Regulary focus in group contexts

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Regulatory Focus in Group Contexts

PROEFSCHRIFT

Ter verkrijging van
de graad van Doctor aan de Universiteit Leiden,
op gezag van Rector Magnificus prof.mr. P.F. van der Heijden,
volgens besluit van het College voor Promoties
te verdedigen op dinsdag 20 januari 2009
klokke 16:15 uur
door

Krispijn Johannes Faddegon
geboren te Leiden
in 1976

Promotiecommissie

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INTRODUCTION

Remember the burst of the dotcom bubble at the start of 2000: the economy had been growing steeply due to the computer and internet revolution that was taking place, and optimism for the future was abound. As a result people started buying shares of internet and computer companies, and each rise in shares led to a new increase of the shares' values. The focus on success was contagious: people's optimistic beliefs strengthened each other, and made generally cautious individuals become risky investors in stock market shares. Almost everyone was eager to share in the benefits and did not want to miss the opportunity of making profit. For many people the possibility of losing money did not even come to mind. The burst of the bubble therefore came as an unpleasant surprise.

The example above illustrates how a group of individuals can collectively come to adopt a mindset that is focused on the presence or absence of potential gains instead of the presence or absence of potential losses. The current thesis builds on recent a theory examining such differences in focus, i.e. "regulatory focus theory", (Higgins, 1997). This theory separates individuals based on this distinction: a "promotion focus" leads to a greater sensitivity to the presence and absence of positive outcomes whereas individuals with a "prevention focus" are more concerned with the presence and absence of negative outcomes. How individuals' regulatory focus is affected by the group they are in and how in turn the individual group members' regulatory focus impacts on the group's performance has not been systematically examined so far. This is the aim of the present thesis.

Regulatory Focus: a Short Introduction

Regulatory focus theory (Higgins, 1997) 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 (gains vs. non-gains). As a strategy, promotion focused individuals prefer an *eager* manner to attain their desired end-states (Higgins, 1997). In contrast, a prevention focus is founded 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). On the emotional level promotion focused individuals tend to experience outcomes on a cheerfulness – dejection dimension, while a prevention focus gives rise to outcome evaluation on a quiescence – agitation dimension.

Regulatory focus is both a chronic trait (Higgins 1997; Förster, Higgins, Idson, 1998) and a state than can be induced by the situation (Higgins 1997; Crowe & Higgins, 1997). Research in which regulatory focus was either manipulated or measured has demonstrated a range of behavioral responses specific for a promotion focus and prevention focus. For instance, whereas a promotion focus has been associated with creativity, speediness, global processing and abstract language usage, a prevention focus has been associated with analytic thinking, accuracy, local processing and more concrete language usage (Förster, & Higgins, 2005; Förster, Higgins, & Taylor Bianco, 2003; Friedman & Förster, 2001; Seibt & Förster, 2004; Semin, Higgins, Gil de Montes, Estourget, & Valencia, 2005). Thus, a promotion focus and a prevention focus have different cognitive, strategic and emotional consequences that give rise to a wide range of different and often antagonistic behavioral responses.

On the basis of regulatory focus theory the principle of regulatory fit theory has been defined (Higgins, 2000). When the manner in which an individual works on a task, is in agreement with the regulatory focus of that individual (eager and promotion or vigilant and prevention), the individual experiences regulatory fit. Experiencing regulatory fit (vs. non-fit) in general

leads to better task performance (Higgins, 2000; Shah, Higgins, & Friedman, 1998; but see also Vaughn, Malik, Schwartz, Petkova, & Trudeau, 2006) and to increased perceptions of value (Higgins, 2000, 2006). Thus, via regulatory fit, regulatory focus also affects the amount of task motivation and increases the extent to which outcomes are valued (either positively or negatively).

REGULATORY FOCUS IN GROUP CONTEXTS: A BACKGROUND

The aim of the current thesis is to examine regulatory focus in group contexts. There are several reasons why this is a worthwhile endeavor. I detail the three most important reasons for the current research focus in the paragraphs below.

Reason 1: the Individual versus the Group

Previous research on regulatory focus has predominantly been performed at the level of the individual (but see also: Florack & Hartmann, 2007; Levine, Higgins, & Choi, 2000; Sassenberg, Jonas, Shah, & Brazy, 2007; Sassenberg., Kessler, & Mummendey, 2003; Seibt, & Förster, 2004; Shah, Brazy, & Higgins 2004). This research demonstrated that an individual's regulatory focus can be the consequence of personality characteristics (Higgins, 1997) and situational factors (e.g. outcome framing, Crowe & Higgins, 1997). The research and literature on group behavior, however, shows that an individual's behavior often cannot simply be inferred from his/her personality characteristics. For instance, group members tend to conform to group norms, and as a result may neglect their own preferences or fail to mention information indicating that their group might be wrong ('groupthink', Janis, 1972). Likewise, people in groups tend to make more polarized decisions than individuals do - showing either a 'risky shift' or a 'cautious shift', depending of what is more characteristic of the group (Fraser, Gouge, & Billig, 1971;

Wallach, Kogan, & Bem, 1962; Myers, 1982). Finally, also research on motivation in groups shows that whether the self is defined in individual terms or in social terms differentially affects group members behavioral responses (Ellemers, De Gilder, & Haslam, 2004). That is, the level of self-definition determines the extent to which an individual is motivated to pursue instrumental personal goals or goals that contribute to the group as a whole (e.g., comply with the norms of the group).

As these previous studies clearly demonstrate, individuals often think and behave differently once they are part of a group. In the case of regulatory focus, therefore, it cannot be assumed that an individual's regulatory focus can simply be inferred from the individual characteristics of each group member. Most likely the regulatory focus of an individual is also affected by the group an individual is in. In some situations an individual's regulatory focus may even fully be the consequence of the group context. As humans live in a social context, it is important to know whether and if so to what extent group contexts impact on the regulatory focus of its members.

Reason 2: Consequences of Regulatory Focus for the Group

As noted before, having a promotion focus or a prevention focus has many different consequences for an individual's motivation and behavior (Higgins, 1997; see also: Förster, & Higgins, 2005; Friedman & Förster, 2001; Seibt & Förster, 2004; Semin et al., 2005). These motivational and behavioral differences in turn can influence how a group functions which is composed of group members that are either promotion or prevention focused or represent a mix of both foci. What the most desirable behavioral responses of group members are, can greatly differ depending on the tasks the group works on. A research and development team, for instance, in which creativity is important, may profit most from promotion focused group members. By contrast, a security team may profit most from group members that are prevention focused as they tend to be accurate and vigilantly try to avoid making mistakes. Other

more complex tasks may be best performed by teams that contain members that are creative and focused on success (promotion focus) as well as members that try to prevent failure and work accurately (prevention focus). Thus, although the needs of a group for promotion or prevention consistent responses may differ, the composition of the group in terms of the regulatory focus of its members is likely to affect the outcomes and effectiveness of the group. This makes studying of regulatory focus also of practical value: not only will it provide insight in the factors influencing an individual's regulatory focus and in the group processes that are involved in a theoretical sense, but its results may also be applicable in a variety of work situations where it might help understand how to enhance motivation and performance of the members of a team.

Reason 3: Motivation in Groups: Amount vs. Direction

How groups function for a large part depends on the motivation of individual group members. Accordingly a lot of research has been devoted to examining motivation in groups. Classic experiments for example demonstrated that depending on the dispensability of a group member's efforts for the group, the group member can either become less motivated (i.e. "social loafing") or more motivated (i.e. "social compensation") to invest effort in the group task (Kerr & Brun, 1983; Kravitz & Martin, 1986; Wiliams & Karakau, 1991). Other work showed the importance of group cohesiveness for group members' motivation to perform well for their team (Gaertner, Mann, Dovidio, & Murell, 1990). Previous research thus examined how different group situations impact on the *amount* of motivation group members have. Very little research so far addressed the *direction* of motivation as a consequence of group membership. As also alluded to in the previous paragraph, the direction of group members' motivation is not trivial. After all, an individual can be very motivated to work on a task in a way that does not contribute to the performance of the team. For instance, in a development team a strong

motivation guided by a non-loss vs. loss framework may lead to less productivity because it suppresses the creativity necessary for developing new ideas. Being strongly motivated to work creatively on tasks on the other hand may be functional in a development team but not in an operational team working in a nuclear power plant. Thus it is not only important to examine the amount of motivation as a function of the group situation, but also the direction of that motivation. Examining regulatory focus in group contexts can provide more insight in both the amount of motivation group members have (via 'regulatory fit'; see Higgins, 2000) as well as what the motivation is aimed at (gains vs. non-gains, or non-loss vs. loss; Higgins, 1997).

The Group Context: Bottom-Up vs. Top-Down

In this thesis I discern two mechanisms by which an individual's regulatory focus can be influenced by the group. First a group can influence an individual's regulatory focus in a *top-down* fashion. With a top-down fashion I mean that the regulatory focus of the group is a pre-given and does not arise from the group dynamical qualities of the group. This happens, for instance, when a new member enters a team that has over time developed a group norm for a promotion focus or a prevention focus. When a group member enters this group the member immediately is under the influence of the regulatory focus endorsed by the other group members. An example of a top-down influence of the regulatory focus of the group can derived from research by Sassenberg and colleagues (2007). Sassenberg and colleagues demonstrated that a promotion focus is associated with groups high in power, whereas prevention focus is associated with groups low in power. As the power of a group is a pre-given characteristic of the group, a new group member that enters a high or low power group will immediately be affected by the regulatory focus endorsed by members of that group.

Second a specific regulatory focus can emerge from the group in a *bottom-up* fashion. This means that the interdependency structure of the group

or the task the group faces naturally leads to the development of a promotion or prevention focus among group members. This might happen for instance when a newly formed group starts working on a task that calls for either a promotion focus or a prevention focus. Thus in the case of a bottom-up process, the focus of the group is neutral when the individual enters the group but the characteristics of the group or the group task are such that the group is more likely to develop a promotion or prevention focus over time. An example of a study examining regulatory focus in a bottom-up fashion is provided by the research of Levine and colleagues (2000). In this study participants collaborated working on a signal detection task in three-person groups. Outcomes for the group were either framed in terms of gains vs. non-gains (promotion manipulation) or in terms of loss vs. non-loss (prevention manipulation). As time passed, participants' responses converged and collectively group members started behaving in an eager or a vigilant manner depending on the regulatory focus manipulation their group received.

Of course the distinction between top-down and bottom up is not absolute. For instance, after a group focus is established in a bottom-up way, the newly developed group focus can also start influencing the regulatory focus of new group members in a top-down fashion. The differentiation is nevertheless useful I believe, as it helps to distinguish between different ways in which regulatory focus can play a role in groups

OVERVIEW OF THE CHAPTERS

In this thesis I present three lines of research examining regulatory focus in group contexts. Chapter 2 considers how the group impacts on the regulatory focus of individual group members in a top-down fashion, whereas Chapter 3 examines the impact of the group task on the regulatory focus of group members in a bottom-up fashion. In Chapter 4 it is examined how the

composition of the group in terms of promotion and prevention focus influences task performance by the group.

In chapter 2 the question is addressed whether participants are affected by regulatory focus strategies that are in a top-down fashion imposed on the group as part of the group's identity. The group's identity is expressed by mottos ostensibly chosen by previous minimal group members that either communicate a promotion focus or a prevention focus (based on a mottos questionnaire assessing chronic regulatory focus, see Van Stekelenburg, 2006). The main prediction is that the regulatory focus identity of the group impacts on individual group members' promotion or prevention focus consistent responses in an interplay with group members' personal regulatory focus preferences.

Chapter 3 examines whether regulatory focus among group members can arise in a bottom-up fashion from the interdependency structure of the group. It is argued that the interdependency that is characteristic of a disjunctive group tasks (team performance equals performance of best performing member) leads to a different regulatory focus than an interdependency structure typical for a conjunctive group task (team performance equals performance of worst performing member). Specifically, it is predicted that a disjunctive group task leads to the emergence of a promotion focus and a conjunctive group task to the emergence of a prevention focus among group members. This hypothesis is tested in both virtual groups and in real groups that work on a Jenga® brick building task.

In chapter 4, the question is addressed how the composition of a team in terms of the promotion focus and prevention focus of its group members affects the performance of the team. It is argued that promotion and prevention focused members excel at different aspects that are relevant for complex team task performance. As a consequence, teams diverse in regulatory focus are predicted to demonstrate higher overall performance on these complex tasks than teams that solely contain promotion or prevention focused group

members. This general prediction is tested in experimental groups working on a brainstorm task and in professional hockey teams with real competition results as a group performance measure.

Finally, chapter 5 summarizes and elaborates on the results of the different studies presented and discusses the consequences for the literatures on regulatory focus theory and on group processes. Furthermore, limitations of the present thesis will be discussed and suggestions are presented for future research.

Chapter 2

If We have the Will, there will be a Way: Regulatory Focus as a Group Identity[1]

[1] This chapter is based on Faddegon, Scheepers, & Ellemers (2008)

INTRODUCTION

Could the motto 'Think different' increase the willingness to take risks and improve the creativity of a computer company's software development team? Or would a team working in a nuclear power plant start working more safely and accurately when the motto of the power plant is: 'saving an ounce of prevention is worth a pound of cure'? In other words: can group mottos communicate a promotion or prevention group identity, which influences the behavior of individual group members? We present two studies in which a promotion or prevention motto is used to characterize the identity of a group – conveying the group's collective regulatory focus. We hypothesize that this collective regulatory focus can lead individual group members to adopt a promotion or prevention strategy and will influence their behavior on group relevant tasks.

In the present research, we apply *regulatory focus theory* (Higgins, 1997) to groups to examine these predictions. So far, regulatory focus research predominantly concentrated on the behavior of individuals. Relatively little is known about the ways in which regulatory focus processes operate at the group level. In many cases, however, people's behavior at the group level cannot simply be inferred from individual level considerations. People who are part of a group often start thinking and behaving differently than they would do as individuals (Turner, 1991; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). For instance, they tend to conform to group norms, and as a result may neglect individual information indicating that their group might be wrong ('groupthink', Janis, 1972). Likewise, people in groups tend to make more polarized decisions than individuals do - showing either a 'risky shift' or a 'cautious shift', depending of what is more characteristic of the group (Fraser, Gouge, & Billig, 1971; Wallach, Kogan, & Bem, 1962; Myers, 1982). Both examples illustrate that individuals' behavior and the strategies they use when they make decisions can be influenced by their membership in a group. We

propose that membership in a group can also influence the regulatory focus strategies used by group members in ways that cannot simply be deduced from their individual regulatory focus inclinations. In this work we will argue that regulatory focus strategies can be a part of the group's identity. A phenomenon we will refer to as 'collective regulatory focus'.

Regulatory Focus Theory

Regulatory focus theory distinguishes self-regulation through a "promotion focus" from self-regulation through a "prevention focus" (Higgins, 1997). Self-regulation through a *promotion* focus, which is rooted in the need for fulfillment of *ideals*, is characterized by framing outcomes in terms of *gains vs. non-gains*. People who self-regulate through a *prevention* focus are guided by *oughts* and *obligations*. Because they are mainly concerned with living up to their *responsibilities*, they tend to frame outcomes in terms of *non-losses vs. losses* (e.g. Roney, Higgins & Shah, 1995; Shah, Higgins, & Friedman, 1998).

Apart from these cognitive framing processes, regulatory focus also has emotional and behavioral consequences. People in a promotion focus typically experience cheerfulness after success and dejection after failure (Higgins, Shah, & Friedman, 1997), whereas prevention focused people experience quiescence after success and agitation after failure. In addition, different self-regulation strategies have been shown to result in different behavioral patterns on a range of tasks. For example, people in a promotion focus perform better on tasks that call for creativity, while people in a prevention focus perform better on analytical skills tasks (Friedman & Förster, 2000, 2001; Seibt & Förster, 2004). On tasks characterized by a speed/accuracy tradeoff, promotion focused individuals tend to be quick but not so accurate whereas prevention focused individuals tend to be accurate but slow (Förster, Higgins, & Bianco, 2003). On signal detection tasks (SDTs) those who are promotion focused tend to show a liberal bias (saying "yes" when uncertain), whereas people who are prevention

focused are more inclined to show a conservative bias (saying "no" under uncertainty; Crowe & Higgins, 1997)

Although people show individual differences in their generic preference for promotion vs. prevention strategies, which of these two strategies is actually used also depends on the situation. The confrontation with a potential loss can trigger prevention-focused responses, even in someone with a chronic promotion focus, while someone with a general prevention preference can start using promotion strategies when a potential gain emerges (Crowe & Higgins, 1997). The present research examines whether promotion or prevention strategies that are part of the identity of the group can function as behavioral cues that likewise elicit promotion-oriented vs. prevention-oriented responses among individual group members.

Collective Regulatory Focus

Recently, researchers have begun to apply regulatory focus principles to group situations (Levine, Higgins, & Choi, 2000; Sassenberg, Jonas, Shah, & Brazy, 2007; Sassenberg, Kessler, & Mummendey, 2003; Seibt, & Förster, 2004; Shah, Brazy, & Higgins, 2004). For instance, Sassenberg, and Shah and their colleagues have shown that group members' individual promotion or prevention tendencies influence their relative preference for different types of in-group bias. This research shows how *individual* regulatory focus preferences affect the way people respond to others in a group context. In the current research we take a different approach, as we examine how the "*collective*" promotion or prevention focus of a *group* (Shah, Brazy, & Higgins, 2002), influences the behavior of individual group members.

For our reasoning, we build on notions from *social identity theory* (Tajfel (1978); Tajfel & Turner, 1979) and *self- categorization theory* (Turner et al., 1987). Social identity theory states that the self is defined in terms of a personal identity and a social identity. The personal identity refers to the characteristics that are unique for the individual in question, and define the

individual self in relation to others. The social identity is that part of the self that is based on the characteristics of the groups one belongs to, and indicates how the group self can be distinguished from those who belong to other groups (see also Haslam & Ellemers, 2005).

According to self-categorization theory, people validate their beliefs about the world by comparing their own views with those held by other members of the groups they belong to (Turner et al., 1987; Turner, 1991). At the same time, members of other groups – out-group members who are less similar to the self - are considered less valid as a point of reference for this purpose. Especially in situations that are new or ambiguous, that is, when it is not entirely clear which behavior or strategy to employ, group members tend to look for what is prototypical for their group and use this information as a normative guideline for their own behavior (Oakes, Haslam, & Turner, 1994; Turner, Oakes, Haslam, & McGarty, 1994). Based on this reasoning, we expect that when groups are characterized by a collective focus on promotion or prevention, people are more likely to adopt the behavioral strategies endorsed by their own group (the in-group) than the ones advocated by members of another group (the out-group).

As indicated above, so far regulatory focus has primarily been studied as an individual inclination. In terms of our social identity analysis, this implies that previous work has mainly addressed the *personal* identity level, to examine how this affects individual behavior in a group context. In this paper we expand previous research on regulatory focus as we take into account the possibility that *social* identities (and the fact that *groups* can also be characterized as having a promotion or a prevention focus) can also affect the regulatory focus strategies used by individual group members. Specifically, we argue that through the process of self-categorization, people can adopt that regulatory focus strategy that is prototypical or normative for their group. Because the process we hypothesize operates via self-definition and the adoption of existing group norms, it differs from previous work that mainly

focused on the *development* of common norms during group interaction (e.g., Levine et al., 2000). Importantly, the process we propose is not restricted to face-to-face interactions in which people can negotiate about the adoption of a common strategy, or to small groups in which individual group members can actually observe and mimic each others' behavior to develop a common behavioral norm. Instead, we posit that individuals can internalize the collective regulatory focus that characterizes the group they belong to, even in situations were no such interaction is possible (e.g. in virtual teams). That is, we should be able to observe this process without other group members being physically present to observe or comment upon the individual's behavior, or even without the individual knowing who these other in-group members are. Because the operation of a collective regulatory focus does not depend on the physical presence of group members, the results of our research have implications not only for small face-to-face groups but also for larger organizations or even broader social categories.

In sum, in the present research we focus on the group-level and social identity based regulatory focus, which we will refer to as *collective regulatory focus* (Shah et al., 2002). In line with the definition provided by Shah et al. (2002), we use this term to refer to promotion or prevention related goals and strategies that have become part of a group's identity, and direct individual group members towards promotion or prevention oriented behavior. Thus although collective regulatory focus can be seen as a group norm or group strategy, it is a norm/strategy that operates via the social identity of the group members through the process of social categorization.

In the present research the collective regulatory focus is conveyed with a group motto communicating that either promotion or prevention strategies are generally preferred by in-group (vs. out-group) members. Mottos offer an ideal means to capture and express a collective regulatory focus not only because they can carry different self-regulatory meanings (see examples and validations below) but also because they are often short, straight-forward, and

"catchy", and can be easily applied to a wide variety of groups (as sports teams mottos, or company slogans).

As briefly indicated above, the *development* of regulatory focus group norms has previously been studied by Levine et al. (2000). This initial study has demonstrated that the behavioral preferences of individuals who work together on a joint task can converge over time, to reflect a common focus on either promotion or prevention (depending on whether the outcomes are framed as gains vs. non-gains, or losses vs. non-losses). With the current work we aim to extend the reasoning offered by Levine et al., by demonstrating that the mere categorization of the self into a group that expresses a distinct regulatory focus preference can also influence subsequent behavior on an independent task. To do this, we will provide information about general promotion or prevention preferences that are part of the group's identity, instead of defining a specific task in terms of promotion or prevention outcomes. We think this represents a significant extension to previous research that has important implications, as specific outcome structures are less easily generalized to different situations. That is, outcome structures are likely to differ from one situation to the next, so that people's tendency to show converging promotion or prevention behavior might be task or situation specific, and does not necessarily translate to other types of tasks with different or less clear outcome distributions. If, however, people perceive a certain strategy as defining their collective identity, that is, as being part of *who they are*, they will be more likely to adopt that strategy across different situations.

In this respect it is also relevant to compare and contrast our work to the work of Seibt & Förster (2004), that has some communalities to our work in that it shows that group identities (i.e. self-stereotypes) can indirectly contribute to a person's regulatory focus. More specifically, the work shows that positive and negative self-stereotypes can induce promotion and prevention strategies, respectively. However, in the work of Seibt & Förster (2004) the relevant group feature consists of the positive/negative expectations people

have of others about the performance of the group on a specific domain. Unique to our research is that the regulatory focus strategy itself contributes to the identity of the group. Consequently, the collective regulatory focus is not domain-specific, but influences the regulatory focus strategy of the group members in general.

Obviously, the influence of a group-level promotion vs. prevention orientation occurs against the background of individual self-regulatory preferences. Indeed, although we argue that the collective regulatory focus of a group can influence the behavior of individual group members, it is hard to predict whether this will completely overrule individual self-regulatory preferences. In other words, the primary effect of the collective regulatory focus may well be that it *modifies* the effects of more chronic individual preferences, in that individual preferences for promotion vs. prevention are enhanced when these match the collective focus of the group but are diminished when individual self-regulatory preferences are incompatible with group norms. In fact, this would be consistent with the so-called *regulatory fit* principle, indicating that people generally prefer and perform best in situations with characteristics that match their own chronic focus (Higgins, 2000; Shah et al., 1998).

The Current Research

To test our assertions we employed a minimal group paradigm. Central to this paradigm is that persons are categorized based on a superficial characteristic to one group instead of another (in our case the 'holistic team' instead of the 'detaillistic team'). In this paradigm, the only way people can come to adopt the group norm is by defining the self as a member of this group (self-categorization) and hence adopting characteristic group behaviors as normative guidelines for the self (Turner et al., 1987). Furthermore, in the minimal group paradigm the group's identity is based on those characteristics that help distinguish the group from other relevant groups. As we placed

participants in an inter-group situation in which the groups were only differentiated by the preferred regulatory focus strategies that were voiced by members of both groups, these strategies provided the only way to attach meaning to an otherwise meaningless group, and hence constitute a central part of the group's identity in this case. Moreover, in our experiments people worked in separate cubicles, so the physical presence of other group members could not be of influence. In sum, we argue that by making use of a minimal group paradigm and by putting individuals in a virtual group situation we provided the conditions in which any observed effects of collective regulatory focus can only be attributed to social identity effects.

We conducted two experiments to examine our central hypothesis that when a common group identity is salient, people's regulatory focus not only depends on their individual regulatory preferences, but also on the collective regulatory focus of their group. We manipulated collective regulatory focus by introducing group mottos. We assessed group members' *a priori* personal regulatory focus (as an independent variable) with a signal detection task in Experiment 2.1, and with the Regulatory Focus Questionnaire (Higgins, Friedman, Harlow, Idson, Ayduk, & Taylor, 2001) in Experiment 2.2.

In both studies, we examined how collective and personal regulatory focus preferences affected group members' strategic behavior on the signal detection task, as our main dependent variable. This measure is particularly useful as it is diagnostic for the emergence of both a promotion focus and a prevention focus in a single index (Crowe and Higgins, 1997). In the second experiment we also assessed participants' emotional responses as an additional indicator of the regulatory focus they had adopted. The second experiment additionally explored whether participants' reliance on the information they had received about the group's collective regulatory focus was enhanced under conditions that increased in-group identification, to further substantiate that collective regulatory focus is an identity-based phenomenon.

Our main hypothesis for both studies is that the collective regulatory focus of the group strengthens (promotion) or diminishes (prevention) the influence of group members' chronic regulatory focus preferences on their strategic behavior on a signal detection task. In the second experiment we expect this interaction to be especially strong for high identifiers.

EXPERIMENT 2.1

Method

Participants & Design. Participants were 76 undergraduate students (64 women and 12 men, mean age = 21, 17-28) at Leiden University. We used a two-factorial design with one dichotomous manipulated variable (collective regulatory focus: promotion vs. prevention) and one continuous measured variable (individual focus). Individual focus was assessed with an initial measure that revealed individual promotion vs. prevention preferences on the signal detection task.

Procedure. The experiment was presented to the participants as research concerned with 'mental association style' and decision making. Upon arrival in the lab, participants were seated in separate cubicles, where they received further instructions via a computer. Participants were told that we were examining the relation between the way people make associations and the decisions they make. This cover story enabled us to employ a minimal group paradigm. After this general information about the purpose of the experiment, but before actual categorization in minimal groups, participants first completed the signal detection task as a pre-measure. After this, participants were assigned to a minimal group. For this they completed a *mental association test* that was ostensibly used to distinguish between "holistic" and "detaillistic" thinkers. In reality all participants were categorized as belonging to the "holistic" group. After categorization into these minimal groups, the collective

regulatory focus manipulation followed. Participants were shown three mottos which were allegedly chosen by fellow group members (i.e., other "holistic" thinkers) at the end of previous sessions in order to characterize the in-group. In order to make this manipulation more convincing, participants were told that at the end of the experiment they were allowed to choose their favorite top-three motto's themselves. In the promotion collective regulatory focus condition these mottos emphasized a promotion focus (e.g. 'If there is a will, there will be a way'), and in the prevention collective regulatory focus condition the mottos conveyed a prevention focus (e.g. 'An ounce of prevention, is worth a pound of cure'). The mottos were selected from the list of proverbs communicating promotion vs. prevention, that has been developed and validated by Van Stekelenburg (2006).[2] Besides the mottos that characterized their own group, participants were also presented with the favorite mottos of the out-group (which always contained mottos expressing a collective regulatory focus that was opposite to the in-group preference). We did this to rule out the possibility that the effects of the collective regulatory focus manipulation could be attributed to the greater cognitive salience of the in-group mottos.

Dependent measures

Checks. Directly after the collective regulatory focus manipulation we asked participants to indicate to which of the two groups they belonged. Then participants were presented with the 6 mottos that had been used to induce the collective regulatory focus (3 allegedly selected by the in-group, and 3 characterizing the out-group) and were asked to indicate which mottos were

[2] In Van Stekelenburg's work, PCA analyses of this proverb scale revealed two factors that construed a promotion and a prevention component. Moreover, both proverb scales highly correlated with the Lockwood scale (Lockwood, Jordan, & Kunda, 2002): $r = 0.76$ for promotion, and $r = 0.84$ for prevention.

chosen by members of their own group and which mottos were preferred by the other group.

Response bias. To assess response bias in signal detection behavior we used the recognition memory task that has been employed for this purpose in previous regulatory focus research (Crowe & Higgins, 1997; Friedman & Förster, 2001; Levine et al., 2000). In the first (remembrance) phase of this task, participants were shown 20 non-words (e.g. tipuv, nolem, yudac) one after the other, for 2 seconds each. After the remembrance phase, participants worked for thirty seconds on a filler task, for which they had to distinguish odd numbers from even numbers ("Is this an even number?" Yes/ No). After the filler task the second (recognition) phase of the SDT followed. During this task, participants were shown 40 non-words: the 20 non-words from the previous list, intermingled with 20 new non-words. The presentation of the non-words in the recognition phase was randomized. The participant's task was to decide whether the presented non-word had been included in the previous list ("Have you seen this non-word before?" Yes/No). To indicate 'Yes' participants were instructed to press the green button (this was the '?'- key), and for a 'No' response to press the red button (the 'z' key).

Our main dependent measure was the response bias (Br) participants showed when working on the recognition memory task. We analyzed the recognition task data using the *two-high threshold model*, proposed as recommended by Snodgrass (1988) and previously used by Friedman & Förster (2001). The Br, or response bias, indicates the extent to which someone is motivated to insure hits (i.e., to correctly identify a non-word from the previous list) and avoid misses (fail to identify a non-word that was included in the previous list), versus the extent to which one is motivated to insure correct rejections (correctly identify a new non-word as new) and avoid false alarms (falsely identify a new non-word as a word from the previous list). Mathematically, Br is calculated using the formula Br = p(False Alarm)/ (1 – p(Hit) + p(False Alarm)). Higher values of Br indicate a promotion focus (i.e., a

more liberal bias, or the tendency to say "Yes" when insecure about the correct answer), compared to lower values which indicate a prevention focus (i.e., a more conservative bias, or the tendency to say "No" when insecure; Snodgrass & Corwin, 1988).

Results

Checks

All participants recalled their group membership in line with the intended manipulations. Nearly all participants also correctly identified which mottos characterized the in-group, and which mottos were preferred by the out-group. Only 8 participants mistakenly assigned one out of 6 mottos to the wrong group. Because they correctly reproduced whether the main emphasis of the in-group and the out-group was on promotion or prevention as intended, these participants were retained for further data analysis.

Response bias

The response bias measure (Br) was analyzed using multiple regression, in which the collective regulatory focus manipulation was entered as a dummy variable (-1 = prevention, +1 = promotion), and the individual initial bias scores were standardized. A main effect of individual focus was observed, $\beta = 0.62$, $t(72) = 6.63$, $p < .001$, which was qualified by the predicted two-way interaction between participants' individual focus and collective regulatory focus, $\beta = .22$, $t(72) = 2.38$, $p = .020$[3] (see Figure 2.1). Simple slope

[3] A similar interaction between individual focus and collective focus was obtained using the correction for the Hit rates and False Alarm rates described by Snoddgrass: ß = .43, $t(72) = 1.93$, $p = .058$ for Experiment 2.1; ß = .34, $t(72) = 2.38$, $p = .02$ for Experiment 2.2. Overall mean values of response bias (Br) were for Experiment 2.1: Br = .61; for Experiment 2.2: Br = .55. We also checked for effects on another index within signal detection research, the discrimination index (Pr). This index indicates the extent to which a participant is able to detect the presence of an old non-word amidst new non-words, and vice versa. We did not expect nor observed effects of regulatory focus on this variable, in line with previous work (Crowe & Higgins, 1997; Friedman & Forster, 2001; Scholer, Stroessner, & Higgins, 2008) There was however a main effect of identification in Experiment 2.2 indicating that people in the high identification condition performed better (Pr =

analyses (see Aiken & West, 1991) revealed significant effects of participants' individual focus in both experimental conditions, consistent with the individual focus main effect.

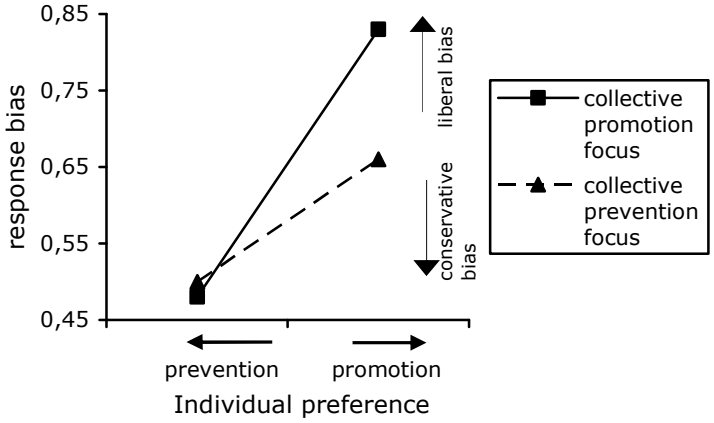

Figure 2.1 Response bias as a function of collective regulatory focus and individual regulatory focus.

Both in the collective prevention condition and in the collective promotion condition participants showed greater evidence of liberal bias on the signal detection task, as their individual orientation to this task was more promotion focused, and more evidence of a conservative bias when their individual orientation was more prevention focused. The interaction, however, indicates that the increase in liberal bias as a function of an individual promotion focus is significantly more pronounced in the collective promotion condition β = .68, $t(38) = 5.74$, $p < .001$, whereas in the collective prevention condition, the effect of the individual tendency towards promotion (vs. prevention) is less strong β = .50, $t(34) = 3.39$, $p = .002$. In other words participants' initial task preference

.53) than people in the low identification condition (Pr = .44), F (1, 79) = 5.23, p = 0.03. This effect is in line with previous work within the social identity domain (e.g., Ellemers et al., 1997). For Experiment 2.1 the overall mean Pr value was .57, for Experiment 2.2 it was .49.

(their individual focus) determines their displays of response bias on the consecutive task, but this effect is moderated by the collective regulatory focus of the in-group, in line with our central prediction. As a result, the strength of the relation between people's individual tendency towards promotion vs. prevention on the one hand, and the response bias they display as group members in signal detection on the other, is diminished when the collective regulatory focus is on prevention, and intensified when the in-group is characterized by a collective regulatory focus on promotion.

Discussion

The results of this first study indicate that participants were able to recognize their inclusion in a group with a collective focus on promotion or prevention. As a result, although initial individual task preferences (for promotion vs. prevention) continued to affect participants' behavior on the subsequent recognition memory task, the strength of this relation depended on the strategy endorsed by their group. That is, in line with predictions, the individual preference for promotion more clearly elicited displays of liberal bias when the in-group was characterized by a collective focus on promotion, while this relation between individual regulatory preferences and displays of response bias in recognition memory was less strong when the group advocated a collective focus on prevention. This study therefore provides an important first step towards showing that a group can be seen as having a collective regulatory focus, and that individuals tend to adapt their behavior to this collective focus due to their identity as group members. Although previous research has examined how personal regulatory focus preferences affect people's responses to (inter-) group contexts (Levine et al., 2000; Sassenberg et al., 2003; Seibt & Förster, 2004; Shah et al., 2004), as far as we know the current research is the first to demonstrate the operation of *collective* regulatory focus preferences as group level guidelines for individual behavior. That is, the results of the present research indicate that when participants

were included in a group that either advocated a collective regulatory focus on prevention or shared a collective regulatory preference for promotion, participants' behavior during the recognition memory task changed towards the strategy that characterized their group's identity.

EXPERIMENT 2.2

The first experiment demonstrated the effects of self-categorization on the guessing bias of individual group members, by showing how this affects displays of liberal vs. conservative bias in signal detection. With this second experiment we aim to replicate and extend these findings in three different ways. First, in the second study we adapted the measure we used to assess personal regulatory focus preferences. We wanted to do more justice to the conceptualization of individual regulatory focus as a chronic trait that indicates people's behavioral preferences and emotional responses across a broad range of situations. Thus, instead of relying on specific task preferences (pre-measure of recognition task), to asses individual regulatory focus in this second study we used a measure that has been designed to tap these more chronic tendencies, namely the regulatory focus questionnaire (RFQ, Higgins et al., 2000). This questionnaire is commonly used to assess individual regulatory focus (e.g., Ayduk, May, Downey, & Higgins, 2003; Grant, & Higgins, 2003; Louro, Pieters, & Zeelenberg, 2005), and refers to a similar level of generality or abstraction as our collective regulatory focus induction. That is, in Experiment 2.1 the individual preference for promotion vs. prevention in signal detection was more narrowly related to the central dependent measure than the manipulation of collective regulatory focus through group mottos. This might also explain why in Experiment 2.1 individual regulatory focus preferences continued to affect displays of bias in signal detection, although as predicted this effect was clearly moderated by the collective regulatory focus of one's group. Thus, in this second

experiment we employ an indicator of personal regulatory focus that is more equivalent to the collective regulatory focus that we induce. We think the consideration of personal and collective regulatory focus at similar levels of generality will offer a stronger and more appropriate test of how these two interact to determine individual task behavior.

As a further extension to the first experiment, in this second study we also included an additional indicator of regulatory focus, by assessing whether group members experience emotions that are specific for a promotion focus or for a prevention focus. Previous research has shown that people in a promotion focus tend to experience outcomes in terms of emotions along a cheerfulness-dejection dimension whereas people in a prevention focus respond to these same outcomes with emotions that can be situated on a quiescence-agitation dimension (Higgins et al., 1997; Idson, Liberman, & Higgins, 2000). For the current experiment we accordingly predict that collective regulatory focus will not only influence individual task behavior (liberal vs. conservative bias in signal detection), but will also affect group members' emotional responses. More specifically, we expect people in a collective promotion focus to experience the outcomes of their group primarily in terms of cheerfulness vs. dejection, while people in a collective prevention focus should be more inclined to experience the outcomes of their group in terms of quiescence vs. agitation.

Last but not least we sought to obtain more direct evidence for regulatory focus as a social identity-based phenomenon by addressing the role of group identification. If collective regulatory focus operates via the social identity of the group members, its influence on behavior and emotion should be particularly strong for those who are highly identified with the group. Therefore, we manipulated group identification in the second experiment. Again, our main prediction is people's personal regulatory focus leads to focus-consistent behavior and emotions that are moderated by collective regulatory focus. Moreover, we expect these effects to be especially strong for high identifiers.

Method

Participants & Design

Participants were 81 students (64 women and 17 men, mean age = 19, 18-28) at Leiden University. We used a three-factorial design with two dichotomous manipulated variables (collective regulatory focus: promotion vs. prevention; and identification: low vs. high) and one continuous measured variable (individual focus).

Procedure

The procedure was identical to that of Experiment 2.1 with three exceptions: a different measure was used to assess personal regulatory focus orientations, participants' strength of identification with the group was also manipulated, and regulatory focus-specific emotions were included as an additional dependent variable.

To measure individual focus, we used the regulatory focus questionnaire (Higgins et al., 2000). This questionnaire contains eleven items that yield a score for "promotion pride" and a score for "prevention pride". To indicate participants' individual regulatory focus we calculated the difference between their focus on promotion and their focus on prevention (score promotion pride – score prevention pride; see Sassenberg, Jonas, Shah, & Brazy, 2007, for a similar procedure).

In order to manipulate strength of group identification we used a "bogus pipeline" procedure (Ellemers, Spears, & Doosje, 1997) that was modeled after the *implicit association test* (IAT; Greenwald, McGhee & Schwarz, 1998). This test consisted of 10 trials, in which we flashed either the label 'holistic group', or 'detaillistic group' on the screen for 100 milliseconds. Directly following this, a word appeared on the screen for which subjects had to decide whether this word had positive or negative value attached to it. All these target words were somehow related to the concept of group identification (e.g. 'connected' or as a positive word, e.g. 'divided', as a negative word). Participants were instructed to react as quickly and accurately as they could.

After completion of this alleged test, participants were informed that their reaction times on this test would be used to calculate how strongly connected they felt to their group. When the 'holistic group' label had preceded the target word, quicker responses to positive words and slower responses to negative words were said to be indicative of the experience of stronger ties with the group. According to instructions, a reversed response pattern would be indicative of strong group identification when the label 'detaillistic group' had been flashed on the screen. Participants were informed that a score between 0 and 100 would be calculated to indicate how important the group was to them. In the low identification condition participants were told that their score was 33, which was below the score of the mean group member (which was said to be 48). This was used to convey the notion that the ties they experienced with the group were less strong than average (cf. Ellemers et al., 1997). Participants in the high identification condition were told that they had a score of 63 (above the average score of 48) implying that their feelings of connectedness to the group were stronger than average. Then, the group motto manipulation followed, which was identical to the procedure used in Experiment 2.1.

Directly after providing the bogus in-group identification feedback, we measured the successfulness of this manipulation by means of five questions (e.g., 'I feel happy that I am a member of the holistic group', $\alpha = .87$). Participants responded to these questions by placing a cross on a line which was anchored 0 'not at all' and 100 'very much'.

Dependent Variables

Participants´ response bias in signal detection was assessed in the same way as in Experiment 2.1. As an additional indicator of the regulatory focus they had adopted, participants completed several emotion items. Specifically, they were asked to indicate on four 100 point scales (ranging from 'not at all' to 'very much') the extent to which they would feel *cheerful* (diagnostic of promotion) and *quiescent* (characteristic for prevention) if their holistic group had performed well on the recognition memory task (i.e., if their

group had obtained a test score of 70, well above the average of 50). In addition they were asked to indicate the extent to which they would feel *dejected* (as a promotion emotion) and *agitated* (indicating prevention) if their holistic group had performed poorly on the recognition memory task (i.e., in response to a test score of 30, well below the average of 50). In other words, all participants responded to both the positive emotions (only after imagined success) and the negative emotions (only after imagined failure).

Results

Check

As was the case in Experiment 2.1, all participants correctly identified their own group. Again, the mottos were also assigned to the correct group: Only 10 participants made one mistake when assigning the six mottos to the two groups, but their general impression of the mottos that characterized the in-group in relation to the out-group was correct. The other participants correctly indicated how all six mottos described the two groups. Finally, as intended, in a GLM including identification (high vs. low), chronic regulatory focus (RFQ) and collective regulatory focus (promotion vs. prevention), participants in the high identification condition (M = 44.35) reported higher in-group identification scores than did participants in the low identification condition (M = 35.39), $F(1, 73) = 7.03$, $p = 0.010$.

Response Bias (Br)

We performed a multiple regression analysis containing response bias as a dependent variable and individual regulatory focus (RFQ), collective regulatory focus (dummy coded: -1 = prevention, +1 = promotion) and group identification (dummy coded: -1 = low identification, +1 = high identification) as independent variables. In a first step we entered all three main effects, in a second step all three two-way interactions, an in a final step the three-way interaction. We did not replicate the main effect of individual focus, $\beta = .15$, $t(77) = 1.32$, $p = .192$. This was anticipated however as the individual focus

measure was not directly related to the dependent measure, as in Experiment 2.1. More importantly, we replicated the interaction between collective regulatory focus and individual focus, β = .27, t(77) = 2.32, p = .017 (see Figure 2). Simple slope analyses were performed to decompose the interaction. In line with predictions and the results of Experiment 2.1, there was a positive relation between individual promotion focus and response bias in the promotion collective regulatory focus condition, β = .41, t(38) = 2.79, p = .008. This indicates that individuals with a personal promotion (vs. prevention) preference show more liberal (vs. conservative) response bias in recognition memory when the collective focus of the group is on promotion. Furthermore, a collective focus on prevention completely washed out the effect of individual focus on participants' response bias, resulting in a non-significant simple slope, β = -.13, t(39) = -.79 , p = .434.

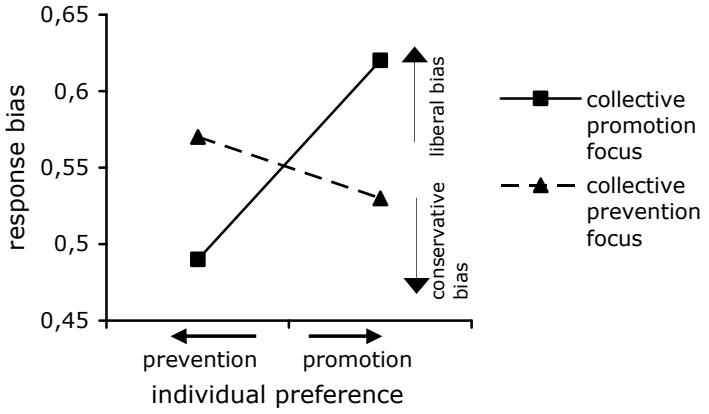

Figure 2.2 Response bias as a function of collective regulatory focus and individual regulatory focus.

The two-way interaction between individual and collective focus was further qualified by a marginally significant interaction with group identification, β = -.21, t(75) = -1.77 , p = 0.080. In line with our group identity rationale, decomposition of this interaction revealed that the collective regulatory focus and individual focus interaction was present for high identifiers (β = .45, t(37) =

2.69 , p = .011), but not for those in the low identification condition (β = .14, t(36) = .89 , p = .379).

Emotions

Following the procedure described by Shah, Brazy & Higgins (2004), we averaged over positive and negative emotions for promotion and prevention. However, because negative emotions were measured after imagined failure and positive emotions were measured after imagined success, negative emotions were not reverse-coded. A repeated measures GLM including collective regulatory focus (promotion vs. prevention), individual focus (RFQ-score, continuous), identification (high vs. low), and regulatory focus of emotion (promotion [cheerfulness/dejection] vs. prevention [quiescence/agitation]), revealed a reliable three-way interaction between group identification, collective regulatory focus, and the regulatory focus of the emotions, F(1, 77) = 9.25, p = .003 (see Figure 2.3).[4] To break down this interaction, we examined the two-way interactions between group identification and collective regulatory focus, separately for promotion emotions and prevention emotions. This two-way interaction was significant for the promotion emotions, F(1, 77) = 6.80, p = 0.011, but not for the prevention emotions, F(1, 77) = 0.16, p = .692. Given that the effect emerges for the promotion emotions one would expect the effect of identification on the experience of these emotions to be present when the collective regulatory focus is on promotion, but not when the collective regulatory focus is on prevention. This is exactly what happened: when the collective regulatory focus was on promotion, participants in the high identification condition reported more promotion emotions (M = 52.98, SD = 11.65), than those in the low identification condition (M = 41.90, SD = 15.32), F(1, 38) = 6.62, p = .014. There were no differences between high and low identified group members in the experience of promotion emotions when the collective regulatory focus was on prevention, F(1, 39) = 1.48, p = .230. These

[4] The four-way interaction with individual focus, was also marginally significant (p = 0.089). This interaction was difficult to interpret, however.

results indicate that high identifiers showed a stronger affective response to the imagined performance of their group than low identifiers, however, this effect only emerged for emotions characteristic of promotion, when the collective focus was on promotion.

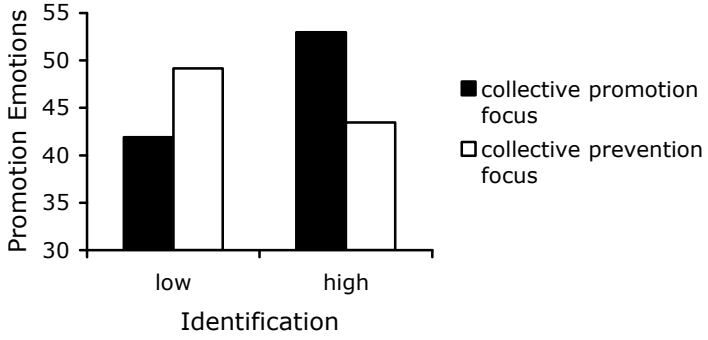

Figure 2.3 Mean scores on promotion-focused emotions (cheerfulness and dejection) for the interaction between collective regulatory focus (promotion vs. prevention) and identification (low vs. high).

Discussion

In Experiment 2.2 we sought to replicate and extend the results of Experiment 2.1, using a broader measure of individual focus, designed to capture more chronic and general regulatory preferences. We examined whether, in addition to displays of response bias in recognition, evidence of the adoption of a particular regulatory focus could be found in the experience of specific emotions. Additionally, we investigated whether the degree of identification with the group moderated the effects of collective regulatory focus on people's behavior on the recognition memory task and the emotions they reported.

As intended, we replicated our most important finding of the first experiment, showing that individual behavior on the signal detection task could not simply be predicted from personal regulatory focus preferences,

because the collective regulatory focus either facilitated or diminished displays of bias. Liberal bias only increased as a function of chronic individual promotion preferences when the collective regulatory focus was on promotion, while a collective prevention focus made group members with a chronic promotion focus display responses that were equally conservative as shown by individuals with a chronic focus on prevention. Moreover, Experiment 2.2 yielded evidence that this effect was stronger for high identifiers, than for low identifiers.

In addition to examining response bias in signal detection, in this second study we sought to establish whether evidence for the adoption of a collective regulatory focus could also be gained from group members' emotional responses. In line with our reasoning, participants were more likely to report emotions characteristic for promotion (i.e., cheerfulness and dejection), when the collective regulatory focus was on promotion instead of prevention, provided that group identification was high. However, we did not observe a similar effect of a collective focus on prevention on the experience of prevention-related emotions. Nevertheless, the significant effect that we observed provides an additional indicator for the notion that individual group members can adopt a collective regulatory focus and illustrates how this can impact upon the emotions they experience. Together with the identification effect on the signal detection task the fact that the effect of collective regulatory focus on emotion was only present for those highly identified with the group provides further support for the identity rationale we presented .

In this second study, individual regulatory focus was established with a scale assessing more chronic and general regulatory preferences that are unrelated to our central dependent measures. Thus, Experiment 2.2 provides a more balanced test for the interactive effects of personal and collective regulatory focus than Experiment 2.1. Indeed, this is also evident from the fact that in this second study there was no significant main effect of individual focus on response bias in recognition. Thus, we think that our observation of

the individual focus main effect on recognition in Experiment 2.1 reflects that in this first study our dependent measure was more closely related to the indicator of personal regulatory focus (initial displays of liberal vs. conservative bias in signal detection) than to the manipulation of collective regulatory focus.

GENERAL DISCUSSION

In two experiments we examined the role of collective regulatory focus in determining the use of behavioral strategies when working on a signal detection task. We found collective regulatory focus-consistent behavior and -emotions when the induced collective regulatory focus was in line with the person's own personal regulatory focus. This occurred particularly for those who were highly identified with their group. These effects seem quite robust in that it consistently emerged across two studies that assessed personal regulatory focus preferences in very different ways. As we have indicated in the introduction, this illustrates that the impact of the collective focus of the group on individual task behavior occurs against the background of more chronic personal behavioral preferences. In this case, the individual preference for promotion was reinforced by a collective focus on promotion, while it was suppressed when the group endorsed a prevention orientation. Although this finding is reminiscent of the regulatory fit principle - which refers to the fit between chronic regulatory focus and specific task characteristics - the present research is the first we know of to extend this reasoning to show that the fit between personal regulatory focus and collective regulatory focus can also affect people's responses.

From our emotion data it appears that the effects of collective promotion focus are stronger than those of collective prevention focus. It should be noted however, that this conclusion is not self-evident when we consider the signal detection results. The effects on this measure can both be interpreted

that collective promotion focus strengthens the effect of individual regulatory focus, or that collective prevention focus weakens this effect. Nevertheless, to the extent that the present results indicate an asymmetry in that we find more evidence that participants adopt a collective focus on promotion than that they move towards prevention, this does not invalidate the significance of our findings. We will return to this issue in the section below on limitations and further research.

The current research also contributes to the existing literature (e.g. Levine et al., 2000; Shah et al., 2002) by showing that the cognitive awareness of one's inclusion in a particular group (the self-categorization process) is sufficient to elicit these effects of collective regulatory focus. In this light it is important to stress the crucial role of social identity processes. Although the motto induction can be seen as a group norm induction, this norm eventually operated via the social identity of the group as there were no interactive group dynamic processes through which normative pressures to comply with group norms are often exerted. That is, the motto had an influence under even quite minimal situations, where group members did not have the opportunity to jointly develop or negotiate about a common behavioral strategy, and where they did not run the risk of being sanctioned when they deviated from collective norms. This implies that a collective regulatory focus can become part of the identity of a group, which is then adopted and enacted by individual group members. The fact that the influence of the mottos was particularly strong for those highly identified further underlines the crucial role of social identity for explaining the current set of results. Thus, we extend previous work in this area by showing that the collective endorsement of a promotion or prevention focus can be internalized by individual group members as a behavioral guideline. In turn this has important implications for regulatory focus theory, as well as for social identity and self-categorization theory.

With respect to the further development of social identity and self-categorization theory, the present findings extend recent research examining

the content of social identities (Jackson & Smith, 1999). In this previous work it has been proposed that a social identity does not only refer to specific characteristics that group members share, but also encompasses the goals, values and norms of the group (Turner, et al., 1987). The current research has identified the collective regulatory focus of the group as another dimension of social identity which can influence how a range of different group goals are approached. At this point it is also important to note that the effects of collective regulatory focus we obtained cannot be attributed to cognitive priming effects. Given that our collective regulatory focus manipulation included the presentation of both in-group and out-group mottos, promotion and prevention mottos were made equally salient in all conditions. Thus the greater effect of in-group mottos on participants' behavior is due to the greater self-relevance of these mottos, and not to the fact that they were more cognitively available.

Our research also has consequences for regulatory focus theory. While previous research focused on regulatory focus as a – chronic or situational - *individual preference* for self-regulation through either promotion or prevention, the present studies indicate that groups can also have a *collective* regulatory preference, which influences the responses of individual group members. Thus, the regulatory focus people adopt not only depends on their individual inclinations or specific task characteristics, but is also affected by the social context they find themselves in. Furthermore, the collective regulatory focus of a group does not necessarily reflect the constellation of the individual regulatory foci of its members. Instead, a collective regulatory focus can develop relatively independently of individual preferences, for instance in response to external threats, collaborative demands, or as a way to distinguish one's group from other groups. Once the group has incorporated a particular focus as part of their shared identity, the collective regulatory focus will affect the behavior of individual group members, in interplay with their personal self-regulatory preferences.

In terms of practical implications, the current work is relevant to all instances in which the self-regulatory strategies groups use influence how well they perform (e.g., in organizations, sport teams, orchestras). Clearly, performance in certain jobs or organizations can benefit when the self-regulation strategies individual workers use match collective demands for promotion or prevention behavior. This is the case, for instance, when employees of a nuclear power plant adopt prevention strategies, or when members of a software development team use promotion strategies. In fact, we argue that an effective way to manage the behavior of individual workers, in order to make them use those strategies that best suit their job, is to include the focal strategy in the identity of the work group or organization. As we have seen in the present research, a relatively simple but effective way to achieve this is to capture the desired regulatory focus in a collective motto.

Our use of group mottos to induce a collective regulatory focus indicates that quite general and abstract information about the inclination of the group towards promotion or prevention was applied by group members to determine the behavioral strategies they employed on a specific task. This implies that the collective regulatory focus of a group is likely to have broad implications for a variety of tasks and contexts in which individual behavior determines collective outcomes. The goals that are pursued in work groups are often quite diffuse, instead of being restricted to specific task behaviors. Thus, if the collective regulatory focus operates as a more general guideline for the behavior of individual workers across a range of possible work situations, this can constitute a powerful management tool. When safety issues are crucial, it might be much more effective to develop a collective identity characterized by a focus on prevention, than to provide specific rules for every decision individual employees have to make, and monitor whether they actually stick to these rules. Furthermore, when a collective regulatory focus on prevention is incorporated as part of the shared organizational identity, the aim of individual workers to employ safe working habits will not only be relevant as a personal

goal, but should operate as a joint goal of one's work team or of the organization as a whole. Under these conditions, individual employees will also be more willing to assist *other co-workers* in accomplishing the collective goal, for instance, by correcting them when necessary, or helping them redress their errors, as the behavior of other team members is relevant to one's own social identity.

Limitations and Further Research

In spite of the current paper's strengths, there are also some limitations. As described above, in our current work we can not rule out the possibility that participants more strongly adopted the collective promotion focus than the collective prevention focus. We think this would be interesting in its own right as previous work on regulatory focus in groups (Lee, Aaker, & Gardner, 2000), has shown that an interdependent self-construal (vs. an independent self-construal) is more closely related to a prevention focus than to a promotion focus. Though this work is not conclusive about the effects of groups on the regulatory focus of its members, it could be interpreted as evidence that group situations tend to make group members more prevention focused. We think that an explanation for the fact that our results seem to point more to promotion results rather than to prevention results, might be that the effect of groups on the regulatory focus of its members might depend on the type of group someone's in (e.g. a real group vs. a minimal group). In our research we made use of a minimal group situation. One of the characteristics of this paradigm is that the group has no initial meaning. Therefore, people in the group have to give meaning to their group. This process of giving meaning to the group might be more related to ideals and ambitions rather than to responsibilities and obligations and therefore might lead participants to think in a manner that is more in line with a promotion focus than a prevention focus This process could be enforced even further by the fact that, in our setting, no group members were present that could scrutinize the extent to which group

members complied with the group norm. Therefore, participants had no reason to be afraid that group members would punish or correct them for not working according to the identity of the group (which could make them become more prevention focused). It would be interesting to explore this idea in future research by studying collective regulatory focus in a real group settings and examine whether the results become more supportive of prevention effects.

Another issue is that we did not replicate our main effect of individual focus in the second experiment. We like to stress however that we did not a priori predict a main effect of individual focus and that our individual focus measure of the first experiment was a pre-measure of our dependent measure (response bias), while in the second experiment we used a measure (RFQ) that was unrelated to our dependent measure. Furthermore, we did observe the same interaction between individual focus and collective regulatory focus as in Experiment 2.2 which was moderated by the identification manipulation, in line with predictions. Therefore, we do not believe that this result casts doubts to the robustness of our effects.

We think the present research has yielded some important contributions to the scientific literature, which can have interesting implications for organizational practice. Also for regulatory focus theory, our work implicates that when predicting someone's strategic behavior knowing someone's individual regulatory focus is not enough: it is also important to know the person's social context. However, our work only offers a first step into our understanding of collective regulatory focus. Future research might explore, for instance, whether certain types of *group tasks* are more likely to elicit a collective focus on promotion, while other tasks or interdependencies more easily provoke a prevention focus. Another possibility would be to examine how the (lack of) fit between the self-regulatory preferences of different group members, or the way their personal promotion or prevention focus relates to their group role, affects individual well-being as well as group cohesion and collective performance, and how this relates to the group's

collective regulatory focus. Further insight into these and related issues can have important consequences for peoples' work motivation and their performance on collective tasks. Another extension that is more directly related to our work would be to see if people also adopt the regulatory focus of groups they hold stereotypes of.[5] For example, in a role-play experiment participants could imagine to be accountants (prevention stereotype) vs. sales man (promotion stereotype). Based on our current work and the work of Seibt & Förster (2004) you might expect participants to become more prevention focused when imagining to be an accountant and more promotion focused when imagining to be a sales man.

We also would like to note that in this paper we presented our results from the perspective of individual regulatory focus as moderated by collective regulatory focus, instead of the other way around. We did this with the notion of the enormous literature on individual regulatory focus in mind. Indeed, we found that individual regulatory focus is crucial in the understanding of collective regulatory focus as in both studies response bias was a function of the interplay between collective regulatory focus *and* individual focus. We do not rule out that other group situations will be able to demonstrate group effects that overrule the group members' chronic preferences. This is something for future studies to find out. We believe that the questions raised above show the relevance for studying regulatory focus in group contexts, as the answers to these questions are not self-evident and cannot be deduced directly from the chronic focus of the group members. Thus we feel that with the present results we have opened up a whole new area for future theory development and research.

[5] We would like to thank an anonymous reviewer for this suggestion.

Chapter 3

Promoting to be the Best, or Preventing not to be the Worst: The Emergence of Regulatory Focus in Disjunctive and Conjunctive Group Tasks [6]

[6] This chapter is based on Faddegon, Ellemers, Scheepers (2008)

INTRODUCTION

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. These differences in emotions and strategies described above are the consequence of 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 their strategies to obtain desired end-states. In the current paper 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 leads to most effort among high ability group members whereas conjunctive group tasks give rise to most effort among group members with low ability. In the present paper 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* (prevention focus)

or aims at *accomplishment* and *growth* (promotion focus). By doing this, we connect existing insights on group dynamics to current knowledge on self-regulation, to obtain insights that have both theoretical implications and practical consequences for group functioning and performance.

Self-regulation Through a Promotion vs. 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 one's *ideals* 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). Furthermore, promotion focused individuals prefer an eager manner to attain their desired end-states. As a consequence, promotion focused individuals tend to be more creative and are more likely to think globally and abstractly (Förster & Higgins, 2005; Friedman, Förster, 2001; Semin, Higgins, Gil de Montes, Estourget, & Valencia, 2005). A prevention focus on the other hand is founded in one's *responsibilities*, *oughts* 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 to behave in a vigilant manner. As a consequence, prevention focused individuals are relatively more accurate and think more locally and concretely (Förster, Higgins, & Bianco, 2003; Förster & Higgins, 2005; Semin et al., 2005). In addition to these different strategies, 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 (cheerfulness after success, dejection after failure), while prevention focused persons tend to experience emotions on a quiescence – agitation dimension (quiescence after success, agitation after failure, Higgins, Shah, & Friedman, 1997). 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, in press; Levine, Higgins, & Choi, 2000; Sassenberg, Jonas, Shah, & Brazy, 2007; Sassenberg, Kessler, Mummendey, 2003; Shah, Brazy, & Higgins, 2002, 2004; Seibt & Förster, 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, whereas in some teams group members need to be creative and risk taking (e.g. a development team) and thus a joint focus on promotion is most suitable, for other teams the priority lies in accuracy and risk avoidance (e.g. a security force) and a joint focus on prevention would be most likely to result in good team outcomes. Therefore, being able to shift the attention of team members to promotion or prevention can be a great tool to optimize performance of these teams. 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 (as gains vs. non-gains or as losses vs. non-losses). Faddegon et al. (in press) 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 especially so when they

are highly identified with their group. Finally, it has been shown that specific socio- structural features – such as the relative power position of a group – are associated with a promotion or a prevention focus of individual group members (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., in press) or group power (Sassenberg et al., 2007), or developed during group interaction due to the way outcomes are framed (Levine et al, 2000). In the present work we argue that a joint focus on promotion or prevention can also arise from the way individual group members relate 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 focus on the way individual group members relate to each other as a source of 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.

Group Task Structure as a Determinant of Regulatory Focus

According to the classic taxonomy 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 by that 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, 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, performance of the team 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 team. This is most likely to be the case when the right 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 were 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 by these different 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 before, having a promotion or a prevention focus impacts on many factors including strategic behavior and 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 to more equity based division rules whereas conjunctive group tasks lead to more equality based rules. Miller and Komorita explained this result by arguing that disjunctive group tasks lead to a stronger focus on personal growth, and conjunctive group tasks to a stronger focus on the group as a whole. Among similar lines, we argue that as the worst performing member determines the team's

performance on conjunctive group tasks, this makes group members aware of their *responsibilities* and *oughts* towards their teammates. They can spoil it for the team, and they can be blamed afterwards. As described above, the resulting focus on responsibilities and oughts lies at the core of a prevention focus (Higgins, 1997, Higgins, Roney, Crowe, & Hymes, 1994). Therefore, we predict that a conjunctive group task, in which the team result equals the performance of the worst performing individual, gives rise to a prevention focus among individual team members.

By contrast, we argue that a disjunctive group task, in which team 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 team. Anything group members do can only benefit their team. We argue that in the case of tasks where only gains can be achieved group members adopt a focus on *accomplishment* and *growth* (cf. Miller & Komorita, 1995), which is at the core of a promotion focus (Higgins, 1997, Higgins et al., 1994). Therefore, we predict that a disjunctive group task will lead to the emergence of 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 work aims to contribute to this literature by addressing the self-regulatory consequences of these group tasks. We thus argue that these tasks do 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. This 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 the task the 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 new ways to deal with the situation. Therefore, instead of investing more effort on the task in this 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 will lead to the emergence of promotion focus among individual group members whereas a conjunctive group task elicits a prevention focus among group members. To test this prediction we collect data on regulatory focus-specific perceptions, emotions, and task behavior.

In Experiment 3.1 we examine how members of a minimal 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 task behavior to assess group members' regulatory focus.

EXPERIMENT 3.1

In Experiment 3.1 participants worked on an anagram task that was either framed as a disjunctive or a conjunctive group task. Participants' self-perceived regulatory focus was measured with an adapted version of the promotion/prevention scale developed by Lockwood, Jordan, and Kunda (2002). The anagram group task itself comprised a behavioral measure to asses 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 it allows for creativity and global thinking (see method sections for details). We predict that a disjunctive group task leads to more self-reported promotion focus and to thinking "outside the box" when working on the anagram task, compared to those working on a conjunctive group task which should result in more prevention focused self-reports and more thinking "inside the box" when working on the anagram task.

In deriving the above hypothesis we have argued that contextual factors (task type) will impact on the regulatory focus of group members. Nevertheless, previous work on regulatory focus in group situations has shown that the effect of situational group features interact with personal regulatory focus (e.g. Faddegon et al., in press, 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 the regulatory focus preferences of individual group members before inducing 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 person's personal regulatory focus.

Method

Participants & Design

A total of 126 students of Leiden University (23 males, 103 females, M_{age} = 21.1) participated in this experiment. All participants were randomly assigned to the disjunctive or conjunctive group task condition.[7] Participants received €3,- for their participation.

[7] 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

Procedure

In this experiment participants worked in a group context on an anagram task (for further details about this task see below). 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. This "blue team" would be in competition with a "red team" consisting of three participants who were also present in the lab, seated in different cubicles.

Before the detailed instructions for the anagram task were provided, participants were asked to fill out the regulatory focus questionnaire (RFQ; Higgins, Friedman, Harlow, Idson, Ayduk, Taylor, 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 items 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 on scale ranging from 1 "never" to 7 "always". Both scales were sufficiently reliable; promotion pride: alpha = .66;, prevention pride: alpha = .70.

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non-loss. However, this framing did not affect our 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 manipulation any further in the results of Experiment 3.1.

Participants then read that after 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 teammates 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 good performance of all group members. In this condition we also provided some examples of this type of group task, like 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 anagrams all consisted of three, four or five letters and could be resolved in multiple ways (e.g. ECHAP, solutions: Cheap, Peach; DGO, possible solutions: dog, god). The performance on the anagram task for each participant consisted of the total number of correct solutions they would find.

After completing the anagram task, participants completed a 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. This scale consisted of 5 promotion and 5 prevention items. Answers were given on a scale ranging from "1" not at all to 7 "totally so". Examples of promotion items are: "I frequently imagine how I will achieve my hopes and aspirations" and "Overall, I am more oriented toward achieving success than preventing failure" Examples of prevention items are: "In general, I am focused on preventing negative outcomes in my life" and "I am more oriented preventing losses than I am toward achieving gains." To obtain a single continuous measure of regulatory focus, participants' prevention scale scores were averaged and subtracted from the mean score of the promotion scale scores. The resulting difference score indicates more promotion with high scores and more prevention with low scores (see Faddegon, et al., in press, and Sassenberg et al., 2007 for similar procedures). Considering the number of items we observed

reasonable alpha's for both scales: promotion scale: alpha = .66; prevention scale:, alpha = .56.[8]

Thinking outside the box. Previous research has demonstrated that a promotion focus is characterized by creative behavior, more global and abstract thinking, and thus the inclination to "break new ground". A prevention focus, by contrast, is characterized more by local en detailed perceiving and "rule following behavior" (Friedman & Förster, 2001, Förster & Higgins, 2005, 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 (neologism; e.g., norent). Second, we also counted the number of non-Dutch words (mainly English or German; e.g., lips, ende) that were proposed as anagram solutions. Two raters unaware of condition scored the self-invented words and non-Dutch words and 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, we ran the experiment in the Netherlands and all instructions and measures were in the Dutch language. Thus the imposed aim of the task was to find Dutch solutions, and proposing 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

[8] The reliability of the prevention scale could be improved by deleting one item (new alpha = .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 reported now (i.e., based on a scale comprising all items). With this in the back of our minds, and in combination with the fact that the scale has been validated and proven to be reliable in earlier research, we decided to keep all items in the scale for our main analysis.

Dutch word is a more vigilant, rule following strategy ("thinking inside the box"), which is associated with a prevention focus. We added the amount of creative (self-invented words) and global (non-Dutch words) solutions to form a single index of "thinking outside the box". Correlation analysis revealed that both measures were positively correlated, $r(125) = .24$, $p = .007$. This is consistent with the notion that both are indicators of the same way of thinking.

Results

Analytic Strategy

For all analyses described below we first tested for main effects of the group task, while controlling for participants' chronic promotion and prevention focus. After this first step we tested for interactions among group task and personal regulatory focus. Following Higgins' advice (see www.columbia.edu/cu/psychology/higgins) concerning how to analyze the effects of chronic regulatory focus (in this case the self-strength guide, see Higgins et al., 1997) we both checked for the interaction with promotion focus while controlling for prevention focus, and for the interaction with prevention focus while controlling for promotion focus. Therefore, for each dependent measure we performed a hierarchical multiple regression entering the main effect of group task and personal promotion and prevention focus in step one. In step two we either entered the interaction of group task and personal promotion focus or the interaction of group task and personal prevention focus.

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 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 purposes 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 (M = 1.20) group members reported a relatively stronger promotion focus, as compared to the conjunctive condition (M = 0.77)[9]. No higher order effects were observed.

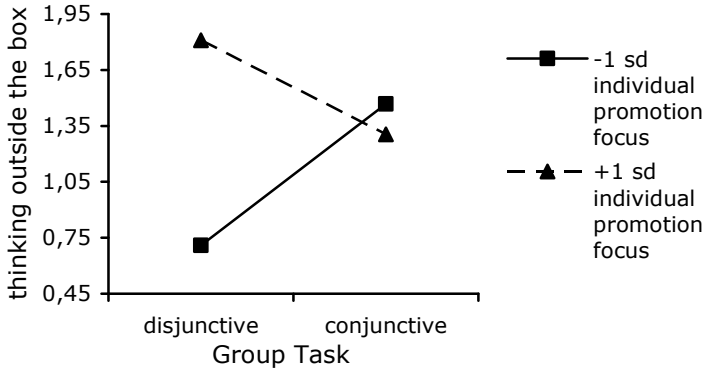

Figure 3.1. "Thinking outside the box" on the anagram task as a function group task and personal promotion focus.

Thinking Outside the Box

With regard to "thinking outside the box" on the anagram task, no main effect of group task was obtained. However, we did observe a significant interaction between personal promotion focus and group task on this measure, β = .18, $t(120)$ = 3.09; p = .050 (see Figure 3.1). In line with predictions, more "thinking outside the box" took place in the disjunctive condition than in the conjunctive condition, but this was only the case when group members had a personal focus on promotion. Simple slope analyses (Aiken & West, 1991) indicated that "thinking outside the box" was positively related to personal promotion focus in the disjunctive group task, β = .55, $t(120)$ = 2.44, p = .016, but not in the conjunctive group task, β = .08, $t(120)$ = -0.36, p = .721. Apparently, the disjunctive task allowed group members to behave more

[9] The means of the components of the promotion/ prevention difference scale are M = 5.27 (promotion), M = 4.07 (prevention) for the disjunctive condition, and M = 4.93 (promotion), M = 4.15 (prevention) for the conjunctive condition.

creatively, think more globally, and break new grounds, but only those high in promotion focus did actually do so.

Discussion

The main aim of this first experiment was to examine our hypothesis that a disjunctive group task leads to the emergence of a promotion focus among group members, whereas a conjunctive task indices group members to adopt a prevention focus. The results of Experiment 3.1 largely confirm this hypothesis, by showing that disjunctive group tasks lead to promotion focus consistent self-reports compared to conjunctive group tasks which result in self-reports more indicative of a prevention focus. A similar result was found for group members' behavior. Individuals with a promotion focus did think more "outside the box" during the anagram task when working on a disjunctive group task than when working on a conjunctive group task. Thus, this first experiment provides clear 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 the effects of the group task structure. With a second experiment we aimed to replicate this effect while using another type of group situation (face-to-face interacting groups) and a less obtrusive measure of regulatory focus.

EXPERIMENT 3.2

A main difference between the real-group setting in Experiment 3.2, compared to the minimal group situation in Experiment 3.1, is that in the current experiment participants could see their fellow group members working on the task, and adjust their own task behavior accordingly. This situation is more similar to group contexts in real life where group members seldom work

in absolute anonymity and most often interact verbally or non-verbally with fellow group members.

Another difference with Experiment 3.1 is the main dependent measure we employed to assess group members' regulatory focus. In Experiment 3.1 we used a direct self-report measure of regulatory focus, i.e. 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. As explained in the general introduction, the experience of emotions on a cheerfulness – dejection dimension indicates a promotion focus, while emotions on a quiescence – agitation dimension are characteristic for a prevention focus. In line with the central hypothesis of this paper we predicted that participants working on a disjunctive group task primarily experience emotions on the cheerfulness-dejection dimension (indicative of a promotion focus), while the emotions of people working on a conjunctive group members experience relatively stronger emotions on the quiescence-agitation dimension (indicative of a prevention focus).

As a group task participants worked in this second experiment on a tower building task (Jenga®) that was framed in either disjunctive or conjunctive terms. We included the height of the towers participants built as a behavioral measure of group members' regulatory focus. Because a promotion focus leads to a focus on advancement and growth and a prevention focus on responsibility and oughts, we predicted that 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).

The face-to-face setting in Experiment 3.2 also allows us to examine in a meaningful way the diversity of group members in terms of their task behavior because group members could actually see the performance of fellow group members and adapt their own efforts accordingly. In line with earlier research of Kerr and Bruun (1983) we propose that in a conjunctive group task

being a relatively poor performing member motivates people to show a good performance because the worst member can spoil it for the group. As a result we anticipate relatively little variance in performance among group members working under these conditions. By contrast, and following the same line of reasoning, on disjunctive group tasks being a relatively highly performing member is motivating while lying behind motivates less as only the best member accounts for the team performance. Accordingly we predict relatively more behavioral variance in performance in a disjunctive group task than in a conjunctive group task. Therefore, more behavioral similarity (i.e. less variance in performance) is predicted among teams working on a conjunctive group task in comparison with teams working on disjunctive group task.

Method

Participants and Design

Participants were invited to the lab where they formed groups with 2 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 68 women, varying in age from18 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. During the first and third part participants worked individually and separated by Styrofoam walls at a laptop computer to read the instructions (first part) and 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 started, like in Experiment 3.1 participants were administered the regulatory focus questionnaire (Higgins et

al., 2001) to measure their personal regulatory focus. Then a general instruction started concerning the group task participants would work on (a brick building task, for details, see below). In this general instruction, subjects read that they would work together on a group task 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 3.1, except that in Experiment 3.2 no competition with another team was mentioned. 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 task instructions followed. We adapted our task from a popular 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 3 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 the brick task they would sit at the same table and their performance would be considered together with the performance of their team members. Participants in the disjunctive group condition were led to believe that only the highest tower of the team would be determined as a measure of the team performance. For teams in the conjunctive task condition participants heard that the performance of the team would only depend on the lowest tower built by the team.

After the brick task, participants were instructed to return to their laptop computer where they individually filled out a questionnaire 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[10]. As a manipulation check we 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. At the behavioral level we also checked the variance in the height of the towers that participants built. Based on research on disjunctive and conjunctive group tasks (e.g. Kerr & Bruun, 1983), we expected more variability in tower height in the disjunctive than in the conjunctive group task condition. This measure thus is not interpreted as evidence for the activation of a promotion or prevention focus, but serves as a behavioral check for the group task manipulation.

Regulatory focus-relevant emotions. After completion of the brick building task we asked participants to indicate the extent to which they experienced a number of regulatory focus related emotions when they considered the obtained results of their team during the task (e.g. "To what extent did you experience [joy] when considering the results your team obtained 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 included 6 emotions that represented the cheerfulness-dejection dimension (promotion emotions) and 6 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 comprised sad, unhappy and discouraged. The set of prevention emotions comprised relaxed, quiet and calm (positive valence) and stressed, restless and anxious (negative valence). Following Higgins and colleagues (1999), and Shah and

[10] We also administered this manipulation check in Experiment 3.1, but due to a technical problem only the data of the disjunctive task condition were retained in this experiment. However, all participants in this condition correctly indicated that they would be working on a disjunctive group task.

colleagues (2004), we conceptualize dejection and cheerfulness as lying on the same bipolar (promotion) dimension which implies that shifts towards cheerfulness imply less dejection, and vice versa. Likewise, prevention emotions (quiescence and agitation) are also conceptualized as opposite poles of the same dimension.

Behavioral measures. During the brick building task we were interested in the height of the towers, which we measured in cm. As explained above we predicted that groups in the disjunctive task condition would on average build higher towers than groups in the conjunctive task condition.

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. As a behavioral check of our group task manipulation we also calculated the mean variance in the height of the towers they built. As predicted, participants in the disjunctive group task condition displayed more variance in the height of the towers they built (M = 13.28) than members of the conjunctive group (M = 5.29), $t(28) = 3.60$, $p = .001$. This result is consistent with the notion based on previous research (e.g. Kerr & Bruun, 1983), that the level of performance of people working on a conjunctive group task is similar to the performance of their fellow group members while this is less likely to be the case when working on a disjunctive group task.

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 a promotion and a prevention component (see Table 3.1 for the factor loadings). 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 with opposite factor loadings. Higher scores on the promotion dimension indicate activation a promotion focus and higher scores on the prevention dimension indicate activation prevention focus. We performed a repeated measures GLM on the orthogonal (standardized) factor scores that were obtained from the principal component analysis. In the repeated measures model we included 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[11].

This analysis yielded a significant interaction between group task type and type of regulatory focus dimension, $F(1, 102) = 4.68$; $p = 0.033$[12], revealing the predicted pattern (see Figure 3.2)[13]. Participants in the disjunctive condition experienced more emotions on the promotion-dimension than participants in the conjunctive group task, while participants working on the conjunctive task experienced more prevention-oriented emotions than members in the disjunctive task condition.

[11] Like in Experiment 3.1 we also examined the effects of personal promotion focus and personal prevention focus. Interestingly, we observed a positive correlation between personal promotion focus and the promotion emotion dimension ($r(104) = .26$, p=.001), which conceptually replicates the main effect of personal promotion focus in Experiment 3.1 and empirically validates the promotion emotion dimension. No higher level interactions with personal promotion or prevention focus were observed (F-values < 1) nor did inclusion of these personal regulatory focus measures affect the interaction between group task and emotion dimension.. For simplicity, therefore, we excluded these measures from the final analysis.

[12] The emotion data were also analyzed at the group level, yielding a similar pattern of results, that due to a limited sample size was marginally significant, $F(1, 33) = 3.22$, $p = .08$.

[13] Note that in Figure 2 standardized factor scores are displayed. Values above zero therefore indicate scores higher than the observed mean; scores below zero indicate scores lower than the observed mean.

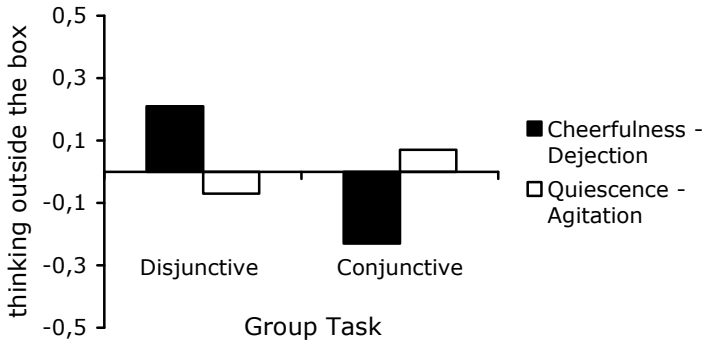

Figure 3.2. Factor scores on the promotion and prevention dimension as a function of group task and regulatory focus dimension of the emotions (promotion vs. prevention).

Behavioral Measures.

We examined the effect of the task type manipulation on the mean height of the tower built, as well as its variance (see Checks), at the group level (i.e., for every group the mean height and the variance in height of the towers was calculated). In 5 groups (2 conjunctive and 3 disjunctive), one of the group members' tower collapsed during the task. Although when the tower collapsed participants had to start building from scratch, this made their performance qualitatively different from groups in which no tower collapsed. However, the number of cases in which this happened was too small to permit for statistical analysis of these groups separately. Because the results of groups in which a tower collapsed were less comparable with other groups, we performed all further analyses on the remaining 30 groups in which none of the towers collapsed during the group task.

Regarding the height of the tower we found evidence for our predictions. Participants in the disjunctive group task condition built higher towers (M = 52.12) than did participants in the conjunctive group task condition (M = 45.42), $t(29)$ =1.76, p = 0.045, one-tailed. This thus confirms our hypothesis that in the disjunctive group task condition, participants members'

focus on advancement and growth lead them to be more ambitious and to build higher towers.

Table 3.1 *Factor loadings emotions after varimax rotation (values under .30 suppressed)*

Type of emotion	Prevention factor	Promotion factor
Happy		.83
Enthusiastic		.86
Cheerful		.85
Discouraged	.43	-.54
Sad	.42	-.60
Unhappy	.47	-.58
Calm	-.83	
Quiet	-.66	
Relaxed	-.74	.32
Tense	.83	
Restless	.85	
Anxious	.70	

Discussion

The main aim of the second experiment was to replicate and extend the findings of Experiment 3.1 in a face-to-face group setting, using different measures of regulatory focus. In line with our predictions, we found that the interdependency structure of the group task impacts on the type of emotions group members' experience, as well as on their behavior. As a result, both emotions and behavior were more in line with a promotion focus when group

members worked on a disjunctive group task, and more in line with a prevention focus when group members worked on a conjunctive group task.

Additionally we were interested in gaining more insight in the group processes in these different group tasks and examined the similarity in actual performance in both disjunctive and conjunctive group tasks. Confirming our hypothesis we found that conjunctive group members are more similar in terms of performance than members of disjunctive group tasks.

Altogether, this second experiment again substantiates our reasoning that the interdependency structure of a group leads to the emergence of a regulatory focus among group members that not only influences group members' self-perceptions and behavior, but also impacts on the type of emotions group members experience. Moreover, by showing that these effects occur in a face-to-face interacting groups, it has become clear that these effects do not stem from instrumental concerns in inter-group competition (as might been the case in Experiment 3.1) but result from the group dynamics elicited by the task interdependence they face in an intra-group context.

GENERAL DISCUSSION

In two experiments we examined whether regulatory focus can emerge from the interdependency structure of a group. To this end we compared individuals working on disjunctive and conjunctive group tasks. We predicted that a disjunctive group task would lead to a promotion focus, whereas a conjunctive group task would lead to 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). Overall, the results were in line with predictions.

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., in press; Levine et al., 2000; Sassenberg et al., 2003, 2007; Shah et al., 2002, 2004; Seibt & Förster, 2004). We add to this literature by showing that characteristics of the group – whether the group task is structured as disjunctive or conjunctive – can change participants' underlying motivation resulting in the emergence of a regulatory focus. Moreover, our work shows that the influence of the interdependency structure of groups on regulatory focus is relatively independent from group members' personal focus and can directly elicit regulatory focus related responses among group members.

In this sense, our work has also consequences for the regulatory focus literature more generally. This literature has focused for a large part on individual preferences for a promotion focus and a prevention focus. The current research, together with earlier work on regulatory focus in group contexts (e.g. Faddegon et al., in press, Levine et al. 2000, Sassenberg et al., 2007), shows that groups can greatly influence group members' regulatory focus and that their behavioral responses cannot simply be deduced from their personal preferences for promotion or prevention. In addition, we were able to demonstrate direct effects of these group tasks on group members' regulatory focus, thereby providing an alternative way of manipulating someone's regulatory focus apart from more traditional methods like changing the pay-off structure or priming ideals vs. oughts (e.g. Crowe & Higgins, 1997, Freitas & Higgins, 2002).

The current findings have also implications for the group dynamics literature, and in particular for the literature 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 the interdependence structure. The current work is complementary with this earlier work by showing the impact of the interdependence structure on the *direction* of their motivation – i.e., whether group members will adopt a

promotion or a prevention focus. We hope that the novel perspective we offer provides a new impulse for research on this topic.

Turning to the practical consequences we think that a shift in group members' regulatory focus can have important consequences for the functioning and performance of teams. After all, most team tasks require different behavioral responses of group members like accurateness vs. creativity, more global vs. more local processing, risk taking vs. risk-avoidance. These are precisely characteristics that regulatory focus impacts on.

Although most teams cannot be fully characterized as disjunctive or conjunctive group tasks, many groups contain a mixture of opportunities for group members to perform well for their team (disjunctive characteristics) and 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 (i.e., a more disjunctive structure in a produce development team, and a more conjunctive structure in a security team).

Though we found effects of the disjunctive and conjunctive group tasks on a promotion and prevention focus in both experiments, the effects on promotion focus were generally somewhat stronger than those on prevention focus. For example, in Experiment 3.1 the effect on "thinking inside/outside the box" was moderated by personal promotion focus, but not prevention focus. Although we cannot exclude the possibility that this result was the consequence of the specific group tasks that we used, another interesting explanation for this asymmetry can be based on the work by Lee, Aaker, & Gardner (2000). These researchers demonstrated that whereas an independent self-construal is associated with a promotion focus, an interdependent self-construal is associated with a prevention focus. From this work, it can be inferred that groups by definition make people somewhat more prevention focused (see also Paulus & Dzindolet, 1993), which makes it more difficult to

further manipulate group members into a prevention focus. Although at this point we can only speculate about this possibility, it is in our view noteworthy that our research thus shows that groups do not *solely* induce prevention but can also lead to a promotion focus when e.g., working on a disjunctive group task. Also important to note in this context is that from our manipulation check data we have no reasons to suspect any differences in the effectiveness of one of our manipulations that could be responsible for an asymmetry.

As with all research, the current studies also raise questions to be examined in future work. For example, as outlined above, many group tasks involve both disjunctive and conjunctive aspects, and it would be interesting to examine the role of personal regulatory focus in *interpreting* such situations. One can predict that promotion focused group members will focus more on the disjunctive characteristics of the task whereas prevention focused group members will focus more on the conjunctive characteristics of the task. This in turn also leads to other interesting questions about *diversity* in groups regarding regulatory focus, and its influence on group performance. As many tasks involve both disjunctive and conjunctive aspects, a diverse group in terms of group members' regulatory focus might outperform a more homogeneous group in terms of regulatory focus.

With the current work we have made an important new step in understanding how the interdependence structure of groups impact on group members cognitive strategic and emotional responses. By doing so, our work contributes to the literatures on group dynamics and self-regulation and at the same time it has practical consequences for how to structure group tasks to enhance performance of teams.

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.

Chapter 5

General Discussion

INTRODUCTION

In the introduction of this thesis I discussed the burst of the internet bubble that took place at the end of the 20th century. As said, individuals' mind-sets became collectively focused on gains versus non-gains thereby neglecting potential losses. For another real-life example of collective focus, consider a recent medical study in the Netherlands that had to be abolished. This study examined the effects of probiotics on the infection of the pancreas. Small studies from outside The Netherlands reported positive results of this treatment. Consequently, the Dutch researchers thought it would be justified to perform a large study. They apparently neglected the risks of the treatment, and the number of people that died was larger than in the treatment group than in the control group. With the findings of this thesis we are able to explain how the above mentioned group phenomena may have taken place.

The aim of the current thesis was to examine the impact of group situations on the regulatory focus of group members and the influence of the group members' regulatory focus on the performance of the group. Chapter 2 and Chapter 3 considered how group members' regulatory focus can be affected by a group context (both top-down and bottom-up), whereas Chapter 4 examined the consequences of the group members' regulatory focus for team performance. In the current chapter I will summarize the main findings of these three lines of research and illustrate them with the just described examples. I will then discuss the theoretical implications of this thesis, followed by a section in which I will point out some strengths and limitations of the current thesis and present directions for future research. I will conclude with a discussion of some practical implications of the results.

SUMMARY OF THE MAIN FINDINGS

Chapter 2: Regulatory Focus as a Group Identity

In Chapter 2 the impact of the regulatory focus identity of the group on the behavioral responses of group members was examined. Based on social identity theory (Tajfel & Turner, 1979) we argued that a promotion or a prevention focus can constitute a part of the group's identity (i.e., 'collective regulatory focus') that in turn influences group members' responses in a promotion or prevention consistent way. It was predicted that collective regulatory focus would affect these responses in interplay with the group members' personal preferences for a promotion or prevention focus. The results of Experiments 2.1 and 2.2 confirmed this hypothesis. Furthermore, Experiment 2.2 supported our group identity rationale by showing that the endorsement of the collective regulatory focus was most pronounced for group members that highly identified with their group.

Chapter 3: Emergence of Regulatory Focus from the Group

While Chapter 2 examined how the group influences the regulatory focus of group members (top-down), Chapter 3 considered the nature of the interdependency between group members as a bottom-up source from which the regulatory focus of group members emerges. To test our idea we compared group tasks with a disjunctive and a conjunctive interdependency structure. We expected that a disjunctive task, in which the performance of the best group member equals group performance, would lead to the emergence of a promotion focus. By contrast we expected that a conjunctive task, in which the performance of the worst group member equals the performance of the team, would give rise to a prevention focus. Experiment 3.1 and Experiment 3.2 indeed confirmed this prediction by showing more promotion consistent responses in the disjunctive group tasks and relatively more prevention consistent responses in the conjunctive group task. We thus can conclude that

group members' regulatory focus can also emerge from the nature of the interdependency structure of the group they are in.

Chapter 4: Regulatory Focus Diversity and Team Performance

In Chapter 2 and Chapter 3 we demonstrated the importance of the group context for the regulatory focus of group members. In Chapter 4 we wished to examine how in turn the regulatory focus of group members affects the performance of a group that works on a complex team task. Based on the specific behavioral responses typical for a promotion focus and a prevention focus we argued that a promotion focus and a prevention focus would lead to better performance on different aspects of complex group tasks and that groups diverse in regulatory focus would perform best overall. Study 3.1 provided initial support for this assertion by demonstrating that for groups working on a brainstorm task, a promotion focus among dyads contributed to the overall idea productivity. In Study 3.2, we examined regulatory focus diversity in professional hockey teams and demonstrated that prevention focus diversity positively contributed to the results of the teams in the hockey competition.

To return to the examples of the dotcom crash and the study on probiotics in The Netherlands, Chapter 2 of the present dissertation demonstrates that indeed groups of individuals can collectively come to adopt a promotion focus that is associated with framing outcomes in terms of gains versus non-gains, instead of loss versus non-loss, leading to increased risk taking. In addition, our findings demonstrate that the preferred regulatory focus can be part of the identity of a group and that this influence is especially pronounced among high identifiers. In the case of the dot com bubble this means the atmosphere present in this decade that the sky was the limit may have resulted in a collectively shared promotion focus especially strong endorsed by those persons that categorized themselves as connected to the world of internet and computers and identified with other members of this category. Similarly, in the case of the probiotics study, the positive results of

the previous smaller studies may have blinded the Dutch research group for potential negative outcomes and made them collectively adopt a promotion focus and this might especially have been the case for researchers highly identified with the probiotics industry. As a result, potential risks involved in performing a much larger study may have been neglected.

In the current thesis evidence is provided that the group context can affect group members' regulatory focus directly or in interplay with group members' personal regulatory focus preferences. It was demonstrated that the group can exert its influence on individual group members' regulatory focus in a top-down fashion as part of the identity of the group and in a bottom-up fashion, emerging from the interdependency nature of the group. In turn, this thesis provides evidence that diversity in regulatory focus can be beneficial for teams that work on complex tasks that require both promotion and prevention consistent responses.

In conclusion, this thesis underlines the importance of taking the social context into account when predicting an individual's regulatory focus consistent responses. As a result, it provides evidence that the group situation does not only affect the amount of group members' motivation but also the direction of that motivation. These insights may be applicable in many real-life situations where one wishes to get control over the behavioral responses of a group of individuals working on a team task. In the next paragraphs I will discuss some of the implications of the current thesis for the literatures on regulatory focus and group processes.

THEORETICAL IMPLICATIONS

Regulatory Focus as a Consequence of the Group

Previous research on regulatory focus theory has demonstrated different pathways affecting an individual's regulatory focus. A first pathway

that impacts on an individual's regulatory focus is the individual's personal preference for a promotion or prevention focus that is assumed to be influenced by experiences during childhood with caretakers (Higgins, 1997). A second path-way is through outcome framing or priming (e.g., Crowe & Higgins, 1997; Friedman & Forster, 2001). The current thesis demonstrates that a third pathway can also be discerned, namely the group context. This is an important addition to the previously studied factors influencing an individual's regulatory focus that has added explanatory value beyond the first two levels. After all, human beings are social creatures that often participate in teams at work or socially (e.g., sport teams). Our findings further complement initial studies suggesting that in these situations an individual's regulatory focus cannot simply be inferred from personal preferences for a promotion focus or a prevention focus. Moreover, our research on collective regulatory focus (Chapter 2) shows that a promotion or prevention focused mind-set can also constitute a part of the identity of a group. This implies that an individual's regulatory focus is also a function of whether the individual's personal or social identity is salient. As the social identity of an individual is a cognitive construct that can be activated without the physical presence of the group, group contexts might even be able exert influence on the group members' regulatory focus in solitude. The present thesis thus demonstrates the importance of the group context as an additional pathway determining an individual's regulatory focus both in a top-down and bottom-up fashion and even in situations wherein the group is not physically present. Hereby this thesis is in line with the suggestion of Sassenberg and Woltin (in press) that group-based self-regulation indeed exists, and can contribute to the understanding of the motivational processes underlying group members' behavior.

Motivation in Groups: Direction versus Amount

An important consequence of the current thesis is the input it provides for the literature on group motivation by demonstrating that group situations

can sculpture the regulatory focus of its members. There is evidence for the argument based on regulatory focus theory (Higgins, 1997) and regulatory fit theory (2000) that regulatory focus has consequences for both the amount of motivation and the direction of motivation. While previous research on group processes mainly considered the effects of the group context for the amount of group members' motivation (e.g. Kerr & Brun, 1983; Kravitz & Martin, 1986; Wiliams & Karakau, 1991), the current thesis shows that group contexts can also affect the direction or focus of group members' motivation. After all, the group member's regulatory focus determines whether motivation is directed at gains versus non-gains or at loss versus non-loss. In turn, this difference in what the individual's motivation is aimed at impacts on many different behavioral responses including creativity, analytical thinking, work-speed and accuracy (Förster, Higgins, & Taylor Bianco, 2003; Friedman & Förster, 2001; Seibt & Fortster). This means that the influence of the group situation on the regulatory focus of group members has consequences for the group itself. It may determine for instance the creativity or accuracy of the team and thereby affect the likelihood that certain results are accomplished by the team.

Are Groups Promotion or Prevention Focused?

A remarkably consistent finding in the current thesis is that we observed stronger effects of the group context on the promotion focus than on the prevention focus of individual group members. Previous research (Aaker & Lee, 2001; Lee, Aaker, & Gardner, 2000) examined regulatory focus in relation with individuals' self-construals. Lee and colleagues (2000) and Aaker and Lee (2001) found that an independent self-construal in which the self is defined in its relational context with other individuals is associated with a prevention focus, whereas an independent self construal is associated with a promotion focus. This research thus seems to imply that a group situation that by definition implies interrelatedness between the individual and other group members should lead to a stronger prevention focus than when the individual

is alone. In the sense that the results of the current thesis mostly demonstrate promotion effects this is an interesting finding in its own right. Even though the self-construal of group members may become more interdependent as a result of the group context, the findings of this thesis show that this clearly does not imply that the group context excludes promotion focused responses. This is good news for many teams that try to obtain goals that are more likely to be obtained with a promotion focus rather than with a prevention focus (e.g., sport teams, development teams; for a further discussion of the implications for teams, see Practical Implications). For instance, in a brainstorm task our finding that the group can adopt a promotion focus already seems to be applied. That is, in the instructions for a typical brainstorm task group members are encouraged to come up with all ideas they can think of (so-called "freewheeling") and not to criticize each other. The apparent goal of this instruction is to focus group members' attention on gains versus non-gains instead of loss versus non-loss, in order elicit more creativity by the group members. Our results indeed demonstrate that it is possible to shift the focus of a group to more promotion focus consistent responses and therefore can explain why these brain storm instructions are effective in enhancing the creativity of group members' responses.

How does the research by Aaker & Lee (2001) and Lee and colleagues (2000) relate to the research discussed in this thesis that demonstrates that group contexts can also elicit more promotion focus consistent responses among group members? Possibly, the ease with which the group context elicits promotion or prevention consistent responses among group members also depends on population characteristics. We conducted our experiments in Dutch-student populations containing young and highly educated individuals raised in a relatively individualistic Western culture. Both having a high level of education and growing up in an individualistic culture might cause individuals to have more independent self-construals than individuals that are lower educated and/or raised in collectivistic cultures. As these independent

self-construals have been found to be related to a promotion focus rather than to a prevention focus (Aaker & Lee, 2001; Lee et al., 2000), it might have been easier to activate a promotion focus than a prevention focus in our population. It would therefore be interesting to examine the impact of group situations in more collectivistic cultures or among participants with a strong interdependent self-construal. Possibly, among these individuals, group situations would be more successful in eliciting prevention consistent responses among group members.

Another reason for the stronger effects found for group influence on individual members' promotion focus compared to prevention focus may be that - as suggested by the findings of Aaker & Lee (2001) and Lee and colleagues (2000)- team situations in general indeed make group members more prevention focused. In other words, there may be a ceiling effect for the prevention focus of group members. Group situations might therefore be able to lift the promotion focus of group members, while the prevention focus is already at its maximum level and cannot be further raised by a prevention focus eliciting group situation.

Group effects on Implicit Beliefs

In this thesis, evidence was provided that groups have an impact on the mind-sets of group members in terms of their regulatory focus. This means that the group situation can influence the way that group members unconsciously perceive the world, which may have important consequences for other areas in which implicit beliefs play a role. That is, the group context may also affect other types of group members' mind-sets or unconscious biases. For instance, the group context may influence a group member's implicit beliefs concerning gender or race. In that case the group context may also affect the responses of group members towards for instance women or ethnic minorities. More specifically, it may be that someone can be an implicit racist or sexist in one group situation and respond more unbiased in other group situations. As our

research demonstrated that implicit responses can be part of the identity of the group, these differences in responses based on implicit beliefs may even occur without the actual presence of the group but solely depend on which identity (personal or social) is salient. This may explain for instance that while an individual may personally hold emancipated beliefs, the individual does not respond in accordance with these beliefs when the work context is salient.

Strengths and Limitations, and Directions for Further Research

The current thesis provides more insight in how and to what extent group members' regulatory focus is affected by the group context and how the regulatory focus of the group members impacts on the performance of the team. Of the six experiments discussed in this thesis, three were performed in virtual groups, two in experimental groups, and one in a real-life group. The fact that a multitude of experimental methodologies has led to converging conclusions substantiates the robustness and the external validity of our findings.

Although this thesis greatly contributes to our understanding of regulatory focus in group contexts, there also remain questions. For instance, as detailed above, it is not totally clear why in the present thesis more pronounced effects for promotion focus than for prevention focus were found. An experiment taking into account participants' self-construal (independent vs. interdependent) may find out whether these effects were driven by population characteristics. Another interesting issue that might be resolved in future research is to discern the effects of self-selection and the influence of the group on the group member's regulatory focus. For instance, Sassenberg and colleagues (2003) found that law students tended to be prevention focused and business administration students tended to be promotion focused. From this finding it is not clear whether these students chose their study based on their regulatory focus, or whether their regulatory focus was a consequence of their group membership. Future research may examine to what extent the regulatory focus of individuals determines which group they choose and to what extent group members' regulatory focus is a consequence of the group

context. With the present thesis I have already demonstrated the important role of the group for determining a group member's regulatory focus and the consequences this can have for team performance

PRACTICAL IMPLICATIONS

The current thesis contributes to the understanding of how group situations affect (the direction of) group members' motivation. This knowledge may be applicable in many settings in which the functioning of a group is important, like in sport teams or work teams. As this thesis shows, the regulatory focus of group members can be affected by the regulatory focus identity as well as the interdependency structure of a team which in turn can affect important behavioral responses like the accuracy and creativity of the group members. So if, for instance, a manager of a nuclear power plant wishes that employees work more accurately it may be a good idea to introduce a motto for the team reflecting a prevention focus like: 'safety first'. Another way to influence the responses of the team could be to alter the nature of the interdependency of the team and to focus attention on the minimal performance group members should always reach to function well as a team member. By contrast, team members of an artistic collective in which creativity is much more important than accuracy, may profit from a motto reflecting a promotion focus such as 'think different!'. This collective may obtain best results in an interdependency structure in which excellent performance is required to function well as a group member, but only once in a while. Depending on the type of performance needed from its members, groups can thus be stimulated to adopt a promotion or prevention focus.

Another practical implication of the finding that groups of individuals can collectively come to share a focus on promotion or prevention is that depending on the regulatory focus of the team, employees might be interested

in different job opportunities. Employees working in prevention focused accountant team, for instance, may be much more concerned with retaining their job or with the uncertainty of contract extension than with their chances of a pay rise, or with their opportunities of promotion. Employees working in a promotion focused investment bank may, in contrast, attach more value to getting a promotion and expected salary growth over time than to the certainty of being able to keep the job for the rest of their life. These potential effects of collective regulatory focus may be important to consider when recruiting new employees or when trying to improve or maintain employees' job satisfaction.

As the examples above illustrate, the findings of the present thesis have many practical implications. The present thesis therefore provides not only new theoretical insights into how self-regulation functions in group contexts, but also insights into real-life group situations in which self-regulation plays a role. Moreover, these insights can be applied in (work-) group settings and may help to optimize the functioning of (work-) groups and the (work) satisfaction of group members. I hope the present thesis will inspire researchers to conduct research in the fascinating field of self-regulation in group contexts.

References

Aaker, J., L., & Lee, A. Y. (2001). I seek pleasures, we avoid pains: The role of self regulatory goals in information processing of persuasion. *Journal of Consumer Research, 28*, 33-49.

Aiken, L. S., & West, S. G. (1991). Multiple Regression: *Testing and interpreting interactions*. Newbury Park, CA: Sage.

Ayduk, O., May, D., Downey, G., & Higgins, E. T. (2003). Tactical differences in coping with rejection sensitivity: The role of prevention pride. *Personality & Social Psychology Bulletin, 29,* 435-448.

Bolino, M.C. & Turnley, W.H. (1999). Measuring Impression Management in Organizations: A Sale Development Based on the Jones and Pittman Taxonomy. *Organizational Research Methods, 2*, 187-206.

Brief, A. P. & Motowidlo, S. J. (1986). Prosocial organizational behaviors. *Academy of Management Review, 11,* 710-725.

Brodscholl, J. C., Kober, H., & Higgins, E. T. (2007). Strategies of self-regulation in goal attainment versus goal maintenance. *European Journal of Social Psychology, 37*, 599-792.

Cicchetti, D. V., & Sparrow, S. A. (1981). Developing criteria for establishing interrater reliability of specific items: Applications to the assessment of adaptive behavior. *American Journal of Mental Deficiency, 86*, 127-137.

Crowe, E., & Higgins, E. T. (1997). Regulatory focus and strategic inclinations: Promotion and prevention in decision-making. *Organizational Behavior and Human Decision Processes, 69*, 117-132.

Ellemers, N., De Gilder, D., & Haslam, S.A. (2004). Motivating individuals and groups at work: A social identity perspective on leadership and group performance. *Academy of Management* Review*, 29*, 459-478.

Ellemers, N., Spears, R., & Doosje, B. (1997). Sticking together or falling apart: Group identification as a psychological determinant of group commitment versus individual mobility. *Journal of Personality and Social Psychology, 72*, 123-140.

Faddegon, K., Ellemers, N.,& Scheepers, D. (2008). *Promoting to be the best, or preventing not to be the worst: Regulatory focus and group tasks.* Manuscript submitted for publication.

Faddegon, K., Scheepers, D., & Ellemers, N. (2008). If *we* have the will there will be a way: Regulatory focus as a group identity. *European Journal of Social Psychology,38,* 880-895.

Florack, A., & Hartmann, J. (2007). Regulatory focus and investment decisions in small groups. *Journal of Experimental Social Psychology, 43,* 626-632.

Förster, J., & Higgins, E. T. (2005). How global versus local perception fits regulatory focus. *Psychological Science, 16*, 631-636.

Förster, J., Higgins, E. T., & Idson, L. C. (1998). Approach and avoidance strength during goal attainment: Regulatory focus and the "goal looms larger" effect. *Journal of Personality & Social Psychology, 75*, 1115-1131.

Förster, J., Higgins, E.T., & Taylor Bianco, A. (2003). Speed/accuracy in performance: Tradeoff in decision making or separate strategic concerns? *Organizational Behavior and Human Decision Processes, 90*, 148-164.

Fraser, C., Gouge C., & Billig, M., (1971). Risky Shifts, cautious Shifts, and group polarization. *European Journal of Social Psychology, 1,* 7-30.

Freitas, A.L., & Higgins, E. T. (2002). Enjoying goal-directed action: The role of regulatory fit. *Psychological Science, 13*, 1-6.

Friedman, R., & Förster, J. (2000). The effects of approach and avoidance motor actions on the elements of creative insight. *Journal of Personality and Social Psychology, 79*, 477-492.

Friedman, R., & Förster, J. (2001). The effects of promotion and prevention cues on creativity. *Journal of Personality and Social Psychology, 81*, 1001-1013.

Gonzalez, R., & Griffin, D.W. (1999). The correlational analysis of dyad-level data in the distinguishable case. *Personal Relationships, 6*, 449-469

Grant, H., & Higgins, E. T. (2003). Optimism, promotion pride, and prevention pride as predictors of quality of life. *Personality and Social Psychology Bulletin, 29*, 1521 - 1532.

Greenwald, A.G., McGhee, D.E., & Schwartz, J.L.K. (1998). Measuring individual differences in implicit cognition: The implicit association test. *Journal of Personality and Social Psychology, 74*, 1464-1480.

Haslam S.A. & Ellemers, N. (2005). Social identity in industrial and organisational psychology. *International Review of Industrial and Organizational Psychology, 20,* 39-118.

Higgins, E. T. (1997). Beyond pleasure and pain. *American Psychologist, 52*, 1280-1300.

Higgins, E. T. (2000). Making a good decision: Value from fit. *American Psychologist, 55*, 1217-1230.

Higgins, E. T., Friedman, R. S., Harlow, R. E., Idson, L. C., Ayduk, O. N., & Taylor, A., (2001). Achievement orientations from subjective histories of success: Promotion pride versus prevention pride. *European Journal of Social Psychology, 31*, 3-23.

Higgins, E. T., Roney, C. J., Crowe, E., & Hymes, C. (1994). Ideal versus ought predilections for approach and avoidance distinct self-regulatory systems. *Journal of Personality & Social Psychology, 66*, 276-286.

Higgins, E. T., Shah, J. Y., & Friedman, R. (1997). Emotional responses to goal attainment: Strength of regulatory focus as moderator. *Journal of Personality and Social Psychology, 72*, 515-525.

Homan, A. C., van Knippenberg, D., Van Kleef, G. A., & De Dreu, C. K. W. (2007). Interacting dimensions of diversity: Cross-categorization and the functioning of diverse work groups. *Group Dynamics: Theory, Research, and Practice, 11,* 79-94.

Idson, L. C., Liberman, N., & Higgins, E. T. (2000). Distinguishing gains from nonlosses and losses from nongains: A regulatory focus perspective on hedonic intensity. *Journal of Experimental Social Psychology, 36*, 252-274.

Jackson, J. W., & Smith, E. R. (1999). Conceptualizing social identity: A new framework and evidence for the impact of different dimensions. *Personality and Social Psychology Bulletin, 25*, 120-135.

Jackson, S. E., Joshi, A., & Erhardt, N. H. (2003). Recent research on team and organizational diversity: SWOT analysis and implications. *Journal of Management, 29*, 801–830.

Janis, I.L. (1972). *Victims Of Groupthink*. Boston: Houghton Mifflin.

Jehn, K., Northcraft, G., & Neale, M. (1999). Why differences make a difference: A field study of diversity, conflict, and performance in workgroups, *Administrative Science Quarterly, 44*, 741-763.

Jetten, J., Postmes, T., & McAuliffe, B. J. (2002). "We're all individuals": Group norms of individualism and collectivism, levels of identification, and identity threat. *European Journal of Social Psychology, 32*, 189-207.

Kerr, N.L., & Bruun, S.E. (1983). Dispensability of member effort and group motivation losses: Free-rider effects. *Journal of Personality and Social Psychology, 44*, 78-94.

Lee, A. Y., Aaker, J. L., & Gardner, W. L. (2000). The pleasures and pains of distinct self-construals: The role of interdependence in regulatory focus. *Journal of Personality and Social Psychology, 78,* 1122-1134

Levine, J. M., Higgins, E. T., & Choi, H. S. (2000). Development of strategic norms in groups. *Organizational Behavior and Human Decision Processes, 82*, 88-101.

Lockwood, P., Jordan, C.H., & Kunda, Z. (2002). Motivation by positive or negative role models: Regulatory focus determines who will best inspire us, *Journal of Personality and Social Psychology, 83*, 854–864.

Louro, M.J., Pieters, R., & Zeelenberg, M. (2005). Negative returns on positive emotions: The influence of pride and self-regulatory goals on repurchase decisions. *Journal of Consumer Research, 31*, 833-840.

McGraw, K. O., & Wong, S. P. (1996). Forming inferences about some intraclass correlation coefficients. *Psychological Methods, 1*, 30-46.

Miller, C.E., & Komorita, S.S. (1995). Reward allocation in task-performance groups. *Journal of Personality and Social Psychology, 69,* 80-90.

Myers, D.G. (1982). Polarizing effects of social interaction. In: H. Brandstätter, J.H. Davis, & G. Stocker-Kreichgauer (Eds.), *Group Decision Making* (pp. 125-161). New York: Academic Press.

Oakes, P.J., Haslam, S.A. & Turner, J.C. (1994) *Stereotyping and Social Reality*. Oxford, UK and Cambridge, MA: Blackwell

Paulus, P. B. & Dzindolet, M. T. (1993) Social influence processes in group brainstorming. *Journal of Personality and Social Psychology, 64*, 575–586.

Plaks, J. E., & Higgins, E. T. (2000). Pragmatic use of stereotyping in teamwork: Social loafing and compensation as a function of inferred partner-situation fit. *Journal of Personality and& Social Psychology, 79*, 962-974.

Rietzschel, E. F., Nijstad, B. A., & Stroebe, W. (2006). Productivity is not enough: A comparison of interactive and nominal groups in idea generation and selection. *Journal of Experimental Social Psychology, 42*, 244-251.

Rietzschel, E. F., Nijstad, B. A., & Stroebe, W. (in press). Relative accessibility of domain knowledge and creativity: The effects of knowledge activation on the quantity and quality of generated ideas. *Journal of Experimental Social Psychology*.

Rink, F., & Ellemers, N. (2007). The role of expectancies in accepting task-related diversity: Do disappointment and lack of commitment stem from actual

differences or violated expectations? *Personality and Social Psychology Bulletin*, *33*, 842-854.

Roney, C. J., Higgins, E. T., & Shah, J. Y. (1995). Goals and framing: How outcome focus influences motivation and emotion. *Personality and Social Psychology Bulletin, 21*, 1151-1160.

Sassenberg, K., & Woltin, K.A. (in press). Group-based self-regulation: The effects of regulatory focus. *European Review of Social Psychology*.

Sassenberg, K., Jonas, K. J., Shah, J. Y., & Brazy P. C. (2007). Why Some groups just feel better: The regulatory fit of group power. *Journal of Personality and Social Psychology, 92,* 249-267.

Sassenberg, K., Kessler, T., & Mummendey, A. (2003). Less negative = more positive? Social discrimination as avoidance and approach. *Journal of Experimental Social Psychology, 39,* 48-58.

Scholer, A. A., Stroessner, S. J., & Higgins, E. T. (2008). Responding to negativity: How a risky tactic can serve a vigilant strategy. *Journal of Experimental Social Psychology, 44,* 767-774.

Seibt, B., & Förster, J. (2004). Risky and careful processing under stereotype threat: How regulatory focus can enhance and deteriorate performance when self stereotypes are active. *Journal of Personality and Social Psychology, 87*, 38 - 56.

Seibt, B., & Förster, J. (2004). Stereotype threat and performance: How self-stereotypes influence processing by inducing regulatory foci. *Journal of Personality and Social Psychology, 87*, 38-56.

Semin, G. R., Higgins, E. T., Gil de Montes, L., Estourget, Y., & Valencia, J. (2005). Linguistic signatures of regulatory focus: How abstraction fits promotion more than prevention. *Journal of Personality and Social Psychology, 89,* 36-45.

Shah, J. Y., Brazy, P. B., & Higgins, E. T. (2004). Promoting us or preventing them: Regulatory focus and the nature of in-group bias. *Personality and Social Psychology Bulletin, 30*, 433-446.

Shah, J. Y., Brazy, P. C, & Higgins, E. T. (2002). Promotion and prevention forms of ingroup bias. In D. M. Mackie & E. R. Smith (Eds.), *From prejudice to intergroup emotions: Differentiated reactions to social groups* (pp. 31-48). Philadelphia, PA: Psychology Press.

Shah, J. Y., Higgins, E. T., & Friedman, R. (1998). Performance incentives and means: How regulatory focus influences goal attainment. *Journal of Personality and Social Psychology, 74*, 285-293.

Shrout, P.E. & Fleiss, J.L. (1979). Intraclass Correlations: Uses in Assessing Rater Reliability, *Psychological Bulletin, 86*, 420-428.

Snodgrass, J. G. & Corwin, J. (1988). Pragmatics of measuring recognition memory - applications to dementia and amnesia. *Journal of Experimental Psychology-General, 117*, 34-50.

Steiner, I.D. (1972). *Group process and productivity*. New York: Academy Press.

Stekelenburg, J. van. (2006). *Promoting or preventing social change. Instrumentality, identity, ideology and groups-based anger as motives of protest participation*. Unpublished doctoral dissertation, Vrije Universiteit, Amsterdam, The Netherlands.

Tajfel, H. (1978). Interindividual behaviour and intergroup behaviour. In H. Tajfel (Ed.), *Differentiation between social groups: Studies in the social psychology of intergroup relations* (pp. 27-60). New York: Academic Press.

Tajfel, H., & Turner, J.C. (1979). An integrative theory of intergroup conflict. In W.G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33-47). Monterey, CA: Brooks/Cole.

Triantis, H.C., Hall, E.R., & Ewe, R.B. (1965). Member heterogeneity and dyadic creativity. *Human Relations, 15*, 33-55.

Turner, J. C. (1991). *Social influence*. Milton Keynes: Open University.

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory*. Oxford: Blackwell.

Turner, J.C., Oakes, P.J., Haslam, S.A. & McGarty, C.M. (1994) Self and collective: Cognition and social context. *Personality and Social Psychology Bulletin, 20*, 454-463.

Van Knippenberg, D., Haslam, S. A., & Platow, M. J. (2007). Unity through diversity: Value-in-diversity beliefs, work group diversity, and group identification. *Group Dynamics: Theory, Research, and Practice, 11*, 207-222.

Vaughn, L. A., Malik, J., Schwartz, S., Petkova, Z., & Trudeau, L. (2006). Regulatory fit as input for stop rules. *Journal of Personality and Social Psychology, 91*, 601-611.

Wallach, M. A., Kogan, N., & Bem, D. J. (1962). Group influence on individual risk taking. *Journal of Abnormal and Social Psychology, 65*, 75-86.

Weber, B., & Hertel, G. (2007). Motivation gains of inferior group members: A meta-analytical review. *Journal of Personality and Social Psychology, 93*, 973 -993.

Nederlandstalige Samenvatting (Dutch Summary)

Toen de internetzeepbel eind twintigste eeuw knapte werd duidelijk dat een grote groep mensen collectief een kijk op de wereld had gecultiveerd die uitblonk in optimisme en weinig oog had voor de mogelijk negatieve gevolgen van hun gedrag. Blijkbaar waren de spectaculaire resultaten van de ICT-revolutie, weerspiegeld in een collectief geloof in het succes van bedrijven die zich hiermee bezighielden, voor veel mensen overtuigend bewijs dat het ze in de toekomst alleen maar beter kon afgaan. Door dit collectieve vertrouwen wilden beleggers steeds meer betalen voor de aandelen, waarmee ze elkaar alleen maar verder versterkten in hun overtuiging. Toen het allemaal fout ging en de zeepbel uiteenspatte, bleek pas hoe onterecht de veronderstelling was geweest dat met deze aandelen alleen geld te verdienen was en geen geld te verliezen. In het huidige proefschrift heb ik onderzoek verricht naar een zelfregulatie theorie die over dit soort verschillen in perceptie van de wereld gaat. Met mijn onderzoek in groepen kan onder andere verklaard worden hoe mensen collectief deze percepties kunnen gaan delen.

Dit proefschrift gaat over de invloed van groepsprocessen op de regulatieve focus van de groepsleden. Regulatieve focus theorie (o.a. Higgins, 1997) onderscheidt *individuen* op grond van hun focus. Iemand met een promotiefocus is vooral gericht op het verwezenlijken van haar idealen en ambities en ervaart plezier en pijn vooral bij de aan- of afwezigheid van iets positiefs. Iemand met een preventiefocus, daarentegen, laat zich eerder leiden door haar verplichtingen en verantwoordelijkheden en waardeert uitkomsten in het leven eerder in termen van de aan- of afwezigheid van iets negatiefs. Dit heeft ook gevolgen voor de manier waarop iemand iets prefereert aan te pakken en op de emoties die ze bij het behalen van een uitkomst ervaart: een individu met een promotiefocus houdt van een gretige, creatieve aanpak en ervaart eerder blijdschap en verdriet als een doel respectievelijk wel of niet behaald wordt, terwijl iemand met een preventiefocus liever voorzichtig en accuraat te werk gaat en het wel of niet behalen van een doel vooral ervaart in termen van respectievelijk opluchting en onrust. Iemands regulatieve focus blijkt zowel af te hangen van persoonlijkheid (die je met een vragenlijst kunt vaststellen), als van de situatie waarin iemand verkeert. Zo zal een bedreigende situatie eerder

tot een preventiefocus leiden en een situatie van overvloed een promotiefocus inluiden. Zoals uit dit proefschrift blijkt, kan ook de groepssituatie iemands regulatieve focus beïnvloeden. In dit proefschrift heb ik onderzocht hoe regulatieve focus onderdeel van de van de groepsidentiteit kan worden waaruit groepsleden hun eigen focus deduceren (Hoofdstuk 2), hoe de regulatieve focus van de groepsleden inductief uit de groepssituatie kan ontspruiten (Hoofdstuk 3) en hoe teams functioneren waarin zowel mensen met een promotiefocus als met een preventiefocus vertegenwoordigd zijn (Hoofdstuk 4).

In Hoofdstuk 2 werd regulatieve focus onderzocht als onderdeel van de groepsidentiteit. Uit onderzoek naar sociale identiteit is bekend dat de identiteit van een groep invloed heeft op de gedragingen van individuele groepsleden, vooral wanneer zij zich met de groep identificeerden. Ik heb met twee studies onderzocht of dit ook voor regulatieve focus als groepsidentiteit het geval is (ook "collectieve regulatieve focus" genoemd). Om collectieve regulatieve focus vorm te geven, kregen deelnemers aan het onderzoek motto's te zien die zogenaamd door leden van hun groep (waar ze willekeurig in werden geplaatst) als favoriet waren bestempeld (bijvoorbeeld: "Waar een wil is, is een weg" als promotiemotto en "Voorkomen is beter dan genezen" als preventiemotto). Inderdaad bleek uit het gedrag van de groepsleden dat ze beïnvloed werden door de collectieve focus van hun groep: bij een collectieve promotiefocus vertoonden deelnemers gretig en risicovol gedrag; was de identiteit preventiegericht dan resulteerde dit in relatief voorzichtiger meer risicomijdend gedrag. Zoals verwacht op grond van sociale identiteit theorie bleek dit effect markanter voor deelnemers die zich sterker identificeerden met hun groep.

Nu duidelijk was dat een aanwezige voorkeur voor promotie of preventie van de groep de regulatieve focus van de groepsleden kan beïnvloeden, wilde ik weten of de voorkeur voor promotie of preventie ook uit het groepsproces kan ontstaan. Om dit uit te zoeken werden twee experimenten verricht waarbij deelnemers werkten in een team waarbij ofwel het *beste* ofwel het *slechtste* groepslid de teamprestatie bepaalt (zoals dat bij respectievelijk een quiz zoals Tien voor Taal en een ploegentijdrit van de Tour de France het geval is). Ik verwachtte dat wanneer het beste groepslid de prestatie bepaalt (dit wordt een "disjunctieve groepstaak" genoemd) en

dientengevolge groepsleden zich in positieve zin kunnen profileren, ze geneigd zullen zijn een promotiefocus aan te nemen. Omgekeerd, verwachtte ik dat wanneer het slechtste groepslid de prestatie bepaalt (ook wel een "conjunctieve groepstaak"), groepsleden zullen willen voorkomen negatief op te vallen, hetgeen preventiefocus teweeg zou moeten brengen. In het eerste experiment werkten deelnemers aan een anagrammentaak en in het tweede experiment aan een bouwtaak waarbij gebruik gemaakt werd van de houten blokken van Jenga®. Beide experimenten bevestigden onze hypotheses: disjunctieve groepsleden gedroegen zich ambitieuzer en ervoeren meer promotie specifieke emoties dan conjunctieve groepsleden.

De eerste twee onderzoekslijnen hebben dus laten zien dat groepsprocessen op twee manieren de regulatieve focus van een groepslid kunnen beïnvloeden: afgeleid uit de collectieve focus van de groep en geïnduceerd uit het groepsproces. Maar hoe functioneren groepen eigenlijk waarin zowel mensen met een promotiefocus als met een preventiefocus vertegenwoordigd zijn? Dit is het onderwerp van hoofdstuk 4. In het eerste experiment werkten deelnemers in tweetallen aan een brainstormtaak waarin zij ideeën moesten genereren voor de vraag "hoe kan het welzijn van Nederland verbeterd worden". De tweetallen waren samengesteld uit of twee personen met dezelfde regulatieve focus (promotie of preventie), of uit twee personen met een verschillende regulatieve focus. In lijn met het idee dat een promotiefocus met meer ambitie en gretigheid gepaard gaat, genereerden tweetallen waarvan beide personen promotie gefocust waren de meeste ideeën, gevolgd door de tweetallen waarvan één van de duoleden een promotiefocus had. Dit eerste experiment liet zien dat de samenstelling van de groep *in een experimentele situatie* invloed kan hebben op het teamresultaat. Voor de tweede studie was ik benieuwd naar de invloed van de regulatieve focus van de groepsleden van *bestaande teams*. Om dit te onderzoeken heb ik voor het tweede experiment regulatieve focus vragenlijsten afgenomen bij hockeyteams uit de Rabobank Hoofdklasse. Met deze vragenlijst kon regulatieve focus van de spelers en de coach vastgesteld worden. Om de teamprestaties vast te stellen heb ik gebruik gemaakt van de competitieresultaten (aantal punten die teams hadden vergaard aan het eind van het seizoen). Uit dit onderzoek kwamen verschillende interessante resultaten naar voren. Zo bleken teams waarin

zowel mensen met een hoge preventiefocus als een lage preventiefocus vertegenwoordigd zijn beter te presteren dan teams met minder variatie in preventiefocus van de spelers. Tegelijkertijd beoordeelde de coach spelers met een hoge preventiefocus als meer teamgericht en mensen met een lage preventiefocus als meer gericht op individualistische acties. Samen kan dit er op duiden dat het voor een goede teamprestatie belangrijk is om spelers te hebben die sterk in de teamdiscipline blijven spelen, maar ook spelers die zich minder van de teamnorm aantrekken en af en toe een risico nemen.

Met dit proefschrift is een stap gezet in het beter begrijpen hoe groepsprocessen kunnen inwerken op de zelfregulatie van groepsleden en hoe omgekeerd de hieruit voortvloeiende gedragingen en strategieën weer de uitkomsten van het team kunnen beïnvloeden. Voor regulatieve focus theorie heeft het onderzoek aangetoond dat ook groepsprocessen een invloed kunnen uitoefenen op iemands regulatieve focus. Praktisch heeft het proefschrift waarde, daar waar het van belang is om groepsleden bijvoorbeeld creatiever of juist meer accuraat te laten werken of meer of minder risicomijdend. Een implicatie van regulatieve focus theorie is namelijk dat mensen niet alleen kwantitatief in motivatie kunnen verschillen, maar ook kwalitatief, dat wil zeggen in de *richting* van hun motivatie. Toegenomen motivatie heeft bijvoorbeeld minder zin als iemand die een creatief probleem moet oplossen een werkwijze hanteert die vooral op het vermijden van fouten en accuratesse gericht is. In dat geval kan het nuttiger zijn om de aard van de motivatie te veranderen naar een promotiefocus dan om iemand aan te sporen extra haar best te doen. Ook is het mogelijk om met dit proefschrift fenomenen zoals het knappen van de internetzeepbel beter te begrijpen: beleggers staken elkaar aan met hun enthousiasme voor de toekomst, waardoor men collectief in een promotiefocus raakte waarbij uitkomsten vooral werden gewaardeerd in de mate waarin ze iets opbrachten, in plaats van de risico's op verlies die ze konden behelzen. Op basis van dit proefschrift zou je bovendien kunnen verwachten dat deze adoptie het sterkst was bij die mensen die zich het krachtigst met de ICT-beweging identificeerden.

Dankwoord

Hoewel ik het werken aan het proefschrift over het algemeen als een leuke activiteit heb ervaren, zou de tijd in Leiden nooit zo fijn en inspirerend geweest zonder de gezellige en sociale collega's en de goede sfeer op de afdeling. Hier wil ik al mijn collega's uit Leiden dan ook heel hartelijk voor bedanken. Met name zou ik Colette, Erik, Dennis, Maarten, Emma, Lukas en Anne Marike willen bedanken voor de gezellige gesprekken/ koffiepauzes/ leuke uitjes buiten het werk/ en de goede sfeer op de kamer (omcirkel wat op jou van toepassing is, meerdere antwoorden zijn toegestaan ;-).

Daarnaast zijn er mensen die ik wil bedanken voor de hulp die ze hebben geboden bij het schrijven van het proefschrift zelf. Kai Sassenberg ben ik dankbaar voor zijn hulp bij het analyseren van de signaaldetectiedata. Jacquelien Van Stekelenburg wil ik graag bedanken voor het opzetten van de regulatory focus groep waarvan de bijeenkomsten zeer nuttig waren om meer grip te krijgen op de theorie en onderzoekservaringen uit te wisselen. I would like to thank John Levine very much for his great hospitality and the intellectually inspiring environment he provided during my stay at the University of Pittsburgh.

Ook zou ik graag mijn paranimfen willen bedanken: voor hun hulp bij het organiseren van de promotie, maar vooral ook voor de vele dierbare momenten van vriendschap die ik heb mogen ervaren tijdens mijn promotie: Rens en Sezgin superbedankt! Andere vrienden die ik graag wil bedanken zijn: Lex, Jitte, Helm en Rob voor de vriendschap, de gezellige etentjes, de muziek en de feestjes. Dit bracht de nodige ontspanning tijdens het werken aan het proefschrift.

Natuurlijk mogen mijn ouders, die altijd erg geïnteresseerd zijn geweest in mijn onderzoek, niet in deze danklijst ontbreken: Hans en Paula, ik prijs mezelf gelukkig om ouders te hebben die me geleerd hebben om van de details van het leven te kunnen genieten. Bedankt voor alle liefde die ik heb mogen ontvangen.

Tot slot wil ik jou graag bedanken lieve Francine, want het laatste anderhalf jaar van mijn promotie was toch wel het aller-leukst en daar heb jij wel het een en ander mee te maken gehad. Ik vond het een voorrecht om de laatste fase van onze promoties samen te hebben kunnen delen. Verder wil ik je bedanken voor de vele leuke herinneringen die je nu al aan mijn leven hebt toegevoegd. Ik kijk erg uit naar de "toekomstige herinneringen".

Curriculum Vitae

Krispijn Johannes Faddegon, geboren op 13 oktober 1976 te Leiden op een steenworp afstand van het Academiegebouw, groeide op in Rotterdam. Hier behaalde hij in 1995 zijn VWO diploma aan het Libanon Lyceum. Voor zijn studie vestigde hij zich in Amsterdam, waar hij tot 2001 Biologische Psychologie studeerde aan de Vrije Universiteit. Na als beleidsonderzoeker en als onderzoeksassistent gewerkt te hebben, begon hij in april 2004 aan zijn promotieonderzoek aan de Universiteit Leiden. Sinds september 2008 werkt Krispijn bij de Wetenschappelijke Raad voor het Regeringsbeleid (WRR) in Den Haag.

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