The Role of Need Support and Motivational Climate in Stimulating Proactivity in Volleyball Teams.

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Coaching is Teamwork! The Role of Need-Supportive Coaching and the Motivational Climate in Stimulating Proactivity in Volleyball Teams.

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3 Coaching is Teamwork! The Role of Need-Supportive Coaching and the Motivational

4 Climate in Stimulating Proactivity in Volleyball Teams.

PROOF

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They completed a questionnaire assessing coach need support, motivational climate and three primary types of proactivity (voice, taking charge and upward communication). Multilevel structural equation modelling yielded a good fit for the hypothesized model. Consistent with our hypotheses, need support related positively to a mastery climate ($\beta = 0.74, p < .001$), which, in turn, positively predicted proactivity ($\beta = 0.72, p < .001$). Need-supportive coaching behavior negatively predicted a performance climate ($\beta = -0.39, p < .001$). Rejecting our hypothesis, a performance climate positively predicted proactivity, albeit to a smaller extent than a mastery climate ($\beta = 0.21, p < .001$). These findings suggest that a need-supportive coaching style enables coaches to create a mastery climate. Such a climate seems to encourage athletes to be proactive, which enables teams to effectively tackle encountered challenges. The weaker but significant positive relation between a performance climate and proactivity will be discussed within the framework of social interdependence theory.

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Introduction

In challenging environments, high-performing teams need to adequately and quickly adapt to complex and changing circumstances. Therefore, team leaders strive to obtain self-regulating, proactive teams (Crant, 2000; Den Hartog & Belschak, 2007). Team sports settings in particular can be considered dynamic and high-demanding environments. In such settings, it is impossible for coaches to constantly be aware of ongoing affairs, intervene or specify every single task that is required from their players. By being proactive, players are able to improve team functioning through correcting others, discussing ideas and voicing suggestions towards team members or coaches. It is crucial that team players proactively take up their responsibility and help guide their team to the predefined goals, without the necessity of receiving constant directions from the coach. In this way, coaching can be considered as teamwork instead of coaches' unilateral instructing and guiding.

Proactivity is considered to be an important element in organizational settings and is described as self-initiated behavior intended to act onto the environment, to change the status quo and to actively create circumstances enabling personal and organizational goal attainment (e.g., Crant, 2000; Thomas et al., 2010). In order to offer a more specific operationalization, scholars distinguished between three primary types of proactivity (Grant et al., 2011): voicing suggestions and opinions (Morrison, 2014), taking charge in actively improving or correcting the current state of affairs (Morrison & Phelps, 1999), and upward communication to convince supervisors to execute changes (Schilit & Locke, 1982). Not surprisingly, proactivity has been related to positive outcomes such organizational effectiveness, job performance, innovation and better team functioning (e.g., Kickul & Gundy; 2002; Thompson, 2005; Thomas et al., 2010).

Sports teams share many features with business environments. They have an established organization, clearly defined goals and a hierarchical structure, which are the

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essential criteria that need to be considered as a formal management structure (Bridges & Roquemoire, 2000). Notwithstanding these resemblances and its demonstrated benefits, research about proactivity in sports remains sparse. The high-demanding nature of the sports teams calls for a proactive approach from players, which makes teams more able to adapt to the complexity of their environment. Despite possible beneficial effects of such an approach, the specific sports context forces many coaches towards a more directive coaching style instead of a participative approach which allows or stimulates proactivity in the team (e.g., Turman, 2001).

It should be noted that a recent shift can be noticed towards a more participative approach in which not only the coach functions as a leader but also that athletes take up leadership roles (Cotterill & Fransen, 2016). In this respect, several studies have demonstrated a positive link between the presence of athlete leadership (roles) and team outcomes such as team cohesion, team identification, team confidence and performance (for a review, see Cotterill & Fransen, 2016). Although these studies merely focused on role-specific behaviors, they indicate that teams can benefit from players who proactively take initiative and provide the team with valuable feedback. In this way, players' proactive behavior is not only a valuable outcome in itself, but may also be an essential tool for coaches to optimize their team's performances.

One limitation of these studies is that they ignored the role coaches can occupy in stimulating initiative in their teams. This gap in coaching literature is surprising based on the various positive outcomes of athlete leadership in teams and the driving force proactivity can be behind achieving team goals (Strauss & Parker, 2014). A current understanding in the proactivity literature is that leadership style and the installed climate are crucial determinants of proactive behavior in the workplace (Bindl & Parker, 2011). In sports settings, coach leadership and the (motivational) climate are central to the theoretical frameworks of,

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respectively, self-determination theory (SDT: Deci & Ryan, 2000) and achievement goal theory (AGT: Ames, 1992). SDT has demonstrated its value in explaining and predicting autonomous motivation, commitment, well-being and burn-out in athletes (Adie et al., 2008; Lonsdale et al., 2009; Gillet et al., 2010; Adie, et al., 2012). AGT has been able to predict individual outcomes such as well-being, performance anxiety and motivational indices (Standage et al., 2005; Reinboth & Duda, 2006; Smith et al., 2007). Importantly, AGT has also been a valuable framework in predicting team outcomes such as task and social cohesion (e.g., De Backer et al., 2015) and inter-individual behavior within sports teams such as cooperation and conflict (Ommundsen et al., 2005).

Studies have shown that leadership plays an integral role for influencing followers' behavior through the development of team climate (e.g., Mayer et al., 2010; Schaubroeck et al., 2012). A climate, such as motivational climate, contains norms and beliefs about appropriate behaviors in particular situations, including inter-individual behavior. The present study will therefore combine the frameworks of SDT, which focuses on coach leadership and AGT, which centers on motivational climate. That is, this study will draw on both frameworks to investigate how coaches, by adhering a specific (leadership) style can create an optimal motivational climate that stimulates players to engage in proactivity.

Need-Supportive Coaching Behavior and the Motivational Climate

A particular style of coaches' leadership that is rooted in self-determination theory (SDT) and receives increasing attention in the domain of sports psychology and coaching is need-supportive coaching. When coaches display need-supportive behavior, they nurture athletes' psychological needs for autonomy (i.e., experiencing a sense of volition), competence (i.e., feeling effective) and relatedness (i.e., experiencing a sense of warmth; Standage et al., 2005). First, by offering rationale for decisions and actions, providing choices, and involving athletes in their learning process, coaches support athletes' need for autonomy.

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100 (Mageau & Vallerand, 2003). Second, competence-supportive coaches create a structured
101 (learning) environment by communicating clear goals and expectations, and by providing
102 informative feedback during the learning process. (Blanchard et al., 2009). To support
103 athletes' need for relatedness, need-supportive coaches show empathy, respect and
104 involvement. They establish a warm relationship with their athletes and make athletes feel
105 mutually connected and respected (Blanchard et al., 2009).

106 Need-supportive coaching behaviors have been found to predict athletes' autonomous
107 motivation, commitment, psychological health, and performance (Adie et al., 2008; Gillet et
108 al., 2010). In a theoretical contribution, Strauss and Parker (2014) drew on the framework of
109 SDT for proactive behavior to argue that autonomously motivated employees are more likely
110 to engage in higher levels of proactivity that is more effective and also sustainable. Need
111 supportive leaders play an important role to encourage and support employees' autonomous
112 motivation which underscores the role of coach need support in stimulating athletes'
113 proactivity.

114 However, team players do not operate in a social vacuum. Based on social information
115 processing theory, Mayer et al. (2010) have already suggested that people look to the social
116 environment for relevant informational cues about required and respected behavior within a
117 group. In this respect, the prevailing climate in a group provides members with important
118 norms and beliefs about appropriate behavior. Many studies revealed that, in order to
119 stimulate particular behaviors, it is a leader's task to adopt an appropriate leadership style that
120 results in a climate containing the desired norms regarding the desired behaviors (Mayer et
121 al., 2010; Schaubroeck et al., 2012).

122 By emphasizing particular behavior, coaches are crucial creators of the motivational
123 climate in a team (Pensgaard & Roberts, 2002). Besides affecting positive individual
124 outcomes, need-supportive coaching behavior will engender a climate characterized by

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125 greater openness and receptivity for others. In team sports, this will manifest through creating
126 a climate with a stronger focus on the team and cooperation with teammates, thus leading to a
127 mastery- instead of performance-oriented team climate.

128 These different motivational climates are central to achievement goal theory (AGT),
129 which states that people strive to achieve success (Ames, 1992). A mastery climate defines
130 success in terms of skill development at both individual and team level. Cooperation,
131 improvement and effort are prevailing beliefs about appropriate behaviors that are crucial in
132 achieving success. In contrast, a performance motivational climate defines success as
133 outperforming others and is characterized by a focus on intra -team rivalry, public evaluation,
134 normative feedback and favoring of specific 'star' players in a team (Heuzé et al., 2006).

135 It can be expected that need-supportive coach leadership will result in a mastery
136 climate, instead of a performance climate. Need-supportive coaches will involve players in
137 their goal-setting procedure and make them responsible for their (self-referenced) skill
138 improvement instead of exerting pressure by imposing normative standards or rewards (Duda,
139 2001). They will ensure feelings of competence by providing sufficient guidance and structure
140 to enable athletes to achieve these goals (Blanchard et al., 2009). Further, such coaches will
141 ensure players feel valued and establish profound relations with and between their athletes. In
142 other words, need supportive coaches view success in a (self-referenced) developmental and
143 cooperative manner and will signal this view consistently through interaction with their
144 athletes. In turn, their athletes will transfer this developmental and cooperative mindset to
145 their larger social environment (i.e. the team as a whole).

146 More specifically, through observation of their coaches' behavior, players will observe
147 expected and valued behaviors in the team. That is, players learn that in their team behaviors
148 such as valuing other players, showing responsibility, skill development, cooperating by
149 guiding others are most desirable and expected. These beliefs and norms regarding the

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required behaviors within the team are essential features of a mastery motivational climate. Accordingly, the more players observe need-supportive coaching behaviors, the less they will create the impression that outperforming team members or intra-team rivalry is desirable in their social environment.

In line with this rationale, some studies have already shown that need-supportive behavior positively relates to a mastery climate and negatively to a performance climate. Using a longitudinal design, Jõesaar et al. (2012) demonstrated that autonomy supportive coaching behavior positively predicted the presence of a task-involving climate in sports teams (but not vice versa). Also in an educational setting, Stornes et al. (2008) have already revealed that teachers' involvement, autonomy support and regulation, positively predict the prevalence of a mastery climate in classes and negatively predict the presence of a performance climate.

The Motivational Climate and Proactive Behavior

AGT states that people are motivated to act upon the beliefs about causes of success that are embedded in the prevailing motivational climate. These beliefs function as situational cues that signal the necessary and desired behaviors, including behaviors directed towards others, in a particular social context (Ames, 1992). A mastery climate is characterized by the belief that cooperation and team effort are important causes for success (e.g., Seifriz et al., 1992). In such a climate, facing problems and obstacles in group-related tasks are handled as opportunities to improve as a team and to generate problem-solving strategies to overcome the encountered obstacles (Gully & Phillips, 2005). Such a cooperative and developmental mindset urges players to look for opportunities of improvement and proactively voice their opinion to the other players. By correcting others, discussing ideas, voicing suggestions towards team members or coaches, players have the intent of improving the present state of

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174 affairs or overcome particular obstacles, which eventually paves the way to reach the team's
175 goals.

176 Also empirical studies suggest a positive relation between a mastery climate and
177 proactive behavior. Bunderson and Sutcliffe (2003) revealed a positive link between a
178 learning climate in business units and their innovative behavior, which can be considered as
179 behavior to improve current practices. Also in a field experiment with teams consisting of
180 university students, Ashauer & Macan (2013) demonstrated that leader-assigned mastery
181 goals resulted in increased team learning behaviors. These behaviors, including addressing
182 challenging ideas, seeking feedback, discussing errors, and voicing suggestions, appear to be
183 important determinants to overcome obstacles and improve the group's performance. In other
184 words, both theory and empirical findings suggest that individuals will act upon the
185 cooperative norms and beliefs in a mastery climate by being proactive. A performance climate
186 is characterized by the belief that intra-team rivalry and outperforming team members leads to
187 success. According to Morrison (2014), people cognitively evaluate the expected utility of
188 their planned proactive behaviors. Following AGT, it could therefore be argued that there is
189 little utility in voicing improvement suggestions or corrections towards others when you try to
190 outperform them. In this respect, Ashauer and Macan (2013) found that leader-assigned
191 performance goals resulted in decreased team learning behavior as compared to leader-
192 assigned mastery goals. Ommundsen et al. (2005) also revealed a positive relation between a
193 performance climate and conflict in soccer teams. These findings signal that team members
194 base their actions on informational cues (i.e. beliefs, norms) in their environment regarding
195 desirable behavior within the team. For this reason, it can be expected that a performance
196 climate will coincide with reduced proactivity.

197 **The Present Study**

First, need supportive coaching behavior was expected to positively predict a mastery climate (Hypothesis 1) and negatively predict a performance climate (Hypothesis 2). Second, based on AGT, players will act upon the prevailing beliefs in these climates. A mastery climate will therefore, in turn, positively predict proactivity in the team (Hypothesis 3). On the contrary, a performance climate will negatively predict proactivity because of its focus on intra-team rivalry and outperforming team members (Hypothesis 4). To summarize, it was hypothesized that the motivational climate functions as an underlying mechanism by which need supportive coaches can stimulate proactivity.

Participants and Procedures

Head coaches of 41 senior Belgian volleyball teams were contacted by means of a standardized email. This email explained the purpose of the study and indicated the time needed to fill out the questionnaire (i.e. 15 minutes). Twenty coaches indicated they wished to participate in the study. All questionnaires were administered before or after a training session

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during midseason. Next, a trained research assistant visited these teams to administer the paper-and-pencil questionnaires. The first page of the questionnaire also included an informed consent that needed to be signed by both researcher and respondent. During the administration, the assistant was available for further clarifications. The study was approved by the Social and Societal Ethics Committee of the research institution. Respondents obtained no rewards for their participation. The twenty participating teams ranked from the highest national level in Belgium to the regional level of the Belgian competition. All players were asked to complete the questionnaire, which was administered in Dutch. However, not all players were present during the arranged training session due to injuries or unavailability. In the participating 20 teams ($N = 243$), the total response rate was 74.1% and the final research sample ($N = 180$) consisted of 75 senior male and 105 senior female volleyball players. The mean age was 21.92 years ($SD = 4.92$; range = 15-37) and players had on average 12.81 years of experience ($SD = 9.87$). On average, coach and players had been together for 2.00 years ($SD = 1.66$).

Measures

Need support. In correspondence with SDT (Deci & Ryan, 2000) and in analogy with research by Standage et al. (2005), need support of the coach was considered as a higher-order construct and was measured by three subscales: autonomy support, structure and relatedness. Players had to score the items of these subscales on a 7-point Likert scale, ranging from 1 (*totally disagree*) to 7 (*totally agree*). For each player, the mean score of each subscale functioned as an indicator of the higher-order latent variable need support.

Autonomy support (6 items). Autonomy support of the coach was measured by the short version of the Sport Climate Questionnaire (SDT website: <http://www.selfdeterminationtheory.org>) and has already been shown to be valid and reliable in a sports setting (Amorose & Anderson-Butcher, 2007). This questionnaire is identical to the

shortened version of the Health Care Climate Questionnaire (HCCQ: Williams et al., 1996), which was translated to Dutch by Jochems et al. (2014), with the exception of the agent of interest (i.e. coach instead of health care staff). A sample item is: “My coach encourages me to ask questions”.

Structure (8 items). Coaches’ provision of structure was assessed by the Structure-subscale of the shortened version of the Teacher as Social Context Scale (TASC: Belmont et al., 1988). This scale was translated to Dutch by Sierens, et al. (2009). These items were slightly adapted to the sports context by substituting the term ‘teacher’ by ‘coach’, following Curran et al. (2013). An exemplary item is: “My coach always tells me what he/she expects of me.”

Relatedness support (5 items). Relatedness with the coach was measured using items based on the relatedness-subscale constructed by Standage et al. (2005). Because these authors measured relatedness support in a physical-education context, the items were adapted to the team sports context by replacing ‘teacher’ by ‘coach’ and ‘class’ by ‘team’. An example is: “In this team, my coach is interested in us”. A Dutch version of this scale that previous research used in a Dutch-speaking sample was administered (Goris W, unpublished observation).

Motivational climate (20 items). Perceived motivational climate was assessed by the Perceived Motivational Climate in Sport Questionnaire (PMCSQ: Seifriz et al., 1992). This study used a Dutch version of the PMCSQ that was constructed and used by De Bruin et al. (2009). The PMCSQ consists of nine items measuring the mastery climate (e.g., “On this team, each player’s improvement is important.”) and 11 items that measure the performance climate (e.g., “On this team, outplaying teammates is important”). Players had to rate these items on a 5-point Likert scale, ranging from 1 (*Totally disagree*) to 5 (*Totally agree*).

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Proactivity (13 items). In analogy with Grant et al. (2011), proactivity in the team was assessed using three different subscales that measured three types of proactive behavior: taking charge (5 items), voice (4 items) and upward influence (4 items). These subscales were shortened versions of their original scales and have been used as a measurement of proactivity that showed factorial validity and good internal consistency (Grant et al., 2011). Because the original scales are designed for work place settings, the items were slightly adapted to the sports context (e.g. 'work unit' becomes 'team'). Exemplary items for the taking charge, voice and upward influence scales are, respectively: "In our team, one tries to correct a faulty procedure or practice.", "In our team, one speaks up and encourages others in the group to get involved in issues that affect the group" and "In this team, one discusses performance issues with the coach". Because these measurements were not available in Dutch, the items used by Grant et al. (2011) were back-translated by two native speaking Dutch researchers. All items were assessed on a 5-point Likert scale, ranging from 1 (*To a very small extent*) to 5 (*To a very large extent*). Average subscale-scores were considered as indicators of the higher-order latent variable proactivity, which was in accordance with Grant et al. (2011).

Data Analysis

First, scale reliabilities and descriptive statistics, including scale means, standard deviations and inter-correlations were computed. Second, multilevel structural equation modelling (MSEM) was conducted in MPLUS 7.4 (Muthén & Muthén, 1998-2015) to test the hypothesized model. More specifically, random intercepts were included in the model for all variables concurrently. As compared to single-level analysis, a random intercepts multilevel model subtracts between-team variance from the total variance. In other words, this procedure allowed us to report relations that are solely due to between-person variance and are not biased due to nesting within teams. Third, invariance tests were conducted based on the analytical procedure from Bentler (1995) to determine whether the hypothesized relations

were similar across gender. The present study used the following indices to evaluate model fit: the normed chi-square (χ^2/df), the Comparative Fit Index (CFI), the Tucker Lewis index (TLI) and the root mean square error (RMSEA). The chi-square statistic assesses the discrepancy between the sample and modelled covariance matrices. However, this statistic is influenced by sample size as its significance will increase when sample size increases. For this reason, the normed chi-square statistic (χ^2/df) was calculated and considered to indicate a good fit when its value was below 3:1 (Kline, 2005). In line with Lance et al. (2006) a CFI and TLI of .90 or higher indicate an acceptable fit. The RMSEA is ideally .08 or lower to indicate an acceptable fit (Hu & Bentler, 1999).

Results

Descriptive Statistics, Correlations and Internal Consistencies

Table 1 provides an overview of all measures used in this study, including their means, standard deviations and inter-correlations. The internal consistencies of the measures are represented by their Chronbach’s alphas, which are depicted on the diagonal. All mean scale scores were high (i.e. above the midpoint), with the exception of performance climate which was reported as moderate. There were no gender differences in mean scores of need support ($t(178) = -1.34, p = .18$) mastery climate ($t(178) = -0.91, p = .37$), performance climate ($t(178) = -1.24, p = .22$) and proactivity ($t(178) = -1.26, p = .21$). The pattern of correlations was in line with the hypothesized relations, except for the non-significant correlation between performance climate and proactivity. All scales demonstrated good internal consistency.

Hypotheses testing using multilevel structural equation modelling

The hypothesized model was tested using MSEM to control for the nesting of players within teams. Because our sample size was too small to use a full-item indicator approach, average (sub)scale scores were used as observed variables. Only autonomy support, structure and relatedness support, and taking charge, voice and upward influence were included in the

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model as indicators of their higher-order constructs need support and proactivity. First, the intraclass correlation (ICC) was calculated for each measurement. These results showed a team level variance of 19% for need support, 19% for mastery climate, 11% for performance climate and 5% for proactivity. Second, the hypothesized model was estimated using a random intercepts structural equation model. Both Mardia's coefficients of skewness and kurtosis indicated multivariate non-normality with regard to the variables in the model ($p < .001$). In a simulation study using MSEM on continuous data, Hox et al. (2010) found that WLSMV estimation is more accurate than other robust estimation methods when between-level sample size is small. Therefore, to accommodate for the limited number of clusters and non-normality, the WLSMV estimator was used.

The results of this MSEM indicated a good fit of the hypothesized model ($\chi^2 = 56.73$, $df = 46$, $p = .15$; $\chi^2/df = 1.23$; TLI = .95; CFI = .96; RMSEA = .034). Standardized path coefficients and proportions explained variance are displayed in figure 1. In line with hypothesis 1 and hypothesis 2, need-supportive behavior from the coach positively predicted mastery climate and negatively predicted performance climate. Confirming hypothesis 3, the results showed that mastery climate positively predicted proactivity. Contrary to hypothesis 4, however, performance climate also positively predicted proactivity.

In order to further examine mediation, indirect effects were calculated from need support to proactivity for both the path going through mastery climate and through performance climate. The results revealed a significant indirect effect from need support to proactivity through mastery climate ($B = 0.13$, $p < .001$) and through performance climate ($B = -0.04$, $p = .007$). Importantly, the direct effect of need support on proactivity was non-significant in this model ($B = 0.11$, $p = .08$). In other words, these results indicate that the motivational climate mediates the relation between need support and proactivity.

Invariance tests

Following the analytical steps from Bentler (1995), invariance tests were conducted to examine whether the hypothesized model was equivalent across gender. A first step is the estimation of the configural invariance model (Model 1), in which the hypothesized model is fitted for both gender concurrently. Because this model did not converge due to the limited amount of teams in each group (i.e. 8 male teams, 12 female teams) (Muthén & Muthén, 1998-2015), these analyses were conducted without controlling for the nested structure of our data. This procedure was deemed appropriate because the single-level model had a good fit ($\chi^2 = 34.26$, $df = 17$, $p = .008$; $\chi^2/df = 2.02$; TLI = .94; CFI = .96; RMSEA = .075) and similar parameter estimates as the multi-level model. The configural invariance model demonstrated a good fit ($\chi^2 = 51.40$, $df = 34$, $p = .028$; $\chi^2/df = 1.51$; TLI = .94; CFI = .96; RMSEA = .075). This model functions as baseline model to compare subsequent increasingly restrictive nested models. To evaluate invariance between these nested models, ΔCFI was used (Cheung & Rensvold, 2002). That is, invariance was confirmed when ΔCFI between the less constrained model and the more constrained model was smaller or equal to .01 (Cheung & Rensvold, 2002). The fit indices of the increasingly restrictive models can be found in table 1.

The results (see Table 2) indicate that constraining additional parameters did not result in a ΔCFI that exceeded .01. This means that invariance was established when factor loading coefficients (on the higher-order factors), factor variance and regression paths were simultaneously constrained across gender. In other words, the hypothesized model was equivalent across gender.

Discussion

Because of the high-demanding and dynamic team sports setting, the present study introduced the concept of proactivity in team sports and studied how coaches can stimulate such behavior in order to obtain self-regulation within their team. Drawing on SDT and AGT, this study tested a model that related need-supportive coaching behavior to proactive

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372 behaviors in volleyball teams by including the motivational climate as an underlying
373 mechanism.

374 The hypothesized model explained 47% of the variance in proactivity. This substantial
375 effect size primarily suggests that, although proactivity is considered as self-initiated
376 behavior, coaches can stimulate players' proactive behavior by behaving in a need-supportive
377 way. Need support has mainly been investigated in its relation to individual outcomes and has
378 been found to be positively related to outcomes such as autonomous motivation, commitment,
379 psychological and physical well-being and performance (e.g., Reinboth et al., 2004; Gillet et
380 al., 2010). The present study provides additional value to the SDT-literature by demonstrating
381 a positive relation between need support and inter-individual cooperative behavior. Further,
382 this relation implies that need support does not only result in self-regulated learning strategies
383 at the individual level (Sierens et al., 2009) but also in self-regulating behavior within the
384 team.

385 Importantly, this study found that the motivational climate mediated the relation
386 between need-supportive coaching and proactivity. Revealing this mediating role is in line
387 with several organizational leadership studies. These studies also found that particular
388 leadership styles result in a team climate that signals appropriate (team) behavior. Such a
389 climate, in turn, predicted the actual behavior of employees (e.g. Mayer et al., 2010). First, the
390 results of this study confirmed hypothesis 1 and hypothesis 2 by demonstrating that need-
391 supportive behavior from the coach positively predicted a mastery climate and negatively
392 predicted a performance climate. This finding was in line with research by Pensgaard and
393 Roberts' (2002), which found that coaching behaviors are crucial for creating an optimal
394 motivational climate. On the one hand, through interaction with their need-supportive
395 coaches, athletes learn that guiding and valuing team members, cooperation, and taking
396 responsibility for their own growth are important expected behaviors in their social

environment. These norms and values regarding appropriate intra-team behavior are believed to be crucial for achieving team success. On the other hand, need-supportive coaches will reduce the perception of a climate that is characterized by a focus on normative standards, intra-team rivalry and intra-team competition. Again, these results go beyond mere individual outcomes of need-supportive coaching behavior. Together with the substantial proportion of explained variances in the motivational climate, this suggests an important role of both SDT and AGT in explaining intra-team dynamics and effective team behavior.

Second, in turn, the motivational climate predicted proactive behavior in sports teams. Confirming hypothesis 3, the results indicate that players will act upon the beliefs prevailing in a mastery climate. In line with AGT, a mastery climate's focus on success by cooperation drives players to proactively voice suggestions and provide corrections in order to help each other to overcome obstacles as a team and improve the current state of affairs. This finding is also in line with social information processing theory as it states that people screen their social environment for informational cues (i.e. norms) to guide their behavior (Salancik & Pfeffer, 1978).

Contrary to hypothesis 4, results demonstrated that a performance climate positively predicted proactivity. This finding contradicted AGT and empirical established relations between a performance climate and negative inter-individual outcomes such as conflict (Ommundsen et al., 2005). However, a potential explanation for this result might reside within the framework of social interdependence theory (SIT: Johnson & Johnson, 2005). Sports teams are highly (task and goal) interdependent (Beauchamp et al., 2002). That is, it is almost impossible for individuals to achieve their individual goals (e.g. outperforming others) without any teamwork. SIT states that in an interdependent context individuals will always need to cooperate by helping each other, communicating effectively and mutually influencing each other (Johnson & Johnson, 2005). Therefore, it can be argued that even in a performance

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climate, players correct each other or constructively voice suggestions towards other players out of self-interest. Although players want to outperform teammates in a performance climate, they remain dependent on each other, even for individual successes, and will therefore take initiative to improve their teammates' actions.

To date, a performance climate has mainly been related to negative outcomes such as a decreased cohesion, negative peer relationships and distress among elite athletes (Pensgaard & Roberts, 2000; Ommundsen et al., 2005; Heuzé et al., 2006). It is therefore surprising to reveal a positive behavioral outcome of a performance climate in an interdependent setting such as a volleyball team. This finding might emphasize the interdependent nature of a team sports setting, and in particular in volleyball teams. Based on these findings, future studies in sports teams should take into account their interdependency in predicting inter-personal outcomes. However, it should be noted that a mastery climate predicts proactivity to a larger extent as compared to a performance climate. Further, a mastery climate has a wide array of positive outcomes such as the use of effective learning strategies, engagement, task cohesion, constructive peer relations and self-determined motivation (Ames, 1992; Ommundsen et al., 2005; Heuzé et al., 2006). Therefore, creating a mastery climate by engaging in need-supportive coaching behavior can be considered most advisable to stimulate proactivity.

The established relations in the model were invariant across gender. This gender-invariance seems to indicate that, at least within the context of this study's model, it is not necessary for coaches to approach male and female athletes differently in order to stimulate proactivity. In this respect, need-supportive coaching has already been widely researched in sports contexts, which resulted in the operationalization of specific need-supportive coaching behaviors (Mageau & Vallerand, 2003). By consulting these practical guidelines, coaches can learn to adopt a need-supportive style, thereby creating a mastery climate and fostering proactivity in both male and female athletes. In other words, this study does not only add to

the literature but also has practical implications for coaches who desire to obtain proactivity in their team.

Limitations and Future Directions

Notwithstanding the confirmation of the hypothesized model and the substantial effect sizes, several limitations should be addressed that are inherent to this study. First, the cross-sectional nature of the study does not allow causal inferences. The hypothesized relations are embedded in a theoretical background of SDT and AGT, and the results do provide valuable first insights about the processes behind stimulating proactivity in a team. However, longitudinal designs are needed to provide further indications of the direction of the relations. Such designs would also allow to examine both reciprocal relations and long-term outcomes of proactivity while taking into account the impact of changing situational circumstances (e.g., wins or losses). A second limitation is the limited sample size of this study. Future studies should include a larger sample that allows a full-indicator MSEM and multilevel invariance tests. Third, the study sample only included volleyball teams which limits the generalization of our findings to other team sports. It can be argued that proactive behaviors regard general initiative-taking behaviors that can be displayed in any group. However, some team sports settings can be more or less inviting for engaging in proactive behaviors. Communication among players might be more required in some team sports such as football given its pitch-size, which makes it hard for coaches to verbally reach all players. This could either result in a larger proactivity-culture, regardless of any coaching style or increase the necessity to stimulate proactivity. Although proactive behaviors do not necessarily include sports-specific on-field behaviors, future studies should consider other team sports to increase the external validity of the results.

Third, motivational climate was measured using the PMCSQ (Seifriz et al., 1992), which lacked an optimally fitting factor structure in this study. Future studies should use the

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more recently developed PMCSQ-2 (Newton et al., 2000). This questionnaire has better psychometric properties and allows to examine different facets of each type of climate. Fourth, the present study addresses how coaches can stimulate proactive behaviors that positively affect team functioning and performance. It seems reasonable to suggest that under some circumstances players will voice destructive critique or complaints that can negatively affect the team. In this respect, Maynes and Podsakoff (2014) distinguished between different types of voice that differentially affect team functioning in organizations. They revealed positive effects of supportive and constructive voice behaviors but negative effects of defensive and destructive voice. Future studies should translate these voice types to the sports context and examine how coaches can manage both positive and negative types of proactivity.

Perspective

Given the high-demanding nature of team sports, it is hard for coaches to keep control and continuously keep an eye on everything that is going on in the team. Teams benefit from players who proactively correct each other and voice suggestions to more effectively overcome obstacles. This study argued and showed that coaches are well-placed to enable proactive behavior. In line with findings from Stornes et al. (2008), the results demonstrated that by displaying need-supportive behavior, coaches foster a mastery rather than a performance climate, which in turn spurs proactive behavior. Importantly, a performance climate also proved to encourage proactivity. However, given the stronger predictive value of a mastery climate and previously found negative outcomes of a performance climate (e.g., Heuzé et al., 2006), creating a mastery climate can be considered the optimal mechanism for coaches to stimulate proactivity. To conclude, coaches who behave in a need-supportive way create a climate that invites them to engage in proactive behavior to more effectively tackle the challenges sports teams are facing.

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Table 1
Means, Standard Deviations and Correlations and Chronbach's Alphas for all Study Variables

Variable	Range	M	SD	1	2	3	4
1. Need Support	1-7	4.80	0.79	(.90)			
2. Mastery Climate	1-5	3.62	0.59	-.63*	(.83)		
3. Performance Climate	1-5	2.98	0.60	-.38*	-.31*	(.80)	
4. Proactivity	1-5	3.38	0.46	-.39*	-.54*	--.05	(.84)

Note. * $p < .001$. Figures between parentheses are Cronbach's alphas.

Table 2
Goodness of fit indices for the gender-invariance model tests

Model	χ^2	df	χ^2/df	TLI	RMSEA	CFI	Δ CFI
Model 1	51.40	34	1.51	.940	.075	.963	
Model 2	60.40	38	1.59	.930	.081	.953	.010
Model 3	65.01	46	1.41	.951	.068	.960	.007
Model 4	67.44	50	1.35	.959	.062	.963	.003

Note. Model 1 = configural invariance model (baseline model); Model 2 = factor loadings constrained; Model 3 = factor loadings and factor variances constrained; Model 4 = factor loadings, factor variances and regression paths constrained.

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Figure 1. The multilevel structural equation model of need support, motivational climate and proactivity. Random intercepts were included in the model, but are not depicted. Legend. Standardized coefficients are presented and proportions explained variance are presented in italics. * $p < .001$