efficacy and participation in the decision making, he/she will develop the feeling of possession. In turn, when an individual feels that "this team is mine", he/she will invest more in the team and the team performance will increase. Moreover, AL is a resource for followers' (Bakker & Demerouti, 2007), as this resource is a motivational process that has a motivational effect on their psychological needs (Hakanen, Schaufeli, & Ahola, 2008). Thus, because AL improves psychological needs, it will improve PO, and in turn, because this

motivational process is effective, performance will improve. Therefore, we first hypothesized an indirect relationship between player's perception of AL and objective team performance via PO.

Second, the need to assess the processes of leadership across several levels of analysis is critical (e.g., Dinh et al. 2014; Torp & Nielsen, 2018; Walumbwa et al., 2008). Since players in team sports are nested within their team, their perceptions are not independent. Therefore, leadership's and PO's perceptions will share a common variance within the leader's team (Cho & Dansereau, 2010; Pierce & Jussila, 2010). Unfortunately, the cumulative effects of both levels (i.e., individual and group) have not been fully explored (Dinh et al., 2004). For example, the only study on AL in sport (Bandura & Kavussanu, 2018) did not use a multilevel approach. By contrast, our study will simultaneously analyze individual -and group- variance player's perception of AL and PO.

Third, research on leadership style often focuses on the followers' perceptions of AL or the leaders self-perception of AL but not on both approaches simultaneously (Černe, Dimovski, Marič, Penger, & Škerlavaj, 2014). To this end, we will add a level of analysis with the leader's self-perceptions of AL and of PO as suggested by Peus et al. (2015). The leader was identified as the coach of the team. There is currently no theoretical distinction between leaders' perceptions and followers' perceptions in the scientific literature, we therefore believe that the relationship will be identical for both the athletes and the coaches . Therefore, we first hypothesized an indirect relationship between coach's perceptions of AL and objective team performance via coach's perceptions of PO. Finally, as suggested by Hannah et al. (2011), we propose that the relationship between AL and objective team performance via PO will be stronger when the strength of player's AL is higher (Hypothesis 3). The hypothetical model is presented in figure 1.

Method

Participants and procedure

We tested 337 athletes ($M_{age} = 24.03$ years, $SD_{age} = 12.06$, 243 females, 246 starters) and their 44 coaches ($M_{age} = 39.04$ years, $SD_{age} = 9.09$, 3 females) with an average number of 7.70 players per coach ($SD = 3.50$, ranging from 3 to 16). Players were coming from 29 teams in different sports: basketball ($n_{team} = 3$, $n_{player} = 19$, $n_{coach} = 3$), handball ($n_{team} = 2$, $n_{player} = 11$, $n_{coach} = 2$), soccer ($n_{team} = 5$, $n_{player} = 50$, $n_{coach} = 5$) and rugby ($n_{team} = 19$, $n_{player} = 257$, $n_{coach} = 34$). They played at district ($n_{player} = 37$; $n_{coach} = 3$), regional ($n_{player} = 25$; $n_{coach} = 2$), national ($n_{player} = 202$; $n_{coach} = 15$), or international level ($n_{player} = 51$; $n_{coach} = 5$). There was an average of 11.62 players by team ($SD = 5.37$; range from 4 to 28). The athletes had been members of their respective teams for 2.35 years ($SD = 2.37$) and had a mean experience of 8.44 years ($SD = 5.03$) in their sport. They spent in average 5.75 hours a week with their respective coach ($SD = 3.23$) during training practices and games.

Snijders and Bosker (2012) suggest that 10 groups is appropriate to perform multilevel analysis. In sport, multilevel analysis with less than 20 groups were conducted successfully (Murray, Coffee, & Eklund, 2020). We calculated sample size for our multilevel models using the `samplesize_mixed` function in the `sjstats` package (Ludecke, 2019). We fixed the power at .8, to determine an effect size of .25 with a degree of freedom of 39 and 60 (respectively for the indirect relationship and the moderation), with 44 coaches, a sample size of 4 individuals per cluster and a minimum of 186 individuals were recommended for the indirect relationship and a minimum of 5 individuals per cluster and a total of 205 individuals. Therefore, a total of 37 to 46 coaches with 4 to 5 individuals per coaches were desired. Our sample is on the higher value of

this range (i.e., 44 coaches with 7.8 individuals per team) and higher than 186 individuals (i.e., 337 athletes). Thus, the use of Multilevel analysis is warranted.

Questionnaires were filled in midseason (between December and February) and all the players and coaches completed the questionnaire voluntarily at the beginning of a team training session. Players were asked to fulfil the questionnaire with reference to the coach with whom they spent the most time and to identify this coach for cross-referencing. Completion of the questionnaire took approximately 15-20 minutes.

Measures

Players and coaches' perceptions of Authentic Leadership. The French version of the 16-item Authentic Leadership Questionnaire (ALQ; Walumbwa et al., 2008) was adapted to correspond to sport context (e.g. Bandura & Kavussanu, 2018). For instance, the item "My leader/supervisor..." was changed to "My coach..." and "As a leader/supervisor I..." was changed to "As a coach I...". The ALQ assessed the four theoretically related factors including balanced processing (3 items; e.g., "Listens carefully to different points of view before coming to a conclusion"), internalized moral perspective (4 items, e.g., "Demonstrates beliefs that are consistent with actions"), relational transparency (5 items, e.g., "Says exactly what he or she means"), and self-awareness (4 items, e.g., "Seeks feedback to improve interactions with others"). Athletes and coaches rated their agreements with each item on a 5-point Likert-type scale from 1 (*totally disagree*) to 5 (*totally agree*). Previous research supported the validity and reliability of the ALQ in an organizational context (Walumbwa et al., 2008) as well as in a sport context (e.g., Bandura & Kavussana, 2018). For athletes' perception, a confirmation factor

analysis supported the higher dimension of the AL with a four-factor structure at the lower level, $\chi^2(86) = 269.787$, CFI = .91, TLI = .89, RMSEA = .08, 90% CIs [.06, .09], $p < .001$, SRMR = .05. The low number of coaches' (i.e., $n = 44$) did not enable us to perform a CFA for the coach version. Cronbach alphas were considered acceptable (Nunnally & Bernstein, 1994) for all subscales (self-awareness $\alpha = .80$, relational transparency $\alpha = .78$, internalized moral perspectives $\alpha = .83$, balanced processing $\alpha = .70$) and the higher order AL construct ($\alpha = .93$).

Players and coaches' perceptions of Psychological ownership. Players' and coaches' perceptions of PO were measured using a sport adapted version of the Shukla and Singh's (2015) scale. For instance, the word "organization" was changed in "team". A French translation and back translation was made by two independent bilingual researchers familiar with group dynamics. The 12-items questionnaire assessed three dimensions of PO on a 7-point Likert scale ranging from 1 (*totally disagree*) to 7 (*totally agree*): Affection, i.e. reflected affection for the organization (4 items; e.g., "I feel I belong to this team"); Connectedness, i.e. perceived connection with the organization (4 items; e.g., "I consider problems in my team as my own"), and obligation, i.e. behavioural appropriateness of employees (4 items; e.g., "I strive to bring improvement in my team"). For athletes' perception, a higher order confirmation factor analysis supported the higher dimension of the PO with a three-factor structure at the lower level, $\chi^2(51) = 154.712$, CFI = .90, TLI = .87, RMSEA = .07, 90% CIs [.06, .09], $p < .001$, SRMR = .05. Cronbach alphas were considered acceptable (Nunnally & Bernstein, 1994) for all subscales (affection $\alpha = .71$, connectedness $\alpha = .72$, and obligation $\alpha = .71$) and the higher order PO construct ($\alpha = .87$).

Team Performance. Team performance was assessed using an indicator created by Petitta, Jiang, and Palange (2015), and used recently by Petitta and Jiang (2020). This objective indicator is based on the team's ranking achievement at the end of the championship of the year. Our study involved several types of sports with great heterogeneity of the number of teams; thus a ratio used enabled the comparison of ranking in this context of disparity. We calculated this indicator as the ratio between (1.) the ranking achieved by the team minus the lowest achievable ranking in the championship (numerator), and (2.) the highest ranking position potentially achievable in the championship minus the lowest ranking position potentially achievable in the championship (denominator). This indicator ranged from 0 to 1 and the higher the indicator was, the higher the team performance. For example, a team that finished at the end of the season in 6th rank out of 14 teams scored as follows: $(6-14)/(1-14) = .615$.

Authenticity strength. To correct for the lack of independence between measures of central tendency and dispersion, we calculated a coefficient of variation whereby the standard deviation for team' authenticity was divided by the team mean of authenticity (Colquitt et al., 2002; Hannah et al., 2011; Walumbwa et al., 2008). We used the standard deviation of this value and we reversed the sign so that higher values represented higher levels of authenticity strength.

Statistical Analyses

Intraclass correlation coefficients (ICCs) were calculated to determine whether there was enough between level variation to support their decomposition into within and between levels (Preacher, Zyphur, & Zhang, 2010). ICCs greater than .05 suggest that multilevel analysis should be used (Julian, 2001). We used multilevel structural equation modeling (MSEM) to examine the direct and indirect effects at the between- and within-level components, with each of them controlling for the other. We had two between level effects with the perception of the coaches

(i.e., each coach has his own perception of AL and PO and each coach is identical for their corresponding players), and the between variance decomposition of the players perceptions (each individual had his own perception of AL and PO, but this perception is nested inside the coach-level, thus this perception has a within and between levels of variance). Moreover, performance would be at the level 3 (team level) but we used it at the coach-level because not all teams had several coaches meaning that without variance inside the level the condition of application of a third level is not met.

In our model (Fig. 1), slopes and intercepts are fixed. Mplus software (Muthén & Muthén, 1998-2018), TYPE = TWOLEVEL, CLUSTER and MLR estimator were used. MLR estimation was used to provide adjusted χ^2 and standard errors that account for non-normality. Model fit was assessed using a chi-square goodness-of-fit index, root mean square error of approximation (RMSEA), Tucker-Lewis index (TLI), Comparative fit index (CFI) and both within and between levels' Square root mean residual (SRMR). A minimum cut-off of .90 for CFI and TLI, a maximum cut-off of .06 for RMSEA, and a maximum cut-off of .08 for within and between SRMR were considered as indicative of acceptable fit (Hu & Bentler, 1999). However, it is classical that for between SRMR the fit lower than the within SRMR. In our case, this is due to the difference of units at level 1 (i.e., 337) and level 2 (i.e., 44).

Next, the moderated indirect relationship (Muller, Judd, & Yzerbyt, 2005) was tested using Bauer, Preacher, and Gill's (2006) a procedure to assess the degree to which the direct effect of player's perception of AL on team performance via player's perception of PO differs for low and high levels of strength authenticity.

The MODEL CONSTRAINT command was used to estimate the within and between direct and indirect effects and the moderation. Indirect effects were calculated as the product of

the *a* paths (predictor-mediator) and *b* paths (mediator-outcome). We determined the statistical significance of the indirect and moderation effects with *p*-values and 95% confidence intervals (CIs) non-overlapping 0. Moreover, effect sizes for indirect and moderation effects were calculated with kappa square (κ^2 ; Preacher & Kelley, 2011). Following Preacher and Kelley's (2001) recommendation, κ^2 were interpreted based on Cohen's (1988) guidelines with effect sizes ranging from small (.01) through medium (.09) to large (.25).

The players age, status (i.e., starter or non-starter) and tenure in the team were entered as covariates at the within-level to control for possible confounding effects. The players sex, the coaches' age and the team's playing level were entered as covariates at the between-level to control for possible confounding effects.

Results

Descriptive statistics

Means, standard deviations, correlations and ICCs are presented in Table 1. The ICCs values (i.e., $ICC > .05$) supported both the use of multilevel analysis (Julian, 2001), and MSEM (Preacher et al., 2010). Neither multivariate nor univariate outliers were found, thus analyses were performed with all 337 players at level 1 and their 44 coaches at level 2.

Indirect effect analysis

The general model testing the indirect relationship analysis for players' and for coaches' perception demonstrated a good fit of the data ($\chi^2/ddl = 1.158$; CFI = .970; TLI = .950; SRMR_{within} = .010; SRMR_{between} = .186; RMSEA = .022). This model explained 43% of the team performance variance. Hypothesis 1 proposed that players' perception of psychological ownership mediates the positive relationship between players' perception of AL and team performance. At the individual level, results revealed a positive association between player's

perception of AL and player's perception of PO ($\beta = .554, p < .001$). Similarly, the path between PO and team performance was also significant ($\beta = .464, p < .020$) whereas the direct path between players' perception of AL and team performance was not significant ($\beta = .028, p = .788$). The indirect effect of players' perception of PO into the relationship between AL and performance was also significant ($\beta = .260, p < .05, \kappa^2 = .141$). Thus, Hypothesis 1 at the individual level received support.

Simultaneously, hypothesis 2 proposed an indirect positive relationship between coaches' perception of AL and team performance via coaches' perception of psychological ownership. Results indicated that the path between coaches' perception of AL and PO was significant ($\beta = .720, p < .001$). However, neither the relationship between coaches' perception of PO and team performance nor the link between coaches' perception of AL and team performance were significant ($\beta = -.021, p = .752; \beta = .130, p = .126$, respectively). Consequently, the indirect relationship between coaches' perception of AL and performance via coaches' perception of PO was not significant ($\beta = -.015, p = .74, \kappa^2 = .015$). Thus, the second hypothesis was not supported.

Moderation analysis

Hypothesis 3 proposed that the strength of players' perception of AL would play a moderating role into the relationship between AL and the performance mediated by PO. When the moderator was added into the model, it did no longer fit with the data ($\chi^2/ddf = 3.422$; CFI = .563; TLI = .359; SRMR_{within} = .011; SRMR_{between} = .277; RMSEA = .085), and neither the relationships between strength of players' perception of AL and team performance nor the relationship between the interactions and team performance were significant ($\beta = -.140, p = .196; \beta = .059, p = .222$, respectively). Thus, the third hypothesis was not supported.

Discussion

The aim of this article was to understand the relationships between AL and team performance by studying the team-based PO as an indirect variable and the strength of perceived authenticity as a moderator. Previous research had been carried out in an organizational setting and had mainly examined these relationships from the perspective of [followers](#) (e.g., Torp & Nielsen, 2018). We decided to study authentic leadership in a sport context and to examine these relationships not only from the players' perspective but also from the leaders' perspective. Results indicated that PO was associated throughout the relationship between AL and performance only at the players' level. Results also indicated that the strength of perceived authenticity did not moderate the relationship between AL and performance via PO.

At the players' level, the team-based PO reported by the players is an indirect variable into the relationship between players' perception of AL and the team performance. [The more a player perceives his/her leader as authentic, the more he/she considers the team as his/her own and the more this translates into higher team performance.](#) On the other hand, at the coaches' level, only the relationship between their perception of AL and PO was significant, suggesting that when the coach perceives himself/herself as authentic, he/she feels the team more as « his/hers", without impacting the team's performance. Thus, our results seem to indicate that team performance is more the result of players' perceptions than of the coaches' perceptions. Players would surpass themselves above all when they have appropriated a team to « their » team, this ownership being enhanced by the perception of an authentic leader. In this line, the leader in our study referred to the coach; however, recent studies highlighted the importance of the captain or the informal leader-verbal as a leader inside the team (e.g., Cope, Eys, Beauchamp, Schinke, & Bosselut, 2011; Fransen, van Puyenbroeck, Loughhead, Vanbeselaere,

De Cuyper, Vande Broek, Boen, 2015). Thus, future research needs to investigate the player's perception of authentic leadership.

On the other hand, we did not observe a significant relationship between players' AL and team performance ($r = .06$, ns) contrary to previous meta-analysis by Banks et al. (2016; $\rho = .40$, CI 95% [.28 .52]) or Alilyyani et al. (2018) in organizational contexts. This difference in results may stem from the fact that most studies use subjective measures of performance (e.g., Peus et al., 2012) while our study used only an objective measure of performance. This objective performance can be influenced by external factors which are outside the athletes' control; such as referees or opponents. If those factors could not influence objective performance as much, it could interfere more deeply with subjective performance. Moreover, collective vs. individual could be inquired specially in sport context. Another explanation could be cultural: the present sample is a French sample with a higher level of collectivism – compared to individualism- than in North America (Hofstede, 2001). In this context, group variables (e.g., PO) appear to be a more important source than group leadership performance. This can come from the collective. Finally, the coach was the leader in our study, however it would be interesting to analyze informal leaders or at least focus on the captain as an important variable. Consequently, the relationship between AL and performance in sport context would therefore benefit from further research. Moreover, our study provides new insights into the influence of psychological ownership on performance. Indeed, to date, this link has been studied mainly in organizational settings which has produced mixed results (Dawkins, 2017), indicating positive strong (Brown et al., 2014; Han et al., 2015) or negligible (Van Dyne and Pierce, 2004) relationships or non-significant relationships (Mayhew et al., 2007). Our study contributes to clarifying this link by

suggesting a strong positive relationship between psychological ownership and performance in a sport.

Additionally, the strength of perceived authenticity did not play a moderating role in the indirect relationship between AL and performance via player's PO. Thus, the convergence of AL perceptions by team members does not seem to be a necessary step for a good performance. Yet, as with personality traits and team composition (for a review see Lepine et al., 2011), it will be important to compare different metrics to account for team composition. We have used the variance and the mean for the team, however it would be interesting to test the maximum or minimum value of the perceptions of AL. For example, if the team captain has a very high perception of the AL, this will have a great influence on the team's performance independently of the other players perception of the team.

Our study addresses several gaps in the literature. First, Dawkins et al. (2017) have highlighted their concern that the literature on PO relies heavily on single source and self-report measures. Here, we have reduced single-source bias by collecting both players and coach's perceptions and by assessing the performance objectively. In addition, we used subjective (i.e., AL, PO) and objective (i.e., performance) measures together. Second, we measured collective performance as suggested by Torp's (2018) to develop better framework to assess the collective consequences of PO. Using an objective and collective indicator is a strength, however future research could use mixed indicators of athletic performance (such as players and coaches expectations compared to objective results). Third, this study opens the door to new research in the context of team sport. With sexual aggression and cases of doping becoming more and more present (Kavussanu, 2019), the development of an ethical leadership is paramount. Our study also has some limitations. First, AL and PO have been assessed at the same time, which does not

allow for causal links neither mediational links between those variables. A longitudinal or experimental design would be necessary to better understand the process of mediation. In this line, we did not test the bidirectionality of the relationship. We posited a relationship AL, PO and performance, but it is also possible to imagine a reverse relationship between these two variables. Depending on performance, the degree of identification to the team could be affected, and coaches' behaviors could change. Future research should investigate this issue. Second, the coach sample is male-dominated (93.2%) while the player sample is female-dominated (72%) and we cannot exclude a gender bias in the perception of AL. [Related to the coach, we can imagine that in a team with two coaches, a hierarchy between those two coaches emerged. However, in our case, coaches were on the same level with each of them having a specific area to focus on: in rugby one took care of the back and the other the front. Future research could inquire the different perceptions of AL according to the hierarchy \(if this notion is relevant\).](#) Third, we used overall AL and PO scores and future studies should consider the sub-dimensions of these variables. Fourth, we specifically targeted AL in our study. However, given the recent work demonstrating the close proximity between transformational, ethical, and authentic forms of leadership in the organizational domain (e.g., Banks et al., 2018), it would be relevant to explore the specific contributions of AL in sport compared to similar forms of positive leadership.

In conclusion, this research indicates that a leader, by behaving in an authentic, moral manner, can indirectly improve team performance. Thus, programs teaching supervisors to behave as authentic leaders could be implemented. This type of program has already been developed in team sports for transformational leadership (Vella, Oades, & Crowe, 2013), with interesting results on role ambiguity and positive developmental experiences for athletes. To the

best of our knowledge, nothing has been developed specifically in the sport. Thus, future studies could test the implementation of authentic leadership program, and assess their effects on affective, cognitive and behavioral aspects. Based on research made outside the sport field, this program could act on different dimensions of AL by setting up training courses (Ladegard & Gjerde, 2014) for leaders. These could include 1. self-reflection exercises to increase self-awareness and enable them to show by their behavior that they are aware of their strengths and weaknesses, 2. discussions and moral judgement exercises to improve moral perspectives (Bebeau, 2002), 3. training in analyzing different perspectives before making a decision, or 4. input on the strengths of open and transparent communication. Furthermore, given that the PO is developmental in nature (Shukla & Sing, 2015), these same leaders and sports managers would benefit from instilling and developing the team-based PO of players given its link to team performance. More generally, the establishment of a culture that values ethical behavior and team spirit would create a favorable climate for collective performance.

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Table 1

Descriptive Statistics for AL, PO and Team performance

		n	M	SD	IC C	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
Between																	
Team																	
1 playing level	4	4	0.65	0.47		—											
2 Players' sexe	4	4	0.30	0.46		.06	—										
3 Coaches' age	4	4	39.04	9.09		.16*	.17*	—									
4 Performance	4	4	.601	1.00		.30*	.36*	.13	—								
5 Coaches' AL	4	4	2.974	0.42		-.01	-.12*	.03	.15*	—							
6 Coaches' PO	4	4	6.196	0.60		.16*	-.01	.10	-.02	.50**	—						
7 Strength	4	4	0.00	.98		.26*	-.01	.19**	-.03	.23**	.15**	—					
8 Interaction	4	4	0.40	2.09		.20*	.10	.11*	.01	.25**	.18**	.94**	—				
Within																	
9 Status	3	3	0.73	.44	.031	-.22*	-.22*	.38**	.28*	.14*	.12*	.28**	.38**	—			
10 Tenure	3	3	2.35	2.37	.09	.04	-.04	-.02	.16*	.31**	.02	.76**	.73**	.48**	—		
11 Players' age	3	3	24.03	12.06	.29	.39*	.06	-.02	.07	.13*	.02	.32**	.33**	.51**	.42**	—	

Running head: LINK BETWEEN AL AND PERFORMANCE VIA PO 33

	1	3									-			-	-	-	
2	Players'	3		0.6		.37*				.14	-	.89	.86	.25	.63	.34	
.	AL	7	2.75	9	.44	*	-.03	-.01	.06	*	.04	**	**	**	**	**	_
	1	3									-	-		-			
3	Players'	3		0.8					.35*	.17	.12	.19	.27	.33			.24
.	PO	7	5.57	8	.11	.08	.07	.01	*	*	*	**	**	**	.02	.07	**

Note. ** $p < .01$, * $p < .05$

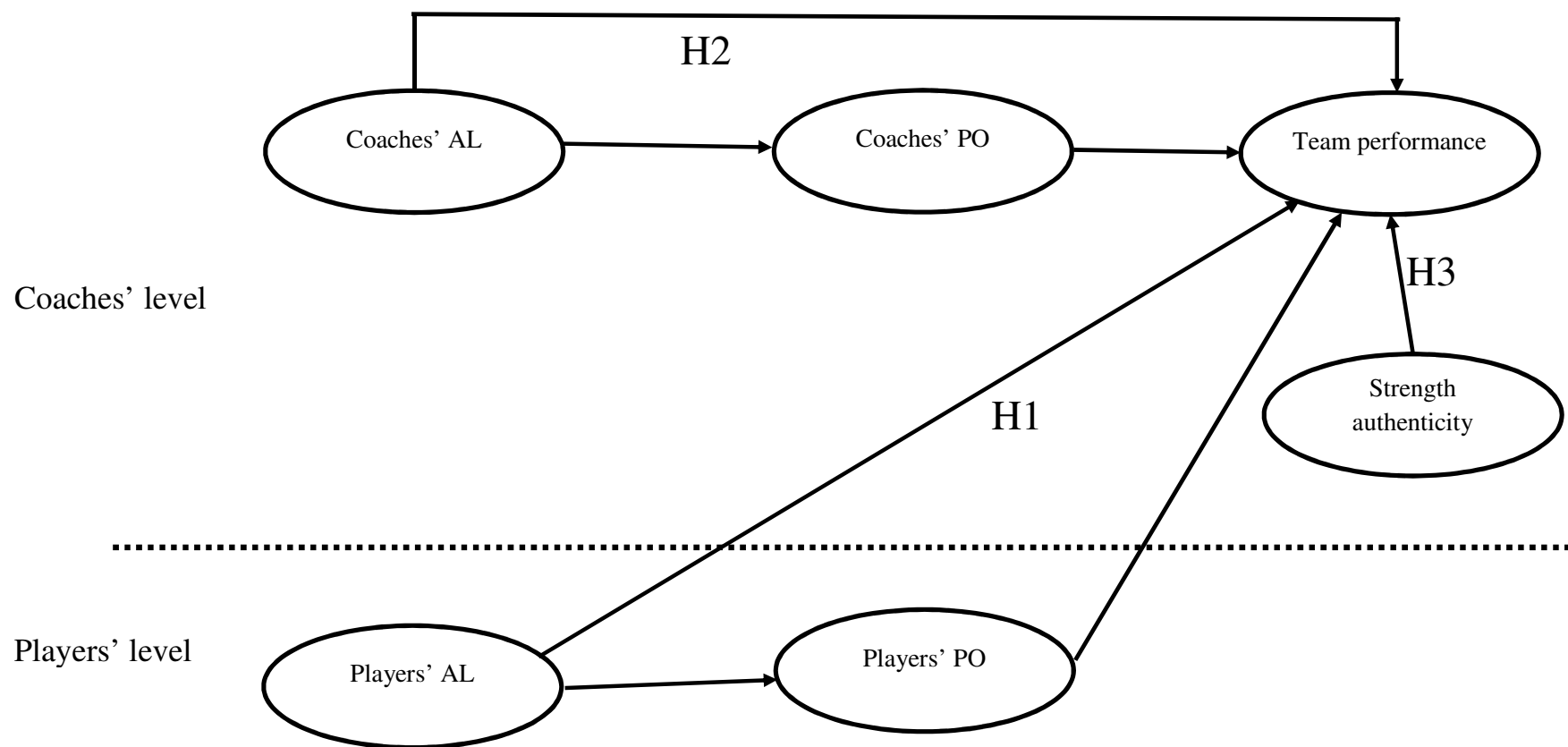


Figure 1

Illustration of hypothetical MSEM model. Within and between players' perception are not represented but were estimated in the model.