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Team Achievement Goals and Sports Team Performance

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Abstract

This study focuses on team achievement goals and performance outcomes in interdependent sports teams. Team achievement goals reflect shared motivational states that exist exclusively at the team level. In a survey among 310 members of 29 premier-league field-hockey teams, team-level performance-approach, performance-avoidance, mastery-approach, and mastery-avoidance achievement goals explained 69% of the overall variance in team performance and 16% after controlling for previous performance. Teams performed better to the extent they were more approach- and less avoidance oriented in terms of both mastery and performance, although mastery-approach goals related to early-season team performance rather than predicting later changes in team performance.

Keywords

achievement goals, goal orientation, team performance, sports teams

In the multidisciplinary domain of human motivation, achievement goal theory (Dweck, 1986; Dweck & Leggett, 1988; Nicholls, 1984) is an influential framework. Achievement goals reflect people's goal preferences in achievement

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situations (Payne et al., 2007). They predict how individuals interpret and respond to situations and challenges and relate to a wide range of cognitive, affective, and behavioral outcomes in many different settings. Here, we focus on the domain of sport and exercise. Consistent with findings in other domains, research demonstrated the value of achievement goals in predicting sports performance (Elliot et al., 2006; Lochbaum & Gottardy, 2015; Stoeber & Crombie, 2010), as well as, for example, well-being (Adie et al., 2008), self-handicapping (Elliot et al., 2006; Ntoumanis et al., 2009), and different types of motivation (Conroy et al., 2006; Moreno et al., 2010).

Previous research has developed a substantial source of knowledge on achievement goals that has been translated into practical programs and interventions. Interestingly, however, previous research has focused almost exclusively on understanding achievement goals at the individual level, and in relation to individual cognitions, behaviors, and performance, even in studies in sports team settings (cf. Harwood & Beauchamp, 2007; Papaioannou et al., 2004). Although the individual is crucial for effective team play, team contexts imply interdependence among team members who collectively pursue shared goals and ambitions. This calls for a team perspective that incorporates the interdependencies among team members inherent to teams in general and sports teams in particular (cf. Harwood & Beauchamp, 2007). This study examines a team-level conceptualization of achievement goals and the performance outcomes of elite sports teams.

Sports teams can develop collective, team-level achievement goals, defined as shared motivational constructs that emerge over time, exist exclusively at the team level, and have important implications for team processes and outcomes. Thus defined, team achievement goals reflect team emergent states: Team properties that vary as a function of team context, inputs, processes, and outcomes, and that develop over time as members work together in a structure of mutual internal and external influences (e.g., Kozlowski et al., 2013; Marks et al., 2001). Theories of emergence specify how individual attributes translate into collective properties through individual actions and interactions that, over time, develop into collective structures that transcend the individual members (Morgeson & Hofmann, 1999). Although research is scarce, scholars have proposed several factors that shape the emergence of shared team-level achievement goals, including individual team members' trait achievement goals (Van Mierlo & Van Hooft, 2015), leadership influences (Dragoni, 2005; Dragoni & Kuenzi, 2012), and the team's functional purpose in the organizational context (Gully & Phillips, 2005).

This view of achievement goals as shared team-level constructs can be substantiated based on research in the organizational domain, where a small

set of studies has examined team achievement goals (e.g., Bunderson & Sutcliffe, 2003; Mehta et al., 2009; Van Mierlo & Van Hooft, 2015). This cross-domain perspective is promising for at least three reasons. First, even though studies in the organizational domain support the idea that team members develop collective conceptions of what and whom they are as a team (i.e., emergent states), this issue remained unaddressed in the sport and exercise literature. As such, examining team achievement goals in a sports context may enrich current theorizing and research on sports teams. Second, several scholars have identified elite sports teams as an ideal context for studying teamwork and testing organizational theories (e.g., Katz, 2001; Van Breukelen et al., 2012). Wolfe and colleagues (2005) qualified sport as a "microcosm of the larger society" and of work settings in particular (p. 184). Sports teams and work teams share many defining features. Work teams represent distinguishable groups of two or more individuals who interact and work interdependently toward a common, valued goal (Salas et al., 1992). Defining features include high interdependence among team members, shared goals, performance requirements, predefined leadership structures, and embeddedness in a broader organization (Kozlowski & Bell, 2003). These same features apply to many types of sports teams, especially in highly interdependent team sports, such as basketball, volleyball, or field hockey (cf. Katz, 2001; Van Breukelen et al., 2012). As such, findings from sports teams are well suited to inform work team practices. Third, sampling sports teams has advantages over sampling work teams. Team membership is clearly demarcated in sports teams, and members know each other well and interact intensively. Also, contrary to many work teams, sports teams often have a limited life span with a clear beginning and end point. This allows researchers to study teams from their formation onward, offering a natural zero point that is hard to find in organizational contexts. Finally, in sports settings, standardized objective performance metrics are more readily available.

Drawing from organizational research to explore team achievement goals and sports team performance, we expect positive performance outcomes for approach-oriented team achievement goals and adverse performance outcomes for avoidance-oriented team achievement goals. Research on team achievement goals is lacking in the sports domain and is still limited in the organizational domain. Increased insight into this topic can contribute to theory development in both domains. The underlying framework for this study is the 2 (mastery-performance) $\times$ 2 (approach-avoidance) achievement goal framework (Conroy et al., 2003; Elliot & McGregor, 2001), an influential individual-level achievement goal framework. To our knowledge, however, only three previous studies examined the 2 $\times$ 2 framework at the team level (Maltarich et al., 2016; Van Hooft & Van Mierlo, 2018; Van Mierlo &

Van Hooft, 2015). Practically, the current study may help understand why some teams perform better than others and inspire the development of strategies that help teams and their coaches or managers create an optimal setting for mastery and performance.

Achievement Goal Theory

Educational scientists (Dweck, 1986; Dweck & Leggett, 1988; Nicholls, 1984) originally developed achievement goal theory to explain differences between students' scholastic achievement patterns. Shortly after its introduction, scholars introduced achievement goal theory into the sports domain (Duda, 1989; Duda & Nicholls, 1992). The original achievement goal theories distinguished between two types of goals. Mastery goals focus on self- or task-referenced competence, as indicated by learning and making progress, and involve an absolute or intrapersonal standard for defining competence. Performance goals focus on normative, other-referenced competence, as indicated by winning and outperforming others, and involve an interpersonal, normative standard for defining competence.[1] Research connects mastery goals to adaptive affective, cognitive, and behavioral outcomes, whereas performance goals produced more ambiguous outcomes (Biddle et al., 2003; Duda, 2001).

To explain those ambiguities, Elliot and colleagues expanded the original goal dichotomy with a valence dimension that distinguishes approach motivation (i.e., striving to achieve a positive outcome) and avoidance motivation (i.e., striving to avoid a negative outcome). This expansion first resulted in a trichotomous achievement goal framework, including performance-approach, performance-avoidance, and mastery achievement goals (Elliot & Harackiewicz, 1996). Subsequently, Elliot and McGregor (2001) introduced a 2×2 framework that also distinguishes between mastery-approach and mastery-avoidance achievement goals (see also Conroy et al., 2003). In this framework, performance-approach achievement goals focus on demonstrating normative competence, for example, defeating competitors or impressing others. Performance-avoidance goals focus on avoiding normative *in*competence (i.e., not performing worse than others or not losing face). Mastery-approach goals focus on attaining self- or task-referenced competence, for example, performing better than before, or mastering a new skill. And finally, mastery-avoidance goals focus on avoiding self- or task-referenced *in*competence, for example, not doing worse than before, or failing to master an important technique. Subsequent research in a variety of domains supported this 2×2 framework, relating the four achievement goals to distinct outcome patterns (Baranik et al., 2010; Hulleman et al., 2010).

In the sport and exercise literature, individual-level research on the 2 × 2 framework is accumulating. Consistent with research in other domains, findings show adaptive outcomes for mastery-approach goals. For example, mastery-approach goals positively predict individual sports performance (Li et al., 2011; Van Yperen et al., 2014). Explanatory mechanisms for these favorable performance outcomes include positive affect and self-esteem (Adie et al., 2008), self-determined motivation (Conroy et al., 2006; Li et al., 2011; Moreno et al., 2010), and enjoyment (Wang et al., 2010). Performance-avoidance goals, in contrast, tend to relate to poor performance (Elliot et al., 2006; Li et al., 2011; Stoeber & Crombie, 2010). Mechanisms underlying these maladaptive outcomes include self-handicapping (Elliot et al., 2006; Ntoumanis et al., 2009), fear of failure (Conroy & Elliot, 2004), and lack of enjoyment (Wang et al., 2010). Results for performance-approach and mastery-avoidance goals are less consistent, but mostly suggest positive or neutral performance outcomes for performance-approach goals and adverse effects for mastery-avoidance goals that are, however, less negative than those for performance-avoidance goals (cf. Jackson et al., 2010).

Some scholars define achievement goal orientation as a disposition or personality trait, implying it is relatively stable over time and across situations. However, most research views achievement goals as situationally dependent, such that they can vary over time and across contexts (DeShon & Gillespie, 2005). Research showed that individuals can display different achievement goal patterns in different domains (e.g., work, sports) and can temporarily adjust their achievement goals in response to specific situational demands (DeShon & Gillespie, 2005; Payne et al., 2007). These latter findings suggest a domain-specific state perspective of achievement goals, which is adopted for this study.

Higher Level Goal Structures

The recognition that contextual and temporal factors can influence achievement goals gave rise to the study of higher level situational goal structures. In the educational context, Ames and colleagues (Ames, 1992; Ames & Archer, 1988) introduced the concept of classroom goal structures, referring to classroom characteristics (tasks, authority) that emphasize different achievement goals and may elicit different motivational patterns. In the domain of sport and physical education, researchers adopted this concept as motivational climate, reflecting the situational goal structure of the environment created by significant others (coaches, parents), and established its predictive value for sport-related outcomes (see Harwood et al., 2015, for a systematic review).

Although some of the research on higher level goal structures targeted team sports settings, motivational climate as a construct resides at the individual level. Researchers measure it by collecting individual perceptions of the team motivational climate and use these perceptions to predict individual outcomes such as well-being or motivation (Harwood & Beauchamp, 2007; Papaioannou et al., 2004). Although this research yielded valuable insights, the individual-level approach does not take into account the interdependencies that are inherent to teams. Some researchers called attention to team-related outcomes of motivational climate. Their findings support its predictive value regarding individual perceptions of team cohesion, collective efficacy, team improvement, and satisfaction with the team (Balaguer et al., 2002; Heuzé et al., 2006). Still, the definition, measurement, and analysis of these concepts resided at the individual level and findings reflect individual perceptions of motivational climate and its outcomes. Moreover, these studies use the traditional mastery–performance goal dichotomy, rather than the more recent 2 × 2 conceptualization of achievement goals.

A 2 × 2 Framework of Team Achievement Goals

Research in the organizational domain suggests a different perspective on achievement goals in team settings: team achievement goals. Team achievement goals represent shared motivational constructs that emerge over time, exist exclusively at the team level, and have important implications for team processes and outcomes (e.g., Bunderson & Sutcliffe, 2003; DeShon et al., 2004). Individual and team-level achievement goals share a similar underlying conceptual framework. Like individuals, teams need to regulate their collective behavior toward goal attainment. This motivational process also includes performance and mastery, striving for desired outcomes, and avoiding undesired outcomes. An important difference is that, for team achievement goals, definitions, theory development, measurement, and analysis all reside at the team level. In addition, compared with individual achievement goals, team achievement goals are more complex and dynamic because they result from the interdependent interactions among team members and their environment (Maltarich et al., 2016).

Based on this team-level perspective, the current study adopts a 2 × 2 team achievement goal framework. In this framework, a team performance-approach achievement goal reflects the team's collective focus on demonstrating normative competence. Performance-approach–oriented sports teams focus on, for example, outperforming other teams or demonstrating superior ability. Team performance-avoidance involves a shared focus on avoiding normative incompetence. Teams with a strong performance-avoidance goal focus,

for example, on not losing, not doing worse than other teams, or preventing failure in front of important others. A team mastery-approach achievement goal refers to a collective focus on self or task-referenced competence. Mastery-approach–oriented teams, for example, strive to enhance team coordination or further improve their level of play. Finally, team mastery-avoidance reflects a shared focus on avoiding self or task-referenced incompetence. Mastery-avoidant teams focus on, for example, failing to master key techniques or being unable to keep up their current level of play.

Consistent with previous studies (e.g., Maltarich et al., 2016; Van Mierlo & Van Hooft, 2015), we operationalize team achievement goals in terms of a referent-shift composition model (Chan, 1998; Van Mierlo et al., 2009). In this measurement model, all team members individually assess the achievement goals of their team. These assessments are then averaged at the team level, provided team members' perceptions are similar enough to qualify achievement goals as a shared team-level construct. A few studies on work and student teams suggest that teams indeed develop a shared conception of team achievement goals that triggers team-level regulatory mechanisms aimed at collective goal achievement (e.g., DeShon et al., 2004; Porter et al., 2010; Van Mierlo & Van Hooft, 2015).[2]

Building on this line of work, the first aim of this study is to examine the fit of the proposed team-level 2 × 2 framework and test the shared nature of the four team achievement goals in sports teams. The second aim is to address the predictive value of the team-level 2 × 2 achievement goal framework. To this end, we examine the relationships of each of the four team achievement goals with team performance outcome indicators (Figure 1). Elliot et al. (2006) described performance as a gold standard in achievement motivation research. This certainly applies to teams in high-level competitive sports where team performance outcomes have far-reaching consequences (relating, for example, to financial and instrumental support, or the status of players and coach).

Team Achievement Goals and Team Performance

Achievement goal theory (e.g., Dweck, 1986; Elliot & McGregor, 2001) and theory on emergent motivational states in teams (e.g., Dragoni, 2005; Marks et al., 2001) suggest differential relationships of the four team achievement goals with team performance outcomes. Because team achievement goals are shared motivational constructs that guide how teams interpret achievement situations, they direct the quality and intensity of team behavior and performance.

First, we predict a positive association between team mastery-approach goals and team performance. The collective approach motivation implies a

preference for difficult tasks and challenges, as well as an active focus on regulating the team's collective behavior toward goal accomplishment, promoting goal commitment, collective sustained effort, and the development of effective task strategies (Chen & Kanfer, 2006; DeShon et al., 2004; Van Mierlo & Van Hooft, 2015). Moreover, team mastery-approach goals induce team learning behaviors, defined as an "ongoing process of reflection and action, characterized by asking questions, seeking feedback, experimenting, reflecting on results, and discussing errors or unexpected outcomes of actions" (Edmondson, 1999, p. 353). Team learning behaviors promote cooperation and information exchange and enable teams to monitor their goal striving and adapt to changing circumstances and setbacks (DeShon et al., 2004; Edmondson, 1999; Gong et al., 2013). These adaptive team behaviors represent potent mechanisms for achieving high performance. A few studies in the organizational domain support this proposition. Edmondson (1999) found a strong bivariate correlation between team learning behavior and team performance. Studies on team achievement goals linked team-level mastery-approach goals to team planning (Mehta et al., 2009), reduced procrastination (Van Hooft & Van Mierlo, 2018), effective goal striving (Van Mierlo & Van Hooft, 2015), information exchange and team creative performance (Gong et al., 2013), and general task performance (Maltarich et al., 2016). Accordingly, we expect a positive association between team mastery-approach and sports team performance.

H1: Team-level mastery-approach achievement goals relate positively to team performance.

Researchers traditionally associated performance goals with helpless, maladaptive response patterns (Dweck & Leggett, 1988). Subsequent research demonstrated, however, that these adverse outcomes uniquely apply to performance-avoidance goals (Elliot & Harackiewicz, 1996). The prevention focus inherent to performance-avoidance goals induces task avoidance and helplessness rather than active task engagement and goal striving, undermining task interest and causing teams to invest less effort and persistence into their focal task (Elliot & Harackiewicz, 1996; Payne et al., 2007; Van Mierlo & Van Hooft, 2015). Furthermore, performance-avoidant teams seek to limit loss rather than maximize gain and set performance standards based on normative comparison with other teams. To uphold the appearance of competence, such teams will try to avoid risk because risk taking entails the threat of error and negative evaluations. Risk aversion undermines information sharing. If members share information, they risk being rejected by the others, and if one member requests information from others, they might

consider this a sign of incompetence (Gong et al., 2013). Furthermore, risk aversion obstructs learning and critical reflection, and may cause teams to cover up mistakes to preserve their reputation, rather than learn from them, having deleterious effects on team performance (Dragoni & Kuenzi, 2012).

Performance-approach goals, in contrast, have a more favorable connotation (Elliot & Harackiewicz, 1996; Van Yperen et al., 2014). The approach component creates a focus on positive outcomes, promoting goal commitment and motivating teams to regulate their collective behavior toward goal achievement. The collective aim of outperforming other teams provides a shared purpose, which may unite teams internally (Gong et al., 2013; Van Bunderen et al., 2018). In all, this provides performance-approach–oriented teams with a strong impetus to select challenging tasks and goals that allow them to demonstrate competence and gain positive evaluations. Moreover, it encourages teams to exert effort and coordinate members' inputs, persevere in the face of difficulties, and monitor progress in their goal-striving process to achieve those goals (Chen & Kanfer, 2006).

Consistent with the performance-approach–performance-avoidance distinction, individual-level studies in sports settings generally identify performance-approach goals as positive and performance-avoidance goals as negative predictors of individual sport performance (Elliot et al., 2006; Halvari & Kjørmo, 1999; Stoeber et al., 2009). No studies that we know of examined the distinction in sports teams. In the organizational literature, few studies examined team performance-approach and performance-avoidance goals in relation to team performance. Regarding team performance-approach goals, these studies consistently support the proposed positive link with indicators of team performance (Dragoni & Kuenzi, 2012; Gong et al., 2013; Maltarich et al., 2016; Mehta et al., 2009). Regarding team performance-avoidance, studies consistently *hypothesized* adverse outcomes, both in terms of performance (Dragoni & Kuenzi, 2012; Maltarich et al., 2016; Mehta et al., 2009) and team processes such as team planning (Mehta et al., 2009), information exchange and creativity (Gong et al., 2013), and motivational outcomes (Van Mierlo & Van Hooft, 2015). Remarkably, only Gong and colleagues (2013) found unequivocal support for the expected adverse outcomes. Other studies show a mixed pattern. To illustrate, in a three-stage longitudinal study, Maltarich and colleagues (2016) reported a positive (Stage 1), nonsignificant (Stage 2), and a negative (Stage 3) link between team performance-avoidance and team performance. One possible explanation may reside in the nature of the samples. The only supportive study focused on organizational work teams (i.e., Gong et al., 2013), whereas most other studies (except Dragoni & Kuenzi, 2012) involved short-term student project teams. Still, considering the strong theoretical foundation for the maladaptive nature of performance-avoidance goals at both the individual and the

team levels, these inconsistent findings are surprising and underline the need for further research. Given the theoretical rationale and the similarities between the current sports team context and organizational work teams, we expect that team performance-avoidance goals undermine sports team performance, because they trigger risk aversion and interfere with effective goal striving behavior. In contrast, performance-approach goals are expected to facilitate sports team performance, because they present a shared purpose that unites the team members in their striving to beat the competition.

H2: Team-level performance-approach achievement goals relate positively to team performance.
H3: Team-level performance-avoidance achievement goals relate negatively to team performance.

Finally, mastery-avoidant achievement goals combine the adaptive aspects of mastery with the maladaptive aspects of avoidance (Elliot & McGregor, 2001). Based on this dual nature, mastery-avoidant teams may feel responsible for developing their skills and competence (i.e., mastery), but concurrently worry they may not live up to their potential (i.e., avoidance). The collective prevention focus associated with mastery-avoidance diverts attention from the task and the goal striving process. Instead, mastery-avoidant teams are likely to be preoccupied with error prevention, meticulous weighing of the pros and cons of potential courses of action, and close monitoring of team and individual behavior. This may result in the sort of dysfunctional learning behavior described in previous research (Bunderson & Sutcliffe, 2003; Edmondson, 1999), where learning is overemphasized and anchored in fear of loss and failure (Elliot & McGregor, 2001). Mastery-avoidant teams might develop an inefficient behavior pattern that emphasizes control and regulation to such an extent that it undermines team performance (Van Mierlo & Van Hooft, 2015). Only one previous study examined the link between team mastery-avoidance and (student) team performance (Maltarich et al., 2016). In line with our reasoning, these authors predicted and found a negative association. Accordingly, we hypothesize the following:

H4: Team-level mastery-avoidance achievement goals are negatively related to team performance.

Method

Sample and Procedure

Respondents were 310 players of 29 field hockey teams in the Dutch field hockey premier youth league. This is the highest level of national youth

hockey. Some of the players also played for the Dutch national team in their respective league (boys/girls). The national premier youth league consists of four separate categories representing boys' and girls' teams from two age classes (14–16 and 16–18 years). All field hockey clubs with premier league youth teams were invited to participate. The invitation letter included information on data treatment and confidentiality. All participating clubs signed a consent form regarding the use of the data for research purposes. Upon agreement at the club level, all team coaches were approached in person. They received information on the study and data collection procedure. At the start of the second half of the season, team coaches invited their players to fill out an online survey, including measures of demographic characteristics, team achievement goals, and perceived previous team performance. The survey was administered in the second half of the season to ensure teams would have had sufficient time to develop shared achievement goals. Team performance was registered at the end of the season. The sample composition was as follows: age class 16 to 18 years, eight boy teams ($N_{ind} = 93$) and seven girl teams ($N_{ind} = 70$); age class 14 to 16 years, eight boy teams ($N_{ind} = 74$) and six girl teams ($N_{ind} = 72$). Together, these teams represented 17 different field hockey clubs. Participation in this study was voluntary, and participants received no compensation and could discontinue their participation at any moment. Data were treated strictly confidentially. Based on these features, the study was exempt from review by the relevant ethical committee.

Measures

All items were answered on 5-point response scales (1 = *fully disagree*, 5 = *fully agree*).

Team achievement goals. Given the definition of team achievement goals as shared team-level constructs, and in line with previous studies on team achievement goals, we used a *referent-shift composition* procedure (Chan, 1998; Van Mierlo et al., 2009) to measure team achievement goals. In this procedure, all team members individually assessed the collective achievement goals of their team. These assessments were then averaged at the team level to obtain team-level achievement goal scores. Researchers commonly use a similar procedure to measure collective efficacy in sports teams (e.g., Dithurbide et al., 2009). The specific items were based on the individual-level 2 × 2 Achievement Goals Questionnaire (Elliot & McGregor, 2001), translated into Dutch, adapted to the field hockey context, and rephrased to refer to the team level. In line with Conroy et al. (2003), the team performance-avoidance goal items were adjusted to explicitly reflect the normative

component.[3] Each goal was measured with three items, for example, "It is important for my field hockey team that we perform better this season compared to other teams" (team performance-approach $\alpha = .81$); "Our goal is to avoid performing poorly compared to other field hockey teams" (team performance-avoidance $\alpha = .79$); "My team wants to learn as much as possible about playing hockey" (team mastery-approach $\alpha = .88$); and "Sometimes, we are concerned that we do not understand the content of our tasks and assignments as fully as we would like" (mastery-avoidance $\alpha = .86$). Prior to calculating the team-level scores, we checked to what extent members' perceptions of team achievement goals were indeed shared and can be combined into a team-level measure. The shared nature of the team achievement goals is addressed in the "Results" section, as this is a central aim of this study.

Team performance. We adopted an outcome perspective on team performance, using the field hockey teams' end-of-season game score totals as primary performance indicator. These scores reflect the total number of game points that each team collected over the course of the season. Teams earn 3 points for a win, 1 for a draw, and none for a loss. The sum of these scores across all games determines teams' ranking in the final charts. As an outcome indicator of team performance, this score total is very similar to winning percentage, which is probably the most common outcome indicator of sports team performance (e.g., Cumming et al., 2007; Timmerman, 2000). Score totals are, however, slightly more comprehensive because they also incorporate the number of draws, thus forming a more complete representation of teams' performance throughout the competitive season.

In addition to the score totals, on a more exploratory note, the total number of goals scored and goals against per team over the course of the season were registered. This made it possible to explore in more detail how team achievement goals relate to these different outcome indicators. The team performance data were made available by the national field hockey association after the competition had ended, when each team had played 14 matches.

Previous team performance. To evaluate the incremental predictive value of team achievement goals relative to the variance explained by previous performance, the survey also included a measure of previous team performance. This approach partials out any shared variance among the team achievement goals and previous performance. Because early performance contributes to the emergence of shared team achievement goals (Maltarich et al., 2016), this offers a conservative estimate of the directional relationship between team achievement goals and end-of-season team performance. Results will, therefore, be presented with and without controlling for previous performance. The measure of previous performance was

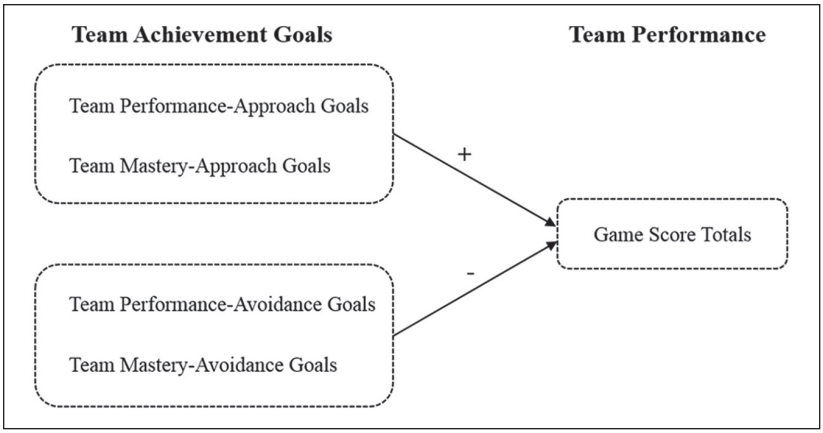

Figure 1. Hypothesized relationships between team achievement goals and team performance.

based on team member self-reports of their team's performance up to the moment of filling out the achievement goal survey and constructed specifically for this study.[4] Two reverse-coded items were deleted from the scale ("As a team, we failed to collect some important points"; "Our team negatively affects our club's public reputation"). These items were deleted based on poor factor loadings in an exploratory factor analysis (.25 and .36, respectively) and weak interitem correlations (average interitem correlation of .34 and .47, respectively). The six remaining items were "The performance of our field hockey team merits a 10 out of 10 this season"; "My field hockey team has been performing poorly this season"; "My field hockey team has been performing well this season"; "As a field hockey team, we are well on our way to achieving our goals"; "As a hockey team, we accomplished great things"; and "So far, my field hockey team has achieved most set goals" ($\alpha = .94$). This measure also represents a referent-shift composition approach. The individual scores were aggregated to the team level after verifying that members indeed held shared perceptions, as reported in the "Results" section.

Results

Preliminary Analyses

First, performance differences between hockey clubs or team types (boys/girls; age class) were examined as such differences could potentially confound our results (Harwood et al., 2015). Teams within the same club were no

more similar than teams of different clubs on game score total, $F(16, 12) = 1.073$, $p = .46$, goals scored, $F(16, 12) = 0.98$, $p = .53$, or goals against, $F(16, 12) = 0.72$, $p = .73$. Also, the two age classes showed no significant performance differences, game score total: $t(27) = -1.16$, $p = .26$; goals scored: $t(27) = -0.52$, $p = .61$; goals against: $t(27) = 1.06$, $p = .30$. Finally, boys' teams and girls' teams did not differ in terms of game score total, $t(27) = 1.24$, $p = .22$, or goals against, $t(27) = 1.42$, $p = .17$. Boys' teams did, however, score more goals than girls' teams did, $t(27) = 3.94$, $p = .001$. To prevent this difference between boys' and girls' teams from confounding our results, gender was controlled for in all analyses.

A 2 × 2 Framework of Team Achievement Goals

To examine to what extent the team achievement goals indeed reflect shared, team-level constructs, we inspected the intraclass correlations ICC1 and ICC2 (Bliese, 2000; Bryk & Raudenbush, 1982) and the average $r^*_{wg(j)}$ (Lindell et al., 1999) across teams. ICC1 represents the proportion of variance in a dependent variable that is explained by team membership, calculated as the ratio of between-group variance to total variance. In applied research, ICC1 values typically vary from .05 to .20 (Bliese, 2000). A one-way analysis of variance (ANOVA) with team membership as factor provides the significance of the proportion of variance explained by team membership. ICC2 represents the reliability of the team-level scores and is commonly interpreted as a reliability coefficient, with values of .70 or higher being considered satisfactory. Finally, $r^*_{wg(j)}$ represents within-team agreement, with values between .51 and .70 indicating moderate agreement and between .71 and .90 strong agreement (LeBreton & Senter, 2008). Dunlap et al. (2003) presented significance levels for $r_{wg(j)}$. Previous team performance, team performance-approach, mastery-approach, and mastery-avoidance goals showed significant within-group agreement (average $r_{wg(j)}$ across teams), substantial and significant variance explained by team membership (ICC1), and reliable team mean scores (ICC2), thus supporting their shared nature and justifying aggregation to the team level (see Table 1). Results for performance-avoidance goals, however, failed to support its shared nature. We will still present team-level results for performance-avoidance goals, but caution should be used when interpreting these results. They reflect average team members' perception of team performance-avoidance goals rather than a shared team perspective.

Next, confirmatory factor analyses (CFAs) were used to compare the fit of a four-factor model (cf. the 2 × 2 achievement goal framework) with four

Table 1. Intraclass Correlations and Average Within-Team Agreement.

Variable	ICC1	ICC2	F^a	($df1$, $df2$)	$r^*_{wg(j)}$
Previous team performance	.75	.97	29.48**	(28, 220)	.72*
Team performance-approach	.18	.70	2.96**	(28, 238)	.64*
Team performance-avoidance	.01	.10	1.16	(28, 238)	.46
Team mastery-approach	.25	.78	3.83**	(28, 238)	.66*
Team mastery-avoidance	.20	.73	3.25**	(28, 238)	.56*

[a]The *F* test is obtained from a one-way analysis of variance with team membership as factor and indicates the significance of the proportion of variance that is explained by team membership (cf. ICC1).
*$p < .05$. **$p < .01$.

Table 2. Confirmatory Factor Analyses of the 2 × 2 Framework of Team Achievement Goals.

Model	χ^2	Delta χ^2	*df*	RMSEA	SRMR	CFI	TLI
Four-factor (2 × 2 framework)	103.66**		48	.07	.07	.92	.90
Three-factor (mastery, performance-approach, performance-avoidance)	306.91**	203.25**	51	.14	.12	.71	.63
Two-factor (mastery vs. performance)	397.94**	294.28**	53	.16	.13	.64	.55
Two-factor (approach vs. avoidance)	589.22**	485.56**	53	.20	.16	.45	.31
Single factor	679.90**	576.24**	54	.21	.17	.35	.21

Note. The delta χ^2-column displays the significance test between the proposed four-factor model and a three-factor solution corresponding to Elliot & Harackiewicz's (1996) trichotomous model (all mastery-goal items collapsed into one factor), a two-factor solution corresponding to Dweck's (1986) dichotomous model (distinguishing between mastery and performance goal items), a two-factor solution representing the approach-avoidance distinction, and a one-factor solution. RMSEA = root mean square error of approximation; SRMR = standardized root mean residual; CFI = comparative fit index; TLI = Tucker–Lewis index.
**$p < .01$.

theoretically plausible alternative models. Table 2 shows that the four-factor model fit adequately and significantly better than the alternative models. All factor loadings in the four-factor model were significant ($p < .01$). These results support our conceptualization of team achievement goals reflecting four distinct goal types.

Team Achievement Goals and Team Performance

To examine the links between the team achievement goals and team performance, hierarchical regression analyses were conducted on the team-level data. This approach reflects our definition of team achievement goals as team-level constructs and is in line with previous studies (e.g., Bunderson & Sutcliffe, 2003; Maltarich et al., 2016; Mehta et al., 2009). Step 1 introduced gender as a control variable. In Step 2, the team achievement goals were added. Team mastery-approach and mastery-avoidance goals were strongly related ($r = -.81$; see Table 3), raising concerns about multicollinearity and suppressor effects that could bias regression results. Therefore, three separate regression models will be reported: (1) A model that includes all four team achievement goals to test our expectations for the two performance achievement goals; (2) a model without mastery-avoidance to assess the results for mastery-approach; and (3) a model without mastery-approach to assess the results for mastery-avoidance achievement goals.

Controlling for gender, the team achievement goals explained 69% of the variance in teams' game score totals (see Table 4). Consistent with H1 and H2, the approach-oriented team achievement goals related positively to the game score totals for mastery-approach ($\beta = .48$, $p < .01$) and for performance-approach ($\beta = .58$, $p < .01$). In contrast, supporting H3 and H4, team performance-avoidance ($\beta = -.38$, $p < .01$) and team mastery-avoidance goals ($\beta = -.66$, $p < .01$) both related negatively to the game score totals.

To evaluate the incremental predictive value of the team achievement goals relative to previous performance, the analyses were repeated, controlling for previous performance in Step 1. Previous performance explained substantial variance in teams' game score totals, $R^2 = 68\%$, $F(2, 26) = 27.53$, $p < .01$, $\beta = .81$. In Step 2, the four achievement goals explained an additional 16% of the variance in the score totals. Upon controlling for previous performance, the link between team mastery-approach achievement goals and the team score totals was no longer significant ($\beta = -.03$, $p = .41$). For performance-approach ($\beta = .46$, $p < .01$), performance-avoidance ($\beta = -.27$, $p < .05$), and mastery-avoidance ($\beta = -.29$, $p < .05$), the pattern remained unchanged, although with relationships of smaller magnitude.

To further explore these findings, post hoc analyses were conducted with the number of goals scored and goals against as additional team performance indicators (see Tables 5 and 6). Regarding goals scored, results mirrored those for the game score totals, with significant positive associations for the approach-oriented team achievement goals and significant negative associations for the two avoidance-oriented team achievement goals. Controlling for previous team performance, the two performance achievement goals were

Table 3. Team-Level Descriptives, Correlations, and Reliability Coefficients for All Study Variables.[a]

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9
1. Gender[b]	0.45	0.51	—								
2. Previous team performance	3.59	0.88	−.22	(.94)							
3. Team performance-approach	3.39	0.36	−.17	.09	(.81)						
4. Team performance-avoidance	2.88	0.32	−.03	−.20	.61**	(.79)					
5. Team mastery-approach	3.81	0.44	−.17	.73**	.01	−.10	(.88)				
6. Team mastery-avoidance	2.93	0.44	.21	−.80**	.03	.20	−.81**	(.86)			
7. Game score totals	19.38	0.71	−.23	.82**	.33†	−.17	.55**	−.73**	(.87)		
8. Average goals scored	2.37	1.12	−.60**	.70**	.35†	−.13	.50**	−.62**	.83**	—	
9. Average goals against	2.74	1.16	−.26	−.56**	−.01	.16	−.35†	.54**	−.69**	−.35†	—

Note. Team-level Cronbach's alphas are displayed on the diagonal. Scores for Variables 2 to 6 can vary from 1 to 5.
[a] $n = 29$ teams.
[b] 0 = boys' teams; 1 = girls' teams.
† $p < .10$. * $p < .05$. ** $p < .01$ (two tailed).

Table 4. Regressing Team Score Totals on Team Achievement Goals, With and Without Controlling for Previous Team Performance.[a]

Dependent variables	Game score totals							
	Without previous performance				With previous performance			
Predictors	Step 1	Step 2 Model 1	Step 2 Model 2	Step 2 Model 3	Step 1	Step 2 Model 1	Step 2 Model 2	Step 2 Model 3
Gender[b]	−.23	−.01	−.07	−.01	−.05	−.01	−.01	.01
Previous team performance					.81**	.75**	.75**	.50**
Team performance-approach		.58**	.61**	.58**		.46**	.44**	.48**
Team performance-avoidance		−.38**	−.50**	−.38**		−.27*	−.29*	−.30**
Team mastery-approach		−.11	.48**			−.25†	−.03	
Team mastery-avoidance		−.75**		−.66**		−.45**		−.29*
R^2	.05	.74	.56	.74	.68	.84	.79	.82
F	1.55	13.15**	7.64**	16.81**	27.53**	19.20**	17.41**	20.91**
($df1$, $df2$)	(1, 27)	(5, 23)	(4, 24)	(4, 24)	(2, 26)	(6, 22)	(5, 23)	(5, 23)
R^2 change		.69	.51	.68		.16	.11	.14
F change		15.24**	9.20**	20.76**		5.50**	4.10**	5.97**

Note. The table displays standardized regression coefficients (beta weights).
[a]$n = 29$ teams.
[b]0 = boys' teams; 1 = girls' teams.
†$p < .10$. *$p < .05$. **$p < .01$ (one tailed).

Table 5. Team Achievement Goals as Predictors of Goals Scored, With and Without Controlling for Previous Performance.[a]

Dependent variables	Goals scored							
	Without previous performance				With previous performance			
Predictors	Step 1	Step 2 Model 1	Step 2 Model 2	Step 2 Model 3	Step 1	Step 2 Model 1	Step 2 Model 2	Step 2 Model 3
Gender[b]	−.60**	−.43**	−.47**	−.43**	−.47**	−.42**	−.43**	−.42**
Previous team performance					.59**	.35*	.46**	.33*
Team performance-approach		.50**	.52**	.50**		.43**	.41**	.43**
Team performance-avoidance		−.35**	−.42**	−.34**		−.28*	−.29*	−.29*
Team mastery-approach		.02	.38**			−.07	.06	
Team mastery-avoidance		−.46**		−.48**		−.27†		−.23†
R^2	.37	.77	.71	.77	.70	.81	.79	.81
F	15.54**	15.66**	14.39**	20.41**	30.11**	15.74**	17.67**	19.56**
($df1$, $df2$)	(1, 27)	(5, 23)	(4, 24)	(4, 24)	(2, 26)	(6, 22)	(5, 23)	(5, 23)
R^2 change		.41	.34	.41		.11	.10	.11
F change		10.33**	9.26**	14.35**		3.28*	3.53*	4.48**

Note. The table displays standardized regression coefficients (beta weights).
[a]$n = 29$ teams.
[b]0 = boys' teams; 1 = girls' teams.
†$p < .10$. *$p < .05$. **$p < .01$ (one tailed).

Table 6. Team Achievement Goals as Predictors of Goals Against, With and Without Controlling for Previous Performance.[a]

Dependent variables	Goals against							
	Without previous performance				With previous performance			
Predictors	Step 1	Step 2 Model 1	Step 2 Model 2	Step 2 Model 3	Step 1	Step 2 Model 1	Step 2 Model 2	Step 2 Model 3
Gender[b]	−.26†	−.41**	−.36*	−.41**	−.41**	−.43**	−.41**	−.43**
Previous team performance					−.65**	−.50*	−.73**	−.40†
Team performance-approach		−.17	−.21	−.18		−.07	−.04	−.09
Team performance-avoidance		.12	.24	.14		.02	.05	.07
Team mastery-approach		.25	−.38*			.38†	.12	
Team mastery-avoidance		.80**		.60**		.53*		.29
R^2	.07	.47	.27	.45	.47	.55	.48	.51
F	2.02†	4.12**	2.18†	4.94**	11.71**	4.51**	4.30**	4.72**
($df1$, $df2$)	(1, 27)	(5, 23)	(4, 24)	(4, 24)	(2, 26)	(6, 22)	(5, 23)	(5, 23)
R^2 change		.40	.20	.38		.08	.01	.03
F change		4.39**	2.14†	5.57**		.95	.13	.50

Note. The table displays standardized regression coefficients (beta weights).
[a]$n = 29$ teams.
[b]0 = boys' teams, 1 = girls' teams.
†$p < .10$. *$p < .05$. **$p < .01$ (one tailed).

still significant predictors of goals scored, for performance-approach ($\beta = .43$, $p < .01$) and for performance-avoidance ($\beta = -.28$, $p < .05$). Team mastery-approach and mastery-avoidance achievement goals no longer related significantly to goals scored when controlling for previous team performance.

For goals against, the four achievement goals explained 40% of the variance. Team mastery-approach achievement goals showed a negative association with the number of goals scored against the team ($\beta = -.38$, $p < .05$), whereas team mastery-avoidance achievement goals were positively related to goals against ($\beta = .60$, $p < .01$). Goals against did not relate significantly to either team performance-approach ($\beta = -.17$, $p = .19$) or performance-avoidance achievement goals ($\beta = .12$, $p = .28$). Controlling for previous performance, only team mastery-avoidance achievement goals remained significant as predictor of goals against, ($\beta = .29$, $p < .05$): More mastery-avoidant teams got more goals against.

Discussion

Achievement goals are important predictors of motivation and performance across domains. The primary focus, however, is on individual-level achievement goals as predictors of individual outcomes. Yet, individuals often do not operate alone but are embedded in groups or teams. Students function in classrooms and study groups, employees are organized in work groups and teams, and in many sports, athletes train and compete in teams. The widespread nature of teamwork, often with substantial interdependence, calls for a team perspective. The present study aimed to shed light on achievement goals in teams by examining the tenability of a team-level 2×2 achievement goal framework. The focus was on elite field hockey teams, as no previous studies addressed team-level achievement goals in a youth sports setting. Teams' game score totals were used as the main indicator of team performance outcomes. This score represents the ultimate outcome indicator for these field hockey teams as it determines their ranking in the national youth league.

To develop the study rationale, we drew from research on work teams, as there are many similarities between sports teams and work teams that justify the cross-domain application of knowledge and experience (e.g., Van Breukelen et al., 2012). There are, however, also notable differences (see, for example, Katz, 2001; Pescosolido & Saavedra, 2012). Sports teams, for example, tend to have a highly predefined and standardized structure, both internally (e.g., roles, hierarchy, time constraints) and contextually (rules and regulations, league characteristics). In work teams, such issues can be subject

to debate within teams and to variations across teams. Such differences require that any cross-domain applications are carefully assessed and tested for generalizability. Moreover, the limited number of studies on team achievement goals includes very few studies that incorporated Elliot and McGregor's (2001) 2 × 2 achievement goal framework or included objective performance metrics. As such, we sought to introduce and validate the concept of team achievement goals to the domain of sport and exercise, while also extending previous work and organizational research on the team-level 2 × 2 achievement goal framework. Some caution is due in terms of generalizability within as well as across domains. Certain defining features should be considered when extrapolating our findings to other settings. Such features include the high interdependence among team members that characterizes field hockey teams, the clearly defined leadership and role structure, the recurrent high-pressure performance episodes, and the limited and predefined team life span (e.g., Van Breukelen et al., 2012). Our conclusions more likely generalize to other interdependent team sports (e.g., soccer, volleyball, basketball; Wolfe et al., 2005) and to work teams with similar features, such as project or emergency response teams.

A 2 × 2 Framework of Team Achievement Goals

The findings largely supported the proposed team-level 2 × 2 achievement goal framework. CFAs supported the four-factor structure, indicating that the four team achievement goals reflect distinct constructs. This is not to say they are independent. In light of the underlying common dimensions of mastery and performance and approach and avoidance, the achievement goals tend to be related (Elliot & McGregor, 2001). In the current study, this was most pronounced in the strong negative association between team mastery-approach and mastery-avoidance achievement goals that will be discussed in more detail below.

The indices for within-group agreement and the intraclass correlation supported the shared, team-level nature for performance-approach, mastery-approach, and mastery-avoidance achievement goals, but not for performance-avoidance. Interestingly, this result aligns with several previous studies on higher level achievement goals in educational and work settings (Kaplan et al., 2002; Van Hooft & Van Mierlo, 2018; Van Mierlo & Van Hooft, 2015). In this study's context, an explanation might be that coaching strategies for elite sports teams often explicitly aim to encourage and train teams to focus on positive outcomes rather than worry about losing. This approach discourages or suppresses expressions of performance-avoidance, making it less likely these teams will develop shared team performance-avoidance achievement

goals. For now, we tentatively interpret our findings in terms of team members' *average individual perceptions* of team performance-avoidance goals.

Team achievement goals and team performance. Next, we investigated the links between the team achievement goals and team score totals as an outcome indicator of team performance. We first examined the direct links, offering a relatively liberal test that allows no directional conclusions. From the moment a team is formed, team achievement goals and team performance likely affect each other (Maltarich et al., 2016). We, therefore, also tested the predictive value of team achievement goals for team performance, controlling for previous team performance. This provides an artificial *zero point*, excluding any reciprocal effects among team achievement goals and team performance that may have occurred before our study started. The results illustrate to what extent team achievement goals relate to changes in performance that occurred after we measured the achievement goals. Hence, they reflect the directional link between team achievement goals and subsequent changes in team performance. Generally, our results suggest the four team achievement goals matter for sports team performance. Together, they accounted for 69% of the overall variance in teams' score totals, and 16% of the variance that remained unexplained after controlling for previous team performance.

Team performance-approach goals related positively to game score totals. The more teams focused on outperforming other teams and demonstrating their ability (e.g., to coaches, peers), the better their competitive results. Team member perceptions of team performance-avoidance, in contrast, related negatively to the score totals. Furthermore, both types of performance achievement goals explained incremental variance beyond previous performance. This suggests that the performance achievement goals predict changes in team performance that occur at later stages of the team's life span. These outcomes mirror previous findings on achievement goals and sport performance at the individual level (Elliot et al., 2006; Halvari & Kjørmo, 1999; Stoeber et al., 2009). The few team-level studies that differentiated between team performance-approach and avoidance also mostly proposed positive outcomes for team performance-approach goals and negative outcomes for team performance-avoidance goals. Notably, these opposing outcomes notwithstanding, team performance-approach and performance-avoidance goals showed a strong positive correlation, which is in line with most previous studies at the team (e.g., Dragoni & Kuenzi, 2012; Van Mierlo & Van Hooft, 2015) and individual levels (Elliot & McGregor, 2001; Payne et al., 2007). As such, trainers, coaches, or other stakeholders who seek to develop and implement interventions aimed at promoting team performance-approach goals

should be aware that this may trigger a simultaneous, potentially harmful increase in performance-avoidance goals.

Team mastery-approach achievement goals related positively to the score totals. This finding aligns with previous individual-level research (e.g., Elliot, 2005) and research on work teams (e.g., Maltarich et al., 2016; Mehta et al., 2009; Van Mierlo & Van Hooft, 2015), which consistently reported positive outcomes for mastery-approach goals, including performance. Teams with strong mastery-approach goals prefer difficult tasks and regulate collective behavior toward goal accomplishment. Their focus on skill development, learning, and improving the level of play encourages cooperation and information exchange, and enables teams to monitor their goal striving and adapt to changing circumstances and setbacks, setting them up for high performance (DeShon et al., 2004; Edmondson, 1999; Gong et al., 2013).

Extending previous research, the predictive value of mastery-approach goals disappeared when accounting for previous team performance. As such, these goals predicted no further changes in team performance later in the competitive season. One explanation can be that teams with a favorable competitive starting point (e.g., because they have a high-potential profile in their league or won their first matches) may more likely set team mastery-approach goals. Their head start may allow such teams to take risks, seek challenges, experiment, and invest in skill development. Also, high initial performance may promote trust and cohesion (cf. Mathieu et al., 2015), which can facilitate information exchange and critical reflection, and contribute to the emergence of team mastery-approach goals. A second explanation may be that sports teams at early stages of their team's life cycle benefit especially from a focus on learning and growth. In these elite youth field hockey teams, membership is age bound. Players can stay on the team for no more than 3 years, and there is fierce competition over the limited number of positions available on the elite teams. These conditions cause high turnover between seasons. As a result, early in the competitive season, these teams have much to gain from learning each other's strengths and weaknesses, establishing effective communication patterns, and experimenting with techniques, combinations, and lineups. This can cause relatively strong early-season effects of team mastery-approach goals on team performance. Controlling for previous team performance partials out such early-season effects, which might explain why mastery-approach goals did not predict further changes in team performance. In this study, team mastery-approach goals indeed related strongly to previous performance. Once teams establish effective routines and strategies, the added value of team mastery-approach goals and the ensuing learning behaviors might diminish (Bunderson & Sutcliffe, 2003). Future studies should follow-up on this finding using more measurement points over time to

uncover the dynamic interplay between team mastery-approach goals and team performance.

Team mastery-avoidance achievement goals related negatively to the team performance indicators and predicted subsequent change in team performance. This finding aligns with previous studies that also reported negative outcomes of mastery-avoidance goals, both among individuals (e.g., Baranik et al., 2010; Elliot & McGregor, 2001) and in teams (Maltarich et al., 2016; Van Hooft & Van Mierlo, 2018). Mastery-avoidant teams may be so preoccupied with their own internal functioning that they lose track of the competition. The emphasis these teams place on mistake prevention, detailed weighing of pros and cons of potential courses of action, and monitoring of team and individual behavior may yield an inefficient, anxious behavior pattern that emphasizes control and regulation to such an extent that it interferes with performance. More research is needed to verify these findings and further examine underlying mechanisms.

Limitations

Although we had more than 300 individual respondents, team-level sample size was limited to 29 teams. This sample did not allow us to study complex outcome patterns, explanatory mechanisms, or boundary conditions. For example, previous research indicates that performance-approach goals are beneficial only if combined with mastery-approach goals (e.g., Linnenbrink, 2005) and suggests team-level exploratory mechanisms such as team goal commitment, information exchange, and team planning (DeShon et al., 2004; Gong et al., 2013; Mehta et al., 2009). Further research based on larger samples would offer more comprehensive insight into team achievement goals and performance.

Second, game score totals were our main performance indicator, reflecting the teams' competitive results, which translates directly into the end-of-season league rankings. This focus on score totals does not reflect the full complexity of sports team performance. As a first step, we also explored goals scored and goals against. Future research could consider a broader range of indicators to better understand how specific team performance behaviors and outcomes relate to team achievement goals. Hughes and Bartlett (2002), for example, presented a performance indicator classification, distinguishing between different indicators that should be studied in concert and tailored to the structure and specific demands of the sport being investigated.

Third, the correlation between team mastery-approach and mastery-avoidance goals was very strong ($r = -.81$). In Baranik et al.'s (2010) meta-analysis, the estimated population correlation between individual mastery-approach

and mastery-avoidance goals was .29. In our sample, the correlation was also much weaker at the individual level ($r = -.13$, $p < .05$; based on hierarchical linear modeling to control for team membership). Still, the few previous team-level studies reported weaker correlations between team mastery-approach and mastery-avoidance. Specifically, Maltarich et al. (2016) found a correlation of $r = -.36$, and Van Mierlo and Van Hooft (2015) found $r = .16$. These fluctuating correlations between the team mastery goals merit further scrutiny. In general, however, strong correlations among team achievement goals are not uncommon. Maltarich et al., for example, found a correlation of $r = .87$ between team mastery-avoidance and performance-avoidance, and Gong et al. (2013) found a correlation of $r = .77$ between team mastery goals and performance-approach goals. As Ostroff (1993) showed, it is common for correlations to be substantially stronger at the team as compared with the individual level. Still, big differences may point toward a shift in the nature of the construct across levels of analysis. Considering also that the negative links between team mastery-avoidance and team performance in our study were more pronounced than would be expected based on previous individual-level research, potential changes in the nature and outcomes of mastery-avoidance when translated to the team level offer an interesting avenue for future research.

Fourth, our findings allow no inferences about possible fluctuations in team achievement goals and their effects over time or across contexts, because we surveyed teams at a single point in time. One previous study did examine team achievement goals over time, following student teams over a 10-week period (Maltarich et al., 2016). This study's results indeed showed changes over time, although the team achievement goals became increasingly stable as team members had worked together longer. Our measure of team achievement goals was administered halfway through the competitive season, when teams had been together for several months. At this point, team achievement goals likely turned into relatively stable team-level motivational states. Nonetheless, our results do not help uncover temporal patterns in the emergence or outcomes of team achievement goals. On a related note, contextual fluctuations in achievement goals have remained fully unaddressed so far at the team level. Individual-level sports studies do suggest that mastery goals may be more important in training settings, whereas performance goals may matter especially in competitive settings (cf. Van de Pol & Kavussanu, 2012). More research is needed to provide insight into temporal and contextual issues related to the emergence and outcomes of team achievement goals.

Finally, although team achievement goals were measured at an earlier time point and via another source than team performance, our design allows no causal inferences. Elite sports teams have a public reputation, related, for

example, to their club's general standing and resources, that is relatively stable and partly independent of the teams' lineup, which may affect both team achievement goals and performance. Moreover, team achievement goals and performance affect each other reciprocally from the start of the team's life cycle (Maltarich et al., 2016). As such, initial team performance and emergent team achievement goals may already have affected each other prior to survey administration. This may be most likely for the team mastery achievement goals, as they both related strongly to previous team performance. Moreover, when we controlled for previous performance, team mastery-approach goals did not predict subsequent change in team performance, whereas team mastery-avoidance and both team performance goals did. These findings might point toward temporal patterns in the degree to which achievement goals matter for team performance. One possibility is that the mutual effects of team mastery-approach goals and team performance occur relatively early. The emphasis on exchanging information, skill development, and experimentation might be most beneficial early in the team's development. In contrast, a shared focus on winning and demonstrating competence might be more beneficial at later stages, when teams realize they have limited time left. Various scholars illustrated the occurrence and importance of qualitative shifts in task focus and pacing strategies throughout a team's life cycle (e.g., Gersick, 1988; Okhuysen & Waller, 2002). Experimental designs could address directional effects by inducing or training team achievement goals and measuring team performance at a later point in time. Previous studies show that achievement goals can be manipulated via situational cues (e.g., Elliot et al., 2006; Van Yperen, 2003) or trained in workshops (Van Hooft & Noordzij, 2009). Given the strong links between team achievement goals and team performance in the present study, the development and assessment of a team-level intervention approach would be a promising next step.

Conclusion

Despite the limitations, our study offers a number of insights that may help extend current theory and research on achievement goals. The application of team achievement goals in general and the team-level 2 $\times$ 2 framework in particular is new to research on sports teams and warrants further attention, for example, concerning the shared nature of team performance-avoidance goals and the meaning and consequences of team-level mastery-avoidance. Moreover, all four team achievement goals related to team performance outcomes and team mastery-avoidance, performance-approach, and performance-avoidance achievement goals also related to changes in team performance later in the competitive season. Extending individual achievement goal theory, results

demonstrated that teams scored more game points across the competitive season to the extent these teams were more approach oriented and less avoidance oriented in terms of both mastery and performance. Potential temporal shifts in the importance of the different team achievement goals throughout a team's life span offer an intriguing direction for further research.

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Notes

1. Authors have used different labels for the achievement goal constructs (e.g., task vs. ego orientation, learning vs. performance orientation, and mastery vs. performance goals). In this study, the terms *mastery* and *performance* are used to be consistent with the terminology of the 2 × 2 framework of achievement goals (Conroy et al., 2003; Elliot & McGregor, 2001).
2. It is important to note that this operationalization does not imply a multilevel model. Even though the measurement procedure is based on individual members' assessments of the team achievement, the resulting construct reflects a team-level property with team-level antecedents and outcomes. Put differently, the team is the level of theory, and analyses are also conducted at the team level (see also Chan, 1998; Klein & Kozlowski, 2000).
3. With the adaptation to the sport context and the addition of the normative component to the performance-avoidance goal items, the instrument becomes similar to the Achievement Goals Questionnaire in Sport (AGQ-S; Conroy et al., 2003). The main difference is that we maintained the original AGQ's focus on learning and mastery in the mastery-goal items, because this aspect is central to our definition of team mastery-approach and mastery-avoidance goals. The mastery items in the AGQ-S focus exclusively on self-referenced performance (e.g., "I want to perform as well as is possible for me to perform").

4. Ideally, previous team performance would have been represented by objective performance metrics. However, when conducting this study, only aggregate end-of-season performance metrics were registered. When adding the incremental validity analyses at a later stage, it was no longer possible to retrieve the separate game scores for the first season half. As such, self-reported previous team performance was used as a proxy.

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