Eager to be the Best, or Vigilant Not to Be the Worst: The Emergence of Regulatory Focus in Disjunctive and Conjunctive Group Tasks

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In two experiments we examined the emergence of regulatory focus in group members resulting from the characteristics of a group task (disjunctive vs. conjunctive). Our central hypothesis was that disjunctive group tasks lead group members to adopt a promotion focus, and conjunctive group tasks lead group members to adopt a prevention focus. In Experiment 1, we used virtual groups to manipulate the interdependence structure of a group task (disjunctive vs. conjunctive). We assessed participants' self-reported regulatory focus, and examined their task behavior. Experiment 2 addressed face-to-face interacting groups and examined the regulatory focus-specific emotions participants experienced as a result of the interdependence structure of the task, as well as their task performance. Results were partly in line with predictions demonstrating the emergence of a promotion focus in disjunctive group tasks, but no parallel effects for conjunctive group tasks. We connect our findings to the literature on regulatory focus theory and group dynamics and discuss the practical implications for team functioning and performance.

Keywords: group, group tasks, regulatory focus, self-regulation

Imagine yourself being in a team quiz where one member of the team needs to find the answer to a difficult question. Probably you would feel cheerful when you think you know the right solution and be quite eager to answer on behalf of your team. Now think of a quiz in which each team member needs to resolve a difficult question for the team to succeed. In this case you would probably feel relieved when you think you know the right answer as you would vigilantly try not to be the worst member of your group. This example illustrates that the same task (correctly answering a question in a team quiz) might lead to different emotions (cheerfulness vs. relief) and strategies (eagerness vs. vigilance) among team members, depending on the interdependency structure (disjunctive or conjunctive) of the group task. The differences in emotions and strategies described above indicate

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differences in self-regulation that are referred to in the literature as a ‘promotion focus’ and a ‘prevention focus’ (Higgins, 1997).

Research based on regulatory focus theory (Higgins, 1997) has shown that people can differ in the strategies they use to obtain desired end-states. In the current article we apply regulatory focus theory to group contexts and argue that someone’s regulatory focus can emerge from group dynamic processes. Previous research on the effects of different group tasks has already shown that the interdependency structure of these tasks can affect the amount of effort group members are willing to invest (e.g. Kerr & Bruun, 1983; Weber & Hertel, 2007). For instance, Kerr and Bruun (1983) observed that a disjunctive group task elicits most effort among group members with high ability whereas conjunctive group tasks induce most effort among group members with low ability. In the present article we argue that the interdependency structure of these group tasks not only affects the amount of effort group members are willing to invest but also the direction of these efforts, i.e. whether their effort is directed towards fulfilling their duties and responsibilities as they attempt not to spoil the group’s performance (prevention focus) or aims at accomplishment and growth in their attempts to gain an optimal outcome for the group (promotion focus). By doing this, we connect existing views on group dynamics to current knowledge on self-regulation, to obtain novel insights that have both theoretical implications and practical consequences for group functioning and performance.

Self-regulation through a promotion versus a prevention focus

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 ideals and the wish for accomplishment and growth, and enhances sensitivity for the presence or absence of positive outcomes (i.e. gains vs. non-gains). Furthermore, promotion-focused individuals prefer an eager manner to attain their desired end-states. As a consequence, promotion-focused individuals display creative behavior and are more likely to think globally and abstractly (Förster & Higgins, 2005; Friedman & Förster, 2001; Semin, Higgins, Gil de Montes, Estourget, & Valencia, 2005). By contrast, a prevention focus is founded in one’s responsibilities, oughts and duties and is characterized by sensitivity to the presence or absence of negative outcomes (loss vs. non-loss). In order to obtain desired end-states, prevention focused individuals prefer to behave in a vigilant manner. As a consequence, prevention-focused individuals are relatively more accurate and think more locally and concretely (Förster & Higgins, 2005; Förster, Higgins, & Taylor Bianco, 2003; Semin et al., 2005). In addition to these different strategies in task accomplishment, regulatory focus is also characterized by the experience of different emotions: people in a promotion focus tend to experience emotions on a cheerfulness–dejection dimension, while prevention-focused persons tend to experience emotions on a quiescence–agitation dimension (Higgins, Shah, & Friedman, 1997). While positive emotions (cheerfulness for promotion and quiescence for prevention) are elicited by the experience of success and negative emotions (dejection for promotion and agitation for prevention) are triggered by failure, emotional responses indicating a focus on promotion or prevention can also emerge when anticipating success or failure (Friedman & Förster, 2008), e.g. during or directly after task engagement. Thus, having a promotion or a prevention focus has an impact on the cognitive, strategic and affective processes related to goal-striving.

Research has shown that the preference for a promotion focus or a prevention focus can both be defined as a chronic disposition and as a state that can be induced by different types of situational features such as the pay-off structure of a task (Higgins, 1997; see also Crowe & Higgins, 1997; Förster, Higgins, & Idson, 1998). In the present research we examine regulatory focus as a situational state that can be induced by the interdependency structure of a group task.
Regulatory focus in group contexts

Over the past few years regulatory focus has increasingly been studied in group contexts (e.g. Faddegon, Scheepers, & Ellemers, 2008; Levine, Higgins, & Choi, 2000; Sassenberg, Jonas, Shah, & Brazy, 2007; Sassenberg, Kessler, & Mummendey, 2003; Seibt & Förster, 2004; Shah, Brazy, & Higgins, 2002, 2004). These studies have shown that groups can develop or adopt a joint focus on promotion or prevention. Clearly, whether the joint focus of a group is on promotion or prevention can have important implications for the performance of many groups and (work-)teams. For instance, in some teams, group members need to be creative and have to take risks (e.g. a product development team) and thus a joint focus on promotion is most suitable. Other teams, however, have to give priority to accuracy and risk avoidance (e.g. a security force) as a joint focus on prevention is most likely to result in favorable team outcomes. Therefore, the ability to shift the attention of group members to promotion or prevention can represent an important tool to optimize the performance of such teams in view of the joint task they need to accomplish. Prior research by Levine and colleagues (2000) has shown that over time, group members’ regulatory focus strategies can converge to either a promotion or prevention focus, depending on how the outcomes of a joint task are framed (i.e. as gains vs. non-gains or as losses vs. non-losses). Faddegon et al. (2008) additionally demonstrated that when a particular regulatory focus is part of the group’s identity, individual group members tend to adapt their own behavior to reflect this ‘collective regulatory focus’, and are especially inclined to do so when they are highly identified with their group. Finally, it has been shown that specific socio-structural features—such as the relative power positions of groups—are associated with responses of individual group members indicating a focus on promotion or prevention (Sassenberg et al., 2007).

In this previous work, regulatory focus was thus either elicited by group-level characteristics, such as group identity (Faddegon et al., 2008) or group power (Sassenberg et al., 2007), or developed during group interaction due to the way outcomes were framed (Levine et al., 2000). In the present research we argue that a joint focus on promotion or prevention can also arise from the way individual group members are connected to each other as implied by the interdependency structure of the group task. This is in line with the approach developed by Levine and colleagues (2000) in the sense that we examine how a joint regulatory focus derives from a group process. Nevertheless, we extend this previous work in that we address how the way in which individual group members depend on each other affects their regulatory focus. That is, we examine the interdependency structure inherent in the group task as a cause for individual group members to adopt a joint focus on promotion or prevention. This notion is in line with the suggestion made by Park and Hinsz (2006) that group interaction should affect group members’ motivational system.

Group task structure as a determinant of regulatory focus

According to the classic taxonomy developed by Steiner (1972), a basic distinction can be made between disjunctive and conjunctive group tasks (see also Weber & Hertel, 2007). A disjunctive group task is defined as a task in which high performance of one single group member is sufficient for the whole team to do well on the task. For instance, in a problem-solving task this means that if one person is able to solve the problem, no other team member is needed for the team to succeed. As a result, if there are no motivation or coordination losses in the group, the performance of the team equals the performance of the best performing individual. A conjunctive task, on the other hand, requires that the performance of all members reaches a minimum level, such as, for instance, in industrial teams working on an assembly line. In this case, all team members are needed, and the performance of the team potentially equals the performance of the worst performing individual.
Previous work on disjunctive and conjunctive group tasks mainly has theorized about ways to optimize performance on these different types of tasks (Steiner, 1972). For example, Steiner reasoned that for a group to perform well on a disjunctive task, it is critical for group members to accept that the individual best suited for the task at hand provides the solution on behalf of the group. This is most likely to be the case when the correct solution is easily recognized. Kerr and Bruun (1983) studied the joint effects of personal ability (high vs. low) and group task structure (disjunctive vs. conjunctive) on motivation of individual group members. They found that high personal ability resulted in a loss of motivation when participants worked in a conjunctive group task but increased motivation when working on a disjunctive group task. Likewise, from their recent meta-analysis, Weber and Hertel (2007) concluded that group members with low ability tend to be more motivated when working on a conjunctive group task than in other types of group tasks.

Thus, previous work on the effects of different types of group tasks was primarily concerned with the amount of individual effort elicited among different group members by these types of tasks and the resulting performance of the group. However, the regulatory focus adopted by group members resulting from disjunctive and conjunctive tasks has not been studied so far. As noted above, the adoption of a focus on promotion or prevention can affect many factors, including strategic behavior and task performance (Higgins, 1997). Therefore, it is important to gain more insight in the group situations from which regulatory focus can emerge.

Why would differences in group task structure have different self-regulatory consequences? In a study examining reward allocations, Miller and Komorita (1995) found that disjunctive group tasks lead group members to adopt more equity-based division rules whereas conjunctive group tasks induced them to prefer equality-based rules. Miller and Komorita explained this result by arguing that disjunctive group tasks make people focus on individual accomplishments, while conjunctive group tasks induce them to consider the group as a whole. Along similar lines, we argue that the knowledge that the worst performing member determines the group’s performance on conjunctive group tasks, makes group members aware of the responsibilities they have towards their team-mates. If their performance does not meet minimal standards, they can spoil it for the group, and can be blamed for a group loss. As described above, the resulting concern with responsibilities and oughts, and the sensitivity to potential losses (vs. non-loss) indicates a prevention focus (Crowe & Higgins, 1997; Higgins, 1997; Higgins, Roney, Crowe, & Hymes, 1994). Therefore, we predict that a conjunctive group task, in which the group result equals the performance of the worst performing individual, is relatively likely to elicit a prevention focus among individual group members.

By contrast, we argue that a disjunctive group task, in which group success is determined by the best performing member, frees individual group members from the anxiety that they can spoil it for the rest of their group. Anything group members do can only benefit their group. We argue that in the case of tasks where only gains can be achieved, group members are more likely to focus on accomplishment (cf. Miller & Komorita, 1995) as they are concerned with the possibility for gains (vs. non-gains), which characterizes a promotion focus (Higgins, 1997; see also Crowe & Higgins, 1997; Higgins et al., 1994). Therefore, we predict that a disjunctive group task is more likely to activate a promotion focus among group members.

The empirical work devoted to the effects of disjunctive and conjunctive group tasks is relatively scarce (Steiner, 1972; Weber & Hertel, 2007). The current research aims to contribute to this literature by addressing the self-regulatory consequences of these different types of group tasks. We argue that these tasks not only have consequences for the amount of effort group members display, but that they can also lead to qualitatively different behavioral strategies and emotions. Our aim thus is to examine how characteristics of the task (and the interdependence structure this implies) affect the responses of those who work under
these conditions. We argue that these task type effects should occur relatively independently of individual differences between group members in ability or performance level. Importantly, we argue that the group task has a general effect on the group members’ regulatory focus as the interdependence structure and its implications for how to contribute to the group’s performance impacts equally on all group members. This is likely to be the case in newly formed groups, or on novel group tasks (as examined here), as well as in any other situation in which concrete expectations about the ability or performance levels of individual group members are lacking.

Increasing our understanding of these processes is not just theoretically interesting but also bears important practical consequences. Almost every task calls for specific behavioral responses that more likely evolve when people’s motivation is in line with specific task demands. Thus, even though much of the current knowledge about task motivation addresses the amount of motivation people display, if the direction of that motivation is not in line with task demands, this extra motivation is of little use. For instance, if a work team faces a problem that requires a creative solution, a strong collective focus on prevention might block openness to finding new ways to deal with the situation. In this case, instead of investing more effort on the task in a prevention mindset, switching to a promotion mindset might be more helpful to solve the problem at hand.

The current research

We performed two experiments to examine our central prediction that a disjunctive group task is more likely to elicit a promotion focus among individual group members compared to a conjunctive group task, which should be more conducive to the emergence of a focus on prevention. To test this prediction, we collected data on regulatory focus-specific perceptions, emotions, and task behavior.

In Experiment 1, we examine how members of a virtual group work on an anagram task which was either framed in disjunctive or conjunctive terms. Our main dependent variables in this experiment were participants’ self-reported regulatory focus, and their tendency to think ‘inside or outside the box’ while performing the task, which is related to regulatory focus (see below). The second experiment was conducted in a face-to-face group setting. Here, we used the emergence of regulatory focus specific emotions as well as displays of task behavior to assess group members’ regulatory focus.

Experiment 1

In Experiment 1, participants worked on an anagram task that was either framed as a disjunctive or a conjunctive group task. The regulatory focus that participants adopted while working on this task was measured with an adapted version of the promotion/prevention self-report scale developed by Lockwood, Jordan, and Kunda (2002). From their performance on the anagram group, we additionally derived a behavioral measure to assess the adoption of a particular regulatory focus strategy by individual group members. Previous research has established that promotion-focused individuals tend to be more creative and think more globally and ‘outside the box’, compared to prevention-focused individuals who tend to be more accurate and think locally and ‘inside the box’ ( Förster & Higgins, 2005). Anagram tasks are useful to tap into this behavior as these tasks allow for creativity and global thinking (see method sections for details). We predict that a disjunctive group task elicits a self-reported promotion focus and leads to more evidence of thinking ‘outside the box’ when working on the anagram task. By contrast, those working on a conjunctive group task should indicate more prevention-focused self-reports and show more evidence of thinking ‘inside the box’ when working on the anagram task.

In deriving the above prediction we argue that contextual factors (task type) will impact on the regulatory focus strategy group members adopt while working on the task. Nevertheless, previous work on regulatory focus in group situations has shown that the effects of such situational group features tend to interact with
more chronic individual differences in personal regulatory focus preferences (e.g., Faddegon et al., 2008; Sassenberg et al., 2007). For instance, in previous research, it turned out that the effect of situational group features was more pronounced when it matched the personal (chronic) focus of the group members in question. This is why in the present research we also assessed these more chronic regulatory focus preferences of individual group members with the Regulatory Focus Questionnaire (RFQ; Higgins et al., 2001) which asks, for instance, about the way they were raised by their parents, and early life experiences that induced them to develop a focus on promotion or prevention. We did this before introducing the experimental manipulation of group task type, to be able to check whether the effectiveness of our manipulations depended on the way they fit with participants’ more chronic personal regulatory focus preferences (the matching hypothesis).

Method

Participants and design A total of 126 students of Leiden University (23 males, 103 females, $M_{\text{age}} = 21.1$) participated in this experiment. All participants were randomly assigned to the disjunctive or conjunctive group task condition. Participants received €3 for their participation.

Procedure In this experiment, participants worked in a group context on an anagram task. Allegedly, participants would form a team with two other participants (the ‘blue team’) to compete against another three-person team (the ‘red’ team). The interdependency structure of the group task was presented as either disjunctive or conjunctive.

Upon entry into the lab, participants were individually seated in separate cubicles. Participants were told they would work individually on the task, but that their result would be considered together with the results of the other two blue team members to determine the team’s performance. The ‘blue team’ to which the participant was assigned would be in competition with a ‘red team’ consisting of three participants who allegedly were also present in the lab, seated in different cubicles.

Before the detailed instructions for the anagram task were provided, participants were asked to complete the regulatory focus questionnaire (RFQ; Higgins et al., 2001) to measure their chronic regulatory focus. This measure consists of two subscales: promotion pride and prevention pride, that tap into a person’s personal promotion and prevention focus, respectively. An example of a promotion item is: ‘How often have you accomplished things that got you “psyched” to work even harder?’ An example of a prevention item is: ‘Growing up, would you ever “cross the line” by doing things that your parents would not tolerate?’ (reverse scored). Participants gave their answers by indicating a number ranging from 1 ‘never’ to 7 ‘always’. Both scales were sufficiently reliable; promotion pride: alpha = .66, prevention pride: alpha = .70.

To enhance task motivation and to introduce the idea that their team was in competition with the other team, participants then read that after completion of the anagram task, they and their blue team members would work one of two possible other tasks that had to be completed. These tasks were presented as differentially attractive. Allegedly, participants in previous experiments really liked one of these follow-up tasks while they disliked the other task (see Sassenberg et al., 2007, for a similar procedure). Participants were led to believe that which of these two tasks they would work on would depend on their team’s performance on the anagram task, relative to the red team. To make the group situation more realistic we also told participants that at the end of the experiment they would meet their blue team-mates to be given feedback about their joint performance by the experimenter.

After this information the group task manipulation followed. In the disjunctive group task condition we explained that the performance of a team sometimes depends on the performance of one single team member. We provided participants with some examples of this type of group task, like being part of team quiz, in
which one member can determine how well the team performs by providing the correct answer to the question at hand. Then we explained that this team would also work on this type of group task in which group performance is determined by the performance of the best performing group member. Concretely, this meant that we would compare the result of the best performing member of the blue team with the best performing member of the competing red team to determine which of the two teams would work on the (un-)attractive follow-up task.

In the conjunctive group task condition we explained that sometimes the performance of a team depends on the performance of all group members. In this condition we also provided some examples of this type of group task, such as a team that is working on an assembly line in a factory and all members need to perform well to achieve a good result. Then, we explained that this team would also work on this type of group task in which all members would have to perform well for the team to succeed. Concretely, this meant that we would compare the result of the worst performing member of the blue team with the worst performing member of the competing red team to determine which of the two teams would work on the (un-)attractive group task.

Then, the instructions for the anagram task followed, which stated that group members had to find as many solutions as they could for each of 10 anagrams. They could work as long as they wished on each anagram. The (Dutch) anagrams all consisted of three, four or five letters and could be resolved in multiple ways (English language equivalents of these types of anagrams are ECHAP, with possible solutions: cheap, peach; DGO, possible solutions: dog, god). For each participant, the performance on the anagram task consisted of the total number of correct solutions they could find.

After completing the anagram task, participants completed the situational self-report measure of regulatory focus. Finally, participants were told that due to time limitations the second task would be cancelled, after which they were debriefed, paid, and thanked for their participation.

**Dependent measures**

**Self-reported promotion/prevention orientation**

We used an adapted version of the ‘promotion/prevention’ scale (Lockwood et al., 2002) to measure participants’ regulatory focus directly after they worked on the group task. The adapted scale consisted of five promotion items (items 3, 6, 14, 16, 18 of the original scale) and five prevention items (items 1, 2, 7, 11, 15), that were selected because they most directly refer to success and ambitions that indicate a promotion focus, or to failure and responsibilities characteristic of a prevention focus. Examples of promotion items are: ‘I frequently imagine how I will achieve my hopes and aspirations’, and ‘I see myself as someone who is primarily striving to reach my “ideal self”—to fulfill my hopes, wishes and aspirations.’ Examples of prevention items are: ‘In general, I am focused on preventing negative outcomes in my life’, and ‘I see myself as someone who is primarily striving to become the self I “ought” to be—to fulfill my duties, responsibilities and obligations.’ Care was taken not to include items containing words such as ‘worst’ or ‘best’, to avoid those items from the regulatory focus measure that could be directly related to task instructions. Answers were given on a scale ranging from ‘1’ not at all to 7 ‘totally so’. To obtain a single continuous measure of regulatory focus, participants’ prevention scale scores were averaged and subtracted from their mean promotion scale scores. The resulting difference score indicates a relatively stronger focus on promotion with higher scores while lower scores indicate a relatively stronger focus on prevention (see Faddegon et al., 2008 and Sassenberg et al., 2007 for similar procedures). Considering the relatively small number of items, we observed reasonable alpha’s for both scales: promotion scale: alpha = .66; prevention scale: alpha = .56.$^2$

**Thinking outside the box**

Previous research has demonstrated that a promotion focus is characterized by creative behavior, more global and abstract thinking, and the inclination to ‘break new ground’. A prevention focus, by contrast, is characterized by more local and detailed perceiving and ‘rule-following behavior’
(Förster & Higgins, 2005; Friedman & Förster, 2001; Semin et al., 2005). In other words, whereas a prevention focus is characterized by ‘thinking inside the box’, a promotion focus is characterized by ‘thinking outside the box’. We captured these tendencies in two ways using our anagram task. First, we counted the number of self-invented words. These are words that are not listed in the dictionary, but fulfill the criteria for ‘real’ Dutch words in terms of the combination and order of vowels and consonants (neologisms, e.g. norent). Additionally, we counted the number of non-Dutch but existing words (mainly English or German words, e.g. lips, ende) that were proposed as solutions for the anagram task. Two raters unaware of experimental conditions scored whether solutions provided were self-invented words or non-Dutch words. Disagreement only existed in a few cases (< 5%) and was resolved through discussion. Even though participants were not explicitly told in which language the anagrams should be resolved, we ran the experiment in the Netherlands and all instructions and measures were provided in the Dutch language. Thus the implicit aim of the task was to find Dutch anagram solutions, and proposing self-invented or non-Dutch words as solutions can be considered as indicating a more global, abstract way of thinking about the task (i.e. ‘thinking outside the box’), or even ‘rule breaking’ behavior, which is associated with a promotion focus. By contrast, limiting oneself to words about which one is absolutely sure that it is a correct Dutch word indicates a more vigilant, rule-following strategy (‘thinking inside the box’), which is associated with a prevention focus. We added the number of creative (self-invented words) and global (non-Dutch words) solutions to form a single index of ‘thinking outside the box’. Correlation analysis confirmed that these two measures (creative and global solutions) are positively correlated, \( r(125) = .24, p = .007 \). This is consistent with the notion that both measures are indicators of the same way of thinking. In addition, we also assessed two more conventional measures in relation to the current anagram task, namely the total number of correct responses, as well as the time that participants worked on this task (i.e. task-persistence).

**Results**

**Analytic strategy** Following Higgins’ advice (see [http://www.columbia.edu/cu/psychology/higgins/papers/rafocus%20strength%20description.pdf](http://www.columbia.edu/cu/psychology/higgins/papers/rafocus%20strength%20description.pdf); see also Higgins et al., 2001) concerning how to analyze the effects of chronic regulatory focus, we always checked for the effects of promotion focus while controlling for prevention focus, and for the effects of prevention focus while controlling for promotion focus. For all analyses described below we tested two models. In model one, we tested for main effects of the group task, while controlling for participants’ a priori personal promotion and prevention focus. In the second model, we entered all main effects, all two-way interactions, and the three-way interaction between group task, personal prevention and personal promotion focus, in order to test our matching hypothesis. All measures were standardized (or scored \(-1,1\) in the case of a dichotomous variable), before entering the equations.

**Self-reported promotion/prevention orientation**

This analysis revealed a main effect of personal promotion focus (as measured with the RFQ) with higher a priori promotion values predicting higher values on the promotion/prevention difference score reported after the group task, \( \beta = .56, t(122) = 6.02, p < .001 \). A priori personal prevention focus was not significantly related to the promotion/prevention difference score after the task, \( \beta = -.09, t(122) = -.95, p = .344 \). However, more relevant for the current investigation was the observed main effect of group task \( \beta = .19, t(122) = 2.42, p = .017 \). In line with our main prediction, in the disjunctive condition, group members reported a relatively stronger promotion focus (\( M = 1.20 \)), as compared to the conjunctive condition (\( M = 0.77 \)). No other effects were observed.

Separate tests for the promotion scale and the prevention scale revealed that the mean value of the promotion scale was significantly higher in the disjunctive task condition (\( M = 5.27 \) than
in the conjunctive task condition \((M = 4.93), t(122) = 2.42, p = .0017\). Although, as expected, in the conjunctive condition the mean prevention score \((M = 4.15)\) is higher than in the disjunctive condition \((M = 4.07)\), this difference does not reach statistical significance, \(t(122) = -0.63, p = .529\).

**Thinking outside the box** With regard to ‘thinking outside the box’ on the anagram task (grand mean \(M = 1.35\); which is comprised of non-Dutch words, \(M = .86\), and self-invented words \(M = .50\)), the predicted main effect of group task was not reliable, nor did we observe any effects of personal promotion or prevention focus. When we examined the interaction terms, we obtained an interaction between personal promotion focus and group task type on this measure, \(\beta = .20, t(117) = 2.19; p = .031\) (see Figure 1). We further examined this unpredicted effect with simple slopes analyses (Aiken & West, 1991). This revealed that in the disjunctive group task condition, participants with a personal focus on promotion were more inclined to show evidence of ‘thinking outside the box’, \(\beta = .55, t(120) = 2.44, p = .016\), while no such relation between ‘thinking outside the box’ and personal promotion focus was observed in the conjunctive group task condition, \(\beta = .08, t(120) = -0.36, p = .721\). This is in line with results of previous research on regulatory focus in groups indicating that people tend to be particularly sensitive to situational features of the group that match their personal self-regulatory preferences (Faddegon et al., 2008; Sassenberg et al., 2007).

On the other side of the ‘matching hypothesis’ we would also predict the opposite interaction between the group task type and personal prevention focus. The observed means indeed showed some evidence of this pattern, in that in the conjunctive condition there is slightly less evidence of ‘thinking outside the box’ for those with a personal focus on prevention. However, this interaction was very weak and not statistically reliable, \(\beta = -0.073, t(117) = -0.476, p = .635\). No other interactions were observed.

**Analyses of correct solutions and task persistence** As an additional check, we tested whether the total number of anagrams solved and the total amount of time spent on the task were affected by the independent variables. Neither of these measures were reliably affected by task type, personal promotion or prevention focus or by any of the interactions between them. This result is in line with our argument that the direction of group members’ motivation may be affected by certain task features, relatively independently of the overall amount of motivation or task effort displayed.

**Discussion**

The main aim of this first experiment was to examine our prediction that a disjunctive group task leads to the emergence of a promotion focus among group members, whereas a conjunctive task should induce group members to adopt a prevention focus. The results of Experiment 1 offer some evidence in line with this central prediction, as they show that disjunctive group task instructions lead to promotion focus consistent self-reports compared to the conjunctive group task condition. No evidence was found that our group task manipulation affected the prevention focus adopted by individual group members. At the behavioral level, some of our observations were also consistent with the
general reasoning that specific types of group tasks can induce group members to adopt a particular self-regulation focus. That is, even though the predicted main effect of group task type did not emerge on this dependent variable, partial evidence in support of our argument was found, in that the effect of group task type depended on more chronic personal differences in regulatory focus preferences. In line with the matching hypothesis, only individuals with a chronic personal focus on promotion showed more evidence of thinking ‘outside the box’ during the anagram task when working on a disjunctive group task than when working on a conjunctive group task. While this was not the exact effect we predicted, this observation is consistent with our general argument that the adoption of task behavior indicating a focus on promotion or prevention can be affected by the type of group task people work on. However, this effect turns out to be moderated by chronic personal preferences for a particular self-regulation strategy.

We note that no reliable evidence for a similar matching effect was found for individuals with a personal focus on prevention, in the case of a conjunctive group task. This asymmetry of effects is consistent with our findings regarding regulatory focus self-reports. We think, in the case of the anagram task, the absence of a reversed effect in the conjunctive task condition is at least partly due to the low mean level of words that fulfill the criteria for thinking outside the box, which likely resulted in a floor effect for this measure. That is, although individuals with a high personal focus on prevention would be expected to show least evidence of ‘thinking outside the box’ in the conjunctive task condition, there was very little scope in the observed values for this measure to show a decrease relative to the disjunctive task condition, which may be part of the reason why this interaction failed to become significant.

Despite the fact that we only obtained partial support for our predictions, this first experiment does provide initial evidence that regulatory focus can emerge from the interdependency structure of the group—even though personal preferences for promotion or prevention may make individual group members more or less susceptible to such effects of the group task structure. With a second experiment we aimed to test the robustness of these findings by further examining our central prediction in another type of group situation (face-to-face interacting groups) and using a less obtrusive measure of regulatory focus.

**Experiment 2**

The main difference between the real-group setting in Experiment 2, compared to the virtual group situation in Experiment 1, is that in the current experiment participants were actually present in the same room with their fellow group members and could see that they were also working on the task. This situation is more similar to group contexts in real life where group members rarely retain absolute anonymity but work on their own assignments for the group in the presence of fellow group members.

Another difference from Experiment 1 is the focal measure we employed to assess group members’ regulatory focus. In Experiment 1 we used a direct self-report measure of situational regulatory focus, i.e. an adapted version of the promotion/prevention scale (Lockwood et al., 2002). In this second experiment we shifted to a less obtrusive measure of regulatory focus by assessing regulatory focus-relevant emotions group members experienced when working on either a disjunctive or conjunctive group task. A further reason why we chose to examine emotions in Experiment 2 as our main dependent measure of regulatory focus (instead of the self-reported strategy used in Experiment 1) is that we wanted to examine whether the predicted results also extend to affective aspects of regulatory focus indicating the nature of group members’ emotional involvement in the task when working together in real interacting groups. Thus, while we aimed to examine the same central prediction as in Experiment 1, in this second study we opted for a different methodology and focal measure, to extend the findings obtained with the relatively cognitive set-up of Experiment 1 (self-reports concerning virtual group interactions).
As explained above, the experience of emotions on a cheerfulness–dejection dimension after success versus failure indicates a promotion focus, while experiencing emotions on a quiescence–agitation dimension are characteristic of a prevention focus. In line with the central hypothesis of this article, we predict that participants working on a disjunctive group task should primarily experience positive or negative emotions, after success or failure respectively, on the cheerfulness–dejection dimension (indicative of a promotion focus). People working on a conjunctive group task, on the other hand should experience relatively stronger positive or negative emotions on the quiescence–agitation dimension (indicative of a prevention focus), after success or failure respectively.

In this second experiment, participants were required to work on a brick building task (Jenga®) that was framed in either disjunctive or conjunctive terms. We used the mean height of the towers built within each group as a behavioral measure of the regulatory focus adopted in the group. Because a promotion focus leads to a focus on advancement and growth and makes people aim for a maximal performance (e.g. Higgins, 1997), we predicted that, on average, participants working on a disjunctive group task (promotion) would be more inclined to build high towers than participants working on a conjunctive group task (prevention) whose focus on responsibility and oughts was expected to result in a goal setting strategy, leading them to show a performance that would be sufficient for non-loss. In the present context, this would mean working just hard enough to avoid being the worst performing group member (Higgins, 1997).

**Method**

**Participants and design** Participants were invited to the lab where they formed a group with two other (same-sex) participants who were present in the same session. Each group was randomly assigned to the disjunctive or conjunctive task condition. Participants received €3 for participating. A total of 35 groups, or 105 individuals (36 men and 69 women, with ages ranging from 18 to 28) participated in this experiment. Due to technical problems, the questionnaire results for one participant were not recorded. However, we did code the behavioral data for this participant, which were included in our behavioral analyses.

**Procedure** The experiment consisted of three parts. In the first and third parts, participants worked individually while being separated by Styrofoam walls at laptop computers to read the instructions (first part) and to indicate the emotions they experienced after the group task (third part). In the second part they actually worked together with two other participants on the group task. Before the instructions concerning the experiment were provided, as in Experiment 1, participants were administered the regulatory focus questionnaire (RFQ, Higgins et al., 2001) to be able to control for more chronic individual differences in personal regulatory focus. Then the general instruction concerning the group task participants would work on was provided (a brick building task). In this general instruction, subjects read that they would work on a group task together with two team-mates and that they would jointly work on this task at the table in the middle of the room. After the general instruction, the nature of the group task (disjunctive vs. conjunctive) was explained in a similar way as in Experiment 1, except that there was no competition with another team for the most attractive follow-up task. All members in one team received the same group task type instruction (i.e. all group members received either the disjunctive group task manipulation or they all received the conjunctive group task manipulation).

Then the brick building task instructions followed. We adapted our task from a popular recreational game: Jenga®. In our adapted task, group members were each requested to build a tower using 54 wooden bricks. The aim was to build a tower of maximum height (without letting the tower collapse) in a maximum of three minutes (an alarm clock on the table provided information about how much time was left to complete the task). Even though they would each work independently of each other on this task to build their own towers, members of the
same team would sit at the same table and their performance would be considered together with the performance of their fellow team members. Participants in the disjunctive group task condition were led to believe that only the highest tower of the team would be considered as a measure of the team’s performance. In the conjunctive task condition, participants were informed that the performance of the team would depend on the lowest tower built by the team. As our aim was to assess the effects of task type on regulatory focus (and not to examine intra-group dynamics due to individual differences in ability or task performance), we wanted to prevent team members from coordinating their efforts. This is why no verbal communication between team members was allowed while working on the brick task.

After the brick building task, participants were instructed to return to their laptop computer where they individually completed a questionnaire asking about the emotions they experienced after working on the brick tasks. Finally, we asked participants to indicate their gender, age, and their study major. Participants were then debriefed, thanked, paid, and dismissed.

**Dependent measures**

**Checks**

We first asked participants to identify the type of group task (disjunctive or conjunctive) they would work on as a team by clicking on a description of either a disjunctive or a conjunctive group task. We also assessed the variance in the height of the towers that participants built, as a behavioral indicator that the group task manipulation was successful. In line with previous research examining disjunctive and conjunctive group tasks (e.g. Kerr & Bruun, 1983), we anticipated that if our group task manipulation were successful, participants should display more intra-group variability in tower height in the disjunctive than in the conjunctive group task condition.

**Regulatory focus-relevant emotions**

After completion of the brick building task, we asked participants to indicate the extent to which they experienced each of 12 emotions when they considered how they thought their team had performed during the task (e.g. ‘To what extent did you experience [joy] when considering how your team performed during the brick-building task?’). Answers were provided by clicking with the mouse on a continuous line ranging from 0 ‘not at all’ to 100 ‘a lot’. The emotions we measured were intended to assess the regulatory focus participants had adopted, and included six emotions that represented the cheerfulness–dejection dimension (promotion emotions) and six emotions that reflected the quiescence–anxiety dimension (prevention emotions). The promotion emotions with a positive valence were happy, cheerful, and enthusiastic, while the promotion emotions with a negative valence were sad, unhappy, and down. The set of prevention emotions consisted of relaxed, quiet, and calm (as positively valenced emotions) and stressed, restless, and anxious (as emotions with a negative valence). Although we included positively and negatively valenced emotions in both cases, following Higgins and colleagues (1997), and Shah and colleagues (2004), we distinguish between promotion versus prevention-related emotions, instead of between positive versus negative emotions. Thus, we conceptualize dejection and cheerfulness as lying on the same bipolar (promotion) dimension indicating that shifts towards more cheerfulness imply less dejection, and vice versa. Likewise, prevention emotions (quiescence and agitation) are also conceptualized as opposite poles of the same dimension.

**Mean height of tower**

After completion of the brick building task, we assessed the height of the towers that were built, which we measured in centimeters after participants had completed the study and had left the room. As explained above, we predicted that group members in the disjunctive task condition would on average build higher towers than group members in the conjunctive task condition, and this is why we used the mean height of the towers built in each group as a behavioral level indicator of the regulatory focus adopted in this group.
Results

Checks Two participants in the disjunctive condition and one in the conjunctive task initially failed to indicate the correct type of task they would be working on. Before proceeding with the experiment we provided these two participants with feedback about the correct response. Therefore, their data were included in the final analysis.

To further check the effectiveness of our group task manipulation we also calculated the mean variance in the height of the towers built in each group. As anticipated, participants in the disjunctive group task condition on average displayed more variance in the height of the towers they built (M = 13.28) than members in the conjunctive group task condition (M = 5.29), t(28) = 3.60, p = .001. This result is consistent with the notion that the level of performance of people working on a conjunctive group task should be more similar to the performance of their fellow group members than when working on a disjunctive group task (see also Kerr & Bruun, 1983). It is also consistent with our hypothesis that conjunctive group members should aim at sufficient performance, whereas disjunctive group members should aspire to maximal performance (but only when they can still become the best member of their team).

Regulatory focus-relevant emotions A principal components analysis (using varimax rotation) on the emotion items revealed a two factorial solution which explained 62.8% of the variance. These components could be interpreted as reflecting a promotion and a prevention dimension (see Table 1 for the factor loadings of individual emotion items). As intended, the promotion dimension represented (positive and negative) promotion emotions, and the prevention dimension represented (positive and negative) prevention emotions. In both cases, positive and negative emotions loaded on the same factor but displayed opposite factor loadings. Thus, higher scores on the promotion dimension following task success indicate activation of a promotion focus and higher scores on the prevention dimension following task success indicate activation of a prevention focus.

We first checked whether the emotions reported were related to the objective performance on the building task, both at group level and at the individual level on the orthogonal factor scores (standardized around zero) that were obtained from the principal components analysis. At the group level, the objective performance of the group (average height of towers built) was not related to the emotions reported on the promotion or prevention dimension, in either experimental task condition (disjunctive vs. conjunctive). It is important to note that participants could not see other teams working on the same task and therefore had no way to assess how their team’s performance related to that of other teams. At the individual level, however, team members could see how they performed in comparison to other team members, and hence here we anticipated this would influence the emotions they experienced. When we examined the relation between objective performance and emotions reported at the individual level, in the disjunctive task condition, the group member who built the highest tower indeed reported more positive promotion emotions (M = .537) than the group member who built the lowest tower (M = .031), t(34) = 2.10, p = .043. No similar result was found

Table 1. Factor loadings of promotion and prevention emotions after varimax rotation

<table>
<thead>
<tr>
<th>Type of emotion</th>
<th>Prevention factor</th>
<th>Promotion factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Happy</td>
<td>.83</td>
<td></td>
</tr>
<tr>
<td>Enthusiastic</td>
<td>.86</td>
<td></td>
</tr>
<tr>
<td>Cheerful</td>
<td>.85</td>
<td></td>
</tr>
<tr>
<td>Down</td>
<td>.43</td>
<td>-.54</td>
</tr>
<tr>
<td>Sad</td>
<td>.42</td>
<td>-.60</td>
</tr>
<tr>
<td>Unhappy</td>
<td>.47</td>
<td>-.58</td>
</tr>
<tr>
<td>Calm</td>
<td>-.83</td>
<td></td>
</tr>
<tr>
<td>Quiet</td>
<td>-.66</td>
<td></td>
</tr>
<tr>
<td>Relaxed</td>
<td>-.74</td>
<td>.32</td>
</tr>
<tr>
<td>Tense</td>
<td>.83</td>
<td></td>
</tr>
<tr>
<td>Restless</td>
<td>.85</td>
<td></td>
</tr>
<tr>
<td>Anxious</td>
<td>.70</td>
<td></td>
</tr>
</tbody>
</table>

Note: Only values larger than .30 are indicated.
for the prevention emotions experienced in the conjunctive task, \( t(31) = .70, p = .491 \).

It is important to note that in the disjunctive task condition even the ‘worst’ performing group member reported a mean score on the promotion dimension that was greater than zero (i.e. the overall observed mean value). Thus, even though the experience of promotion-related emotions is affected by one’s individual performance relative to other group members, in all cases participants in the disjunctive task condition reported more positive promotion-related emotions than those in the conjunctive condition. Therefore, in the second analysis, we tested whether participants would experience more positive emotions on either the promotion or the prevention dimension in the disjunctive versus the conjunctive task condition, irrespective of their relative performance in the team. We performed a repeated measures GLM including group task type (disjunctive vs. conjunctive) as a between-subjects factor, and the two regulatory focus emotion dimensions (promotion vs. prevention) as a within-subjects factor. This analysis yielded a significant interaction between group task type and regulatory focus dimension, \( F(1, 102) = 4.68, p = .0335 \) (see Figure 2).6 Analysis of simple main effects indicated that group members in the disjunctive group task condition reported more (positive) emotions on the promotion dimension than conjunctive group members, \( F(1, 102) = 5.38, p = .022 \). Again, no reliable effect of group task type emerged for the prevention emotions, \( F(1, 102) = .54, p = .466 \). This result suggests that all participants in the disjunctive group task felt their team performed well. We return to this possibility in the discussion of Experiment 2.

**Mean height of tower** We examined the effect of the task type manipulation on the mean height of the towers built, at the group level (i.e. for every group we calculated the mean height of the towers built in that group). In five groups (two conjunctive and three disjunctive), one of the group members’ tower collapsed during the task. When the tower collapsed, participants had to start building from scratch and this made the performance of groups in which this happened qualitatively different from groups in which no tower collapsed. Because the number of cases in which a tower collapsed was too small to permit for separate statistical analysis of these groups, we excluded these five groups from further analysis, and performed all analyses reported below on the remaining 30 groups in which none of the towers collapsed during the group task.

The observed mean height of the towers built yielded evidence for our central prediction: on average, participants in the disjunctive group task condition built higher towers (\( M = 52.12 \)) than participants in the conjunctive group task condition (\( M = 45.42 \)), \( t(29) = 1.76, p = 0.045 \), one-tailed. This finding confirms our hypothesis that in the disjunctive group task condition participants members’ focus on advancement and growth should lead them to aim at maximal performance (instead of sufficient performance as in the conjunctive task) and as a result to build higher towers than participants working in the conjunctive condition.

**Discussion**

The main aim of this second experiment was to examine the robustness of the predicted effects
and extend the findings of Experiment 1 in a more realistic face-to-face group setting, using different and less obtrusive measures of regulatory focus. In line with our central prediction, we found that the interdependency structure of the group task affects the type of emotions group members’ experience, as well as on their task behavior. As a result, both emotions (as a result of task/team performance) and behavior were more in line with a promotion focus when group members worked on a disjunctive group task. As in Experiment 1, no reliable evidence for an opposite effect was observed for responses indicating a focus on prevention. We will further elaborate on this asymmetry of results in the general discussion.

In sum, this second experiment again substantiates our reasoning that the interdependency structure of a group can elicit a particular regulatory focus among its members. Importantly, the use of different procedures and measures allows us to show that this effect is not only evident in group members’ self-reported regulatory focus (Experiment 1) and task behavior (Experiment 1 and 2), but also emerges in the type of emotions group members experience (Experiment 2). Moreover, by showing that these effects also occur in face-to-face interacting groups (in Experiment 2), we make it less plausible that they stem from instrumental concerns in inter-group competition (as might have been the case in Experiment 1). Indeed, the converging evidence obtained in these two studies validates the notion that the observed effects result from the group dynamics elicited by the task interdependence individuals face in an intra-group context. In addition, the use of a different methodology in Experiment 2 offers further reassurance that any priming effects of the task instruction that may have played a role in the way participants completed the self-report measure of regulatory focus in Experiment 1 are excluded by using the emotion measure in Experiment 2, as the emotion measure is not semantically related in any obvious way to the instructions of the group task manipulations.

The effect of the disjunctive condition on the mean score on the promotion emotion dimension suggests that participants generally felt their team had performed well on the task and anticipated a positive outcome for their team. Our observations of the group interactions during data collection seemed to indicate that participants were generally positively engaged in the task. This was as anticipated. After all, people tend to assume they can perform well on tasks that do not require specific skills (unless they receive explicit information to the contrary) so that participants generally think their team performed well, and hence are more likely to report positive rather than negative emotions after working on a group task (Alicke, Klotz, Breitenbecher, Yurak, & Vredenburg, 1995; Dunning, Griffin, Milojkovic, & Ross, 1990; Weinstein, 1980).

**General discussion**

In two experiments we examined whether a particular regulatory focus can emerge from the nature of the interdependency structure in a group. To this end, we compared individuals working on disjunctive and conjunctive group tasks. We predicted that a disjunctive group task would elicit a promotion focus, whereas a conjunctive group task should be more likely to induce a prevention focus. These predictions were tested in both ‘virtual’ and real interacting groups, and by assessing regulatory focus in a variety of ways (self-reports, emotions, and behavior on different tasks). The results we obtained were consistently in line with our reasoning in so far as promotion-related responses were observed, but no evidence for our predictions was found on responses indicating a focus on prevention. Thus, the effects of Experiment 1 and Experiment 2 complement each other by showing similar results under different circumstances and with a range of measures tapping into different aspects of regulatory focus orientations. Nevertheless, we only demonstrated the adoption of a promotion focus in the disjunctive group task condition, while no evidence was found that group members adopt a prevention focus when working on a conjunctive group task. For example, in Experiment 1 the effect on ‘thinking inside/ outside the box’ was moderated by personal
promotion focus, but not prevention focus. In Experiment 2, effects on the emotion measure were only reliable for the promotion dimension and not for the prevention dimension. In this context, it is important to note that we have no reason to suspect (as can be seen in the manipulation checks) that the asymmetry in responses shown should be attributed to the differential effectiveness of our manipulations. However, we cannot exclude the possibility that the stronger promotion effects we observed stemmed from the specific group tasks used in this research. Nevertheless, an alternative and potentially more interesting explanation for this asymmetry can be derived from the work by Lee, Aaker, and Gardner (2000). These researchers demonstrated that whereas an independent self-construal is associated with a promotion focus, an interdependent self-construal is associated more strongly with a prevention focus. This would seem to suggest that individual interdependence in groups generally tends to make people more prevention focused (see also Paulus & Dzindolet, 1993). Arguably, this base rate interdependency effect might make it more difficult to further enhance group members’ prevention focus with additional measures such as examined here. At this point we can only speculate about this effect as a possible explanation for the asymmetry we observed. Nevertheless, we think it is noteworthy that our research shows that groups do not invariably induce a focus on prevention, but can also facilitate the adoption of a promotion focus, in this case when working on a disjunctive group task.

The current findings have both theoretical and practical implications. First of all, they contribute to the recent integration of self-regulation theories within group psychology (Faddegon et al., 2008; Levine et al., 2000; Sassenberg et al., 2003, 2007; Seibt & Förster, 2004; Shah et al., 2002, 2004). We add to this literature by showing that characteristics of the group and its interdependence structure—whether the group task is structured as disjunctive or conjunctive—can affect participants’ task motivation and task strategy, indicating the emergence of a regulatory focus that is best suited to the task’s characteristics. Also, extending previous work on conjunctive and disjunctive tasks, we show that the nature of the task structure can affect the strategy generally adopted by group members, which complements research demonstrating the effects of individual differences in ability or task performance in this context.

In this sense, our work also has consequences for the regulatory focus literature more generally. This literature has focused for a large part on individual preferences for a promotion focus or a prevention focus. The current research, together with earlier work on regulatory focus in group contexts (e.g. Faddegon et al., 2008; Levine et al., 2000; Sassenberg et al., 2007), reminds us that group-level factors can also have an impact on the regulatory focus of individual group members and demonstrates that their behavioral responses cannot simply be deduced from more chronic personal preferences for promotion or prevention. In addition, we were able to demonstrate direct effects of group task characteristics on group members’ regulatory focus, thereby providing an alternative way to induce a particular regulatory focus, in addition to previously documented methods such as changing the pay-off structure or priming ideals versus oughts (e.g. Crowe & Higgins, 1997; Freitas & Higgins, 2002).

The current findings also contribute to the group dynamics literature, and in particular to previous work on the interdependence structure of groups. Prior research on this topic is scarce and has predominantly focused on the amount of effort invested by group members as a function of task interdependence. The current research complements earlier work by showing the impact of the interdependence structure on the direction of the motivation shown, i.e. whether or not group members will adopt a promotion focus while working on the task. We hope that the novel perspective we offer provides a new impulse for future research on this topic.

Turning to the practical consequences of this research and the insights it yields, we think that a shift in group members’ regulatory focus can have important consequences for the functioning and performance of teams. After all, more often than not, particular team tasks require specific behavioral responses of group members such
as accuracy versus creativity, more global versus more local processing, or risk taking versus risk-avoidance. These are precisely the types of responses that characterize differences in regulatory focus, and the present research suggests that such responses can be altered by adapting the nature of the task interdependency structure.

Although it is often not possible to say that a team assignment fulfills all criteria of a disjunctive or conjunctive group task, many group situations contain a mixture of opportunities for group members to perform well for their team (disjunctive characteristics) as well as things they can do to spoil it for their group (conjunctive characteristics). It could be useful for managers to be aware of the motivational consequences of these group characteristics and adjust them if necessary to bring the interdependency structure more in line with the behavioral responses needed for the team to perform well (e.g. by creating a more disjunctive structure in a product development team, or a more conjunctive structure in a security team).

As with all research, the current studies also raise further questions to be examined in future work. For example, as indicated above, many group tasks involve both disjunctive and conjunctive aspects, and it would be interesting to examine the role of personal regulatory focus preferences in interpreting such situations. One might argue that promotion-focused group members will be more sensitive to the disjunctive characteristics of the task whereas prevention-focused group members might primarily address and respond to the conjunctive characteristics of the task. This in turn also leads to other interesting questions about diversity in groups with respect to the regulatory focus of its members, and how this affects the group’s performance. As many tasks involve both disjunctive and conjunctive aspects, a diverse group in terms of group members’ regulatory focus might be better equipped for such tasks and therefore likely will outperform a group that is more homogeneous in terms of regulatory focus. A final issue to consider in future research is what happens when group members work on a series of conjunctive or disjunctive tasks with the same team. When, for instance, one group member consistently outperforms other group members on a disjunctive task, this individual might start feeling personally responsible for the team result, so that over time the attainment goal of performing well may become a maintenance goal which has been associated with a prevention focus (Brodscholl, Kober, & Higgins, 2007). Similar mechanisms may come into play when a particular individual has specific expertise or abilities relevant to the group task. These are interesting possibilities that merit further research.

To conclude, with the current work we have opened up an important new area of theory development and research, that is relevant to increase our understanding of how the interdependence structure of groups impacts on the cognitive, strategic, and emotional responses of its members. In this way, our work connects different strands of research and contributes to the literatures on group dynamics and self-regulation, as it yields insights that have important practical implications and can help decide how to enhance team performance through the structure of group tasks.

Notes

1. We counterbalanced our manipulation in terms of outcome framing. That is, the outcome of the second task participants would allegedly have to work on was either presented as a gain or as a non-loss. Importantly, this framing did not affect self-reported regulatory focus, $t(125) = .282$, $p = .778$, nor any of our other dependent measures. Also, no interactions with group task framing were observed. Therefore, we will not discuss this factor any further when presenting the results of Experiment 1.

2. The reliability of the prevention scale could be improved by deleting one item (with deletion of this item resulting in an alpha of .63). Doing so also made the effect of group task on this scale somewhat stronger, although the general pattern of means was similar to the effect that is currently reported (i.e. with the scale comprising all items). However, because this is an existing scale that has been validated and found to be reliable in earlier research, we decided to retain all items in the scale for our main analysis.
3. We also administered this manipulation check in Experiment 1, but due to a technical problem only the data of the disjunctive task condition were retained in this first study, so that we could not compare responses of participants in the two experimental conditions. All the answers that were retained (i.e. that were provided by participants in the disjunctive condition) correctly indicated that participants were aware that they would be working on a disjunctive group task.

4. As in Experiment 1, we also examined the effects of personal promotion focus and personal prevention focus as a potential moderator of the experimental effects. Examination of these data only revealed a positive correlation between personal promotion focus and emotional responses on the promotion dimension ($r(104) = .26, p = .001$). This is consistent with the main effect of personal promotion focus on self-reported regulatory focus observed in Experiment 1 and empirically validates our interpretation of this emotion dimension as indicating a focus on promotion. Importantly, no higher-level interactions with personal promotion or prevention focus were observed ($F$-values < 1), nor did inclusion of the personal regulatory focus measures affect the observed interaction between group task and emotion dimensions. For simplicity’s sake, therefore, we excluded the personal promotion and prevention measures from the final analysis.

5. We observed an Intra Class Correlation (ICC) of .33, $p = .001$ for the promotion dimension and an ICC of .031, $p = .366$ for the prevention dimension. This is an indication of interdependence between the responses of members of the same group for the promotion but not for the prevention dimension.

   Therefore, we also analyzed our results at the group level. This analysis yielded a similar pattern of results (promotion dimension: $M_{\text{disjunctive}} = .21, M_{\text{conjunctive}} = -.21$; prevention dimension: $M_{\text{disjunctive}} = -.07, M_{\text{conjunctive}} = .07$). However, due to the relatively small number of groups observed, the group-level effect was only marginally significant, $F(1, 33) = 3.22, p = .08$.

   Also the simple main effects for the group-level results revealed similar results as the individual level analyses: $F(1, 33) = 3.34, p = .077$ for the promotion dimension; and $F(1, 33) = 1.46, p = .235$ for the prevention dimension.

6. Please note that in Figure 2 standardized factor scores are displayed. Values above zero therefore indicate scores higher than the overall observed mean; scores below zero indicate scores lower than the observed mean.

References


Higgins, E. T., Friedman, R. S., Harlow, R. E.,  


**Biographical notes**

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**Daan Scheepers** is associate professor at Leiden University. His research is directed at the motivational aspects of group processes and intergroup relations. More specifically, his work focuses on: (1) the motivational states of threat and challenge in relation to social identity and intergroup relations; (2) the functions of ingroup bias; and (3) regulatory focus in relation to group dynamics.