Regulary focus in group contexts

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Chapter 4

It Takes Two to Make it: The Added Value of Regulatory Focus for Team Performance

INTRODUCTION

Group tasks are often complex and require different strategies for successful completion. A hockey team, for instance, has to excel at different sub-tasks like defending, playing well together, and offending, to reach the overall goal of beating the opponent. In order to successfully work on these different sub-tasks, teams need to use a mix of strategies. In the current work we examine how such a mix of strategies can contribute to the performance on team tasks. To examine different strategies in teams, we connect our work to regulatory focus theory (Higgins, 1997). This theory distinguishes between two self-regulatory systems underlying the wish to obtain desired end-states, namely a "promotion focus" and a "prevention focus", which have different strategic and motivational consequences (Higgins, 1997; Higgins, Roney, Crowe, & Hymes, 1994). Previous research on regulatory focus has not considered diversity in regulatory focus in relation to complex team tasks. Thus, little is known about the functioning of groups that are diverse in regulatory focus or how this relates to the group's performance on complex tasks. The present research addresses this issue.

Studies on organizational or group diversity initially focused on demographic differences like age, gender, and ethnic origin and later also addressed diversity in knowledge and expertise (e.g. Triantis, Hall, & Ewe, 1965; Jehn, Northcraft, & Neale, 1999). These studies demonstrated mixed results of diversity for group performance (Jackson, Joshi, & Erhardt, 2003). One likely reason is that surface level diversity characteristics have been used as a proxy for more task related deep-level differences. This is why recent work on the effects of diversity has emphasized the importance of directly studying task relevant aspects of diversity (e.g. Jackson, et al., 2003). Recently, some researchers have studied how differences in work-styles impact on group performance (Rink & Ellemers, 2007; Homan,Van Knippenberg, Van Kleef, & De Dreu, 2007). These work-styles, however, were rather specific for the task at

hand. In this paper we extend previous research on differences in work styles by focusing on more general and less task specific differences in self-regulation that give rise to different work strategies. We argue that such more general diversity in work strategies should have positive effects for performance on complex group tasks.

In the current research we examine the central hypothesis that regulatory focus diversity enhances group performance on complex tasks. To test our prediction, we report one experimental lab study and one study that examines the relation between regulatory focus diversity and performance in real teams (Dutch first league field-hockey teams with their competition results as a performance measure).

Regulatory Focus Theory and Task Behavior

Regulatory focus theory distinguishes between two self-regulatory systems underlying the wish to obtain desired end-states, namely a promotion focus and a prevention focus. A promotion focus is rooted in one's *ideals, ambitions* and wish for *accomplishment* and *growth* and gives rise to a sensitivity for the presence or absence of positive outcomes (i.e. gains vs. non-gains). As strategy, promotion focused individuals prefer an *eager* manner to attain their desired end-states (Higgins, 1997). In contrast, a prevention focus is rooted in one's *responsibilities*, *oughts*, *obligations* and *duties* and is characterized by a sensitivity to the presence or absence of negative outcomes (loss vs. non-loss). In order to obtain desired end states, prevention focused individuals prefer a *vigilant* strategy aimed at avoiding failure (Higgins, 1997). Regulatory focus can be seen as a chronic trait (Higgins 1997; Förster, Higgins, & Idson, 1998) and a state than can be induced by the situation (Higgins 1997; Crowe & Higgins, 1997). Many studies have concentrated on how individual regulatory focus, measured as a chronic trait or manipulated as a state, influences individual task behavior. For instance, Förster, Higgins, and Taylor Bianco (2003) found that on a speed/accuracy task promotion focused

individuals were quick but not so accurate whereas prevention focused individuals tended to be accurate but not so quick. Other studies demonstrated that a prevention focus is related to analytical thinking, local processing and the use of concrete language, whereas a promotion focus is linked to creativity, global processing and the use of abstract language (Förster & Higgins, 2005; Friedman & Förster, 2001; Seibt & Förster, 2004; Semin, Higgins, Gil de Montes, Estourget, & Valencia, 2005).

Common denominators of the above mentioned studies are that the tasks participants worked on were not divisible into sub-tasks and that the experiments were performed at the individual level. Therefore, these experiments could only consider the separate effects of a promotion focus or a prevention focus on task behavior. In the current work, we address more complex group tasks in which different sub-tasks can be discerned that either have promotion or prevention characteristics or both. In this way promotion as well as prevention efforts can contribute to the overall group task performance.

Regulatory Focus in Groups

In recent years regulatory focus has increasingly been studied in group contexts (Faddegon, Scheepers, & Ellemers, in press; Florack & Hartman, 2006; Levine, Higgins, & Choi, 2000; Sassenberg, Jonas, Shah, & Brazy, 2007; Sassenberg, Kessler, & Mummendey, 2003; Sassenberg & Woltin, in press; Seibt & Förster, 2004; Shah, Brazy, & Higgins, 2004). For instance, Levine et al. (2000) demonstrated that over time small interacting groups can develop a focus on promotion or prevention when the task they work on has been framed in terms of promotion or prevention, respectively. Faddegon et al. (in press) additionally showed that a regulatory focus can be part of the identity of the group, which then leads individual group members to adopt this collective focus on promotion or prevention in their task behavior. Also, regulatory focus has been studied in the context of (meta-) stereotypes (Seibt & Förster, 2004; Plaks & Higgins, 2000). Plaks and Higgins (2000) for instance examined the effort

invested by persons who read that they would collaborate with someone having the attributes stereotypical for a promotion focus or a prevention focus. They found that participants' efforts on the task were affected by the regulatory focus stereotypes they held of the partner they collaborated with. That is, depending on task demands (promotion vs. prevention) participants either engaged in social loafing (when they thought the focus of their partner matched the task characteristics) or showed social compensation (when they thought the task demands did not match the focus of their partner). Thus, from previous work we know that groups can collectively endorse a regulatory focus and that regulatory focus related (meta-) stereotypes can influence individual task behavior and group performance.

In the current research we address a different issue, namely how the group's performance is affected by regulatory focus diversity. In doing so, we build further on the work of Plaks and Higgins (2000). This research was concerned with how regulatory focus stereotypes of team members influence individual work motivation on tasks that either contained mainly promotion or prevention characteristics. In the current research we address a related but different issue, namely how in real interacting groups a promotion focus and a prevention focus can simultaneously contribute to task performance. Furthermore, we consider complex tasks that contain both promotion and prevention characteristics. By doing so, our work contributes in two ways to the existing literature on regulatory focus. First, our work sheds light on the role of regulatory focus in situations where people cooperate with others who have different self-regulatory concerns, which is likely to occur frequently in daily life. Second, our work addresses the issue of whether a mix of group members with a promotion and a prevention focus can contribute to the performance of a team when working on a complex task.

Diversity in Groups

Historically, diversity has been studied from the perspective of the growing number of women and etnic minorities entering the work force and has mostly focused on demographic differences that reflected this increase in diversity on the work floor (Triantis et al., 1965). In order to examine valued group outcomes like performance, more recently researchers have also started to take into account diversity in knowledge, values, skills, and attitudes (Jehn et al., 1999). However, the studies performed in these demographic and informational approaches to diversity were not conclusive about the impact of diversity on group performance as they sometimes demonstrated positive effects, and sometimes negative effects (Jackson et al., 2003). As a result, researchers started considering 'deep level' diversity which is concerned with non-visible dimensions on which individuals differ instead of surface level diversity. Related to this, also job-related and job-unrelated forms of diversity were discerned. An example of job-related deep level diversity is the research on work-style diversity (Rink & Ellemers, 2007; Homan et al., 2007). For instance, Rink and Ellemers (2007) examined how the expectancies that individuals hold about the differences in work styles and goals between themselves and a collaborator, influence satisfaction with the collaboration. Other research demonstrated that diversity can also positively affect performance and group identification, provided that such diversity is beneficial for the task at hand (Homan et al., 2007; Van Knippenburg, Haslam, & Platow, 2007). In sum, the recent developments suggest that it is not the amount of diversity but the way characteristics of different group members relate to each other and to the requirements of the task at hand that determines how diversity affects group performance.

In the current paper, we extend this previous research on diversity by examining differences in regulatory focus as a determinant of group performance. Our research particularly builds on and extends the research on diversity in work-styles. Previous research on work-styles considered work-

styles that are specific to the task at hand (Homan et al., 2007; Van Knippenburg et al., 2007) or considered satisfaction with the collaboration as the focal dependent variable instead of addressing the task performance of the team as an outcome variable (Rink & Ellemers, 2007). As noted above, at the individual level regulatory focus has been demonstrated to influence a broad range of individual behaviors in the context of e.g., creativity, analytic thinking, risk taking and the level of processing (Förster & Higgins, 2005; Friedman & Förster, 2001; Seibt & Förster, 2004; Semin et al., 2005). Precisely because regulatory focus impacts on such a broad range of behaviors that are not restricted to a specific task, the influence of regulatory focus is very general and can emerge on any (sub-) task a team works on. In addition, we argue that the task- related behaviors typical for a promotion and a prevention focus can be highly complementary when they are relevant for performance in collaborative groups. That is, for optimal task performance groups often need group members to be quick *and* accurate, to be specific *and* to see the whole picture, to be creative *and* analytic. In other words, groups often need the behaviors associated with a promotion focus *and* a prevention focus, and this is why the group can benefit from a diverse composition in terms of the work styles of its members. Thus, we argue that diversity in regulatory focus has a great potential for enhancing team performance.

To illustrate our reasoning, consider the investment team of a bank. For the bank to grow it needs to make risky investments that have the potential for major profit but also run the risk of major loss. At the same time, the bank must avoid going bankrupt and therefore must also make investments that are relatively risk-free. Thus, when the investment team buys shares, it needs to weigh the potential gains and losses of different shares and determine how many risky shares will be bought and how many risk-free shares. A team with mainly promotion concerns may go for the risky shares, risking bankruptcy. In contrast, a team with predominantly prevention concerns may buy only risk-free shares that result in retaining the status quo

instead of making any profit. Clearly, both a promotion and a prevention focus can impact on the decisions made and the outcomes for the bank and a mix of both probably leads to the best outcomes overall.

The Current Research

In two studies we examined our central prediction that diversity in regulatory focus enhances the performance of teams that work on complex group tasks. In Study 4.1 we examined the performance of dyads on a brain storm task when both dyad members had either the same regulatory focus (promotion or prevention) or a different regulatory focus (one promotion and one prevention). Our main dependent variable in this studie consisted of the quality of the ideas (in terms of originality and feasibility) and the number of ideas generated during the brainstorm task. Study 4.2 examined our prediction in first-league Dutch field hockey teams. In this study we not only examined regulatory focus diversity within the team but we also assessed how one's role in the field (offender vs. defender) is related to the personal regulatory focus of the player. Our main dependent variable in Study 4.2 consisted of the competition results obtained by the teams at the end of the season.

STUDY 4.1

In Study 4.1 we examined the influence of regulatory focus in dyads working on a brainstorm task. Like in previous work (Rietzschel, Nijstad, & Stroebe, 2006, in press) we evaluated performance on the brainstorm task in terms of the quantity and the quality of the ideas generated. Our general argument is that a promotion focus and a prevention focus have both their unique influences on different aspects of these performance measures.

In line with previous research (Rietzschel et al., 2006, in press), the quality of the generated ideas was defined by both the feasibility and

originality of the ideas. As noted above, a promotion focus leads to increased risk-taking and elicits more creative thinking (Higgins, 1997; see also Crowe & Higgins, 1997; Friedman & Förster, 2001). Therefore, we argue that the originality of the ideas generated most likely profits from a promotion focus represented in dyads. A prevention focus, in contrast, is characterized by safety needs and the avoidance of risks (Higgins, 1997, see also Crowe & Higgins, 1997). Therefore, people with a prevention focus will generally prefer ideas that are practical and do not diverge too much from the existing situation (Brodscholl, Kober, & Higgins, 2007) therefore focus in particular on the feasibility of the ideas generated. The quantity of the ideas simply consists of the number of the ideas generated during the experiment. Previous work showed that promotion focused individuals tend to be quicker while working on tasks (Förster et al., 2003) and are more likely to use eager means to attain their goals (Higgins, 1997; Crowe & Higgins, 1997). In line with this research we predict that a promotion focus contributes to the generation of more ideas. Thus, we predict that a promotion focus among dyads will contribute to the creativity but not the feasibility of the ideas (Hypothesis 1), and also to the overall quantity (i.e., productivity) of the ideas (Hypothesis 3). A prevention focus in dyads, in contrast, is predicted to enhance the feasibility but not the originality and the quantity of the ideas (Hypothesis 2). Taken together, we predict that groups diverse in regulatory focus will generate most ideas that are both high in feasibility as well as in originality (i.e. high quality ideas, Hypothesis 4).

Method

Participants and Design

A total of 120 undergraduate students at Leiden University (21 male, 99 female, age range 18 – 28, M_{age} = 20.7) participated in this study. Participants received €3 for their participation. With these 120 participants, 60 dyads were formed that were randomly assigned to one of the three dyad

conditions: one in which both dyad members received a promotion focus manipulation (promotion condition), one in which both dyad members received a prevention focus manipulation (prevention condition), and one in which one dyad member received a promotion focus manipulation while the other dyad member received a prevention focus manipulation (diverse condition).

Procedure

Upon entry in the lab, participants were seated in separate rooms and read the instructions for the study. Participants were told that they would form a dyad with a partner to work on a brainstorm task. After this general introduction, the regulatory focus manipulation followed. As a manipulation of regulatory focus all participants read a story about a consultancy company called 'profit people planet' that advised other companies on sustainable enterprising. The goal of the company was either framed in terms of the ambitions and ideals to make the world more sustainable (promotion manipulation) or in terms of responsibilities and oughts to make the world more sustainable (prevention manipulation). After reading this story participants were instructed to work on the subsequent brainstorm task along the lines of the company they just read about. Either the dyad members both read about the same story (promotion or prevention condition), or one dyad member read the prevention instruction and the other member read the promotion instruction (diverse condition). Then the instruction for the brainstorm task followed. Participants were told that they and their brainstorm partner would have a maximum of ten minutes to generate ideas for the question at hand: 'How can the quality of living be improved'. We told participants that we were both interested in the quantity of the ideas they generated (number of ideas) and in the quality of these ideas. The quality of the ideas was defined by both the feasibility of the ideas and by the originality of the ideas (Rietzschel et al., 2006, in press). Participants were instructed to write down all the ideas they generated on a sheet of paper that was provided at the brainstorm table. A clock at the brainstorm table indicated the time

participants had left to work on the task. After the instructions participants sat themselves at the table were they met their brainstorm partner to work on the brainstorm task. After the brainstorm task, participants completed a demographic questionnaire comprising questions about their age, sex, and education. Finally, they were debriefed and paid for their participation.

Dependent Measures

Idea Quality: Originality and Feasibility of Ideas. Our two measures of idea quality, namely feasibility and originality were scored on a five point scale by a trained rater (first author) on a scale from 1 not at all feasible/ original to 5 very feasible/ original. A second rater scored 40% of the ideas in order to calculate inter-rater agreement. We first assessed agreement using the method developed by Diehl and Stroebe (1987) in which raters are considered to be in agreement whenever their scores differ by no more than one scale point. Using this criterion, for both originality and feasibility agreement existed in 100% of the cases. We also computed the intra-class correlations (using a two-way random model and consistency definition; see McGraw & Wong,1996; Rietzschel et al., 2006; Schrout & Fleisch 1979). We observed intra-class correlations of .73 for feasibility and .76 for originality which is "good" to "excellent" according to Cicchetti and Sparrow (1981).

Productivity. We calculated the total number of ideas participants generated as measure of general productivity.

High Quality Ideas. We calculated the number of high quality ideas as an over-all quality-index. High quality ideas were defined as ideas that simultaneously scored above average on feasibility *and* scored above average on originality in this study (see for a similar definition of high quality ideas Rietzschel et al., in press).

Results

Idea Quality: Originality and Feasibility of Ideas

The means on originality and feasibility are displayed in Table 4.1. We analyzed the originality and feasibility of the ideas using regression analysis. In these analyses the number of promotion focused or prevention focused individuals in each dyad (0, 1, or 2) was regressed on the relevant outcome measures (originality for promotion focus and feasibility for prevention focus).

Regarding originality no effect of dyad condition was observed ($t(58) = .14$; $p > .50$). Regarding feasibility, there was a non-significant trend, $\beta = .193$, $t(58) = 1.50$, $p = .139$, indicating that, in line with Hypothesis 2, on average the ideas became more feasible as the dyads contained more prevention focused individuals (see Table 4.1).

Productivity

Hypothesis 3 regarding productivity was confirmed: Regression analysis examining the effect of dyad condition (promotion vs. diverse vs. prevention) on productivity revealed a positive relation between the number of promotion focused individuals the dyads contained and idea productivity , $\beta = -.252$, $t(58) = -1.99$, $p = .052$. As can be seen in Table 4.1, a promotion focus thus contributed to the productivity (i.e., total number of ideas) during a brainstorm task.

High Quality Ideas

As can be seen in Table 4.1, the pattern of means on the number of high quality ideas follows our predictions. In line with Hypothesis 4, the number of high quality ideas was highest for participants in the diverse condition. A planned contrast, however, revealed that the diverse condition did not differ significantly from the two other conditions, $F(1, 57) = 1.05$, $p = .31$.

Table 4.1 Means and Totals of the Ideas Scored on Originality and Feasibility for Study 4.1

	Promotion condition	Diverse condition	Prevention condition	Overall mean
Mean originality	2.01	2.01	2.03	2.02
Mean feasibility	3.47	3.58	3.63	3.56
Productivity	8.90	7.95	6.70	7.17
High quality ideas	0.95	1.25	0.90	1.03

Discussion

Study 4.1 confirmed our prediction that a promotion focus in dyads impacts on different task aspects than a prevention focus. The overall productivity of the dyads increased as a function of the number of promotion focused dyad members, whereas no such relation existed with prevention focus in dyads. Our other hypotheses regarding idea quality, however, were not confirmed.

The lack of prevention focus effects might be explained by the characteristics of the brainstorm task. Indeed, classic brainstorm instructions often stress to suggest every solution that comes up in ones mind, and discourage too much critical thinking. Therefore, a brainstorm task may be more prototypically 'promotion focused' in character than 'prevention' focused. After all, failures of omission are more devastating in a brainstorm task than errors of commission. That is, generating bad ideas is by far not as harmful as failing to generate good ideas. Errors of omission are associated with a promotion focus, whereas errors of commission are associated with a prevention focus (Crowe & Higgins, 1997). Another characteristic of a brainstorm task that may have suppressed the influence of prevention in our study is that brainstorm tasks are relatively disjunctive in nature. After all,

one good member can produce all the ideas while the other member(s) only contribute(s) little. Faddegon, Ellemers, and Scheepers (under review) demonstrated that a disjunctive group task leads to a promotion focus among group members whereas a conjunctive group task leads to a prevention focus. Thus, we argue that a brainstorm task is somewhat biased towards a promotion focus. As a result, it might be easier to elicit promotion responses than prevention responses among dyads working on a brainstorm task.

Partly in response to this limitation of the task domain of the first study, we moved in Study 4.2 to another domain and examined regulatory focus diversity in Dutch first-league hockey teams. We argue that the task a hockey team faces is more balanced in terms of regulatory focus and less biased towards a promotion focus as is the case with brainstorm tasks. Therefore, we expected that in Study 4.2 we would also be able to show prevention effects.

STUDY 4.2

In Study 4.2, we sought to obtain further evidence for our hypothesis that regulatory focus diversity can enhance group performance. To do this, we tested our predictions in Dutch first league field-hockey teams, using their competition results as our dependent measure. A hockey team provides ample opportunities to test our diversity hypothesis as playing hockey consists of different subtasks for which different strategies are useful (e.g., defending, offending, playing well together). Furthermore, an advantage of studying these hockey teams is that they have been collaborating for a longer period of time, compared to the ad hoc-formed brainstorming groups in the first study. Team members therefore have had the chance to learn to make use and take advantage of their differences in strategies. Another advantage of studying professional hockey teams is that their competition results are the consequence of the matches of a whole year which provides a more reliable measure of

performance than is possible in one single lab-session. Finally, in terms of the distinction that we earlier made between disjunctive and conjunctive tasks we argue that the task of playing hockey is relatively unbiased. After all, in a hockey team the weakest link (worst player) can make the whole team play worse while one really good team member can make the difference during a match (e.g. scoring the winning goal or making an important save).

In Study 4.2 we directly assessed diversity in promotion and prevention in the hockey teams. A prevention focus is concerned with a focus on oughts and responsibilities and is associated with a vigilant strategy. We argue that a hockey team needs both players scoring high on these prevention focus features (the rule followers) and players that score low on this dimension (rule-breakers). We thus predicted that higher diversity in prevention focus will lead to better team performance (Hypothesis 1). In addition, we also predicted that diversity in promotion focus would be positive related to team performance (Hypothesis 2).

Apart from examining regulatory focus diversity in terms of differences in regulatory focus *between* players, in Study 4.2 we also considered an *intra-individual* form of regulatory focus diversity, namely the combination of the role a player has in the field (offender vs. defender) and his/her personal regulatory focus. We will refer to this as 'intra-individual regulatory focus diversity'. We argue that the role of offender leads to a focus on positive outcomes and thereby a promotion focus whereas the role of a defender or goal-keeper results in a focus on avoiding negative outcomes and elicits a prevention focus (Higgins, 1997). Based on the literature, two opposite predictions can be made about the effects of intra-individual regulatory focus diversity on team performance. The first possible prediction follows from regulatory fit theory (Higgins, 2000). According to this theory, if an individual's regulatory focus is in line with the preferred manner to work on a task (promotion and an eager manner; prevention and a vigilant manner) the individual experiences 'regulatory fit' which has been demonstrated to lead to increased task

performance (Higgins, 2000; Shah, Higgins, & Friedman, 1998). On the basis of this it can be argued that in hockey teams the combination the player's regulatory focus and the strategy that is inherent in the main team role (offending vs. defending) induces regulatory fit among those players of which the personal regulatory focus matches with their position in the field (promotion focus and offender; prevention focus and defender). Based on this line of arguing we thus would predict that a low level of intra-individual regulatory focus diversity (or a high level of fit) leads to better team performance than a high level of intra-individual regulatory focus diversity (Hypothesis 3a).

Our second and opposite prediction concerning the influence of intra-individual regulatory focus diversity is based on the central prediction of this paper that regulatory focus diversity can improve team performance. When, for instance, a striker is promotion focused and as a result only cares about offending, the striker may neglect other team tasks like helping the team when it needs to defend. For the overall team performance the defensive efforts of strikers may be crucial, however, as the team needs both to offend well and to defend well to win a match. Thus, the focus that is a consequence of the team role and the player's individual regulatory focus can complement each other. It therefore might be more beneficial for team performance when the players personal regulatory focus is different from the regulatory focus that is the consequence of their role in the team. The above reasoning is in line with literature on extra-role behavior and citizenship behavior (e.g. Bolino & Turnley, 2003; Brief & Motowidlo, 1986). This literature demonstrated that teams often perform better when group members perform tasks that are outside the realm of their formal role in the team. In the case of professional hockey teams this would mean that the teams' performance would increase if more players would perform behavior that is outside the realm of their role based on their position in the field (e.g., defending or scoring goals). We argue that this is most likely the case in teams high in intra-individual regulatory

focus diversity. Based on this reasoning we thus predict that team performance increases when there is more intra-individual regulatory focus diversity in a team (Hypothesis 3b).

For better interpretation of what diversity in prevention focus or promotion focus means for the team, we also asked the coach to judge for each player in the team whether he or she was a strong 'team player' or a more individualistic player. This question connects to previous research that demonstrated that a prevention focus is associated with an interdependent self-construal, and a promotion focus is associated with an independent self-construal (Lee, Aaker, & Gardner, 2000; Aaker & Lee, 2001). Based on this we predict that a promotion focus is associated with an individualistic playing style and that prevention focus is associated with a collective play style (Hypothesis 4).

Method

Participants

We invited all 24 teams that are active in both the female (12 teams) and the male competition (12 teams) of the Dutch first field-hockey league (the "Rabobank Hoofdklasse") to participate in this study. Of these teams 11 hockey teams agreed to participate in this study (5 teams of the male competition and 6 teams of the female competition). These 11 teams consisted of 45 offenders, 47 midfielders, 53 defenders, 18 goalkeepers and 11 team coaches (field players: M_{age} = 22.44; coaches, M_{age} = 40.67).

Procedure

All participating teams were visited after a midweek training session to fill in our questionnaire, which took about ten minutes to complete. We told participants that all information obtained by the questionnaire would be treated strictly confidential. The main goal of the questionnaire was to asses the personal regulatory focus of the hockey players and the coach. For this purpose, participants filled in the regulatory focus questionnaire (RFQ,

Higgins, Friedman, Harlow, Idson, Ayduk, & Taylor, 2001) which is a measure of chronic regulatory focus. This questionnaire consists of 6 items that comprise a personal promotion focus subscale ("promotion pride") and 5 items that comprise a personal prevention focus subscale ("prevention pride"). Sample items of the RFQ are: "How often have you accomplished things that got you "psyched" to work even harder?" (promotion pride), and "Growing up, would you ever 'cross the line' by doing things that your parents would not tolerate?" (prevention pride). Participants could indicate their answers on scale ranging from 1 "never" to 7 "always" (promotion scale: alpha = .60; prevention scale: alpha = .77). Both coaches and field-players filled in this questionnaire but we also added some specific questions for field-players and coaches separately. Field players indicated their number and position in the field (goalkeeper, defender, midfielder or offender); coaches indicated for each player whether the player was more oriented on team play or more oriented on making individualistic actions (coaches could mark one of these two options).

Dependent Measures

Apart from the rating by the coach, our main dependent measure was team performance in terms of the number of points the team had gained at the end of the competition (year 2006-2007, see http://www.rabohoofdklasse.nl).

Results

Performance

Team regulatory focus diversity. To obtain measures of the diversity in promotion focus and prevention focus for each team we calculated the variances of personal promotion and prevention focus for each of the players of a particular team. With this measure, we conducted a regression analysis containing diversity in promotion focus and diversity in personal prevention focus as independent variables and points gained in the competition as the dependent measure. This regression model significantly predicted team performance, $F(2, 8) = 5.47$, $p = .032$. Confirming Hypothesis 1 prevention focus

diversity was positively associated with the points gained in the competition, β = 1.02, $t(10) = 3.20$, $p = .013$. However, in contrast to Hypothesis 2, the beta for promotion diversity was non-significant.

Intra-individual regulatory focus diversity. In order to obtain measures intra-individual regulatory focus diversity we first calculated difference scores between personal promotion focus and personal prevention focus (promotion focus – prevention focus, see for a similar procedure: Faddegon et al., in press; Sassenberg et al., 2007). In this way positive values indicate a relatively stronger personal promotion focus and lower values indicate a relatively stronger personal prevention focus. We then multiplied these difference scores with 1 for offenders and -1 for defenders and for goal-keepers. This resulted in a scale of similarity, in which higher scores meant more similarity for both defenders and offenders (negative values, indicating stronger prevention focus become positive for defenders and goal-keepers, but not for offenders). Midfielders were not included in this analysis because it is not clear whether the role of midfielder elicits a promotion focus or a prevention focus.

We observed a significant negative correlation between the role-focus similarity and the points gained in the competition, $r(10) = -.73$, $p = .011$. Confirming hypothesis 4b this means that regulatory focus diversity in terms of the role in the field/ personal regulatory focus combination is associated with more points gained in the competition and thus with better team performance. As a result, our alternative regulatory fit based hypothesis (3a) that teams would perform better when their role in the team matches their individual regulatory focus, could not be confirmed.

Team Player vs. Individualistic Player

We performed a logistic regression analysis containing personal promotion focus and personal prevention focus as independent variables and the judgment of the coach (individualistic vs. team player) as the binary dependent variable. This analysis partly confirmed Hypothesis 4, by showing that personal prevention focus was positively associated with the judgment by

the coach that the player was focused on the team instead of on individual actions, β = .30, Wald's χ^2 (1, N = 152) = 4.01, p = .044. The hypothesized negative relation with personal promotion focus could not be confirmed, β = .26, Wald's χ^2 (1, N = 152) = 1.22, p = .269.

Discussion

This study showed that in professional hockey teams, diversity in prevention focus is positively associated with team performance whereas diversity in promotion focus is not. More precisely, we found that the number of points gained in the competition increased with higher diversity in prevention focus of the team. Apart from the effects of diversity at the team level, Study 4.2 also revealed that diversity in regulatory focus derived from the combination of the player's personal focus and his/her role in the team contributes to team performance. More specifically, we observed that teams in which 'intra-individual regulatory focus diversity' was higher had gained more points at the end of the hockey season.

We did not find evidence for our prediction that diversity in promotion focus would contribute to team performance. In retrospect we think this might be explained by a ceiling effect for the promotion focus of the players resulting in a too small variance of promotion focus to meaningfully predict other measures. After all, to become a professional hockey player a lot of ambition is probably necessary which would likely result in a high promotion focus among all players. In line with this idea, we observed that the mean individual promotion focus (M = 5.37, SD = 0.75) was higher than the mean individual prevention focus (M = 4.84, SD = 1.19), t(173) = 5.38, p < .001 and that indeed the variance in personal promotion focus was significantly smaller than the variance in personal prevention focus, t(172) = -6.42, p < .001, (for the statistical procedure to compare dependent variances, see: Gonzalez & Griffin, 1999). Thus, as the variance in promotion focus was smaller, it may also have been more difficult to observe effects related to this measure.

Study 4.2 complements Study 4.1 by showing that not only differences in promotion focus in dyads can contribute to the performance of a team but that also differences in prevention focus. Interestingly, and in agreement with our hypothesis we also found that players high in prevention focus were more likely to be judged as focused on the whole team whereas players low in prevention focus were more often judged to be focused on individual actions. Therefore, a possible mechanism for the benefits of prevention focus diversity in hockey teams is that a team both needs players high in prevention focus that think for the team as a whole and players low in prevention focus that make creative personal contributions to the team.

As said, Study 4.2 provides intriguing evidence that regulatory focus diversity at the individual level (in terms of divergence of personal focus and role) can positively affect team performance. This finding is in line with the central reasoning of the paper that regulatory focus diversity can contribute to the performance of the team. Although this finding seems to exclude a regulatory fit explanation we cannot rule out this possibility entirely. Research by Vaughn, Malik, Schwartz, Petkova, and Trudeau (2006) has shown that for performance motivation, regulatory fit can function as a two-edged sword. In line with previous research (Higgins, 2000; Shah et al., 1998), Vaughn and colleagues found that when there is no stop-rule that determines when participants' effort is sufficient, regulatory fit leads to increased task motivation. However, Vaughn and colleagues demonstrated that when there is a stop-rule from which the individual can infer that performance has been sufficient, regulatory fit leads to decreased task motivation and regulatory non-fit leads to increased task motivation. Possibly, fulfilling your team role in teams and organizations can also function as a stop-rule. That is, team members may think that if they have fulfilled their role in the team, their efforts have been sufficient, and they do not have to fulfill tasks that are not in the descriptions of their role, even though these extra tasks can benefit the team or organization as a whole. Based on this reasoning and on the findings of

Vaughn and colleagues, we thus could expect that team members that experience regulatory non-fit between their role and their personal regulatory focus are more motivated to perform extra-role behavior than team members that experience regulatory fit. With the current study we cannot determine whether it is intra-individual regulatory focus diversity or regulatory non-fit that explains our results. We do, however, believe that the finding is important as it affects the effectiveness of the team and therefore is worth further exploration in future research.

It should be added that the benefits of "extra role behavior" have actually also been recognized in sports contexts. For instance the playing style of the famous Dutch football team from the early seventies was characterized by frequent changes in role within the team (defenders that attacked; strikers that defended). This dynamic playing style—referred to as 'total football'—brought the Dutch team into two world cup finals. In reference to this, the team's captain, Johan Cruijff once mentioned that "the keeper determines the pace of an attack". At the same time, it should also be mentioned that such a dynamic view on personal focus and role may not always be functional (as a moderation of the above example it should indeed be noted that the Dutch team did not win any of these finals). For example, it may be only functional for teams in which there is a strong commitment (as in professional sports teams often is the case). When commitment is lower, performance might be particularly improved by a fit between focus and role.

GENERAL DISCUSSION

With two studies we tested our central prediction that regulatory focus diversity enhances team performance. Study 4.1 demonstrated positive effects of a promotion focus in dyads on the total production of the ideas (during a brainstorm task. In Study 4.2 we found that diversity in prevention focus was

positively related to the number of points gained by professional field-hockey teams. We also demonstrated that regulatory focus on the intra-individual level (team role-individual regulatory focus combination) was positively related to the number of points gained by the hockey team.

Previous literature on regulatory focus mainly considered regulatory focus at the individual level (e.g. Higgins 1997; Förster, Higgins, Idson, 1998) or at the level of the whole group (Faddegon et al., in press; Levine et al. 2000; Sassenberg et al., 2007). The current work demonstrates that groups can be diverse in regulatory focus and that these different strategies can lead to better performance of different aspects of complex team tasks. Study 4.2 additionally showed that regulatory focus diversity can be beneficial for overall team performance. In many real life group situations the regulatory focus of group members is probably diverse. Thus, our research extends the knowledge about how regulatory focus theory functions in diverse groups and thereby increases the practical value of the theory in many daily life group contexts.

Our research also contributes to the existing diversity literature (Triantis et al., 1965; Jehn et al., 1999; Jackson et al., 2003). To our knowledge our work is the first to examine differences in underlying motivation as a factor that affects team performance. Although the current work is not comprehensive and further research is needed (see below), our work does provide evidence that regulatory focus diversity can be beneficial for team performance. As previous research on diversity often is inconclusive about whether diversity is beneficial or harmful (Jackson et al., 2003), we believe that our work provides new insights that can help the research on diversity to progress.

Finally, our findings in Study 4.2 have also consequences for the literature on extra-role behavior (e.g. Bolino & Turnley, 2003; Brief & Motowidlo, 1986). That regulatory focus-diversity at the intra-individual level is associated with increased team performance suggests that extra-role behavior can be enhanced when someone's role in a team is different from someone's motivational and strategic preferences. More generally this result

could implicate that to encourage extra-role behavior team managers may consider to select (highly committed) employees that are not only motivated for the tasks relevant for their role in the team but also for other tasks the team needs to perform to function well overall. As noted above, however, this may be only functional in the case when there is strong group commitment.

Limitations and Further Research

In Study 4.1 promotion focus in dyads affected different aspects of the brainstorm task while prevention focus did not. As explained, we believe that this asymmetry is likely the result of a bias towards a promotion focus of the brainstorm task itself. Future research could consider complex group tasks that are more balanced in the sense that negative contributions can be just as harmful as positive contributions can be beneficial for team performance. In this situation we believe that both a prevention focus and a promotion focus can make unique contributions to the task at hand, leading to better overall team performance in diverse teams.

Study 4.2 was performed with professional field-hockey teams. Possibly the intra-individual regulatory focus effect we observed can be explained by the fact that all players were highly trained professionals. It may be that when an individual starts learning a new task at first it is beneficial to have a regulatory focus that matches with the prerequisites of the task (e.g., a promotion focus for an offender in a hockey team). When the task gets over-learned, however, the task becomes almost automatic and a matching regulatory focus adds little to the individual's performance anymore. From then, a regulatory focus opposite to the focus required by the task (e.g., prevention focus and offender) may add to the performance (the offender also helps with the defensive tasks of the team). In future research therefore it would be interesting to replicate the hockey study in lower level amateur teams. Possibly, in these team a role/regulatory focus match would lead to better team results overall. Another advantage of performing the study among

amateur teams is that there is probably more variability in promotion focus among players which may allow for more promotion focus effects.

In conclusion, with the present research we addressed the issue of regulatory diversity as a determinant of team performance. Our results indicate that this form of diversity can indeed positively impact on (aspects of) team performance. Future research is necessary, however, to understand exactly under which circumstances this form of diversity is most effective.