Fostering Team Creativity: Perspective Taking as Key to Unlocking Diversity's Potential

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Abstract

Despite the clear importance of team creativity for contemporary organizations, the conditions that foster it are not very well understood. Even though diversity, especially diversity of perspectives and knowledge, is frequently argued to stimulate higher creativity in teams, empirical findings on this relationship remain inconsistent. We develop a theoretical model in which the effect of a team's diversity on its creativity is moderated by the degree to which team members engage in perspective taking. We propose that perspective taking helps realize the creative benefits of diversity of perspectives by fostering information elaboration. Results of a laboratory experiment support the hypothesized interaction between diversity and perspective taking on team creativity. Diverse teams performed more creatively than homogeneous teams when they engaged in perspective taking, but not when they were not instructed to take their team members' perspectives. Team information elaboration was found to mediate this moderated effect and was associated with a stronger indirect effect than mere information sharing or task conflict. Our results point to perspective taking as an important mechanism to unlock diversity's potential for team creativity.

Keywords: Team Creativity, Diversity, Perspective Taking

Fostering Team Creativity: Perspective Taking as Key to Unlocking Diversity's Potential

The importance of creativity for organizations' ability to adapt to changing environments and innovate is widely recognized (George, 2007; Zhou & Shalley, 2010). Due to the complexity of issues organizations face and more specialized work roles, creative work is frequently done by teams. Whenever the members of these teams differ in their task-relevant perspectives and knowledge, existing theories predict higher creativity (Jackson, 1992; West, 2002). Yet this notion of a consistent main effect of diversity on team creativity is not backed by reliable and generalizable evidence (Hülsheger, Anderson, & Salgado, 2009; Jackson & Joshi, 2011) raising the question of how to realize diversity's benefits for team creativity. In this study, we present perspective taking directed at teammates as a tool that enables diverse teams to bring out their creative potential. Perspective taking entails the attempt to understand the thoughts, motives, and feelings of another person (Parker, Atkins, & Axtell, 2008). We propose that taking the perspective of teammates helps to realize the promise of diverse perspectives for team creativity by facilitating information elaboration, a team process that we argue is especially conducive to it.

Although research has yet to establish the positive effect of elaboration on team creativity, we propose that it constitutes a more proximal and compelling precursor to team creativity than other concepts suggested to mediate the positive effects of diversity (van Knippenberg, De Dreu, & Homan, 2004). In contrast to task conflict and information sharing, elaboration captures the crucial elements of team members constructively discussing each others' suggestions and integrating the input different members provide. Yet diverse perspectives do not automatically entail higher elaboration and team creativity (cf. Dahlin, Weingart, & Hinds, 2005). Instead, this requires that the members of diverse teams invest cognitive energy in understanding their teammates' approaches to the task. Due to its other-focused nature, the cognitive process of

perspective taking has considerable potential to increase the creativity of diverse teams as it may not only facilitate information exchange (cf. Krauss & Fussell, 1991), but also engender a more comprehensive evaluation of the suggested ideas, and an integration of different perspectives.

Based on this reasoning, we propose that perspective taking moderates the effect of diversity on team creativity and that this effect is mediated by information elaboration (see Figure 1 for an overview of the model). Although it seems particularly suited to foster the integration of different perspectives that is central to the notion of creative synergy (Kurtzberg & Amabile, 2001) and to realizing the benefits of diversity (van Knippenberg & Schippers, 2007), perspective taking and related other- or team-focused processes play no role in current diversity models. Instead, these models focus on task- and team member characteristics as moderators of diversity's effect on team processes and outcomes (van Knippenberg et al., 2004). Moreover, our study adds an important facet to the understanding of how perspective taking affects team outcomes. Its relevance for intra- and interpersonal outcomes is well established (Parker et al., 2008) and individual-level findings suggests that taking beneficiaries' perspective may inspire more creative ways of helping them (Grant & Berry, 2011). Complementing this research and extending it to the context of collaborative teamwork, we show that perspective taking between teammates may increase team creativity. Our study thus yields valuable insights into how team composition and processes interact to foster the important outcome of team creativity.

Literature Review and Hypotheses

Team Creativity

In organizations, creativity, defined as the joint novelty and usefulness of ideas regarding products, services, processes, and procedures (Amabile, 1988; Zhou & Shalley, 2010), is of vital importance and creative work is frequently carried out in teams. Hence, the question about the

state of our knowledge about team creativity has been raised more than once. Often, it is met with concern about how little is known about how teams perform creatively (George, 2007; Paulus & Nijstad, 2003). This dearth of scientific knowledge is partly attributable to a strong research focus on individual creativity in organizations (Shalley, Zhou, & Oldham, 2004). Furthermore, the existing research on team creativity mainly stems from the brainstorming paradigm in which creativity is equated with divergent thinking and measured as fluency, flexibility, originality, and elaboration (Paulus, 2000), thus limiting the extent to which these results inform questions regarding creativity defined as above (Zhou & Shalley, 2010). We rely on the commonly accepted conceptualization of workplace creativity to define team creativity as the joint novelty and usefulness of a final idea developed by a group of people. Our focus on the quality of a final creative outcome highlights the importance of studying the factors that contribute both to the generation of initial ideas and their refinement into final creative solutions.

The Potential Benefits of Diverse Perspectives

The wide use of teams for creative tasks is based on the notion that they bring a wider pool of perspectives and knowledge to the table which, if properly integrated, lead to creative synergy (Kurtzberg & Amabile, 2001). This diversity of perspectives forms a resource from which teams are expected to benefit on creative tasks (Jackson, 1992; Williams & O'Reilly, 1998). Following prior work, we refer to diversity as a team characteristic that denotes the extent to which team members differ with regard to a given attribute (Joshi & Roh, 2009; van Knippenberg & Schippers, 2007) but not whether these differences are recognized within a team (which reflects the concept of perceived dissimilarity, Harrison & Klein, 2007). Yet we do not single out a specific diversity attribute (e.g., age) or class of attributes (e.g., deep-level diversity). Instead, we focus on the underlying differences in perspectives on a task as the more proximal indicator of a

team's increased cognitive resources (van Knippenberg et al., 2004). In line with the word's basic meaning and origins (the Latin 'perspicere' meaning 'to look through'), we use the term perspective to denote "a particular way of considering something" (Cambridge Online Dictionary). A perspective thus shapes *how* a situation is viewed including the perceived relevance and evaluation of certain aspects of the problem and its proposed solutions.

Whereas differences in perspectives are a common part of many diversity dimensions usually classified as job-related (e.g., functional diversity; Bunderson & Sutcliffe, 2002), recent theorizing stresses that these underlying differences in task-relevant perspectives are not a function of the diversity attribute alone, but arise from the combination of a diversity attribute with a given task (van Knippenberg et al., 2004). In line with this argument, some studies indicate the task-relevance of surface-level diversity attributes (see McLeod, Lobel, & Cox, 1996; Thomas, 2004 for examples involving demographic diversity) and a recent meta-analysis finds a positive effect of relations-oriented diversity (e.g., gender, ethnicity) on the performance of teams in service industries (Joshi & Roh, 2009). Regardless of their specific source in a given situation, diverse perspectives reflect qualitative differences that equip teams with a broader repertoire of approaches to the task. Thus, they are best conceptualized as diversity in the sense of variety which reaches its maximum when every member has a different perspective and is minimal when all members share a perspective (Harrison & Klein, 2007).

Conceptually, the link between these cognitive resources of diverse teams and higher team creativity is frequently made (e.g., Jackson, 1992; West, 2002). Different perspectives and knowledge form the core of the so-called "value-in-diversity" hypothesis (McLeod et al., 1996) - a value that is deemed especially advantageous for conceptual tasks (McGrath, 1984) including creative tasks. Thus, both the diversity and creativity literatures imply that diversity leads to

more creative outcomes. Despite seeming conceptually straightforward, the link between team diversity and creativity is not supported by conclusive empirical evidence. Although a recent meta-analysis of team-level predictors of creativity and innovation finds a small but significant effect of job-related diversity (Hülsheger et al., 2009), the wide credibility interval for this effect points to the need to consider contingency factors. Similarly, a recent review concludes that for creative tasks, the effects of job-related diversity are mixed (Jackson & Joshi, 2011).

Moderators of the diversity effect

This inconsistency is not limited to research on team creativity but reflects a more general problem in empirically supporting the theoretical assumptions of a main effect of diversity (van Knippenberg & Schippers, 2007). Hence, recent research stresses the need to study the boundary conditions that determine whether the benefits of diversity and the processes underlying these benefits occur. The most comprehensive framework in this regard to date is the categorization-elaboration model (CEM; van Knippenberg et al., 2004). It integrates the social categorization and information-decision making perspective on diversity and outlines a set of moderators of the effect of diversity on team outcomes. According to the CEM, teams benefit from their diversity when members differ in task-relevant perspectives and knowledge and engage in information elaboration. Elaboration is argued to be the central team process underlying diversity's benefits and is defined as the exchange, discussion, and integration of ideas, knowledge, and insights relevant to the team's task (van Knippenberg et al., 2004). Social categorization and intergroup bias may harm diverse teams by disrupting elaboration. Yet the absence of these disruptions does not, according to the model, by itself guarantee elaboration. Instead, team member attributes (ability, motivation) and task demands (complexity, required creativity) additionally affect whether diverse knowledge and perspectives are elaborated on and benefit team outcomes.

Research has provided initial support for task characteristics as a moderator of the effect of different viewpoints on team creativity (cf. Kratzer, Leenders, & van Engelen, 2006) and identified leadership styles as an additional set of external factors that shape this effect (Shin & Zhou, 2007). Moreover, openness to experience (Homan et al., 2008) and need for cognition (Kearney, Gebert, & Voelpel, 2009) have been found to enhance the performance of diverse teams on conceptual tasks. The facilitative effect of these individual-level dispositions which affect team members' motivation and arguably experience in processing a wide variety of information for related team outcomes are indicative of the role that these factors may play for creative tasks. Yet, although these types of moderators are clearly relevant, this research leaves the question of which processes team members themselves can engage in to improve their teams' information processing patterns and reap the rewards of diversity unanswered.

The Moderating Role of Perspective Taking

The widely acknowledged importance of integrating diverse viewpoints for high (creative) performance (Taggar, 2001; cf. Gardner, Gino, & Staats, in press), highlights the need to consider processes that are focused on the team and its members as facilitators of elaboration and creativity. This points to perspective taking between teammates as a potent but so far neglected moderator of diversity's effect on team creativity. As a multi-faceted concept which is used across disciplines, perspective taking has been defined in various ways. These definitions vary in the experiential aspect targeted by perspective taking (i.e., perception, cognition, affect; Kurdek & Rogdon, 1975) and whether it is seen as a stable disposition (Davis, 1980) or a situationally malleable process (e.g., Parker et al., 2008). Yet the different definitions converge on perspective taking as a cognitive process that entails considering or trying to understand another's viewpoint (Caruso, Epley, & Bazerman, 2006; Parker et al., 2008; Sessa, 1996) by "deliberately adopting

their perspective" (Caruso et al., 2006, p. 203; Galinksy & Ku, 2004; Parker et al., 2008). Given our focus on the processes that help teams benefit from their diversity, we define perspective taking following Parker et al. as a cognitive process through which "an observer tries to understand, in a nonjudgmental way, the thoughts, motives, and/or feelings of a target, as well as why they think and/or feel the way they do" (2008, p. 151).

As a cognitive process that is directed at an external target, perspective taking is seen as a facilitator of interpersonal interaction. Taking another's perspective has been shown to reduce in-group favoritism and stereotyping (Galinsky & Moskowitz, 2000), foster cooperative workplace behaviors (Parker & Axtell, 2001) and improve emotional regulation (see Parker et al., 2008, for an overview). Taking into account the needs of a beneficiary of one's work has been linked to suggesting more creative ways of helping them (Grant & Berry, 2011). For teams, perspective taking has been argued to aid team situation model construction and implicit coordination (Rico, Sánchez-Manzanares, Gil, & Gibson, 2008). And empirically, team members' dispositional perspective taking has been related to interpreting conflicts as less person-oriented (Sessa, 1996).

Perspective taking has mostly been considered as an individual-level cognitive process. Yet there are arguments to suggest that in interacting teams perspective taking can acquire the qualities of an emergent group process (Morgeson & Hofmann, 1999) for which team members show high levels of convergence (Chen, Mathieu, & Bliese, 2004). In a team, perspective taking not only occurs in a social setting but also affects the likelihood that other team members reciprocate in kind. In this vein, other-rated perspective taking has been shown to positively relate to communication satisfaction (Park & Raile, 2009) which in turn may improve a person's mood, motivation, and liking of the other, all of which are argued to promote perspective taking (Parker et al., 2008). In line with these arguments, initial evidence supports this proposed

reciprocity in dyads (Axtell, Parker, Holman, & Totterdell, 2007) and teams (Calvard, 2010).

We argue that perspective taking, as an emergent team process, helps teams to capitalize on their diversity on creative tasks by fostering the sharing, discussion, and integration of diverse viewpoints and information. Perspective taking is at least in part an inferential process (Parker et al., 2008), but it can affect how much persons seek (cf. Tjosvold & Johnson, 1978) and share information and perspectives. This is particularly important for highly diverse teams which have been found to not consider the full range of information available to them (Dahlin et al., 2005). Trying to comprehend a team member's perspective creates informational needs that may be satisfied through active inquiry or by monitoring what team members say. Yet even when team members share information and perspectives, knowledge barriers may hinder cross-functional understanding (Carlile, 2002; Dougherty, 1992). By affecting how messages are framed (Boland & Tenkasi, 1996; Krauss & Fussell, 1991) perspective taking may alleviate these difficulties.

Diverse perspectives also come with differences in evaluative standards which may impair team communication (Cronin & Weingart, 2007). Failing to see the value of another's idea can lead to destructive criticism which disrupts communication (cf. Baron, 1988). Taking a team member's perspective entails considering their evaluative standards and may thus facilitate a more constructive appraisal of their ideas. This is likely to foster the process of elaborating on each other's ideas which is required to develop truly creative ideas (Titus, 2000). Finally, increased diversity heightens the demands for teams to integrate their ideas and perspectives (Taggar, 2001). Analyzing another person's viewpoint may lead to a cognitive reframing that helps this integration of perspectives and ideas which has been linked to creativity (Hargadon & Bechky, 2006). In sum, perspective taking can help diverse teams to overcome their difficulties with effectively sharing and integrating their diverse viewpoints and benefit in their creativity.

Arguably, the beneficial effects of perspective taking will not extend to homogeneous teams in equal measure. In the absence of different approaches to the task, perspective taking is unlikely to reveal novel insights or opportunities to integrate different viewpoints. It might even reinforce the existing perspective on a problem and constrain the exploration of new approaches (cf. Smith, 2003). Also, perspective taking is cognitively taxing (Roßnagel, 2000; Ruby & Decety, 2001), and in the absence of the benefits it is associated with in diverse teams, might detract valuable resources that may be more wisely invested elsewhere. In sum, we propose:

Hypothesis 1: Perspective taking moderates the effect of diversity of perspectives on team creativity, such that diversity has a more positive effect on creativity when team members engage in perspective taking than when they do not engage in perspective taking.

Our arguments for perspective taking as a moderator of diversity's effect on team creativity strongly build on the influence of perspective taking on the effective sharing and integration of diverse viewpoints. More specifically, based on prior research suggesting its effects on information sharing (cf. Tjosvold & Johnson, 1978), the framing of messages that facilitates the processing of divergent viewpoints (Krauss & Fussell, 1992), on a more constructive evaluation and debate of ideas, and the potential discovery of opportunities to integrate different perspectives and ideas (Boland & Tenkasi, 1996), we argue that perspective taking may elicit the full range of sub-processes that jointly define information elaboration (van Knippenberg et al., 2004) in diverse teams. It is important to note that perspective taking is unlikely to elicit equally high degrees of elaboration in homogeneous teams. Instead, perspective taking might quickly lead team members to recognize that they share viewpoints and information and thus limit the degree to which a team discusses and elaborates on them. Hence, based on our reasoning for why perspective taking moderates the effect of diversity on team creativity and on the assumed

differential effect of perspective taking on elaboration in diverse teams, we propose:

Hypothesis 2: Perspective taking moderates the effect of diversity of perspectives on

information elaboration, such that diversity has a more positive effect on elaboration when

team members engage in perspective taking than when they do not engage in it.

The idea that team processes effectuate diversity's benefits is widely accepted, yet their

precise nature is debated. Based on the CEM (van Knippenberg et al., 2004) we propose that

information elaboration is the key mediator of the interaction of diversity and perspective taking

on team creativity. Although direct evidence for a relationship between elaboration and team

creativity remains missing, prior findings on its benefits for related team outcomes suggest a

value of elaboration for team creativity as well. Elaboration has been found to mediate the effects

of diversity on decision making (van Ginkel & van Knippenberg, 2008, 2009) and performance

in teams (Homan et al., 2008; Homan, van Knippenberg, van Kleef, & De Dreu, 2007; Kearney

et al., 2009) including R&D teams (Kearney & Gebert, 2009) whose work arguably requires

creativity. Conceptually, elaboration seems to be especially suited to promote creativity as it

explicitly comprises the integration of team members' perspectives and focuses on the more

constructive forms of discussion which recent research posits as essential for team knowledge

integration (Gardner et al., in press). These characteristics distinguish it from other processes

which are invoked as precursors to team creativity instead.

The most prominent among these alternative processes is task conflict which is defined as

"disagreements among group members about the content of the task being performed, including

differences in viewpoints, ideas, and opinions" (Jehn, 1995, p. 258). Diverse perspectives are

thought to elicit these disagreements which in turn are posited to increase team creativity by

preventing premature consensus (Kurtzberg & Amabile, 2001), and stimulating a more thorough

discussion and a reevaluation of the status quo (e.g., Jehn, 1997). Despite its intuitive appeal, the

case for task conflict as a precursor to higher creativity appears less clear upon closer inspection.

Some have argued that it is less the occurrence of disagreements than the way teams solve them

which determines whether conflict is beneficial (e.g., Lovelace, Shapiro, & Weingart, 2001) and

the effects of task conflict on team creativity and innovation are inconsistent (Hülsheger et al.,

2009). Recent findings suggest that its benefits for creativity are limited to situations in which

conflict does not exceed moderate levels and teams are in the early stages of their projects (Farh,

Lee, & Farh, 2010) indicating a diminishing value of persisting conflict. Critically, task conflict

may entail high degrees of negative emotionality (Jehn, 1997) and elicit relationship conflict (De

Dreu & Weingart, 2003) which can harm team creativity (Pearsall, Ellis, & Evans, 2008).

This indicates that a constructive discussion between team members and attempts to

integrate and build on each other's suggestions are neither an automatic consequence nor a

definitional characteristic of task conflict. Information elaboration, for which task conflict is

neither a necessary nor sufficient antecedent (van Knippenberg et al., 2004), conceptually

comprises the consequences that task conflict is thought to engender (i.e., a more thorough

processing of the information and viewpoints) when it feeds into increased creativity but

explicitly excludes the undesirable consequences conflict is sometimes associated with.

Similarly, perspective taking is likely to increase information sharing in diverse teams (cf.

Tjosvold & Johnson, 1978) – another alternative process that has been posited to promote team

creativity (Milliken, Bartel, & Kurtzberg, 2003). Exposure to the ideas of others (especially those

thinking differently) is thought to stimulate cognitive flexibility and idea generation (Brown &

Paulus, 2002) and create a broader knowledge base for the team to use creatively (Stasser &

Birchmeier, 2003). As such, it may influence a team's creativity-relevant processes and domain-

relevant knowledge (Amabile, 1988) and form an important precondition for the creative benefits of diversity. Yet information sharing does not suffice to ensure that these benefits are realized. Creative synergy requires diverse perspectives to be integrated in a way that makes "new sense of what they already know" (Hargadon & Bechky, 2006, p. 491) and points to alternative routes in the search for a solution. Sharing information is a necessary precondition for its integration. Yet prior research indicates that information sharing does not reliably predict knowledge integration in teams (Okhuysen & Eisenhardt, 2002). In some cases, teams have even been shown to actively discount or disregard information (Cruz, Boster, & Rodríguez, 1997) and react negatively to the ideas of others (cf. Mueller, Melwani, & Goncalo, 2012). In sum, information sharing, neither conceptually covers nor invariably elicits the careful processing and integration of viewpoints which form an integral part of the elaboration construct and are considered especially valuable for creativity. Thus, we posit that elaboration best captures the information processing mechanisms that perspective taking fosters in diverse teams to promote creativity:

> *Hypothesis 3a:* Information elaboration mediates in the interactive effect of diversity and perspective taking on team creativity such that perspective taking moderates the first stage of the indirect effect between a team's diversity and creativity through elaboration.

Our analysis implies that task conflict is unlikely to mediate in the joint effect of diversity and perspective taking on team creativity. Perspective taking has been shown to affect conflict perceptions (Sessa, 1996) and may actually reduce conflict in teams due to more careful message framing. Also, the effect of conflict on team creativity is not unequivocally positive. Information sharing, in turn, is a likely consequence of perspective taking in diverse teams but the mere sharing of information is unlikely to transmit the full benefit of perspective taking for diverse teams. In line with calls to test proposed effects against existing theoretical alternatives (instead

of against the absence of an effect; van de Ven, 2007), we tested the following:

Hypothesis 3b: The conditional indirect effect of diversity as moderated by perspective

taking on creativity through information elaboration is stronger than the indirect effect

observed for the alternative mediators of task conflict and information sharing.

Method

Design and Participants

We tested our hypotheses in a laboratory experiment using a 2 (diversity of perspectives:

diverse vs. homogeneous) x 2 (perspective taking: yes vs. no) between-groups design. 231

students (55.8% male; mean age = 21.3, *SD* = 2.20) from a Dutch university were assigned to 77

three-person teams which were randomly assigned to conditions.[1] The majority of participants

were students of business administration (75.8%) or economics (17.3%). In return for their

participation, they received partial course credit or 10 euro (about 15 USD).[2] We video-taped all

teams to allow for a behavioral coding of the mediating processes. Due to technical problems,

the video-data for one team and the survey data for another were missing. As there is no

indication that these teams behaved differently than the others, we relied on all teams to test the

effects of the manipulated factors on their creativity.[3] We ran the analysis of the perspective

taking manipulation check without the team with missing survey data and all analyses involving

the mediators were conducted without the team with the missing video-recording.

Experimental Task

The task was designed to observe teams while they develop a creative plan. Task materials

were inspired by a group exercise unrelated to creativity (Windy City Theatre Exercise,

Thompson & Bloniarz, 1996). We adapted the role instructions, task, and information to form a

creativity task. In this task, participants take the roles of management team members of a theater.

Together, they have to develop a creative action plan to improve the theater's position. Participants received role instructions (their managerial function) and information about the theater (location plan, schedule of plays, etc.). Teams were instructed to develop the most creative plan possible and provided with a standard definition of creativity as joint novelty and usefulness. Moreover, we asked them to hand in one integrated plan and not a list of unconnected ideas. These instructions matched the adopted definition of team creativity. As further motivation, we promised monetary rewards to teams with the most creative plans.

Experimental Manipulations

    Diversity of perspectives. We used functional role instructions to manipulate diversity of perspectives in line with our definition of it as a team characteristic denoting the existence of differences between members in the way they view the task, information, and solutions. In the diverse condition, members were assigned the roles of the Artistic, Event, and Finance Manager respectively. The descriptions of each managerial role in the diverse condition highlighted different aspects of the solution that were important for the respective role and stressed that team members should ensure that these aspects were realized in the final plan. Whereas the Artistic Director had to ensure high creative reputation, the Event Manager was concerned with high service levels and community involvement, and the Finance Manager had to pay special attention to financial performance. Apart from the role instruction, all information about the theater was fully shared across conditions. As such, our manipulation closely resembles the notion of functional assignment diversity in the sense that different viewpoints are derived from different functional accountabilities and not experience per se (Bunderson & Sutcliffe, 2002).

    Importantly, this manipulation focused on the distribution of different perspectives (roles) between team members. In practice, these distributional differences accrue to a broader range of

perspectives at the level. With an experimental manipulation we have the chance to avoid a potential confound of the distribution of differences with differences in the amount or range of perspectives available to a team. Realizing this opportunity, comparable previous studies on informational diversity and distributed information (e.g., Homan et al., 2007; Stasser & Titus, 1985) provided teams with equal amounts of information across conditions but manipulated its distribution within the teams leading to members of homogeneous teams having more information at their individual disposal. Parallel to this, we decided to keep the amount of role information containing the goal criteria constant on the team level. Hence, in order to avoid a potential confound of the diverse teams having a clearer picture of the desired solution, the role in the homogeneous condition contained the goal information from all three diverse roles. To keep the instructions comparable in length, the role descriptions in the diverse condition stressed certain parts of the information that were redundant with the information given to everyone. This manipulation covers the two main definitional criteria of diversity as a team-level characteristic that indicates to which degree team members differ on a particular attribute.[4]

Perspective taking. Perspective taking was manipulated at the team level at the onset of the team task. Teams in the perspective taking condition were verbally instructed to try to take each others' perspectives as much as possible and asked to jointly review a page of written instructions on what perspective taking entailed. These instructions told participants to try to view the situation from the positions of the other team members and specified examples of perspective taking such as trying to understand how others view the situation and trying to ask themselves what is important to the other person. As a further incentive to engage in perspective taking, participants were informed that these would help to increase their performance. Teams in the non-perspective taking condition received only the instructions for the team task.

Measures

    Creativity. In line with our definition of creativity (Zhou & Shalley, 2010) we coded each team's plan for both novelty and usefulness and multiplied them to obtain an overall creativity measure (see Zhou & Oldham, 2001 for a similar procedure). To assess *Novelty*, we divided each plan into its different ideas (whenever it contained multiple) and two independent coders rated each idea included in the plan on a five-point scale (0 = *not novel at all* to 4 = *very novel*). As teams were instructed to develop one comprehensive plan which could consist of one or multiple, interrelated ideas, we averaged the scores of the ideas within one plan to obtain the overall novelty score. The same set of coders coded the plan's *Usefulness* in different random order than novelty. As different ideas could jointly impact the usefulness of a plan with regard to a goal, they coded usefulness on the basis of the entire plan on a seven-point scale (0 = *harmful* to 6 = *very useful*).[5] Coders were instructed to assess the usefulness with regard to the three main goals included in the instructions across conditions (creative reputation, financial performance, community and service levels). Plans that were useful with regard to all three goals received the maximum score of 6, plans that were harmful with regard to all goals received a score of 0 and plans that were useful for some, but less so for other goals received intermediate scores. We trained coders using the data from 19 pilot teams (not included in the analysis). To adjust for scaling differences, we divided novelty and usefulness by their standard deviations before calculating the overall creativity score as the product of novelty and usefulness. The high intraclass correlation coefficients (*ICCs*) and r_{wg}-values indicate high interrater reliability and agreement (usefulness: $ICC(1) = .79$, $ICC(2) = .88$, mean $r_{wg} = .93$; novelty: $ICC(1) = .82$, $ICC(2) = .90$; mean $r_{wg} = .89$; Bliese, 2000; James, Demaree, & Wolf, 1984).[6]

    Manipulation check diversity of perspectives. Our manipulation of diversity aimed to

provide members of diverse teams with diverging views on what is important and what is relevant information. In order to ascertain that members of diverse teams approached the task with different mindsets, we asked them to individually write down which aspects they considered important to achieve in the team task before it started. We coded the answers for whether they contained aspects reflecting the artistic, event, or finance manager's perspective. Based on this information, we calculated Blau's coefficient of heterogeneity as an indicator of the diversity with which team members pursued each aspect and averaged this indicator across the three perspectives to yield a single index per team. In order to test whether our manipulation indeed also led members of diverse teams to assign differential relevance to certain information sources out of the available set of information, we coded the initial ideas for which information sources they were based on. Although all members received all information sources, certain information sources were thematically related to certain perspectives (e.g., the calendar of plays to the artistic director, overview of sales to the financial manager, etc.). For each member, we calculated the proportion of ideas that were based on information related to the artistic, event, and financial perspective and used the standard deviation of these proportions as an indicator of how much an individual relied preferentially on certain types of information. To form a team-level indicator, we averaged this index of a preferential use of information sources across each team's members.

Manipulation check perspective taking. In order to ensure the effectiveness of the perspective taking manipulation, participants indicated the degree to which they engaged in it on a five-item scale. We relied on participants' self-assessment because perspective taking is a cognitive process and as such not directly observable. Example items included: "During the group discussion, I tried to take the perspective of the other members of my team". Answers were given on a five-point scale ranging from 1 = *not at all* to 5 = *very much*. To avoid priming

participants in the non-perspective taking conditions with the concept of perspective taking, participants completed the manipulation check after the team task.

Information elaboration. A different set of two independent coders coded elaboration (and the other mediators) from the videos in different random order. As a team process that has no individual-level equivalent, elaboration was coded at the team level on a seven-point scale with specific anchors for each scale point. The scale was based on a scale by van Ginkel and van Knippenberg (2008) who studied team decision making with a hidden profile task. For our creativity task lacking a single correct answer and with mostly shared information, coding for the sharing, discussion, and integration of unshared, critical information was not possible. We thus adapted the scheme (see the Appendix for a detailed description of the scale).

In line with the definition of elaboration, the different scale levels detailed to which degree some or all members mentioned different perspectives and information, whether other teammates acknowledged this, whether different perspectives and information were discussed and used to build on each other's suggestions, and whether teams tried to integrate the perspectives and information. Examples of integration attempts included statements linking multiple perspectives and constructive remarks about potential improvements of suggested ideas. A value of 1 was given to teams that immediately began to develop ideas with little or no systematic discussion of the different perspectives and information. A score of 7 was assigned to teams in which all perspectives and information were mentioned and fully discussed by its members, different information and perspectives were used to build on each other's suggestions, and team members attempted to integrate different information and perspectives. The measure thus assessed to which extent teams engaged in all the consecutive processes detailed in the elaboration concept and assigned the highest score to teams showing the full range of the interrelated sub-processes.

We trained coders to apply this coding scheme using the 19 pilot team videos. As indicated by the high *ICCs* (*ICC*(1) = .85, *ICC*(2) = .92) and r_{wg} (mean r_{wg} = .93) between the coders' scores, the scheme allowed for a reliable assessment of this process.

Information sharing. Prior research indicates differences between the likelihood and the effect of sharing initially unshared information compared to initially shared information (Stasser & Titus, 1985; cf. Homan et al., 2007). Thus we coded information sharing separately for the information on the theater which was fully shared across conditions and for the members' perspectives which were unshared in the diverse condition. Two independent coders coded each video separately for the extent to which all three members mentioned each information source (*ICC*(1) = .76, *ICC*(2) = .86, mean r_{wg} = .93) or perspective (*ICC*(1) = .60, *ICC*(2) = .75, mean r_{wg} = .87). The measures for sharing information and perspectives reflect the number of members that on average discussed a certain piece of information or perspective with a maximum of 3 for teams in which all members discussed all information sources or all perspectives.

Task conflict. In line with the definition of task conflict as the existence of disagreements about viewpoints, ideas, and opinions pertaining to the task (Jehn, 1995), task conflict was coded from the videos as the number of disagreements about task-related ideas, opinions, and information by two independent coders (*ICC*(1) = .65, *ICC*(2) = .78, mean r_{wg} = .75).

Procedure

Upon arrival at the lab, participants were told that they were going to participate in an experiment on how teams come up with creative ideas and informed about their task. They first read written instructions which provided a brief description of the setting, the management team member role, and an array of information about the theater including a calendar of plays, a location plan, a floor plan, an overview of costs, ticket sales, and target groups. To ensure that

participants studied the materials carefully, they had to answer two open answer questions asking (a) what was particularly important for them to consider during the team task and (b) their initial ideas for the plan. After 20 minutes, they were asked to work on the team task which required them to develop a final, integrative creative action plan for the theater. Moreover, teams in the perspective taking condition received the perspective taking instructions. Teams had 20 minutes to complete the team task which we videotaped. After ten minutes, the experimenter entered with the answer sheet and reminded them to come up with one integrative, creative plan. Afterwards, participants individually filled out a brief survey before they were debriefed, paid or awarded their credit, and dismissed. Altogether, the experimental sessions lasted one hour.

Results

Table 1 displays the descriptive statistics and intercorrelations for the variables in our study. We tested our hypotheses using regression analyses with dummy-coded variables to reflect the teams' assignment to the experimental conditions (0 =homogeneous; 0 = non-perspective taking) and mean-centered mediating variables. To forego the problems of the causal steps approach to testing mediation (Baron & Kenny, 1986) and of parametric tests of the product of the paths' coefficients, we used a non-parametric bootstrapping method to test indirect effects. For the mediated moderation proposed in Hypothesis 3a, we relied on a procedure by Edwards & Lambert (2007) and we tested the differences in conditional indirect effects through different mediators proposed in Hypothesis 3b with a procedure by Preacher and Hayes (2008).

Manipulation Checks

Diversity of perspectives. We subjected both the average Blau index indicating team members' heterogeneity in what they saw as important and the average standard deviation of members' use of information pertaining to each perspective to an analysis of variance testing for

the single and joint effect of perspective taking and diversity. In line with the intended effect of the manipulation, the results indicated a main effect of diversity for both the diversity of stated goals and the differential preference for information. In the diverse condition, team members exhibited significantly higher degrees of heterogeneity ($M = 0.42$, $SD = 0.07$) in what they saw as important than in homogeneous teams ($M = 0.18$, $SD = 0.12$; $F(1, 73) = 101.61$, $p < .001$; $\eta^2_p = .58$). Likewise, members of diverse teams showed a significantly higher preference for basing their ideas on certain types of information ($M = 0.43$, $SD = .12$) than members of homogeneous teams ($M = 0.26$, $SD = 0.10$; $F(1, 68) = 40.52$, $p < .001$; $\eta^2_p = .37$). For both analyses, neither the main effect of perspective taking, nor its interaction with diversity reached statistical significance (all $F < 1$). This indicates that the manipulation successfully induced different perspectives on what is considered important with regard to the task and increased the individuals' reliance on certain information pieces. Lastly, it is worth noting, that the manipulation did not inadvertently create more information sharing in diverse teams as a result of increased interdependence ($F < 1$ for the main effect of diversity on information sharing).

Perspective taking. We combined the five items of the perspective taking manipulation check into one scale (Cronbach's $\alpha = .72$). High levels of agreement between team members' reported degree of perspective taking (mean $r_{wgj} = .92$) and acceptable aggregate reliability (Cronbach's $\alpha = .68$) justify averaging the individual responses to the team level in line with the proposed consensus model (Chen et al., 2004). An analysis of variance with diversity and perspective taking as between-group factors on the teams' perspective taking scores yielded the expected main effect of perspective taking as the only significant effect. In the perspective taking condition, teams reported significantly higher values ($M = 4.24$, $SD = 0.38$) than in the non-perspective taking condition ($M = 3.58$, $SD = 0.33$; $F(1,72) = 80.38$, $p < .001$, $\eta^2_p = .54$).

Furthermore, these differences in situational perspective taking are not due to differences in dispositional perspective taking. Indeed, individuals did not differ between conditions in their dispositional perspective taking (for both main effects and their interaction, $F < 1$) which was assessed at the end of the post-experimental questionnaire with the scale by Davis (1980; seven items, Cronbach's $\alpha = .68$). These findings point to a successful perspective taking manipulation.

Test of Hypotheses

   The effect of diversity and perspective taking on team creativity. In order to test Hypothesis 1, we first regressed team creativity on the dummy-coded variables for diversity and perspective taking and then added their product to test the proposed moderation (see Table 1). The model containing only the dummy variables for the direct effects of our manipulations did not account for significant variation in the criterion team creativity ($R^2 = .04$, $p = .26$) and neither diversity ($b = 1.57$, $SE = 1.39$, $p = .26$) nor perspective taking ($b = 1.65$, $SE = 1.39$, $p = .24$) were significant predictors. Adding the interaction between diversity and perspective taking to the model significantly increased the amount of explained variance ($\Delta R^2 = .13$, $p < .01$). In the model including diversity, perspective taking, and their interaction as predictors ($R^2 = .17$, $p < .01$), the interaction significantly predicted creativity ($b = 8.88$, $SE = 2.60$, $p < .01$). Simple slopes analyses (Preacher, Curran, & Bauer, 2006) yielded a significant positive simple slope of diversity (i.e., the difference between diverse and homogeneous teams) in the perspective taking condition ($b = 5.79$, $SE = 1.79$, $p < .01$) but not in the non-perspective taking condition ($b = -3.09$, $SE = 1.88$, $p = .11$). In sum, the significant moderation effect and the specific pattern of effects (see Figure 2) support Hypothesis 1 and the theoretical reasoning behind it.

   The effect of diversity and perspective taking on information elaboration. Hypothesis 2 predicted that perspective taking moderates the effect of diversity on elaboration. To test it, we

regressed elaboration on diversity and perspective taking and then added their interaction to the model. The model containing only the predictors for our manipulated factors did not explain significant variance in elaboration ($R^2 = .08$, $p = .05$), although perspective taking ($b = 0.75$, $SE = 0.31$, $p = .02$) but not diversity ($b = 0.19$, $SE = 0.31$, $p = .55$) were significant predictors. Adding the interaction between diversity and perspective taking to the model significantly increased the amount of explained variance in elaboration ($\Delta R^2 = .12$, $p < .01$). In this model ($R^2 = .19$, $p < .01$), the coefficient for the interaction was significant ($b = 1.89$, $SE = 0.59$, $p < .01$). Simple slopes analyses showed that in support of Hypothesis 2, the simple slope for diversity was significant and positive in the perspective taking condition ($b = 1.09$, $SE = 0.41$, $p < .01$) but not in the non-perspective taking condition ($b = -0.80$, $SE = 0.43$, $p = .07$). Simple slopes analyses also qualified the observed direct effect of perspective taking which only had a significant and positive simple slope for diverse ($b = 1.67$, $SE = 0.41$, $p < .001$) but not for homogeneous teams ($b = -0.22$, $SE = 0.42$, $p = .61$). This suggests that the direct effect of perspective taking is solely attributable to its effect on elaboration in the diverse condition.

The mediating role of information elaboration. Support for Hypothesis 3a requires a conditional indirect effect of diversity on creativity through elaboration in the perspective taking condition and the absence of such an effect in the non-perspective taking condition. In line with our theoretical arguments, the model allowed for a moderation of the first stage of the indirect effect (from diversity to elaboration) but not of the second stage (from elaboration to creativity; see model F, Edwards & Lambert, 2007).[7] Coefficient estimates for the paths of the model were obtained by extending the regression analyses which established the moderating role of perspective taking on diversity's effect on team creativity and the mediator elaboration in support of Hypothesis 1 and 2. To test the effect of the mediator on the criterion and the strength

of the direct effect of diversity as moderated by perspective taking on creativity after accounting for elaboration, we regressed creativity on diversity, perspective taking, their interaction, and elaboration. In this model (R^2 = .40, p <.001), elaboration significantly and positively predicted team creativity (b = 2.32, SE = .44, p < .001) rendering the effect of the interaction between diversity and perspective taking non-significant (b = 4.49, SE = 2.38, p = .06). To assess the magnitude of the indirect effect, we constructed bias-corrected confidence intervals on the basis of 1000 bootstrap samples. Coefficients are considered significant if their 95% confidence interval excludes zero. Conditional indirect effects were computed for both levels of perspective taking. Supporting Hypothesis 3a, there was a significant indirect effect of diversity on creativity through elaboration in the perspective taking condition (b = 2.52, CI [.95, 4.63]) but not in the non-perspective taking condition (b = -1.86, CI [-4.97, 0.12]) and the difference between these conditional indirect effects was significant (b = 4.39, CI [1.67; 8.70]).

Comparing information elaboration to the alternative mediators. To test the relative strengths of different mediators posited in Hypothesis 3b, we first repeated the analyses used to test the mediating effect of elaboration for each individual alternative mediator. Sharing the (fully shared) information about the theater did not mediate in the effect between diversity and team creativity in either the perspective taking (b = 0.00, CI [-0.32, 0.34]) or the non-perspective taking condition (b = -0.01, CI [-0.49, 0.41]). Moreover, in a regression model with diversity, perspective taking, their interaction, and information sharing as predictors of team creativity, the direct effect of the interaction remained significant (b = 8.87, SE = 2.62, p < .01). In contrast, sharing the different (for diverse teams unshared) perspectives partially mediated the joint effect of diversity and perspective taking with a significant positive indirect effect of diversity on creativity through sharing perspectives in the perspective taking condition (b = 1.29, CI [0.03,

3.05]) but not in the non-perspective taking condition (b = -0.05, CI [-1.58, 0.84]). Yet the direct effect of diversity's interaction with perspective taking remained significant after adding the mediator sharing perspectives to the model (b = 7.54, SE = 2.62, p < .01). Lastly, there was no indirect effect of diversity on creativity through task conflict in either the perspective taking (b = 0.02, CI [-0.67, 0.77]) or the non-perspective taking condition (b = -0.87, CI [-2.62, 0.03]). As a formal test of the proposed differences in the strengths of the specific indirect effects through the different mediators, we specified three multiple mediated moderation models (Preacher & Hayes, 2008) to compare the indirect effect through elaboration with those through sharing information, sharing perspectives, and task conflict respectively. In each model, the indirect effect of diversity's interaction with perspective taking and diversity on creativity through elaboration remained significant whereas neither the specific indirect effect for sharing information (b = 0.09, CI [-1.02, 1.61]), sharing perspectives (b = -0.43, CI [-2.72, 0.60]), nor task conflict (b = 0.20, CI [-0.35, 1.63]) reliably differed from zero. Moreover, the confidence intervals for the contrast comparing the size of the specific indirect effect through elaboration against those through sharing information (C = 4.81, CI [1.25, 9.12]), sharing perspectives (C = 5.18, CI [1.63, 10.82]), and task conflict (C = 4.03, CI [1.08, 8.05]) excluded zero. This supports the proposed stronger specific indirect effect of diversity as moderated by perspective taking on creativity through elaboration than through the potential alternative mediators.

Discussion

This study examines the question of what team members can do to help their teams benefit from their diversity on creative tasks as is frequently predicted (Jackson, 1992; West, 2002) but not consistently shown (Hülsheger et al., 2009). The need to integrate different perspectives to achieve creative synergy points to the other-referential process of perspective taking as a potent

factor in explaining when and how diverse teams perform more creatively. Our findings support the hypothesized moderating role of perspective taking on the effect of diversity on creativity and the proposed mediation of this moderated effect through information elaboration. These results provide valuable theoretical insights and practical implications.

Theoretical Implications

By combining the literatures on diversity and perspective taking, we are able to outline a set of conditions that helps team members integrate their diverse viewpoints. Our findings thus add to the CEM as they help to clarify the contingencies that shape the inconsistent effects of diversity (van Knippenberg & Schippers, 2007) and point to an additional class of moderators of diversity's effect on elaboration and team outcomes beyond the individual (e.g., Kearney et al., 2009) and task characteristics (Kratzer et al., 2006) proposed by the CEM. Our results point to the value of additionally considering team- and other-focused processes as moderators which may be especially relevant when outcomes require integrating diverse cognitive resources. Moreover, as they are arguably more proximal to team information processing, they may also underlie the effect of other factors that have been found to moderate diversity's effect on team creativity. For example, transformational leadership (Shin & Zhou, 2007) may affect perspective taking as individualized consideration entails that leaders try to understand their followers' viewpoint (Moates & Gregory, 2008) and thus function as role models. Likewise, seeing value in diversity may promote diverse teams' performance (Homan et al., 2007) by raising the motivation to invest cognitive effort in considering their teammates' perspectives.

In addition, we were able to show that information elaboration mediates the positive effects of diversity on team creativity in the perspective taking condition, thus extending prior findings suggesting its benefit for other team outcomes (Homan et al., 2007, 2008; van Ginkel & van

Knippenberg, 2008, 2009). Whereas idea generation is widely studied (Paulus & Nijstad, 2003),

research is only starting to develop an in-depth picture of the potentially distinct processes which

teams use to transform ideas into final solution (Lingo & O'Mahoney, 2010). Our study thus

adds to a more complete account of how teams perform creatively. We also ruled out that task

conflict or information sharing can fully account for our effects. This helps to resolve an ongoing

theoretical debate (van Knippenberg et al., 2004) in which different mediators are theoretically

contrasted but not empirically compared. This empirical comparison of the alternative mediators

also provides a more stringent test for the posited role of elaboration as we can show its benefits

compared to viable alternatives rather than against the absence of an effect (van de Ven, 2007).

By studying the effect of perspective taking on teams, we add to a growing understanding

of its effects beyond the well-established individual-level and dyadic outcomes (Parker et al.,

2008). Earlier team research shows that perspective taking facilitates implicit coordination (Rico

et al., 2008) and shapes conflict perceptions (Sessa, 1996). Yet the only study we know of that

links perspective taking to creativity operates at the individual level (Grant & Berry, 2011) and

does not speak to its effect on team processes and outcomes in collaborative settings. Studying

perspective taking as a team-level construct for which members of homogeneous and diverse

teams exhibited high consensus also yields promising avenues for future research. As a cognitive

process, perspective taking may not always acquire the properties of an emergent team process.

Instead, individuals might, under certain conditions, continue to differ in their perspective taking

efforts. Studying these conditions and the effects of perspective taking diversity might help to

delineate the boundary conditions of our findings. Future studies could for example examine

whether all members need to engage in this cognitively effortful process (Roßnagel, 2000) to

ensure its benefits. This would also echo calls to treat (dis)agreement between teammates as a

theoretically meaningful variable rather than a mere methodological issue (DeRue, Hollenbeck, Ilgen, & Feltz, 2010). Likewise, the temporal dynamics of perspective taking and its effects warrant further investigation. Perspective taking is unlikely to occur on an ongoing basis (cf. Roßnagel, 2000) raising the question of whether it is especially beneficial at specific incidents in a team discussion such as in case of disagreements or when reacting to others' ideas. Also, if perspective taking helps to uncover diverse perspectives and build a shared mental model (Rico et al., 2008), its benefits may vary across project phases and diminish with growing team tenure.

Given our focus on diversity's effect on team creativity, we specified our model at the team level. Yet studying perspective taking in a multi-level context could expand our knowledge on its multifaceted effects. Recent findings show that whether members benefit from their teams' cognitive diversity for their individual creativity depends on their creative self-efficacy and transformational leaders (Shin, Kim, Lee, & Bian, 2012). In this vein, perspective taking may be a tool for individuals to harness their team's cognitive resources for their own creativity. Conversely, organization-level variables, such as reward structures, may affect team members' motivation to engage in perspective taking and use the gained insights for the collective benefit.

Lastly, our findings raise the question under which conditions perspective taking occurs in diverse teams. As we manipulated perspective taking and diversity orthogonally, we cannot speak to this question and prior findings informing it are mixed. On the one hand, anticipating differences in opinion has been linked to a more accurate understanding of another's thoughts (Tjosvold & Johnson, 1977). On the other hand, when team members are increasingly dissimilar, the cognitive effort of perspective taking may rise and be less willingly extended. In this vein, a recent study links perceived coworker dissimilarity to less positive attributions and emphatic concern (as direct effects of perspective taking; Williams, Parker, & Turner, 2007). In sum, it

seems that diversity may at times hinder perspective taking. Clarifying the specific nature of this relationship is important as perspective taking may improve the social dynamics in teams (Parker et al., 2008) and limit intergroup bias (Galinsky & Moskowitz, 2000). Taken together, this suggests that perspective taking may also mitigate the potential negative effects of diversity. Further research, directly measuring team viability, cohesion, and emotional conflict, is needed to establish whether perspective taking is indeed doubly useful for diverse teams.

Practical Implications

When faced with the question of how to boost the creativity of teams in which members have divergent approaches to the task, our results suggest that trying to foster perspective taking is one viable answer. Prior research indicates that perspective taking may be influenced by situational factors and can be trained (Parker et al., 2008; Sessa, 1996). Through its focus on perspective taking, the current study hence directs attention to a factor that is at least partially under managerial control. In order to maximize the creativity of diverse teams, managers and team leaders can consider both a direct training of perspective taking as well as a change in task and job characteristics (Parker & Axtell, 2001) to indirectly increase perspective taking. Yet our findings indicate that perspective taking is not equally effective across all teams. Rather, the lack of a positive effect on homogeneous teams suggests that its benefits may be limited to situations in which team members have different viewpoints. Interventions in highly homogeneous teams should thus focus on increasing the variety of a team's cognitive input. Here, perspective taking may still play a role if it is directed at persons with different viewpoints outside one's team.

Moreover, our results not only present elaboration as an antecedent of team creativity but also highlight the importance to go beyond information sharing and of creating a constructive debate of the knowledge and perspectives instead of disagreements about them per se. Besides

raising awareness of the importance of elaboration, managers may also support it by creating conditions that prior research shows facilitate elaboration in diverse teams. Those include pro-diversity beliefs (Homan et al., 2007), a reward structure inducing a superordinate identity (Homan et al., 2008), and a shared task-understanding (van Ginkel & van Knippenberg, 2008).

Limitations and Directions for Future Research

This study was designed to test the causal effects of a set of antecedents on team creativity. The experimental procedure strengthens our confidence in the internal validity of our findings and allowed us to test the effect of two manipulated factors on the rated creativity of one comparable team product to show the mediating role of a video-coded team process. Although establishing the external validity of our findings was not our primary aim (Mook, 1983), the important question of whether our results generalize to other settings can ultimately only be addressed through a series of systematic replications. Yet there are some arguments that suggest that our findings may hold across a broader range of settings and operationalizations. In general, meta-analyses on a variety of psychological effects show substantial correspondence between the effect sizes obtained in laboratory and field settings (Anderson, Lindsay, & Bushman, 1999). For the specific case of diversity, a recent meta-analysis on the diversity-performance link (including creativity) across 132 studies failed to find a reliable effect of study setting (laboratory vs. field; van Dijk, van Engen, & van Knippenberg, 2009). Likewise, support for elaboration as a mediator of the positive effects of diversity has been consistent across laboratory (Homan et al., 2007; van Ginkel & van Knippenberg, 2008; 2009) and field studies (Kearney & Gebert, 2009; Kearney et al., 2009) as well as different operationalizations of diversity. Finally, regarding the role of perspective taking, recent results indicate its beneficial effect on team reflexivity (Calvard, 2010) which in turn has been linked to elaboration (van Ginkel & van Knippenberg, 2009).

Another potential limitation arises from our choice to manipulate diversity of perspectives as an underlying element of different diversity attributes across situations. Although we can rule out that our effects are instead caused by other, specific diversity attributes or faultlines formed by them (see footnote 4), it is important to explore our model holds for other diversity types and combinations. Based on our rationale that the task-relevance of diversity depends on the situation, we would propose that the moderating role of perspective taking extends to specific diversity attributes insofar as they entail different approaches to the task. Likewise, recent work links the effects of deep-level diversity to the existence of surface-level diversity (Phillips & Loyd, 2006). In line with this finding, one might propose that surface-level diversity may signal deep-level diversity and thus stimulate the exploration of alternative viewpoints whereas a lack thereof may lead to the erroneous assumption that perspectives align and stifle perspective taking. Moreover, our manipulation of diversity resembled the concept of functional assignment diversity as it focused on the diverse, role-based accountabilities but not the experience members had with their role. Exploring the impact of experience would be interesting as contradictory arguments can be raised regarding its effect on perspective taking. Whereas research on cognitive entrenchment (Dane, 2010) suggests that growing expertise may come at the expense of reduced flexibility, others argue that effective perspective taking requires clear, identifiable perspectives (a conceivable correlate of more role experience; Boland & Tenkasi, 1995).

Additionally, unlike many types of job-related diversity which also entail differences in knowledge, our diversity manipulation focused on team members' perspectives but kept the information they received constant. We chose this manipulation so as to avoid confounding differences in perspectives with those in knowledge. Additional differences in knowledge can be argued to strengthen the effect of perspective taking. Research shows that teams often fail to

uncover unshared information (Stasser & Titus, 1985) and studies on the mediating role of elaboration stresses that this process is especially effective with regard to unshared information (Homan et al., 2007). Thus, to the extent that perspective taking not only mobilizes diverse perspectives but also helps uncover unshared information, it should put diverse teams at an even bigger advantage compared to diverse teams that do not engage in it. As such, our manipulation seems to provide a conservative test of perspective taking as a moderator of the effect of diversity on creativity. However, whether perspective taking indeed is of higher value for teams in which members also have diverse knowledge needs to be tested through future research.

Finally, our diversity manipulation might have induced different levels of cognitive load for members of homogeneous and diverse teams. We tried to minimize this possibility by matching the length of instructions and keeping the amount of information about the theater constant across participants. Yet as small differences in cognitive load are theoretically possible, we tested whether or not these differences affected individuals' ability to perform the task. We coded all initial individual ideas for their creativity. Sensitivity analyses revealed no systematic differences in the average or maximum creativity of these ideas (all $F < 1$) indicating that if our manipulation caused differences in cognitive load, they did not seem to interfere with the task.

Conclusion

The importance of team creativity is widely recognized, yet our knowledge of how teams optimally use their resources for higher creativity is limited (George, 2007). Our results provide an important step toward building our understanding of this phenomenon. We outline the role of perspective taking in helping diverse teams to elaborate on their perspectives and information to develop more creative solutions. In sum, our findings suggest interesting avenues for future research and useful implications for practitioners who seek to enhance their teams' creativity.

References

Amabile, T. M. (1988). A model of creativity and innovation in organizations. *Research in Organizational Behavior, 10,* 123-167.

Anderson, C. A., Lindsay, J. J., & Bushman, B. J. (1999). Research in the psychological laboratory: Truth or triviality? *Current Directions in Psychological Science, 8,* 3-9. doi:10.1111/1467-8721.00002

Axtell, C. M., Parker, S. K., Holman, D., & Totterdell, P. 2007. Enhancing customer service: Perspective taking in a call centre. *European Journal of Work and Organizational Psychology, 16,* 141-168. doi:10.1080/13594320600989583

Baron, R. A. (1988). Negative effects of destructive criticism: Impact on conflict, self-efficacy, and task performance. *Journal of Applied Psychology, 73,* 199-207. doi:10.1037/0021-9010.73.2.199

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51,* 1173-1182. doi:10.1037/0022-3514.51.6.1173

Bliese, P. (2000). Within-group agreement, non-independence, and reliability: Implications for data aggregation and analysis. In K. J. Klein & S. W. Kozlowski (Eds.), *Multilevel Theory, Research, and Methods in Organizations,* (pp. 347-381). San Francisco, CA: Jossey-Bass.

Boland, R. J., Jr., & Tenkasi, R. V. (1995). Perspective making and perspective taking in communities of knowing. *Organization Science, 6*, 350-372. doi:10.1287/orsc.6.4.350

Brown, V. R., & Paulus, P.B. (2002). Making group brainstorming more effective: Recommendations from an associative memory perspective. *Current Directions in Psychological Science, 11*, 208-212. doi:10.1111/1467-8721.00202

Bunderson, J. S., & Sutcliffe, K. M. (2002). Comparing alternative conceptualizations of functional diversity in management teams: Process and performance effects. *Academy of Management Journal, 45,* 875-893. doi:10.2307/3069319

Calvard, T. S. (2010). *Understanding perspective taking and its role in relation to teamworking and diversity* (Doctoral Dissertation, The University of Sheffield, UK). Retrieved from: http://etheses.whiterose.ac.uk/1167/

Carlile, P. R. (2002). A pragmatic view of knowledge and boundaries: Boundary objects in new product development. *Organization Science, 13,* 442-455. doi:10.1287/orsc.13.4.442.2953

Caruso, E. M., Epley, N., & Bazerman, M. H. (2006). The good, the bad, and the ugly of perspective taking in groups. *Research on Managing Groups and Teams, 8*, 201-224.

Chen, G., Mathieu, J. E., & Bliese, P. B. (2004). A framework for conducting multi-level construct validation. *Multi-Level Issues in Organizational Behavior and Processes. Research in Multi-Level Issues, 3*, 273-303.

Cronin, M. A., & Weingart, L. R. (2007). Representational gaps, information processing, and conflict in functionally diverse teams. *Academy of Management Review, 32,* 761-773.

Cruz, M. G., Boster, F. J., & Rodríguez, J. I. (1997). The impact of group size and proportion of shared information on the exchange and integration of information in groups. *Communication Research, 24,* 291-313. doi:10.1177/009365097024003004

Dahlin, K. B., Weingart, L. R., & Hinds, P. J. (2005). Team diversity and information use. *Academy of Management Journal, 48*, 1107-1123. doi:10.5465/AMJ.2005.19573112

Dane, E. (2010). Reconsidering the trade-off between expertise and flexibility: A cognitive entrenchment perspective. *Academy of Management Review, 35,* 579-603. doi:10.5465/AMR.2010.53502832

Davis, M. H. (1980). A multidimensional approach to individual differences in empathy. *JSAS: Catalog of Selected Documents in Psychology, 10,* 85.

De Dreu, C. K. W., & Weingart, L. R. (2003). Task versus relationship conflict, team performance, and team member satisfaction: A meta-analysis. *Journal of Applied Psychology, 88,* 741-749. doi:10.1037/0021-9010.88.4.741

DeRue, D. S., Hollenbeck, J., Ilgen, D., & Feltz, D. (2010). Efficacy dispersion in teams: Moving beyond agreement and aggregation. *Personnel Psychology, 63,* 1-40. doi:10.1111/j.1744-6570.2009.01161.x

Dougherty, D. (1992). Interpretive barriers to successful product innovation in large firms. *Organization Science, 3,* 179-202. doi:10.1287/orsc.3.2.179

Edwards, J. R., & Lambert, L. S. (2007). Methods for integrating moderation and mediation: A general analytic framework using moderated path analysis. *Psychological Methods, 12,* 1-22. doi:10.1037/1082-989X.12.1.1

Farh, J.-L., Lee, C. & Farh, C. I. C. (2010). Task conflict and team creativity: A question of how much and when. *Journal of Applied Psychology, 95,* 1173-1180. doi:10.1037/a0020015

Galinksy, A. D., & Ku, G. (2004). The effects of perspective taking on prejudice: The moderating role of self-evaluation. *Personality and Social Psychology Bulletin, 30,* 594-604. doi:10.1177/0146167203262802

Galinsky, A. D., & Moskowitz, G. B. (2000). Perspective-taking: Decreasing stereotype expression, stereotype accessibility, and in-group favoritism. *Journal of Personality and Social Psychology, 78,* 708-724. doi:10.1037/0022-3514.78.4.708

Gardner, H. K., Gino, F., & Staats, B. R. (in press). Dynamically integrating knowledge in teams: Transforming resources into performance. *Academy of Management Journal.*

George, J. M. (2007). Creativity in organizations. *Academy of Management Annals, 1,* 439-477. doi:10.1080/078559814

Grant, A. M., & Berry, J. (2011). The necessity of others is the mother of invention: Intrinsic and prosocial motivations, perspective-taking, and creativity. *Academy of Management Journal, 54*, 73-96.

Hargadon, A. B., & Bechky, B. A. (2006). When collections of creatives become creative collectives: A field study of problem solving at work. *Organization Science, 17,* 484-500. doi:10.1287/orsc.1060.0200

Harrison, D. A., & Klein, K. J. (2007). What's the difference? Diversity constructs as separation, variety or disparity in organizations. *Academy of Management Review, 32,* 1199-1228. doi:10.2307/20159363

Homan, A. C., Hollenbeck, J. R., Humphrey, S. E., van Knippenberg, D., Ilgen, D. R., & van Kleef, G. A. (2008). Facing differences with an open mind: Openness to experience, salience of intra-group differences, and performance of diverse work groups. *Academy of Management Journal, 51,* 1204-1222.

Homan, A. C., van Knippenberg, D., van Kleef, G. A., & De Dreu, C. K. W. (2007). Bridging faultlines by valuing diversity: Diversity beliefs, information elaboration, and performance in diverse workgroups. *Journal of Applied Psychology, 92,* 1189-1199. doi:10.1037/0021-9010.92.5.1189

Hülsheger, U. R., Anderson, N., & Salgado, J. F. (2009). Team-level predictors of innovation at work: A comprehensive meta-analysis spanning three decades of research. *Journal of Applied Psychology, 5,* 1128-1145. doi:10.1037/a0015978

Jackson, S. E. (1992). Team composition in organizational settings: Issues in managing an

increasingly diverse workforce. In S. Worchel, W. Wood, & J. A. Simpson (Eds.), *Group processes and productivity* (pp. 138-173). Newbury Park, CA: Sage.

Jackson, S. E., & Joshi, A. (2011). Work team diversity. In S. Zedeck (Ed.), *APA Handbook of Industrial and Organizational Psychology, Vol. 1* (pp. 651-686). Washington DC: APA.

James, L. R., Demaree, R. G., & Wolf, G. (1984). Estimating within-group interrater reliability with and without response bias. *Journal of Applied Psychology, 69,* 85-98. doi:10.1037/0021-9010.69.1.85

Jehn, K. A. (1995). A multimethod examination of the benefits and detriments of intragroup conflict. *Administrative Science Quarterly, 40*, 256-282. doi:10.2307/2393638

Jehn, K. A. (1997). A qualitative analysis of conflict types and dimensions in organizational groups. *Administrative Science Quarterly, 42,* 530-557. doi:10.2307/2393737

Joshi, A., & Roh, H. (2009). The role of context in work team diversity research: A meta-analytic review. *Academy of Management Journal, 52,* 599-627.

Kearney, E., & Gebert, D. (2009). Managing diversity and enhancing team outcomes: The promise of transformational leadership. *Journal of Applied Psychology, 94,* 77-89. doi:10.1037/a0013077

Kearney E., & Gebert, D., & Voelpel, S. C. (2009). When and how diversity benefits teams: The importance of team members' need for cognition. *Academy of Management Journal, 52,* 581-598.

Kratzer, J., Leenders, R. T., A., J., & van Engelen, J. M. L., (2006). Team polarity and creative performance in innovative teams. *Creativity and Innovation Management, 15,* 96-104. doi:10.1111/j.1467-8691.2006.00372.x

Krauss, R. M., & Fussell, S. R. (1991). Perspective-taking in communication: Representations of

others' knowledge in reference. *Social Cognition, 9*, 2-24. doi:10.1521/soco.1991.9.1.2

Kurdek, L. A., & Rogdon, M. M. (1975). Perceptual, cognitive, and affective perspectie taking in kindergarten through sixth-grade children. *Developmental Psychology, 11*, 643-650. doi:10.1037/0012-1649.11.5.643

Kurtzberg, T. R., & Amabile, T. M. (2001). From Guilford to creative synergy: Opening the black box of team-level creativity. *Creativity Research Journal, 13,* 285-294. doi:10.1207/S15326934CRJ1334_06

Lingo, E. L., & O'Mahoney, S. (2010). Nexus work: Brokerage on creative projects. *Administrative Science Quarterly, 55*, 47-81. doi:10.2189/asqu.2010.55.1.47

Lovelace, K., Shapiro, D. L., & Weingart, L. R. (2001). Maximizing cross-functional new product teams' innovativeness and constraint adherence: A conflict communications perspective. *Academy of Management Journal, 44*, 779-793. doi:10.2307/3069415

McGrath, J. E., (1984). *Groups: Interaction and Performance*. Englewood Cliffs.: Prentice Hall.

McLeod, P. L., Lobel, S. A., & Cox, T. H., Jr. (1996). Ethnic diversity and creativity in small groups. *Small Group Research, 27*, 248-264. doi:10.1177/1046496496272003

Milliken, F. J., Bartel, C. A., & Kurtzberg, T. R. (2003). Diversity and creativity in work groups: A dynamic perspective of the affective and cognitive processes that link diversity and performance. In P. B. Paulus & B. A. Nijstad (Eds.), *Group creativity: Innovation through collaboration* (pp. 32-62). Oxford: Oxford University Press.

Moates, K. N., & Gregory, B. T. (2008). *Perspective taking and transformational leadership.* Working paper series 08-07, The W.A. Franke College of Business, Northern Arizona University. Retrieved from:

http://www.cba.nau.edu/Faculty/Intellectual/workingpapers/pdf/Gregory_Perspective.pdf

Mook, D. G. (1983). In defense of external invalidity. *American Psychologist, 38,* 379-387. doi:10.1037/0003-066X.38.4.379

Morgeson, F. P, & Hofmann, D. A. (1999). The structure and function of collective constructs: Implications for multilevel research and theory development. *Academy of Management Review, 24,* 249-265. doi:10.2307/259081

Mueller, J. S., Melwani, S., & Goncalo, J. A. (2012). The bias against creativity: Why people desire but reject creative ideas. *Psychological Science, 23,* 13-17. doi:10.1177/0956797611421018

Okhuysen, G. A., & Eisenhardt, K. M. (2002). Integrating knowledge in groups: How formal interventions enable flexibility. *Organization Science, 13,* 370-386. doi:10.1287/orsc.13.4.370.2947

Park, H. S., & Raile, A. N. W. (2009). Perspective taking and communication satisfaction in coworker dyads. *Journal of Business and Psychology, 25*, 569-581. doi:10.1007/s10869-009-9149-6

Parker, S. K., Atkins, P. W. B., & Axtell, C. M. (2008). Building better work places through individual perspective taking: A fresh look at a fundamental human process. In G. Hodgkinson & K. Ford (Eds.), *International Review of Industrial and Organizational Psychology* (pp. 149-196). Chichester, UK: Wiley.

Parker, S. K., & Axtell, C. M. (2001). Seeing another viewpoint: Antecedents and outcomes of employee perspective taking. *Academy of Management Journal, 44,* 1085-1100. doi:10.2307/3069390

Paulus, P. B. (2000). Groups, teams, and creativity: The creative potential of idea-generating groups. *Applied Psychology: An International Review, 49,* 237-262. doi:10.1111/1464-

0597.00013

Paulus, P. B., & Nijstad, B. A. (Eds.). (2003). *Group creativity: Innovation through collaboration.* Oxford: Oxford University Press.

Pearsall, M. J., Ellis, A. P. J., & Evans, J. M. (2008). Unlocking the effects of gender faultlines on team creativity: Is activation the key? *Journal of Applied Psychology, 93,* 225-234. doi:10.1037/0021-9010.93.1.225

Perspective (n.d.). In Cambridge Dictionaries Online. Retrieved from: http://dictionary.cambridge.org/dictionary/british/perspective_1

Phillips, K. W., & Loyd, D. L. (2006). When surface and deep-level diversity collide: The effects on dissenting group members. *Organizational Behavior and Human Decision Processes, 99,* 143-160. doi:10.1016/j.obhdp.2005.12.001

Preacher, K. J., Curran, P. J., & Bauer, D. J. (2006). Computational tools for probing interaction effects in multiple linear regression, multilevel modeling, and latent curve analysis. *Journal of Educational and Behavioral Statistics*, *31*, 437-448. doi:10.3102/10769986031004437

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40,* 879-891. doi:10.3758/BRM.40.3.879

Rico, R., Sánchez-Manzanares, M., Gil, F., & Gibson, C. (2008). Team implicit coordination processes: A team knowledge-based approach. *Academy of Management Review, 33,* 163-184.

Roßnagel, C. (2000). Cognitive load and perspective-taking: Applying the automatic-controlled distinction to verbal communication. *European Journal of Social Psychology, 30,* 429-445.

Ruby, P., & Decety, J. (2001). Effect of subjective perspective taking during simulation of action: A PET investigation of agency. *Nature Neuroscience, 4*, 546-550.

Sessa, V. I. (1996). Using perspective taking to manage conflict and affect in teams. *Journal of Applied Behavioral Science, 32*, 101-115. doi:10.1177/0021886396321007

Shalley, C. E., Zhou, J., & Oldham, G. R. (2004). Effects of personal and contextual characteristics on creativity: Where should we go from here? *Journal of Management, 30,* 933-958. doi:10.1016/j.jm.2004.06.007

Shin, S. J., Kim, T.-Y., Lee, J.-Y., & Bian, L. (2012). Cognitive team diversity and individual team member creativity: A cross-level interaction. *Academy of Management Journal, 55.*

Shin, S. J., & Zhou, J. (2007). When is educational specialization heterogeneity related to creativity in research and development teams? Transformational leadership as a moderator. *Journal of Applied Psychology, 92,* 1709-1721. doi:10.1037/0021-9010.92.6.1709

Smith, S. M. (2003). The constraining effect of initial ideas. In P. B. Paulus & B. A. Nijstad (Eds.), *Group creativity: Innovation through collaboration* (pp. 15-31). Oxford: Oxford University Press.

Stasser, G., & Birchmeier, Z. (2003). Group creativity and collective choice. In P. B. Paulus & B. A. Nijstad (Eds.), *Group creativity: Innovation through collaboration* (pp. 85-109). Oxford: Oxford University Press.

Stasser, G., & Titus, W. (1985). Pooling of unshared information in group decision making: Biased information sampling during group discussion. *Journal of Personality and Social Psychology, 48*, 1467-1478. doi:10.1037/0022-3514.48.6.1467

Taggar, S. (2001). Group composition, creative synergy, and group performance. *Journal of Creative Behavior, 35,* 261-286.

Thomas, D. A. (2004). Diversity as strategy. *Harvard Business Review, 82*(9), 98-108.

Thompson, L., & Bloniarz, J. (1996). *Windy City Theatre. Team exercise.* Offered by Dispute Resolution Research Center and Kellogg's Team and Group Center. Retrieved from http://www.kellogg.northwestern.edu/drrc.

Titus, P. A. (2000). Marketing and the creative problem-solving process. *Journal of Marketing Education, 22*, 225-235. doi:10.1177/0273475300223006

Tjosvold, D., & Johnson, D. W. (1977). Effects of controversy on cognitive perspective taking. *Journal of Educational Psychology, 69*, 679-685. doi:10.1037/0022-0663.69.6.679

Tjosvold, D., & Johnson, D. W. (1978). Controversy within a cooperative or competitive context and cognitive perspective-taking. *Contemporary Educational Psychology, 3*, 376-386. doi:10.1016/0361-476X(78)90040-1

van de Ven, A. H. (2007). *Engaged scholarship: A guide for organizational and social research*. Oxford, UK: Oxford University Press.

van Dijk, H., van Engen, M. L., & van Knippenberg, D. (2009). *Work group diversity and performance: A meta-analysis*. Paper presented at the Academy of Management Annual Meeting, Chicago, IL.

van Ginkel, W. P., & van Knippenberg, D. (2008). Group information elaboration and group decision making: The role of shared task representations. *Organizational Behavior and Human Decision Processes, 105*, 82-97. doi:10.1016/j.obhdp.2007.08.005

van Ginkel, W. P., & van Knippenberg, D. (2009). Knowledge about the distribution of information and group decision making: When and why does it work? *Organizational Behavior and Human Decision Processes, 108,* 218-229. doi:10.1016/j.obhdp.2008.10.003

van Knippenberg, D., Dawson, J. F., West, M. A., & Homan, A. C. (2011). Diversity faultlines,

shared objectives, and top management team performance. *Human Relations, 64*, 307-336. doi:10.1177/0018726710378384

van Knippenberg, D., De Dreu, C. K. W., & Homan, A. C. (2004). Work group diversity and group performance: An integrative model and research agenda. *Journal of Applied Psychology, 89,* 1008-1022. doi:10.1037/0021-9010.89.6.1008

van Knippenberg, D., & Schippers, M. C. (2007). Work group diversity. *Annual Review of Psychology, 58,* 515-541. doi:10.1146/annurev.psych.58.110405.085546

West, M. A. (2002). Sparkling fountains or stagnant ponds: An integrative model of creativity and innovation implementation in work groups. *Applied Psychology: An International Review, 51,* 355-424. doi:10.1111/1464-0597.00951

Williams, H. M., Parker, S. K., & Turner, N. (2007). Perceived dissimilarity and perspective taking within work teams. *Group & Organization Management, 32,* 569-597. doi:10.1177/1059601106293769

Williams, K. Y., & O'Reilly, C. A., III. (1998). Demography and diversity in organizations: A review of 40 years of research. *Research in Organizational Behavior, 20,* 77-140.

Zhou, J., & Oldham, G. R. (2001). Enhancing creative performance: Effects of expected developmental assessment strategies and creative personalities. *Journal of Creative Behavior, 35,* 151-167.

Zhou, J., & Shalley, C. E. (2010). Deepening our understanding of creativity in the workplace: A review of different approaches to creativity research. In S. Zedeck (Ed.), *APA Handbook of Industrial and Organizational Psychology, Vol. 1* (pp. 275-302). Washington DC: APA.

Appendix: Coding scheme information elaboration

The definition of information elaboration as the exchange, individual level processing, discussion, and integration of different perspectives and information specifies a set of interrelated processes that are logically ordered in a way in which the higher order subprocesses presuppose the lower order subprocesses. In line with this definition, information elaboration was coded on a scale from 1 to 7 that indicates the extent to which groups engage in the full set of interrelated processes that jointly define information elaboration. A score of 1 was given to groups that immediately started developing ideas with little or no systematic discussion of the information and/ or the different perspectives. A score of 2 was given to groups in which members expressed most of the information about the theater and the different perspectives but this was largely ignored by the fellow team members. Groups received a score of 3 when the information about the theater and the perspectives was expressed and acknowledged by some but not all team members. Teams received a score of 4 if all members acknowledged the information and perspectives shared by their team members but no attempts were made to jointly discuss or elaborate on this information. A score of 5 was awarded when all the previous conditions for a score of 4 were met and teams additionally engaged in a constructive joint discussion in which different pieces of information and perspectives were used to elaborate on each other's ideas and suggestions. Groups were assigned a score of 6 if they additionally developed suggestions to combine at least two of the different perspectives and information sources. Finally, a score of 7 was awarded to teams that fulfilled the criteria of scale level 5 but developed suggestions to integrate all three perspectives or three different information sources on the task.

Footnotes

[1] Students registered for the study online, so their assignment to teams was not strictly random. Yet, they reported low familiarity with their teammates in the post-experimental survey ($M = 1.47$; $SD = 0.85$) on a scale from 1 = *not familiar at all* to 5 = *very familiar*. Repeating our analyses to test our hypotheses with familiarity as a control did not alter the pattern of findings.

[2] Including the number of members who received money as a control in the analyses did not alter the pattern of our results. Accordingly, all analyses are reported without this control.

[3] Analyzing the effect of diversity and perspective taking on the teams' creativity without the teams with partially missing data did not change the nature or significance of the effects.

[4] Besides the manipulated diversity of perspectives, our teams may also differ on specific diversity attributes or combinations. Although randomly assigning teams to conditions should prevent that these differences systematically co-vary with our manipulation, we re-ran the analyses testing our hypotheses while controlling for nationality, sex, field of study (Blau's index), and age (SD) diversity and the two-and three-dimensional faultlines based on these attributes (using van Knippenberg, Dawson, West, & Homan, 2011's measure). As including these controls did not alter the pattern of our results, all analyses are reported without them.

[5] The different coding formats for novelty and usefulness are attributable to different degrees of variation that can be meaningfully distinguished with regard to the plans. Sensitivity analyses using a seven-point scale for novelty instead did not alter our findings.

[6] As moderate scores of usefulness/novelty were given more often than extreme values, we based our r_{wg}s on the expected variance of a triangular null distribution (James et al., 1984).

[7] Testing an alternative model that allowed for a moderation of both stages of the indirect effect did not alter the results and showed no moderation of the indirect effect's second stage.

Table 1

Descriptive statistics and correlations

		Mean	SD	1	2	3	4	5	6	7	8	9
1.	Diversity	0.50	0.50									
2.	Perspective taking	0.52	0.50	.04								
3.	Perspective taking manipulation check	3.92	0.46	-.10	.72**							
4.	Diversity manipulation check information preference	0.34	0.13	.61**	-.01	-.05						
5.	Diversity manipulation check goals	0.30	0.16	.76**	.08	-.12	.43**					
6.	Sharing information	2.11	0.42	.01	.09	.02	-.16	-.03				
7.	Sharing perspectives	1.08	0.52	.23*	.19	.15	-.01	.17	.12			
8.	Task Conflict	4.17	2.95	.14	-.26*	-.27*	-.01	.09	.20	-.07		
9.	Information Elaboration	3.53	1.40	.08	.27*	.22	-.04	.02	.31**	.56**	-.36**	
10.	Team creativity	10.01	6.04	.13	.14	.15	.08	.06	-.02	.24*	-.24*	.53**

Note. Diversity and perspective taking are dummy-coded variables (0 = homogeneous; 0 = no perspective taking). All correlations at the team level

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 2

Regression Results for the Mediated Moderation Model

Predictor	b	SE	β	t	R^2
Model 1: Creativity					.17**
Diversity	-3.09	1.89	-.26	-1.64	
Perspective taking	-2.89	1.86	-.24	-1.55	
Diversity x Perspective taking	8.88	2.60	.66	3.41***	
Model 2a: Information elaboration					.19*
Diversity	-0.80	0.43	-.29	-1.87	
Perspective taking	-0.22	0.42	-.08	-0.51	
Diversity x Perspective taking	1.89	0.59	.61	3.20**	
Model 2b: Sharing information					.01
Diversity	.17	.84	.03	.20	
Perspective taking	.56	.83	.11	.68	
Diversity x Perspective taking	-.20	1.16	-.04	-.18	
Model 2c: Sharing perspectives					.09*
Diversity	-.02	.17	-.02	-.11	
Perspective taking	-.05	.16	-.05	-.32	
Diversity x Perspective taking	.49	.23	.42	2.13*	
Model 2c: Task conflict					.09*
Diversity	1.83	.95	.31	1.94	
Perspective taking	-.58	.93	-.10	-.62	
Diversity x Perspective taking	-1.88	1.30	-.29	-1.44	
Model 3a: Creativity					.40***
Diversity	-1.23	1.65	-.10	-0.74	
Perspective taking	-2.39	1.59	-.20	-1.50	
Diversity x Perspective taking	4.49	2.38	.33	1.88	
Information elaboration	2.32	0.44	.54	5.234***	
Model 3b: Creativity					.44***
Diversity	-.82	1.67	-.07	-.49	
Perspective taking	-1.99	1.61	-.17	-1.24	
Diversity x Perspective taking	3.95	2.38	.29	1.66	
Information elaboration	2.94	.63	.68	4.64***	
Sharing information	-.49	.25	-.20	-1.95	
Sharing perspectives	-1.18	1.41	-.10	-.84	
Task conflict	.08	.23	.04	.35	

Note. Diversity and perspective taking are dummy coded variables (0 = homogeneous; no perspective taking). * $p < .05$. ** $p < .01$. *** $p < .001$.

```
                    ┌─────────────┐
                    │ Perspective │
                    │   Taking    │
                    └──────┬──────┘        ┌──────────────┐
                           │               │ Information  │
                           │               │ Elaboration  │
                           │               └──────────────┘
┌──────────────┐          │
│ Diversity of │          ▼
│ Perspectives │─────────────────────────────────────────►┌──────────────┐
└──────────────┘                                           │     Team     │
                                                           │  Creativity  │
                                                           └──────────────┘
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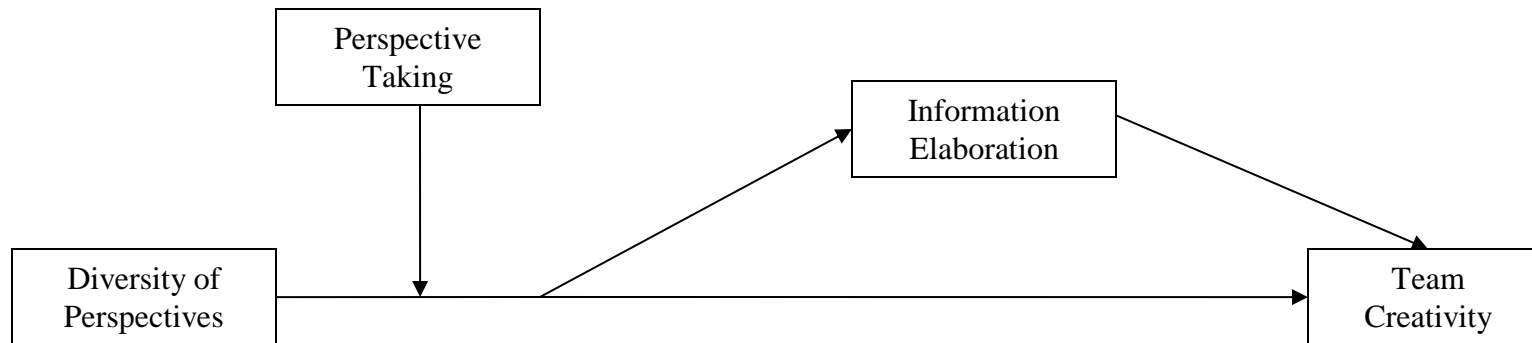
Figure 1. Research model with the interaction between diversity and perspective taking, the mediating process information

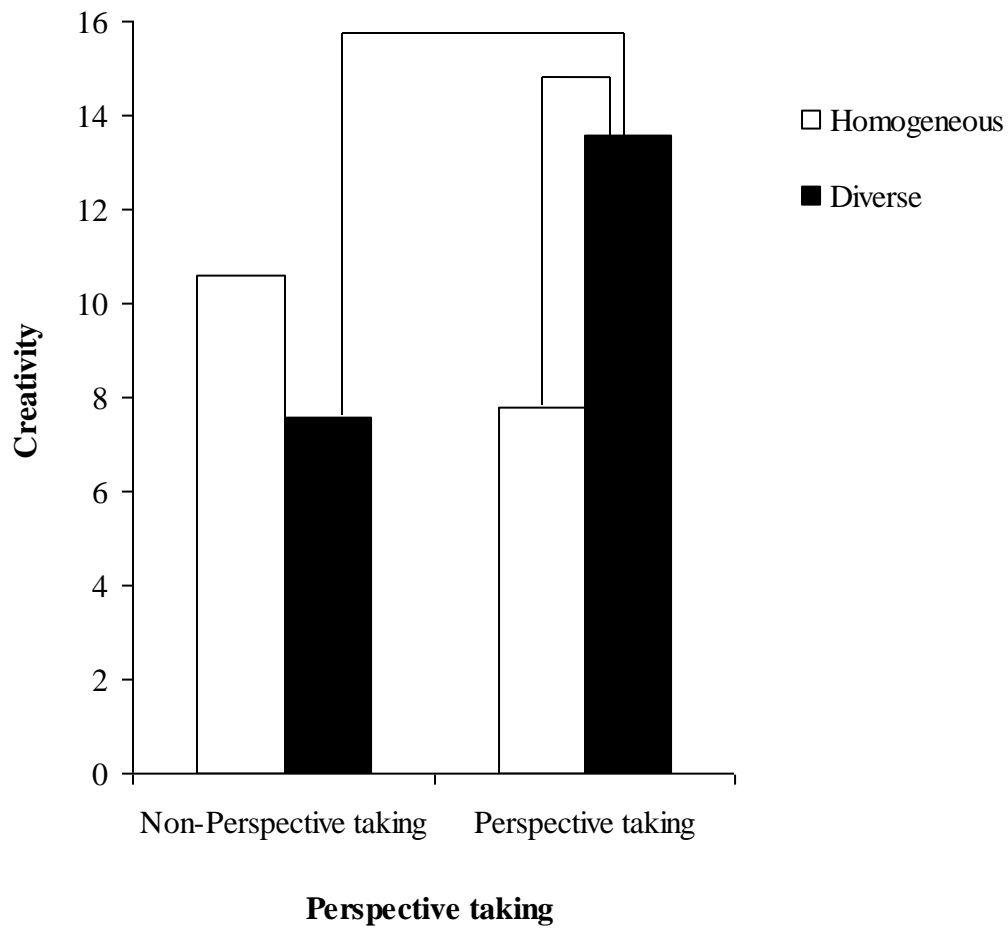elaboration, and the outcome variable team creativity.

Figure 2. Interaction of diversity and perspective taking on the creativity of the team action

plans. The significant simple main effects of diversity in the perspective taking condition and of

perspective taking in the diverse condition are indicated by the two bars.