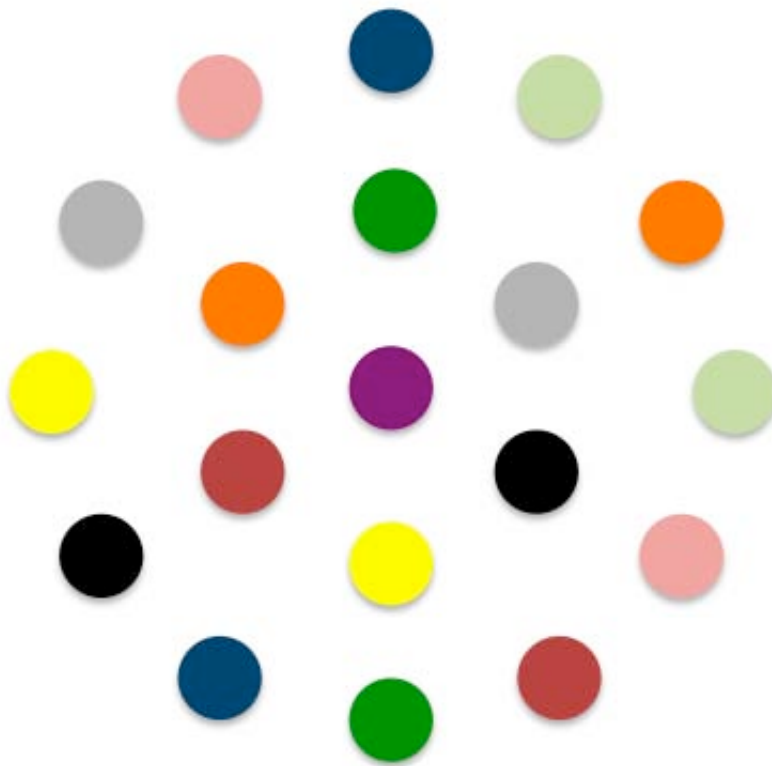


FINDING LEVERS FOR INNOVATION IN DIVERSE TEAMS



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Finding levers for innovation in diverse teams

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SUMMARY

How do diverse teams come into existence? Are they allocated to the right kind of tasks? How do elderly stereotypes influence age diverse groups? How can different pathways towards creativity be switched on or off? What makes diversity training effective? And what role do different creativity dimensions, such as fluency, originality, flexibility, depth or nationality related and nationality unrelated creativity, play in assessing all the above? The theoretical and empirical work presented in this dissertation addresses the above questions and shows that team creativity is a complex issue, even more so if coupled with team diversity.

First, this dissertation investigates age-related differences with regard to team staffing decisions. Accordingly, older individuals were better able to match task type (e.g. simple or complex/creative tasks) and team diversity level (homogeneous or heterogeneous).

Second, in four-person groups consisting of two younger and two older adults, elderly stereotypes were manipulated. This thesis finds that the creative fluency of highly conscientious age-diverse teams was higher when elderly stereotypes were positive, and respectively lower for the control group and the negative age-stereotype condition. For depth, a creativity dimension relying on perseverance, the effects were diametrically reversed.

Third, this thesis finds that a team's actual nationality diversity (i.e., the possibility to apply the training) as well as the diversity beliefs of the team members (i.e., the personal need for the training) interact in determining group creativity following a diversity training. Accordingly, teams with relatively low levels of diversity beliefs benefitted most from a diversity training, provided that they could actually use the training in their nationality diverse team

In sum, many factors including personality, age, and beliefs have to be taken into account. The path to achieving creativity in diverse teams is more difficult and paved with more obstacles than it is the case for homogeneous teams, but at the same time team diversity is the much more promising route to take.

Anxiety is the hand maiden of creativity.
T.S. Eliot (British-American poet)

The key question isn't "What fosters creativity?" But it is why in God's name isn't everyone creative? Where was the human potential lost? How was it crippled? I think therefore a good question might be not why do people create? But why do people not create or innovate?
Abraham Maslow (U.S.-American psychologist)

An essential aspect of creativity is not being afraid to fail.
Edwin Land (U.S.-American scientist and co-founder of the Polaroid Corporation)

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CHAPTER 1

General Introduction

Even though the lonely inventor has become the exception rather than the rule in today's world, the myth of the powerful creative genius still lingers around in the heads of many. One reason might be that individual creators make a better story that is easier to understand and seems to be decorated with just a bit more magic than the story of how a group of normal people came together and somehow – no one knows anymore who it was – came up with an idea, followed it through and eventually created something new and meaningful: an innovation. Greatness coming from greatness sounds much more plausible. Claiming teams of normal people create innovations is more complicated and coming up with something great with just an ordinary input is akin to saying that it's possible to turn dirt into gold: The famous “the result is more than the sum of its parts”. However, despite some brainstorming studies suggesting otherwise (Diehl & Stroebe, 1991), the assumption underlying this thesis is that teams have a huge potential to be creative, which they often underuse. Indeed, evidence from the various fields supports this reasoning: Not only do the lists of authors participating on scientific publications get longer and longer (Papatheodorou, Trikalinos, & Ioannidis, 2008), but also in organizations, it has become the rule rather than the exception to work in teams (Kozlowski & Bell, 2003). Complex creative work needs different perspectives and thus a diverse team will lead to success (Cox, Lobel, & McLeod, 1991; Jehn, Northcraft, & Neale, 1999).

The view that creativity is born in teams, even by “normal” humans is a rather new idea. From the perspective of a pre-renaissance man, there was nothing “normal” about creativity (Ripple, 1999). Thus, attributing creativity to unknown divine forces has a long record in human history (Ripple, 1999).

Originally, creativity was in most cultures the characteristic only ascribed to an omnipotent divine creator and not, as we usually do now, to lesser human mortals. In the Bible for instance, God is the Creator of basically everything. Similarly, in almost all other cultures, creation myths as diverse as that of the Dreamtime of the Australian Aborigines or the Hindu myth in which Vishnu commands his servant Brahma to create the world, exist. Still during Italian Renaissance, creativity was thought to come from Heaven. The Florentine painter and architect Vasari described in his classic *Lives of the Painters, Sculptors and Architects*, how “the great Ruler of Heaven looked down and sen[t] to earth a genius universal in each art, who was rather divine than earthly” (Vasari, 1550/1996). Here Vasari was praising Michelangelo. Then, with increased secularization, the perceived origin of creativity gradually moved away from divine to human and is now moving from individuals to teams. Today organizations of all kinds rely on diverse teams to innovate (Jackson, Joshi, & Erhardt, 2003).

Innovation and therefore creativity as its premise (George, 2001; West, 1996) has become so important today that economists and sociologists have proclaimed the era of the Innovation Economy (Christensen Raynor, 2003; Davenport, Leibold, Voelpel, 2006) and predict the rise of the Creative Class (Florida, 2002). Creativity is probably one of the most important capabilities that enable individuals and organizations to cope with the rapid change, complexity and uncertainty of the 21st century (Runco, Ebersole, & Mraz, 1991). As the world is becoming more and more complex, the ability to find new ways of dealing with our daily life becomes increasingly important. We have to master more and more new technological, cultural and social

developments in order to understand the world around us and be able to appropriately cope with our everyday life. Although today we are able to make an appointment via e-mail or cell phone, we also have to learn to exploit the new abundance of technical appliances. We must learn to use the new features of the latest smart phone generation, televisions, computers, transport systems, etc. New art and entertainment amazes us, but it demands a heightened capability to adapt, if we want to understand the newest changes and emerging trends. Web art, performance art, and other forms of art, are just a few examples that may challenge the creativity even of the beholder.

All this implies that creativity, the ability to find new and meaningful ways to deal with a situation (Sternberg, 1988), is becoming more and more important than ever before.

Creativity is a useful and effective response to the vast changes that are continuously underway, since it allows the individual to stay flexible and quickly adjust to new circumstances (Flach, 1990; Runco, 1994). Thus, as the industrialized world is shifting more and more from an industrial society towards an innovation society (Christensen & Raynor, 2003), creativity becomes an increasingly important factor for modern organizations too (Voelpel, Leibold, & Eckhoff, 2006). In this view, creativity is not only useful as a reaction to change taking place, but is also the main driver of change.

Innovation today is paramount to organizational success and organizations of every color try to foster and sustain it (Bigoness, 1981; Davenport, Leibold, & Voelpel, 2006; West & Rickards, 1999; Anderson, De Dreu, & Nijstad, 2004; Janssen, Vliert, & West, 2004). Meanwhile, the loci of innovation move more and more from the individual towards the team. In this respect, the divergent

perspectives and ideas that different team members bring to the table are believed to be a crucial instigator of team creativity (Cox, Lobel, & McLeod, 1991). Today, diverse teams work on new exciting projects at Google that will help molecular biology and it is a large interdisciplinary team that discovered the Higgs boson at the world's largest particle physics laboratory, CERN.

Diversity

As the world becomes increasingly complex, many problems demand a variety of knowledge and perspectives and with this it becomes increasingly important to employ teams that are heterogeneous (Jehn, Northcraft, & Neale, 1999). Almost by definition, creativity is complex: The desired outcome is not known at the outset, the possibilities are seemingly endless and different perspectives of different individuals are usually beneficial. In other words, there are indications that creative performance and team diversity should go well together (Cox, Lobel, & McLeod, 1991). Unfortunately, this is not always the case. On the way to creative performance, diverse teams also face many pitfalls, such as increased conflict (Murnighan & Conlon, 1991). This is one of the reasons why research in the past has found team diversity to be related both positively and negatively to performance (Van Knippenberg & Schippers, 2007). One school of thought, taking the similarity-attraction perspective, argues that team diversity leads to more conflict, decreased trust and cooperation (Jackson, 1992). The opposing school takes an information-decision-making perspective, and posits that different task-relevant knowledge elicits fruitful discussions that ultimately lead to better decisions and results (for instance Bantel & Jackson, 1989). Both schools have found

empirical support for their view (Williams & O'Reilly, 1998; Van Knippenberg & Schippers, 2007) and the question whether diversity increases or decreases a team's effectiveness is unsolved. While this is puzzling, such seemingly conflicting findings only show that it is necessary to take contingency factors into account when assessing the effectiveness of team diversity (Pelled, Eisenhardt, & Xin, 1999).

Contextual Factors

Team diversity thus can promote or impede a team's effectiveness, depending on contextual factors (van Knippenberg & Schippers, 2007). In this thesis I will look at the following contextual factors that may play a role in determining creative performance outcomes of diverse teams: Age, personality and beliefs.

Since creativity is almost by definition a complex task, this thesis starts out with an investigation into when and how teams are assembled to work on complex tasks. In this respect, age has been identified as an important factor, influencing different outcomes, such as capabilities and decision making (Baltes, Lindenberger, & Staudinger, 2006). We propose that depending on someone's age, people might take different factors into account when making staffing decisions. More specifically, we wondered whether younger and older individuals are both equally capable of applying the contingency approach to selecting team members. More specifically, if indeed diversity is more beneficial for complex rather than for simple tasks, it is interesting to understand whether people from different age groups differentially apply this

knowledge when setting up teams.

Of course, age does not only affect individual behavior, but is also a crucial diversity characteristic. Demographic change is one of today's mega-trends in Western societies that will as a consequence lead to increasingly (age) diverse workforces (Leibold and Voelpel 2006; Tempest, Barnatt, & Coupland, 2002). The average age of the European worker is increasing rapidly and age diverse teams are becoming more and more the rule rather than the exception (Leibold and Voelpel, 2006). Thus, understanding how age influences team diversity, team work and creative performance is crucial, especially when at the same time innovation becomes increasingly important for sustained business success (Voelpel, Leibold, & Eckhoff, 2007).

As diverse teams are better at solving complex tasks compared to homogeneous teams (Jehn et al., 1999), understanding the factors influencing creative performance of diverse teams is crucial to organizational success. However, age differences in teams are not without potential disadvantages, as employees often hold strong beliefs about older individuals (Kite & Wagner, 2002). While there is a large literature investigating stereotype effects on individuals (Hilton & von Hippel, 1996), to my knowledge there is a scarcity of research with regard to the effects of stereotypes on diverse teams. As I will show, the effects of stereotypes towards one group elicit mixed effects on the targeted and the non-targeted group that influence each other. Moreover, in this thesis I will investigate both positive and negative elderly stereotypes and their (moderating) effects on different creativity dimensions. Interestingly enough, different stereotypes can indeed aid or

hinder team performance (e.g., Desrichard & Koepetz, 2005).

If we examine this work more broadly, it becomes clear that beliefs about other groups can affect team performance. Organizations are also aware of the impact of beliefs on team functioning, and in order to address potential negative beliefs about others, organizations often provide diversity training for their employees (Pendry, Driscoll, & Field, 2007). Unfortunately, it is still unclear whether such training is always beneficial and if not, under which conditions it will have positive effects (see for instance Anand & Winters, 2008; Bezrukova, Jehn, & Spell, 2012; Egan & Bendick, 2008; Hemphill & Haines, 1997; Kulik, Pepper, Roberson, & Parker, 2007; Naff & Kellough, 2003). Although organizations presume that diversity training has a positive effect on the functioning of diverse teams, the contingency factors of successful diversity training are still unclear. In this respect, we will move to more generalized beliefs about diversity (or diverse others) and examine the benefits of diversity training on teams that are more or less diverse. Thus, in the fourth chapter of this thesis, I will investigate contingency factors that may affect training effectiveness. Once again, I will in this case focus on beliefs that moderate training effectiveness, specifically beliefs about the value of diversity.

Thesis Outline

The core of this thesis consists of three empirical research papers written with the goal of being published in peer-reviewed scientific journals. All three papers investigate, from different perspectives, the relationship of group diversity and creativity as well as age, personality and beliefs (for an overview of chapter topics, please see Table 1.1). All three empirical chapters (Chapter 2, 3, & 4) discuss the respective theoretical background, the methods used as well as the results and their theoretical and practical implications separately.

	Team Diversity	Age	Personality ¹	Beliefs ²	Creativity
Chapter 2	√	√	√		(√)
Chapter 3	√	√	√	√	√
Chapter 4	√			√	√

Table 1.1: Overview of thesis topics and the chapters in which they are dealt with.

¹ Personality includes openness to experience (Ch. 2 & 3), conscientiousness and intragroup dominance (Ch. 3); ² Beliefs include Diversity Beliefs (Ch. 3 & 4) and Stereotypes as the belief in certain prejudices pertaining to an outgroup (Ch. 3).

Overview Chapter 2

In order to investigate the above mentioned factors, in the first empirical chapter (Chapter 2), I aim at developing an understanding of how team diversity is created in response to different task characteristics. In this, I integrate research on group diversity, as well as on personality and lifespan psychology, investigating age-related differences with regard to staffing

decisions. Research has shown that complex tasks typically require diverse group members, who integrate their dissimilar background characteristics in order to achieve high performance (e.g., Jehn et al., 1999). In contrast, homogenous groups are likely to be better suited for simple tasks. In an experimental setting with 236 adults aged below 30 and above 50, the results presented in this Chapter suggest that older adults are better able to take this task-composition-fit argument into account than younger adults. This effect was further moderated by openness to experience, in that older-adults with high openness to experience were even more inclined to choose a diverse team for complex tasks and a less diverse team for simple tasks. The implications of these findings are discussed with respect to future research and organizational practice.

Overview Chapter 3

Chapter 2 shows that age possibly leads to different perspectives and thus decisions, and consequently might play a role as a team diversity dimension too. Thus, in Chapter 3, I was also interested in how younger and older individuals would work together as a team on a complex, i.e. creative, task and how their specific strengths and weaknesses would be influenced by prior beliefs such as stereotypes and how they interact with different levels of team-level conscientiousness. For instance, high levels of conscientiousness have been shown to promote individual and group performance. As such, it is not surprising that personnel selection favors conscientious individuals. However, for creativity, this selection criterion is often detrimental. In turn, stereotypes have been found to either decrease performance of stereotyped

groups (stereotype threat) or increase performance (stereotype lift). While these effects of stereotyping can be both direct (i.e. negative elderly stereotypes affecting older individuals negatively) or indirect (i.e. negative elderly stereotypes affecting younger individuals positively), this study investigates the interaction of stereotype priming within an age-diverse group with regards to positive as well as negative stereotypes. Thus, by integrating research on group diversity, elderly stereotypes and personality research, this study investigates and finds a moderating effect of elderly stereotypes on the relationship of conscientiousness and different creativity dimensions. In an experimental setting with 55 four-person groups consisting of two younger and two older adults, we manipulated elderly stereotypes and found that the creative fluency and depth of highly conscientious age-diverse teams was higher when elderly stereotypes were positive, and respectively lower for the control group and the negative age-stereotype condition. Implications of these findings are discussed with respect to future research and organizational practice.

Overview Chapter 4

After the second study found that the stereotypical beliefs about a group of individuals do influence team effectiveness, Chapter 4 includes another kind of beliefs, more precisely diversity beliefs. The study's main focus, however, is on training for working in diverse teams and whether such training may overcome some of the obstacles team diversity poses to team productivity. While organizations spend millions on training their employees to better deal with diversity, the effectiveness of diversity trainings is still unclear.

Chapter 4 proposes that the effectiveness of diversity training, for instance strengthening the understanding of factors promoting performance, depends on a combination of individual and situational characteristics of the trainees. As diversity training is geared towards improving work in diverse teams, the actual diversity of the team in which the trainees work in, is an important, though neglected, team characteristic that should be taken into account when assessing diversity training' effectiveness. For instance, if the team is not diverse, the lessons from diversity training might be either useless or misapplied. In addition, diversity training is given to people with preconceptions about the value of diversity.

The question whether trainees view diversity favorably or unfavorably is yet another often neglected factor that needs to be considered when investigating diversity training. This is because such pre-existing beliefs can render the information conveyed in a diversity training as either new or merely a repetition of already known facts and thus thereby differentially add to the knowledge base of trainees. More specifically, we predicted and found that the team's nationality diversity (i.e., the possibility to use the training) as well as the diversity beliefs of the team members (i.e., the personal need for the training) interact in determining group creativity following a diversity training.

To test these ideas, we provided a diversity training to twenty-eight student groups and compared their creativity to twenty groups that were subject to a control training. Teams differed in their diversity beliefs and nationality diversity. Our findings showed that teams with relatively low diversity beliefs benefited most from diversity training, provided that they could actually use the training in their diverse team. When nationality diversity was low, however, teams with relatively low diversity beliefs were actually less

creative following diversity training. With regard to the underlying process of our findings, we also found that the effects of diversity training were driven by the experienced team efficacy of the team members. Practical and theoretical implications are discussed.

Overview Chapter 5

Finally, in Chapter 5, I summarize the most important findings of all three empirical chapters and discuss the contribution of each chapter with regard to recurring topics of this thesis:

- Creativity and diversity
- Age, personality and diversity competence
- The impact of beliefs
- Finally, I conclude with discussing directions for future research

References are provided for all chapters at the end of this thesis.

CHAPTER 2

Older and Wiser: Matching Team Diversity Levels to Task Demands

This chapter is based on: Eckhoff, R.A., Homan, A. C., & Voelpel, S.C.: Older and Wiser: Matching team diversity levels to task demands.

Abstract

The workforce is becoming increasingly age-diverse. By integrating research on group diversity, as well as on personality and lifespan psychology, this study investigates age-related differences with regard to staffing decisions. Research has shown that complex tasks typically require diverse group members, who integrate their dissimilar background characteristics in order to achieve high performance (e.g., Jehn et al., 1999). In contrast, homogenous groups are better suited for simple tasks. In an experimental setting with 236 adults aged below 30 and above 50, we found that older adults are better able to take this task-composition-fit argument into account than younger adults can. This effect was further moderated by openness to experience, in that older-adults with high openness to experience were even more inclined to choose a diverse team for complex tasks and a less diverse team for simple tasks. The implications of these findings are discussed with respect to future research and organizational practice.

Owing to demographic change, organizations in many developed Western countries will increasingly keep older personnel and, hence, deal with a dramatically aging and an increasingly age diverse workforce (Tempest, Barnatt, & Coupland, 2002). In 2012 for instance, workers above 55 will already comprise about 20 percent of the overall US workforce (Toossi, 2004). In other countries, for instance in the European Union, demographic change also has a strong impact on the work-force's age composition (Leibold & Voelpel, 2006). At the same time, teams in organizations are becoming increasingly diverse, not only in terms of age, but also with regard to gender, nationality, and educational background (e.g., Buhler, 1997; Dean & Snell, 1991; Harrison, Price, Gavin, & Florey, 2002; Horwitz & Horwitz, 2007). Parallel to these important changes in the workplace, teams are becoming increasingly important for sustained organizational success (Kozlowski & Bell, 2003). As such, project teams with diverse backgrounds are regularly newly formed and for specific, pre-known tasks (Ericksen & Dyer, 2004).

However, team diversity has shown to be a “double-edged sword” (Milliken and Martins, 1996: 403). While the focus on diversity research has been growing over the past decades, (Lawrence, 1997), it produced inconsistent results with regard to team diversity's effect on performance (Williams & O'Reilly, 1998; Van Knippenberg & Schippers, 2007). While other studies have looked at the effect of different staffing policies on team performance (Millhiser, Coen, & Solow, 2011), in this paper we are concerned with the effect of diversity per se. Thus, when assembling project teams, it is important to know when diversity is beneficial and when not. Both, past theorizing (Pelled, 1996) and empirical research has indicated that the relationship between team diversity and performance depend, among others,

on the task complexity level (Bowers, Pharmer, & Salas, 2008; Higgs, Plewnia, & Ploch, 2005; Horwitz & Horwitz, 2007; Jehn, Northcraft, & Neale, 1999; Stewart, 2006; Van der Vegt & Van de Vliert, 2005). Accordingly, diversity is likely to enhance performance for more complex tasks and hampers it when the task at hand is routine and simple.

In this paper, we examine the degree to which young and old individuals take this knowledge into account when making actual team composition choices. With line managers and other decision makers becoming more and more age diverse themselves, it is vital to investigate the relationship between age and different approaches to composing the right team for the right task. Unlike most previous studies, we are interested in the combination of multiple diversity dimensions as an outcome variable, rather than as a predictor of team processes or of team performance. Our aim is therefore to contribute to two streams of literature. First, with respect to the diversity literature, we investigate individual differences in terms of age (or life experience) and their interplay with openness to experience regarding predicting preferred team composition. More specifically, we investigate whether scientific knowledge coincides with actual decision making by examining when and how team composition choices are in favor of or at the expense of diversity.

Second, regarding lifespan psychology literature, we extend previous attempts to better understand experience's effects regarding selecting different team members for different tasks. Both aspects are of theoretical and practical importance. For instance, if age were to be identified as a factor influencing decision making regarding team compositions, HR departments could take informed actions by selecting and/or training key individuals – young and old – who make decisions about project team staffing.

Theoretical Background

Task Complexity

Past research on diversity's impact on performance has produced mixed empirical results (Williams & O'Reilly, 1998; Van Knippenberg & Schippers, 2007), with some studies associating diversity with high performance (e.g., Bantel & Jackson, 1989), while others have linked diversity to lower performance (e.g., Murnighan & Conlon, 1991).

Diversity definitions usually describe the degree to which similarities and differences – such as age, gender, nationality, and educational background – are present between individuals within a team (Jackson, Joshi & Erhardt, 2003). Accordingly, diversity has mostly been investigated along single diversity dimensions (i.e. gender diversity; Van Knippenberg & Schippers, 2007). More recently, researchers have proposed that diversity should not only be examined from a single-attribute perspective, but that it should also be understood and measured as a complex bundle of demographics, with multiple demographic attributes accounted for in their interplay (Bezrukova, Jehn, Zanutto, & Thatcher, 2009; Jehn, Bezrukova, & Thatcher, 2007; Lau & Murningham, 1998). In the current study, we follow this approach.

Due to the lack of empirical clarity concerning diversity's direct effect on performance, research on team diversity has started investigating the moderators as the decisive factors influencing performance rather than the main effects (Pelled, Eisenhardt, & Xin, 1999). Research established that the task and the situation's structural aspects influence the effect that team diversity has on performance very early on (Brehmer, 1976; Van De Ven &

Ferry, 1980). An important structural aspect that is relatively easy to identify and is often established prior to the actual act of composing a project team, is a project's level of complexity; for instance, whether the work will mostly consist of routine tasks or whether it will involve more complex tasks such as innovative work outcomes. Accordingly, previous research on diverse teams has found that task characteristics, such as the task complexity level, play a significant role in predicting a diverse teams' performance (Bowers, Pharmed, & Salas, 2008; Higgs, Plewnia, & Ploch, 2005; Horwitz & Horwitz, 2007; Stewart, 2006; Van der Vegt & Van de Vliert, 2005).

When a task is well understood and simple, teams may rely on standard procedures (Jehn et al., 1999). In such cases, the integration of different viewpoints is unnecessary and could even be regarded as inefficient. When confronted with a simple task, homogenous teams are therefore better able to avoid the downsides of diverse perspectives, namely conflict and discussion, than heterogeneous teams and can focus on the task itself.

The more complex a task, however, the more beneficial the discussion of different viewpoints may become. Such discussions can extend the group's available strategic options, improving the group's solution of a given problem (e.g., Amason & Schweiger, 1994; Fiol, 1994; Jehn, 1995; Putnam, 1994). The success of constructive debates needed to accomplish complex tasks depends on the different information and viewpoints that a diverse team can provide. Van Knippenberg, De Dreu, and Homan (2004) point towards the need to integrate different viewpoints in order to prevent premature decisions, thereby stimulating a more elaborate processing. This is especially helpful when facing complex tasks and less applicable to simple tasks. In sum, this implies that when organizations compose project teams for certain tasks, they

should ensure that the team's composition matches the expected task complexity level.

Assembling Teams

While extant literature acknowledges both the advantages and disadvantages of team diversity, research has also consistently demonstrated that, in practice, individuals generally tend to select team members who are similar to themselves regarding their demographic characteristics (see, e.g., George, 1990; Hambrick & Mason, 1984; Tsui & O'Reilly, 1989). The similarity-attraction paradigm posits that similarity is a major driving force behind interpersonal attraction (Byrne, 1971). Thus, the question whether individuals incorporate their knowledge of the advantages and disadvantages of diversity into their everyday decision making remains an important one. Individuals might differ in their understanding of when diversity is helpful and when it is not. Thus, they might or might not match diversity levels to the expected task complexity at hand, and choose more diverse teams for complex tasks and less diverse teams for simpler tasks. Specifically, does experience help individuals make better decisions? Do personality factors, such as openness towards experience (McCrae, 1994), if applicable, enhance this effect further?

With demographic change widening the age range within organizations, it becomes increasingly important to investigate the differences between younger and older individuals with respect to decisions about team staffing choices. In the following section, we will show that lifespan theory suggests that there will be differences with regard to younger and older adults' diversity competence.

Age

Lifespan psychology assumes that human development is not completed at adulthood (Baltes, Lindenberger & Staudinger, 2006). Since lifespan psychology investigates the characteristics of and changes in late adulthood, it is well positioned to inform the investigation of differences between young (aged 18-30) and old adults (here, aged 50+).

With regard to intellectual changes that occur with age, lifespan psychology research generally distinguishes between fluid mechanics and crystallized pragmatics of intelligence, which are subject to different change trajectories (Baltes, 1993; Li, Lindenberger, Hommel, Aschersleben, Prinz, & Baltes, 2004; Schaie, Willis, & Pennak, 2005). Fluid mechanics refer to neurobiologically based intelligence mechanics, such as working memory, processing speed, and fluid intelligence, which starts declining in middle adulthood (Baltes, Staudinger, & Lindenberger, 1999; Hommel, Li, & Li, 2004). Aging is therefore usually accompanied by a decline in cognitive capacity (e.g., Horn & Cattell, 1967; McArdle, Ferrer-Caja, Hamagami, & Woodcock, 2002; Schaie et al., 2005).

Research on the effect of fluid mechanics and crystallized pragmatics on decision making has produced mixed results (Thornton & Dumke, 2005). On the one hand, there is evidence of improved decision making via reliance on crystallized pragmatics (e.g., Crawford & Channon, 2002). On the other hand, fluid mechanics are found to impede good decision making through decreased cognitive capacities (Finucane, Mertz, Slovic & Schmidt, 2005). Studies finding diminished decision making ability in older adults have, however, mostly focused on complicated decisions that demand high levels of fluid intelligence (Christensen, Haroun, Schneideman, & Jeste, 1995), thus

requiring good memory and high processing speed.

Older adults might perform better than younger adults if the decisions to be made are less abstract and part of everyday decision making. In such cases, crystallized intelligence, as a reflection of knowledge originating from years of experience, may compensate for individual fluid mechanics losses (Baltes & Baltes, 1990; Baltes et al., 1999). Accordingly, intellectual abilities that are primarily rooted in intelligence's experienced-based pragmatics, like professional knowledge, contextual judgment in everyday problem solving, and wisdom, mostly increase in late adulthood (Blanchard-Fields, 1996; Cole, 1996; Li, 2003; Shweder, 1991; Valsiner & Lawrence, 1997). With growing experience, older individuals should become better able to match the requirements of a task with the composition of the team needed to fulfill the task. In other words, experience-based pragmatics should theoretically include the knowledge of when diverse teams are beneficial.

Thus, older adults should be more likely to take diversity into account when making selection decisions. Theories of successful aging suggest that age-related decline in fluid mechanics may be compensated by an increase in pragmatics or experience, leading to a "higher level of adaptive capacity" (Baltes et al., 1999: 478). Thus, crystallized intelligence and life experience could be associated with a better understanding of the fit between the environment and particular strategies for achieving a given goal. If experience is a good predictor of appropriate and adaptive strategies to solve a given task, older adults might well outperform young adults in matching team and task type.

Hypothesis 1: Age moderates the relationship between expected task complexity and selected team diversity, such that this relationship is positive

for older individuals but negative or nonsignificant for younger individuals.

As outlined above, crystallized intelligence, originating from experience, may be an important factor in selecting appropriate levels of team diversity. However, past research has also shown that crystallized intelligence is correlated with openness to experience (Ashton, Lee, Vernon, & Jang 2000; Brand, 1994; Goff & Ackerman, 1992; Staudinger, Lopez & Baltes, 1997).

Openness to Experience

People high in openness "are characterized by an active pursuit of novelty, a quest to "clarify, intensify, or otherwise enlarge our experience" (Canaday, 1980: 5). Thus, in order to gain experience, to benefit from it, and expand his or her crystallized intelligence, an individual needs to be open to new experiences (McCrae, 1994; Moutafi, Furnham & Crump, 2003). In this context, Staudinger, Lopez and Baltes (1997) argued that open-minded people continue to seek new insights, thus constantly update their experience or their life pragmatics as they age. In other words, younger individuals do usually not have the time and thus opportunities to gather and establish a sound experiential basis for their life pragmatics.

In addition, of the Big Five personality traits, openness is especially likely to be related to perceptions of group composition (Homan, Greer, Jehn, & Koning, 2010) and to play an important role in learning (De Raad & Schouwenburg, 1996). Openness to experience has been shown to be strongly related to positive attitudes towards diversity (Flynn, 2005). Without being open to new experiences, it is therefore difficult to experience diverse teams in action and thus learn about the contexts in which they are advantageous or disadvantageous. For less open minded individuals, the possibilities to experience and learn – over the lifespan - that diverse teams

perform better for complex rather than simple tasks, will remain unused. Thus, in contrast to narrow minded individuals, open minded individuals accumulate knowledge and experience with regard to diverse teams as they age, such that they have a greater chance in achieving a high level of crystallized intelligence (here knowledge about the best task environment for diverse teams) when they are older.

Thus, open-minded older adults should be especially able to match high levels of team diversity to complex tasks, and low levels of diversity to simple tasks. For young adults, openness to experience should not yet have contributed significantly to their knowledge of appropriate and less appropriate levels of diversity for different task types. They have not had as many opportunities to experience diversity in different task contexts to be able to identify when diversity is beneficial and when it is not. For older individuals that are not open to experience and thus are more likely to lack the experience with diverse team similarly to their younger counterparts, their knowledge to match task type and diversity level should be similarly low.

Hypothesis 2: The three-way interaction between task complexity, age, and openness to experience will be significantly related to the level of chosen team diversity.

Hypothesis 2a: For older individuals, openness to experience moderates the relationship of expected task complexity and selected team diversity, such that this relationship is positive when openness is high but negative or nonsignificant when openness is low.

For younger individuals, openness to experience will not moderate the relationship between task complexity and the chosen team diversity.

Methods

Participants and Design

Subjects were recruited through newspaper advertisements and direct approach, targeting participants below age 30 and above age 50. A total of 236 German adults (106 male, 130 female) participated in the experiment for monetary compensation (10 EU, approximately 13 USD). The younger sample included mainly college students (87%; 12% high school students, 1% apprentices). Of those participants above 50, 54% had received some sort of college or university education, 19% had completed an apprenticeship, and for 27% high school was the highest level of education.

The experimental design was a 2 (young vs. old) by 2 (simple vs. complex task) design in which we asked the participants to pick the team members with whom they would work on the task. We asked the participants to answer an online questionnaire and choose a team for a group work study that would supposedly take place two weeks later on the university campus. Following previous research on group diversity (Williams & O'Reilly, 1998), the participants were allowed to indicate the desired age, gender, nationality, and educational background of each of their three prospective team members. Despite being among the most used characteristics in the literature (for an overview see Van Knippenberg & Schippers, 2007), they also seem to come to mind first when thinking about team diversity.

Manipulation and Measures

In the following, we summarize the different measures used in this study. An overview of the means, standard deviations, and intercorrelations is given in Table 1.

Age

The age of each participant was recorded as a continuous variable. The sample comprised 146 young adults (age range 18-30, $M = 22.12$, $SD = 3.1$) and 90 older adults (Age range: 50-80, $M = 65.96$, $SD = 8.0$)¹.

Task Complexity

Directly prior to choosing their team members' characteristics, participants were randomly assigned to one of two conditions in the online questionnaire. After answering a few questions about their personality (e.g., the Big Five personality traits), participants were either told that upon arrival on campus their team would work on a simple task or on a complex task. Team members of the best team would additionally receive a 20 EU [approximately 26 USD] book voucher each.

We deliberately refrained from describing the team task to avoid different assessments or interpretations of the task description. For instance, a physics student might find a task involving a mathematical problem rather simple, while a history student might perceive it as complex. By keeping the task description both abstract and simple, we allowed each individual to subjectively interpret the task as either simple or complex.

TABLE 1
Means, Standard Deviations, and Correlations Between Variables in the Study

Variable	M	s.d.	1	2	3	4	5	6	7	8
1. Age	37.89	21.70	—							
2. Task type	0.53	0.50	-.05	—						
3. Aggregate Diversity Measure	0.48	0.13	-.12	-.03	—					
4. Diversity Beliefs	5.40	0.68	-.09	.05	.02	—				
5. Educational Level	3.57	0.77	-.27**	-.01	.07	-.17*	—			
6. Deliberative Diversity	3.67	2.31	.16*	-.10	-.07	-.05	.02	—		
7. Openness to Experience	3.90	0.58	.14*	.13	-.09	.22**	-.02	-.13	—	
8. Chosen Diversity	0.56	0.13	.34**	.08	-.04	.00	-.09	.10	.09	—

Note. Level of diversity was operationalized with the faultline measure (Bezrukova et al., 2009; not allowing for team sizes smaller than two)

* = $p < .05$; ** = $p < .01$ (two-tailed, with $N=236$).

Openness to Experience

To measure openness to experience, we used the German version of the Big Five Inventory, consisting of 44 items (John & Srivastava, 1999; Lang, Lüdtke, & Asendorpf, 2001). A sample item is: "I see myself as someone who...is curious about many different things" ($\alpha = .80$).

Team Diversity Selection

Following previous work on diversity (Milliken & Martins, 1996; Van Knippenberg & Schippers, 2007), we allowed the participants to indicate the characteristics of their three fellow team members on four diversity dimensions: age, nationality, gender, and educational background. These variables are among the most widely used diversity dimensions in the extant literature (e.g. Tsui & Gutek, 1999). The age of the three other team members could be indicated as a real number, i.e. by entering a specific age. In order to simplify the choice of nationality and educational background, we categorized nationality into 11 cultural zones (using the categorization by Inglehart & Welzel, 2005)¹, and educational background into: no school leaving certificate, school leaving certificate, apprenticeship and some college/university (begun or completed). Finally, gender preference could be indicated.

Diversity Level Measure

We measured the overall chosen diversity along four characteristics (age, gender, nationality, and level of education) for the reasons indicated above. In past research, overall group-level diversity has been assessed by averaging single measures of dispersion (Bell, Villado, Lukasik, Belau, & Briggs, 2011), such as Blau's index (Blau, 1977), Teachman's entropy index

(Teachman, 1980), or Allison's coefficient of variation (Allison, 1978). All three measures are based on statistical aggregation, thus averaging single, thus only one, dispersion measures.

In order to capture the interplay of multiple demographic characteristics simultaneously, and especially *cumulatively*, we used the faultline measure proposed by Lau and Murningham (1998) and operationalized by Thatcher, Jehn, & Zanutto (2003). Faultline measures have traditionally been used to measure the strength of faultlines, potentially subdividing a group. However, in this paper we do not focus on the faultline feature of the measure, but on its ability to dynamically measure diversity using multiple demographics at once. This diversity measure not only accounts for possible subdivisions, but also for cumulative proportions of variance across demographic variables (Zanutto, Bezrukova, & Jehn, 2010). Contrary to aggregate measures, this allows for estimating how well the different clusters can explain the variability within the group. As an example, while there is a strong faultline in a team with two Caucasian women aged around 50 and two Asian men in their 20s, there is no strong faultline, if the team was composed of a Caucasian woman in her 50s, an Asian man in his 50s, a Caucasian woman in her 20s and an Asian man in his twenties as well. Aggregating the individual diversity dimensions, one would arrive at the same level of diversity for both groups. However, the diversity measure used here is high for the first and relatively lower for the later case. This is an important difference, especially since perspectives or resources are affected by the convergence of different diversity dimensions, such as in the later example given above. Accordingly, groups with the same array of demographic diversity may still feature very different dynamics,

depending on how such characteristics are distributed.

The advantageous features of Thatcher et al.'s algorithm (2003) led to its use in prior team diversity research (e.g., Lau & Murnighan, 2005; Molleman, 2005; Jehn & Bezrukova, 2010). This algorithm calculates the percentage of total variation in the overall group characteristics accounted for by the strongest group subdivision. It does so by calculating the ratio of the between-group sum of squares to the total sum of squares (resulting in values between 0 and 1, with larger values indicating greater strength). In our sample, the values ranged from 0.388 to 0.968 ($M = 0.56$, $SD = 0.13$). Following the extant literature (e.g., Bezrukova & Jehn, 2003; Thatcher et al., 2003; Bezrukova et al., 2009), we only consider faultlines that theoretically divide groups into subgroups with at least two members.

Deliberative Diversity Choice

To explore whether the participants' decisions regarding their choice of team members took diversity into account, we asked each participant for his or her reason for picking the given team. After they had picked their team members, we asked them to what extent the team diversity level had played a role in their decision making: "I picked this team composition because I wanted a diverse / homogeneous team".

Control Variables

Aggregate diversity measure: To ensure that our diversity measure (here the dependent variable) explains variance over and above the aggregated single diversity dimensions, we used their indices as control variables. For each diversity dimension used for the calculation of our dependent variable, age, gender, nationality and education, we calculated the

respective Blau's index (1977). While other indices are often used to measure diversity, such as standard deviation or Teachman's index, we here used Blau's index as the most commonly used index (for instance Williams & O'Reilly, 1998; Pelled et al., 1999) to capture qualitatively different categories for diversity as variety (Harison and Klein, 2007; Bunderson & Sutcliffe, 2002).

Following the procedure proposed by Jehn et al. (1999), we averaged all four indices, creating an aggregate diversity measure that has also been used in previous diversity research (e.g. Polzer, Milton, and Swann, 2002). To aggregate the four indices, we had to use the same index for all four diversity dimensions. However, including each diversity dimension separately or using standard deviation or Teachman's index, yielded similar results as the aggregate Blau's indices measure. We therefore decided to only report the aggregate Blau's indices measure here.

Diversity Beliefs. Various authors have found that people may differ in their attitudes and beliefs towards diversity (Hostager & De Meuse, 2002; Strauss, Connerley, & Ammermann, 2003). Another concern in this study was therefore that preferences for different levels of diversity were a result of individual diversity beliefs. Diversity beliefs can be regarded as beliefs about the value of diversity for a work group (Homan, Van Knippenberg, Van Kleef, & De Dreu, 2007). A sample item for this scale was, for example: "Diversity is an asset for teams" (Homan et al., 2010). Responses were given on Likert-type scales ranging from 1 (disagree) to 5 (agree). The internal consistency estimate was $\alpha = .94$.

Education. Since the older participants in our sample were less likely to have received any kind of university education, it seemed important to rule out

education as a driving factor for our findings. We therefore included educational background as control variable.

Results

Treatment of the data

We analyzed whether the older age group should be split into two subgroups ranging from 50-65 and from 65-80. We chose the cut-off point at 65 for three reasons. First, there was a bigger age range in the older group than in the young group, therefore we wanted to examine whether this would influence our findings. In addition, 65 is the midpoint between 50 and 80. Second, the official retirement age in Germany is 65 and might therefore affect outcomes. Third, it has been found that many changes related to aging begin to become apparent around the age of 65 (Heckhausen, Dixon, & Baltes, 1989).

We therefore split the old group into the young-old (age range: 50-64, $N = 43$, $M = 58.7$, $SD = 4.2$) and the old-old (age range 65-80, $N = 47$, $M = 71.6$, $SD = 4.5$). However, while finding a significant difference among the three groups overall ($F[2, 236] = 16.16$, $p < .001$), a Bonferroni post hoc test did not show that the young-old ($M = .63$, $SD = 0.14$) and the old-old ($M = .61$, $SD = 0.14$) differed significantly from each other with regard to chosen team diversity ($p = 1.0$). Nevertheless, the young group chose significantly different levels of team diversity ($M = 0.52$, $SD = 0.12$) compared to both the young-old ($M = 0.63$, $SD = 0.14$, $p < .001$) and the old-old ($M = .61$, $SD = 0.14$, $p < .001$). We therefore combined the young-old and old-old groups in an overall older group (thus, aged 50-80 as indicated above).

Chosen Diversity Composition of the Team

To test hypothesis 1 (older adults choose more diverse teams for complex tasks than for simple tasks, and young adults do not differentiate), we performed separate hierarchical regression analyses with mean-centered predictor variables for chosen diversity. In the regression, we entered the control variables in the first step, age and task type in the second step, and the interaction in the third step. Table 2 summarizes the results. The interaction of age and task type explained a significant amount of variance, exceeding the variance explained by the controls and the main effects (ΔR^2 for chosen diversity = .15, $p < .05$).

TABLE 2:
Level of Chosen Diversity as a Function of Age and Task Complexity

Variables entered	Step 1	Step 2	Step 3
Aggregate Diversity Measure	-.030	.013	.004
Participant's Education	-.092	-.007	-.006
Diversity Beliefs	-.013	-.030	-.011
Age		.346**	.179
Task type		.101	.104
Age*Task type			.232**
R^2 (adjusted R^2)	.009 (-.005)	.125** (.104)	.151** (.126)

Note. $N = 236$ participants, standardized regression weights are shown;

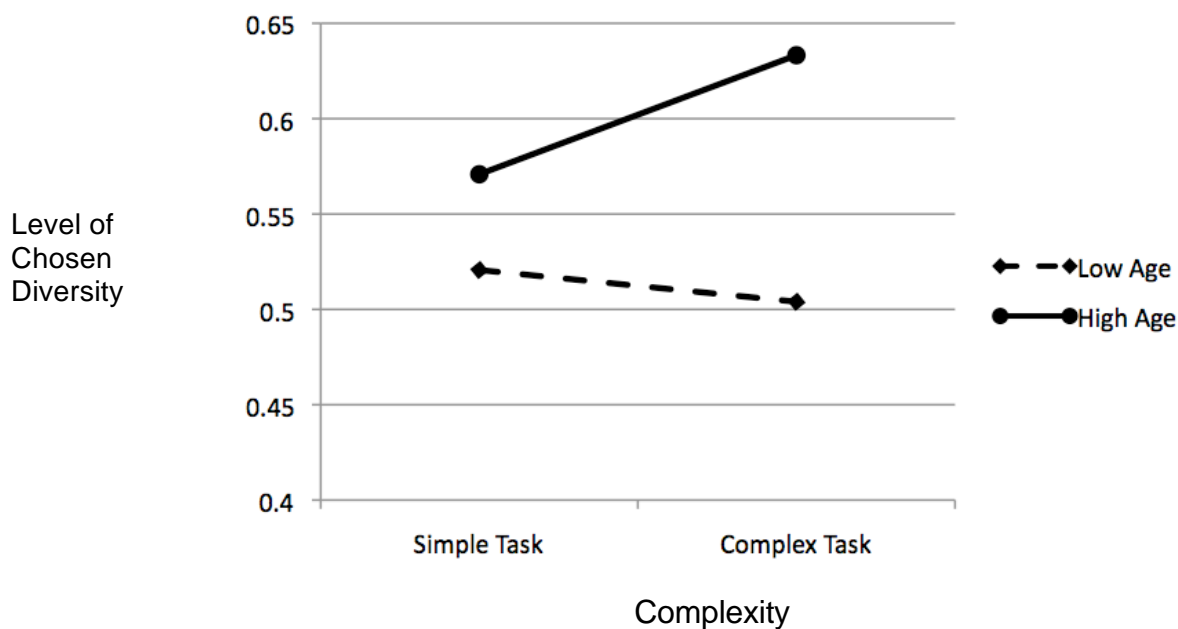
* $p < .05$; ** $p < .01$; Blau = Blau's index (Blau's indices always apply to the selected team's diversity).

The results, illustrated below in Figure 1, are consistent with hypothesis 1. The relationship between task type and chosen diversity was moderated by age. In addition, a simple slope test (Aiken & West, 1991) revealed that the slope for older adults was significantly different from zero (simple slope $\beta = .307$, $p < .01$ at one SD above mean). In contrast, a simple slope test

indicated that, for young adults, the relationship of task type and chosen diversity was not significantly different from zero (simple slope $\beta = .133$, *ns* at one SD below mean). Thus, older adults chose a more diverse team when expecting to work on a complex task than a simple task, while this was not the case for young adults.

FIGURE 1

Level of Chosen Diversity in Dependence of Age and Expected Task



Diversity Composition of the Team and Openness to Experience

To test hypothesis 2 (the interaction of age, task complexity, and openness with experience), we conducted a multiple regression analysis. In the first step, we entered the control variables (as in the analysis above), and in the second step the main effects. In step three, we entered the three two-way interaction terms (task type x age, task type x openness, age x openness), and, finally, the interaction term for task type x age x openness to

experience. Table 3 summarizes the results. The interaction between task type, age and openness explained a significant amount of variance, exceeding the variance explained by the controls, the main effects, and the two-way interactions (ΔR^2 for chosen diversity = .19, $p < .05$), thus supporting hypothesis 2.

TABLE 3:
Level of Diversity as a Function of Task Complexity, Openness to Experience, and Age

Variables entered	Step 1	Step 2	Step 3	Step 4
Aggregate Diversity Measure	-.030	.016	.012	-.011
Participant's Education	-.092	-.009	-.013	.001
Diversity Beliefs	-.013	-.038	-.021	-.006
Task Type		.097	.100	.074
Age		.341**	.151	.173
Openness to Experience		.038	.129	.085
Task Type*Age			.249**	.223*
Task Type*Openness			-.101	-.043
Age*Openness to Experience			.017	-.155
Task Type*Age*Openness				.229*
R^2 (adjusted R^2)	.013 (-.016)	.126** (.101)	.157** (.120)	.176** (.136)

Note: $N = 236$ participants, standardized regression weights are shown.

* $p < .05$, ** $p < .01$

We plotted the three-way interaction for young and old adults separately (see Figure 2). Using a subgroup analysis (Aiken & West, 1991), we conducted post hoc probing for the interaction of task type, age, and openness to experience, using young and old subgroup samples as a natural split. Accordingly, for old, but not for young adults, who were high in openness (one SD above the mean), the slopes were significantly different from zero (young adults $\beta = -.226$, *ns*; old adults $\beta = .381$, $p = .04$). For both young and old adults low in openness, the simple slope tests were not significant (young adults $\beta >$

.125, *ns*; old adults $\beta = .098$, *ns*). Thus, in line with hypothesis 2a, older individuals, who were high in openness to experience, chose higher levels of diversity for complex tasks. In addition, we found that, for young participants, openness to experience did not have a significant effect on task type and chosen diversity's relationship.

Subjective Diversity Preference

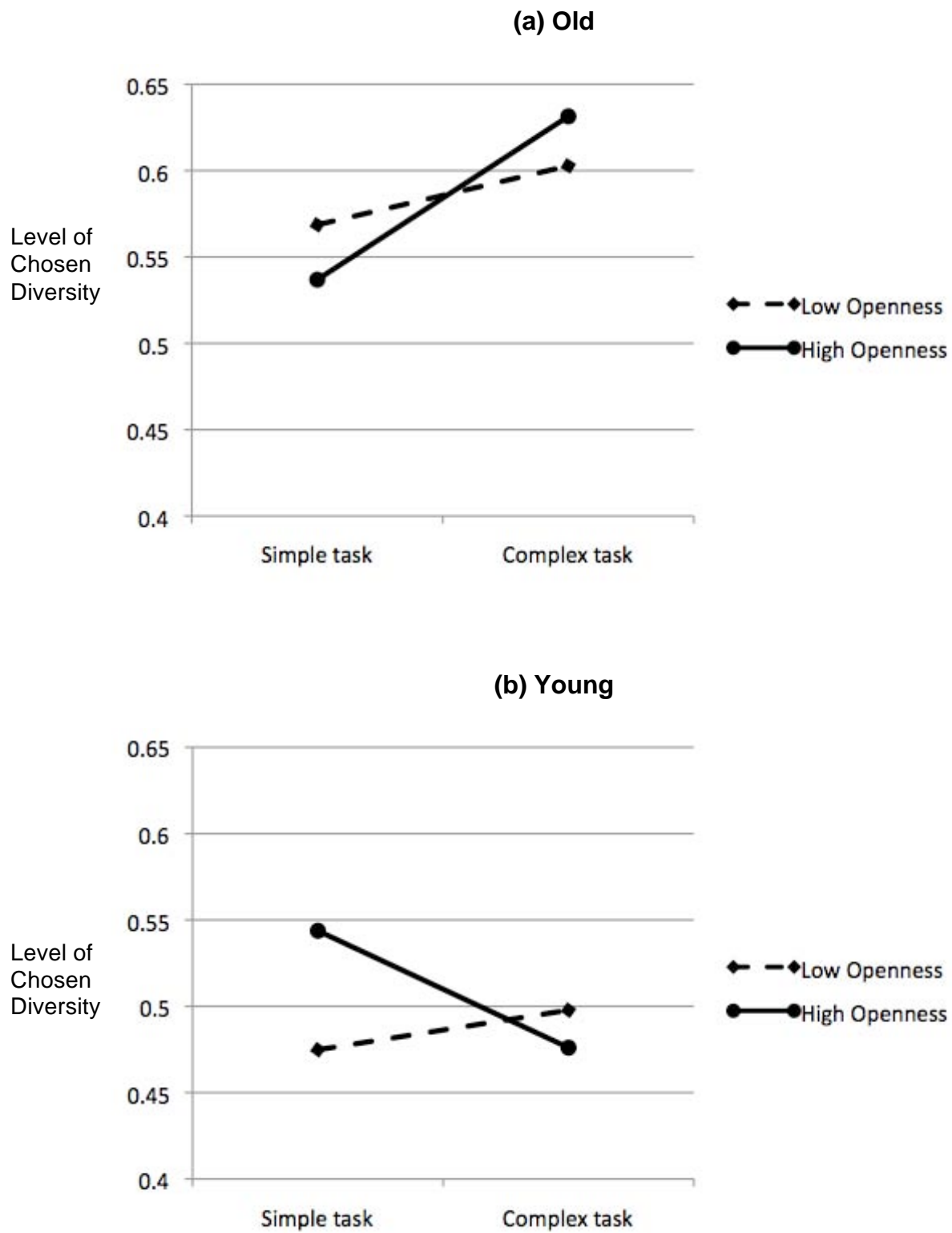
In addition, by means of an independent t-test, we probed into the reasons for choosing a more or less diverse team. Older participants ($M_{\text{old}} = 4.15$, $SD = 2.40$) were more likely to deliberately choose their team according to diversity considerations, while this was a less important reason for younger participants ($M_{\text{young}} = 3.45$, $SD = 2.22$), $t(236) = 5.32$, $p = .02$. However, this was not influenced by our task complexity manipulation ($F(3, 236) = 1.99$, $p = .16$), nor by the interaction between age and task complexity ($F(3, 236) = 0.34$, $p = .56$). We did not find an interaction between task type, age, and openness with regard to subjective diversity preference either ($R^2 = .09$, $F(3, 236) = 1.86$, $p = .10$).

Discussion

Since societies and organizations face increasing levels of diversity, adequate fit between team composition and team task is vital for success. The ability to make appropriate decisions regarding when diversity is beneficial and when it is not, is part of a more general diversity competence. Research has shown that team performance of diverse teams depends on the team's task (e.g., Jehn et al., 1999). Accordingly, diversity is thought to be beneficial for complex but not for simple tasks. We argued that in terms of

FIGURE 2

**Interaction between Task Complexity and Openness to Experience
Predicting Level of Chosen Diversity**



organizational success, it is important whether people actually use these insights when composing a team. To our knowledge, no previous research has investigated how teams are composed in terms of diversity and the extent to which individual differences have an influence on team composition choices.

In the current study we found support for our first hypothesis that older participants are better able to adapt the level of selected team diversity depending on the level of complexity of the team task. Thus, the older participants selected a diverse team for a complex task and a more homogeneous team for a simple task. Crystallized intelligence may have helped older participants to sense the advantages that diverse teams have for complex tasks. This was reflected by the finding that older adults indicated that they picked their level of team diversity deliberately. In contrast, younger adults tended to not select their team's diversity according to task type considerations. Given that the young participants did not seem to be led by deliberate diversity considerations when making their team selection choice, they might not have been adequately aware of the advantages and disadvantages of diverse teams in different task environments.

In a second analysis, we tested the extent to which the task type and age's interactive effect on the chosen diversity levels was further influenced by openness to experiences. In support of hypothesis 2, we found a significant three-way interaction between task type, age, and openness to experience on chosen diversity. Older individuals with high levels of openness displayed a better fit between task type and chosen diversity than those who were low in openness (hypothesis 2a). Thus, being open-minded may

increase the likelihood of engaging in and profiting from experiences with diverse teams, resulting in the knowledge necessary to distinguish between situations that benefit from or are harmed by diversity.

Diversity competence may be supported by being open towards new experiences, which might in turn promote the collection of valuable insights that help in fitting the team level diversity to the task type. For younger adults who had not had as many opportunities to gather experience, openness did not show to make a significant difference. Here, individual levels of openness seem to result in an indiscriminate preference for or aversion to diversity, irrespective of the task complexity at hand. Thus, while openness alone leads to higher levels of chosen diversity, it is only in combination with experience, that comes with age, that individuals can adequately identify beneficial applications for team diversity. However, without being open-minded, an individual will probably not seize the same amount of opportunities to develop his or her crystallized intelligence or, in this case, diversity competence, enabling him or her to make a sound team selection choice.

Practitioners, on the one hand, might use these findings, to continue to trust the decisions of older employees concerning team composition decisions and to involve them where possible. This is especially important since self-managed and diverse teams, which often are especially assembled for a specific project, are becoming increasingly widespread. On the other hand, these teams provide an opportunity to train young leaders in taking environmental factors, such as task complexity, into account when making decisions about who will join a team. To enable young leaders to experience diversity early on, it might be beneficial to diversify the student body of

business schools. In addition, our research suggests openness might be an important trait for professionals with staffing responsibility, which can be also informally assessed (Mount, Barrick, & Strauss, 1994). If staffing choice does not allow for open-minded HR-managers, extensive training in terms of the staffing advantages and disadvantages of diverse teams might be considered.

Limitations and Future Research

As is often the case with experimental studies, the external validity of our findings could be called into question. Although experimental studies enable researchers to better assess causal links, to identify real moderators, and minimize threats to internal validity, the participants in this study still differed from those in an organizational setting in important ways. However, due to the nature of our study and the problems associated with testing our hypotheses in an organizational context, the current study might be a good estimate of what would happen in the field. We would expect to find even stronger results in the field, as older employees who remain in a company tend to be positively biased towards higher performance, i.e. low performers are not as likely to stay within the company as high performers are (Conway, 1999). Thus, one can generally expect their abilities in terms of diversity competence to be above average. In addition, a field study could investigate the different role that age and experience plays in determining the effects reported here. Our findings regarding openness to experience imply that experience itself is not the sole driver of the results, but that the relationship is more complex. Nonetheless, whether our findings would yield similar results in the field remains a valuable empirical question.

A key limitation of the present study is that it lacks a more detailed analysis of the underlying processes, which might better explain why and how older participants arrive at decisions for or against diverse teams. We have tried to shed some light on this question by examining the extent to which participants deliberately chose a team according to diversity considerations. These results only provide a first hint regarding the underlying processes, and future investigations into these dynamics might be an interesting avenue for further research. For instance, experience with diverse teams or an understanding of advantages and disadvantages of diverse teams might mediate our findings.

Future research might also benefit from incorporating different compositional and situational factors. For one, a closer look at other individual diversity characteristics besides those used here, such as tenure, functional background, and personality could be insightful. Additionally, it remains an interesting empirical question whether our results are limited to decisions about team diversity and task complexity, or whether they can be extended towards other environmental features such as task interdependence.

Despite these limitations, our results may offer a new avenue into the investigation of diversity as an outcome rather than an influencing factor. With a greater number of governments asking for an age-diverse or gender-balanced workforce, and with increasing diversity in general, it is not only important how diverse teams perform well, but also how to ensure that these diverse teams are put to optimal use within an organizational context.

Footnotes

¹ Australia/New Zealand, China/Taiwan, Germany, India/Nepal, Islamic countries, Latin America, North America, East Asia/Southeast Asia, Eastern Europe/Balkan, Sub-Saharan Africa, and Western Europe.

² Including each diversity dimension that separately yielded similar results as the aggregate measure. We therefore decided to only report the aggregate measure here.

CHAPTER 3

Conscientious Creativity: The moderating influence of age stereotypes on the relationship between conscientiousness and the creative performance of age diverse groups

This chapter is based on: Eckhoff, R.A., Voelpel, S.C., & Förster, J.A.: Creative conscientiousness: The moderating influence of age stereotypes on the relationship between conscientiousness and the creative performance of age diverse groups.

Abstract

As organizational teams are becoming more and more age heterogeneous, elderly stereotypes and their influence on team creativity need to be better understood. While personnel selection favors conscientious individuals, for creativity, this selection criterion is often detrimental. By integrating research on group diversity, elderly stereotypes and personality research, this study investigates and finds a moderating effect of elderly stereotypes on the relationship of conscientiousness and different creativity dimensions. In an experimental setting with 55 four-person groups consisting of two younger and two older adults, we manipulated elderly stereotypes and found that the creative fluency and creative depth of highly conscientious age-diverse teams was higher when elderly stereotypes were positive, and respectively lower for the control group and the negative age-stereotype condition. Implications of these findings are discussed with respect to future research and organizational practice.

In J.K. Rowlings Harry Potter series, the white bearded and wise magician Albus Dumbledore is a prime example of a positive elderly stereotype. In real life, however, older people are often facing stereotypes that are negative (Brooke & Taylor, 2005). As many developed societies are confronting demographic changes, leading to an increasingly age diverse workforce (Feyrer, 2007), the problem of elderly stereotypes is becoming more and more important. In work settings, workers often hold elderly stereotypes (Kite & Wagner, 2002) that seem to become more prevalent, affecting an increasing number of workers (Walker, 1999). Not surprisingly therefore, age-related discrimination has increased over the past decade (Lieber, 2007). In addition, there is still a need for research on the impact of an aging workforce on organizational innovativeness (Lawrence, 1996; Moody, 2006). Thus, as organizations rely increasingly on work groups to achieve organizational goals (Kozlowski & Bell, 2003), knowledge about the impact of elderly stereotypes especially on group outcomes, such as innovativeness, becomes crucial.

While an organization's sustained business success increasingly depends on its innovative capabilities (Davenport, Leibold, & Voelpel, 2006), innovation itself is often rooted in the creative ideas of various work groups within the organization (George & Zhou, 2001; West, M.A. & Anderson, 1996). As conscientiousness is one of the arguably most important personality characteristic of individuals and groups for high performance (Bell, 2007), the aim of our study is to help understand the consequences of different elderly stereotypes on conscientious age-diverse teams creative performance. We posit that age diverse teams with different levels of conscientiousness are affected by elderly stereotypes in different ways for different aspects of the

creative process. In this, we follow the recommendations of Baas, De Dreu and Nijstad (2011), who concluded that further research is needed to explore how both, low- and high- anxiety environments, can lead to creative performance, i.e. through flexible, divergent thinking (low anxiety) or through a persistent in-depth approach (high anxiety).

Following an interactional approach, we propose that the relationship of conscientiousness and creativity depends both on the creativity dimension in question (i.e. creative quantity, creative perseverance, etc.) and on the extent to which elderly stereotypes promote or hamper the manifestations of aggregated group dispositions. Specifically, we argue that negative stereotypes activate conscientiousness-related behaviors in those individuals that the stereotype targets and thus instigate a more structured and perseverant task approach. Furthermore, in an attempt to identify one of many possible mechanisms that underlie the relationship of conscientiousness, elderly stereotypes and creativity, in an explorative section, we try to shed some light on intrateam dominance of the stereotyped group (i.e. older) as a possible mediator. These predictions are developed in more detail below.

Thus, the present study follows and combines the recommendations by Posthuma and Campion (2009) in investigating the moderating effects of elderly stereotypes on group performance. In addition, George and Zhou (2001), propose to examine the interaction of personality traits, in this case conscientiousness, with situational determinants.

We contribute to the literature in at least three ways. First, to our knowledge, this study is the first to examine the influence of elderly stereotypes and possible interactions on age diverse groups, not only

individuals. Second, we believe that this is the first paper to examine the complementary effects of stereotype threat and stereotype lift simultaneously in groups, i.e. its direct and indirect influences on the stereotype targeted group and non-target group. Third, we follow and extend the literature on the relationship of group personality traits and creativity. In this, we investigate conditions under which conscientious groups can in contrast to general findings perform well on creative tasks. Specifically, we suggest that elderly stereotypes may serve to activate or deactivate behavior linked to conscientiousness. In assessing creativity, we will follow previous work by Rietzschel, De Dreu and Nijstad (2007) distinguishing idea quantity (or fluency) and creative perseverance (or depth).

Theoretical Background

Conscientiousness, performance and creativity

With regard to personality research, the Big Five model continues to be of major influence (Wiggins & Trapnell, 1997) and is described to be the dominant taxonomy for representing individual and group personality traits (Roccas, Sagiv, Schwartz, & Knafo, 2002). Conscientiousness is the basis for a structured and perseverant achievement approach to tasks (Costa & McCrae, 1992). Behling (1998), for example, posited that conscientiousness is an excellent predictor of performance for most jobs and surpassed in its predictive power only by intelligence. Accordingly, research has shown conscientiousness to be consistently related to individual as well as group level performance (Barrick & Mount, 1991; Behling, 1998; Bell, 2007; Hurtz &

Donovan, 2000; Salgado, 1997; Barrick, Stewart, Neubert, & Mount, 1998; LePine, 2003; Neuman, Wagner, & Christiansen, 1999; Neuman & Wright, 1999). One of the cited reasons for this association is the perseverance, structure and achievement approach that highly conscientious people bring to a given task (Barrick & Mount, 1991).

Following from these findings, many organizations use conscientiousness as a predictor for job performance, which in turn influences hiring decisions, mostly in favor of conscientious applicants (Levy-Loboyer, 1994). However, while conscientiousness is beneficial for general performance, there is some evidence suggesting that conscientiousness is negatively related to creativity (mostly quantity of ideas), on both the individual and the group level (Feist, 1992; George & Zhou, 2001; Robertson, Gibbons, Baron, MacIver, & Nyfield, 1999; Robert & Cheung, 2010; Tett, 1998; Walker, Koestner, & Hum, 1995). This would be a severe weakness of highly conscientious teams in an innovation economy that relies heavily on the creativity of organizational work groups (Janssen, Vliert, & West, 2004).

Elderly stereotypes

The extant literature on stereotypes has shown that stereotyped groups often underperform in achievement situations (Steele & Aronson, 1995). In explaining this effect, stereotype threat theory (Steele, 1997) posits that negative stereotypes about women, ethnic minorities or older individuals trigger the fear of confirming the respective negative stereotype and thus result for instance in decreased creative performance (e.g. Inzlicht & Ben-

Zeev, 2000; Gonzales, Blanton, & Williams, 2002; Hess & Hinson, 2006).

Recent studies identified regulatory foci or working memory load as possible mediators (Seibt & Förster, 2004; Schmader, Johns, & Forbes, 2008). In everyday life, stereotype threat can be induced by jokes, media reports, etc. In experimental settings, stereotypes are activated by reminding participants of a certain stereotype, e.g. the stereotype that elderly persons are slow, less original or forgetful. For example, when older participants were reminded that they are forgetful, their subsequent performance in a memory test was hampered (e.g. Chasteen, Bhattacharyya, Horhota, Tam, & Hasher, 2005; Desrichard & Koepetz, 2005; Hess, Hinson, & Hodges, 2009; Levy, 1996). Also in the workplace, stereotypes about older workers have been shown to pertain to poor performance (e.g. Finkelstein, Burke, & Raju, 1995; Gordon & Arvey, 2004; Lawrence, 1998; Perry, Kulik, & Bourhis, 1996; Shore, Cleveland, & Goldberg, 2003).

However, while most research on stereotypes has focused on negative stereotype consequences, i.e. stereotype threat, there is also some research investigating the other side of the same coin, namely stereotype lift. Stereotype lift suggests that stereotypes may in addition to hampering performance for negatively stereotyped groups, also boost performance for indirectly or directly positively stereotyped groups (Marx & Stapel, 2006; Shih, Ambady, Richeson, Fujita, & Gray, 2002; Shih, Pittinsky, & Ambady, 1999; Walton & Cohen, 2003; Smith & Johnson, 2006). We distinguish between direct and indirect stereotype effects, because a negative stereotype directly affects the target of the stereotype and may thereby indirectly affect the group not directly targeted. For instance, when negative elderly stereotypes are

activated, younger individuals experience an indirect stereotype lift, while older individuals experience a direct stereotype threat. In addition, positive stereotypes should induce a direct stereotype lift and thus affect the target group such as older individuals in a positive way, i.e. by boosting performance (for an overview of the possible performance consequences of stereotypes see Table 1).

Along similar lines, Seibt and Förster (2004) investigated the consequences of both, positive and negative stereotypes on creative performance. Accordingly, positive self-stereotypes, by inducing a promotion focus on ideals and accomplishments (see Higgins, 1996), foster an explorative, broad and more creative processing style, which is detrimental to analytical thinking and perseverance tasks (see Förster & Higgins, 2005; Friedman & Förster, 2010). In contrast, negative self-stereotypes, by inducing a prevention focus on safety and responsibilities, direct attention towards possible dangers, mistakes and omissions that are necessary to avoid, thereby fostering perseverance and undermining divergent thinking and creativity.

When elderly stereotypes are activated in age diverse groups, we expect the effects of stereotype lift (i.e. positive elderly stereotypes) to improve performance (i.e. creative fluency) of older individuals, while having no effect on younger group members. Based on the extant literature (Smith & Johnson, 2006), we do expect negative elderly stereotyping to also result in an indirect stereotype lift for younger members. In contrast, to our knowledge, there is no evidence in the literature suggesting that stereotype lift will likewise lead to an indirect stereotype threat for the group that is not the target of the positively

stereotyped outgroup.

However, the activation of negative elderly stereotypes is expected to impair creative performance of older, but not younger participants. According to stereotype lift theory (e.g. Smith & Johnson, 2006), stereotype threat for one group (e.g. older participants) will lead to increased performance of the group that is not targeted (i.e. younger participants). As group creative performance, i.e. in brainstorming tasks, is additive and influenced by subgroups, the performance of one subgroup, i.e. older, will necessarily affect the performance of the other, i.e. younger; the more ideas younger group members voice, the less space do older members have to voice theirs. In line with this reasoning, we propose the following hypotheses:

Hypothesis 1a: Creative performance (fluency) of older group members, as compared to younger, is higher when positive elderly stereotypes are activated.

Hypothesis 1b: Creative performance (fluency) of older group members, as compared to younger, is lower when negative elderly stereotypes are activated.

In addition, we expect the control condition (i.e. no stereotypes are activated) to induce older group members to contribute more ideas than in the negative condition, but less than in the positive stereotype condition.

Elderly stereotypes as moderator

As hypothesized above, elderly stereotypes should influence creative performance in younger and older individuals. However, with regard to age

diverse groups, elderly stereotypes may act similar to other environmental factors, influencing group creativity by activating or deactivating characteristics that are beneficial or detrimental for group creativity. In a field study, George and Zhou (2001) have shown that situations supportive of individual tendencies towards conscientiousness, lead to lower creativity. In this, they found conscientiousness on the individual level to lead to lower levels of creativity when coworkers were unsupportive or the environment was negative. They suggest that conscientiousness itself is not discouraging creativity per se, but only when in combination with a negative work environment that fosters conscientiousness related behavior such as conformity or structuring tendencies and lacks support for creativity.

Table 1: Performance consequences of positive and negative elderly stereotypes.

Age	Negative elderly stereotype	Positive elderly stereotype
Younger	+	none
	indirect stereotype lift (e.g. Smith & Johnson, 2006)	no indirect stereotype threat
Older	-	+
	stereotype threat (e.g. Steele, 1997)	stereotype lift (e.g. Levy, 1996)

Note: First row: Influence on performance of expected effect; Second row: Name of expected effect; Third row: References for respective effect

We suggest that, similar to negative work environments, negative stereotypes or a stereotype threat activate existing tendencies towards conscientiousness, thus resulting in lower numbers of creative ideas by encouraging tendencies that are associated with conscientiousness, i.e. analytical thinking, structuring attempts and perseverance, while discouraging

idea generation and creativity (Friedman & Förster, 2010; Friedman & Förster, 2000, 2001). In contrast, we expect positive stereotypes to discourage analytical thinking, structuring attempts and perseverance, while encouraging creativity and the generation of ideas. As we have explained in the previous section, conscientiousness on the individual as well as on the group level is in general negatively related to creative performance (Feist, 1992; George & Zhou, 2001; Robertson et al., 1999; Robert & Cheung, 2010; Tett, 1998; Walker et al., 1995). Assuming an interaction effect, it is likely that conscientious individuals tend to use a structured, perseverant and analytical approach under stereotype threat, but refrain from doing so when the situation does not encourage or activate this kind of approach, i.e. under stereotype lift.

A major innovation of this study is the application of stereotype activation to age diverse groups. As mentioned above, when aggregated group conscientiousness is high, we expect negative stereotype activation to affect the output on the entire group performance in terms of creative ideas (fluency) to suffer, while we expect an increase for groups in which positive elderly stereotypes were activated. The reasoning for these expectations is based on the fact that creative group performance is often an additive and interdependent task, where each group member can help or hamper the group's output.

While stereotype threat increases inflexible perseverance (Carr & Steele, 2009) in older group members, younger group members might experience stereotype lift such that their conscientiousness-related behaviors are not activated. Thus, their creative idea generation under the indirect stereotype lift condition should be superior to that of their older negatively stereotyped

counterparts. In contrast, based on extant literature (see Table 1), we do not expect younger participants performance to suffer from a positive elderly stereotype.

As a consequence of stereotype threat, older group members use a more perseverant task-approach, which is more likely to be embraced and thus adopted by a highly conscientious group. In contrast to the negative impact of conscientiousness on fluency, however, creativity dimensions such as depth will benefit. In a related line of work, Baas, De Dreu and Nijstad (2011) have shown that both prevention and promotion focus can lead to creative performance. However, while promotion focus may lead to a more flexible processing, prevention focus or a stereotype threat may activate a conscientiousness-compatible processing style, i.e. one based on perseverance. Creative depth is the result of such a task-approach that stresses category perseverance, i.e. the amount of ideas belonging to one semantic category (Rietzschel et al., 2007).

Under positive stereotype activation, we expect opposite outcomes. A positive elderly stereotyping may mean that instead of resorting to strategies that structure the task, older members may rather focus on helping, supporting and guiding their younger counterparts in generating creative ideas.

Thus, both positive and negative elderly stereotype groups are able to be creative. However, they will use different pathways in order to do so; the positive elderly stereotyping will lead to more ideas (fluency), while a negative elderly stereotyping will lead to a more perseverant kind of creativity (depth). The above expectations are summarized in the following hypotheses:

Hypothesis 2a: Elderly stereotypes moderate the relationship of group conscientiousness with creative idea generation (fluency), such that this relationship is positive when age priming is positive but negative when age priming is negative.

Hypothesis 2b: Elderly stereotypes moderate the relationship of group conscientiousness with creative perseverance (depth), such that this relationship is negative when age priming is positive but positive when age priming is negative.

Intrateam dominance as a mediator

In order to explain the processes proposed in the above section and in Hypothesis 2a and 2b, we presume a mediated moderation (see also Figure 1). A mediated moderation refers to an interaction effect (here between conscientiousness and elderly stereotypes) that affects a mediator (here intrateam dominance), which in turn affects the outcome variable (Kearney & Gebert, 2009; Morgan-Lopez & MacKinnon, 2006).

With regard to the activation of negative elderly stereotypes, older individuals as the target of the stereotype threat become more insecure as compared to when positive elderly stereotypes are activated (e.g. Elkins, Phillips, & Konopaske, 2002). As explained above, we expect a difference in the effects stereotype threat has on age diverse teams with different levels of conscientiousness and the older team members therein. Accordingly, we assume that under perceived (stereotype) threat, less conscientious individuals might withdraw from the task. In contrast, as a consequence of the

then activated perseverance and achievement orientation of highly conscientious individuals, highly conscientious group members continue pursuing the task by working even harder and with more effort.

With regard to creativity related tasks, however, more effort by group members under threat and with a strong inclination to structure tasks, results in lower numbers of ideas and higher levels of perseverance (Friedman & Förster, 2001). Here, individual behavior can influence the group through dominance, i.e. when older group members are highly perseverant and dominate the group, the group is more likely to adopt a perseverant task-approach.

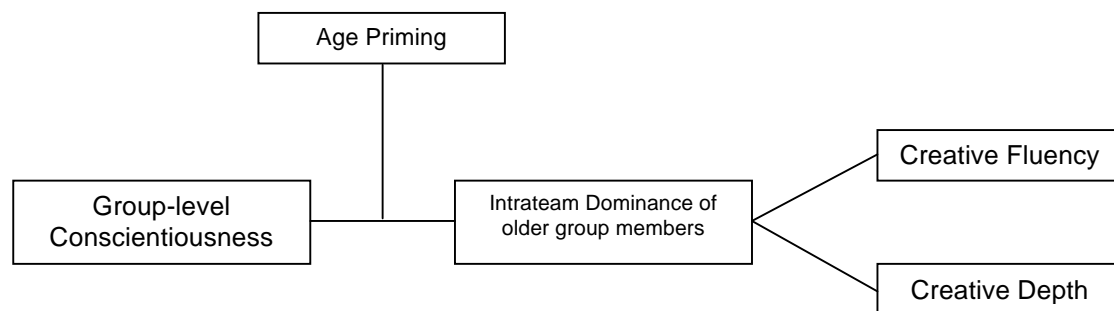
In this study, we borrow the dominance definition from the communication literature, where "dominance is said to occur when one individual's assertive actions elicit complementary acquiescence by another" (Burgoon, Johnson, & Koch, 1998, p. 97). We posit that the stereotype activation, especially in older group members, influences the relationship of group conscientiousness and creativity not via the younger members, but through the dominance of the stereotyped older group members. As intrateam dominance must be seen in relation to the group (Burgoon & Dunbar, 2000), it is the relative dominance of older group members that we expect to determine in how far the entire group is influenced by elderly stereotype activation. In other words, older group members "pass on" or transfer their activated state of mind, i.e. a structured and perseverant task approach, via intrateam dominance to the group. Following the above reasoning, we posit the following final hypothesis:

Hypothesis 3: The intrateam dominance of older group members mediates the moderating effect of elderly stereotype activation on the relationship of

conscientiousness with creative fluency and creative depth.

In contrast, as theorized in the above section, stereotype lift does not activate tendencies towards conscientiousness, such as achievement-orientation and perseverance. We thus do not expect a mediated moderation, as the factor influencing intrateam dominance, i.e. conscientiousness, has not been activated.

Figure 1. Proposed relationships among the variables



Methods

Design and Participants

Participants were recruited through newspaper advertisements and direct approach, targeting participants below age 30 ($M = 22.25$, $SD = 3.15$) and above age 50 ($M = 63.40$, $SD = 6.41$). We specifically aimed for this age gap in order to ensure a minimum age distance of 20 years within the groups, such that age could become salient. A total of 208 participants were randomly assigned to 55 four-person groups. As research has shown that gender diversity influences group functioning (Chatman, Polzer, Barsade, & Neale,

1998), members of one group were either only male or only female. Each group was in turn randomly assigned to one of the three experimental conditions and consisted of two younger (aged below 30) and two older (aged above 50) participants. The experiment lasted about 90 minutes and participants were paid €10 for participation (approximately \$13 US). One group had to be excluded from the analysis because in the funneled debriefing, one of the group members nearly discovered the priming condition.

Procedure

Upon arrival in the laboratory, participants were told that they were participating in a study about creativity and asked to individually fill in a questionnaire in separate rooms. Directly after participants were primed (see below), they were asked to walk to a bigger room where the group task with all four group members took place. The group was then asked to generate as many creative ideas for a new city called Creativia. Groups were given general brainstorming instructions, i.e. they were told not to judge or criticize the ideas of others during the brainstorming (Stroebe & Diehl, 1994). Each idea was then recorded on a flip chart by the experimenter so that no group member had to write down ideas, thus not diverting attention of single group members from the idea generation process. All groups were videotaped during their interactions.

Stimuli

Directly prior to the group task, participants were primed using a "Scrambled Sentence Test" (J. A. Bargh, Chen, & Burrows, 1996; Srull & Wyer, 1979) that was disguised to participants as a test of language ability.

Participants were asked to construct grammatically correct sentences with five out of six words that were listed in the task. The six words of each string were presented in a scrambled order, such as "good is bit he a grumpy". Three versions of the task were used: One version was aimed at activating positive elderly stereotypes, another the negative elderly stereotypes and a third was intended to prime neither (the neutral condition). Based on Chasteen et al. (2002), 25 positive and 25 negative age-related traits were selected. Each of the two priming conditions (positive age priming and negative age priming) consisted of 30 scrambled strings with 25 strings including one word each that was semantically related to the priming condition. Following an initial pre-test which was used to select appropriate adjectives, the positive priming condition included German translations of words such as reliable, experienced, wise, kindhearted, etc., while the negative age priming version consisted of words as for example forgetful, senile, helpless, grumpy, etc. The neutral condition did not use any age related words and therefore used words like normal, general, etc. At the end of the sessions, participants were debriefed, using the funneled debriefing technique proposed by Bargh and Chartrand (2000). Following the procedure described by West, Aiken and Krull (1996) for handling categorical moderator variables, we created two dummy codes comprising the three priming conditions.

Measures

Conscientiousness. Prior to both the priming and the group task, we measured conscientiousness using the nine items from the German version of the Big Five Inventory (John & Srivastava, 1999; Lang, Luedtke, & Asendorpf,

2001). Sample items are: "I see myself as someone who...does a thorough job" and "I see myself as someone who...perseveres until the task is finished". The coefficient alpha estimate of reliability was .79.

In this study, we were interested in conscientiousness at the group level and thus aggregated individual conscientiousness using an additive composition model (Chan, 1998). Accordingly, we operationalized group-level conscientiousness as the group mean of the individual characteristics, which has been shown to be a good predictor of team success (Barrick et al., 1998). This procedure also has been commonly used in previous literature on teams (see for instance Homan et al., 2008; Kearney, Gebert, & Voelpel, 2009).

Intrateam dominance.

To assess the difference of younger and older group members with respect to interpersonal dominance (Burgoon & Dunbar, 2000), we trained two coders (one below age 30 and one above age 50 in order to avoid any age bias and to reflect the experimental design). Among the nonverbal cues of dominance were direct eye contact, expressive faces, eyes, and voices; vocal loudness and rapid tempo; dynamic and animated gestures; body orientation and lean. Among the indicators of submission were a high ratio of looking while speaking (i.e. low visual dominance), softer and slower voices, less kinesic and vocalic animation, intermediate proximity, moderate postural tension, and postural symmetry (Dunbar & Burgoon, 2005).

Following recommendations of previous research, (e.g. Burgoon et al., 1998), we assessed dominance at the macro-level, therefore asking two raters (aged 29 and aged 59 to exclude possible age effects) how dominant the two older

group members appeared to be in general during the group task (see also Moskowitz, 1988). The overall dominance of older participants respectively was rated on a 7-point scale. The inter-rater reliability, was acceptable $\alpha = .67$. Differences were resolved by discussion.

Creative performance.

We measured creativity along traditionally used three dimensions fluency, flexibility, and originality (Guilford, 1967; Torrance, 1966) as well as a more recent measure, depth (Rietzschel et al., 2007). Fluency is defined as the number of creative ideas. Flexibility refers to the ability to approach a problem from different perspectives (e.g. Guilford, 1967). Thus, flexibility is usually measured by counting the number of ideas across distinct semantic categories. Originality (sometimes also called novelty) reflects the uniqueness of an idea. We assigned a frequency score to each idea, i.e. how often the idea was mentioned by other groups, and reverse coded the score so that higher scores reflect higher originality. More recently, Rietzschel, De Dreu and Nijstad (2007) proposed a fourth dimension in order to assess creative category perseverance: depth. The depth measure captures the number of ideas within each category (the total number of ideas is the product of flexibility and depth). Ideas were coded by two expert raters aged 27 and 28, who have studied urban development. Interrater reliability exceeded .78, and differences were resolved by discussion. For the difference of ideas contributed by younger and older participants, we subtracted the number of ideas by younger group members from the number of ideas contributed by older group members.

Control variable and manipulation check.

Klein and Kozlowski (2000) proposed to control for dispersion effects when aggregating individual personality trait scores to group level measures by using mean scores. Thus, in the following analyses, we included the standard deviation of conscientiousness as a control variable in addition to the mean group conscientiousness.

To test the manipulation we measured the difference of perceived age salience between the three priming conditions using the age salience scale by Schmidt and Wegge (2009). The scale consists of three items and measures the degree to which group members perceive age to play a role with regard to group behavior (a sample item would be "Differing age of team members was taken into consideration, when decisions were made in our team"; Cronbach's $\alpha = 0.57$).

Results

Manipulation check

Testing for the effect of our manipulation on age salience, we found that participants in both, the negative ($M_{negative} = 1.74$, $SD_{negative} = 0.78$) and the positive age priming condition ($M_{positive} = 1.89$, $SD_{positive} = 0.88$) perceived age to play a stronger role than in the neutral condition ($M_{neutral} = 1.50$, $SD_{neutral} = 0.64$; $F(2, 208) = 5.12$, $p < .00$).

Finally, we tested whether the differences between the three priming conditions were related to differences in moods induced by the priming condition. Mood was measured right after priming with the commonly used

Positive Negative Affect Schedule (PANAS; Watson & Clark, 1994) with a Cronbach's alpha of 0.87 for positive moods and 0.77 for negative moods. No differences between conditions were observed either for positive moods ($F(2, 208) = 2.16, p = .12$), nor for negative moods ($F(2, 208) = 0.28, p = .76$).

Test of hypotheses

Table 2 presents the means, standard deviations, and correlations for the variables of interest. We analyzed the results using hierarchical linear regression, centered conscientiousness measures and two dummy variables comprising the three conditions: negative, neutral and positive priming condition (for a detailed explanation of how to deal with categorical moderation variables, see West, Aiken & Krull, 1996 or Homan et al., 2008 for a practical application). The comparison condition (that is, the condition that scored a 0 on all dummies) was the control condition, thus the condition in which participants were neither primed positively or negatively. This condition was compared with the positive priming condition (Pos. Priming vs. Neutral; dummy 1), and with the negative condition (Neg. priming vs. Neutral; dummy 2). To test the effects of conscientiousness in its interaction with the different priming conditions, we calculated the product of conscientiousness and each dummy variables respectively.

Table 2: Means, standard deviations, and correlations

Variable	Mean	s.d.	1	2	3	4	5	6
1. Conscientiousness	0.0	0.26						
2. Positive Priming Dummy	0.33	0.48	-0.04					
3. Negative Priming Dummy	0.32	0.47	0.11	-0.50***				
4. Originality	33.65	6.08	-0.09	0.21	0.02			
5. Fluency	32.89	10.58	-0.09	0.13	0.10	0.41***		
6. Flexibility	9.11	1.41	-0.08	-0.08	0.11	0.50***	0.46***	
7. Depth (Rietzschel et al)	4.15	1.04	0.05	0.07	0.17	0.17	0.85***	-0.06

* $p < .10$

** $p < .05$

*** $p < .01$

Hypotheses 1a and 1b

Hypotheses 1a and 1b state that the activation of positive elderly stereotypes will lead to higher creative fluency of older group members, while negative age priming will lead to lower fluency for older group members as compared to younger group members. Using an analysis of variance, we tested whether younger and older participants contributed different numbers of ideas depending on the priming condition. The difference of ideas contributed by older and younger participants varied significantly between the negative priming condition ($M_{negative} = -3.65$, $SD_{negative} = 5.07$), the neutral condition ($M_{neutral} = 1.47$, $SD_{neutral} = 4.73$) and the positive priming condition ($M_{positive} = 4.60$, $SD_{positive} = 6.29$; $F(2, 55) = 10.43$, $p < .00$). Thus, older group members contributed more ideas in the positive priming condition, while younger group members generated more ideas as compared to their older counterparts when in the negative priming condition.

Hypotheses 2a and 2b

To test Hypotheses 2a and 2b, which posits a moderating effect of our age priming conditions on the relationship of group conscientiousness with creative fluency (2a) and creative depth (2b), we conducted a hierarchical regression analysis with a mean-centered conscientiousness variable (Aiken & West, 1991), and two dummy coded variables that captured the priming conditions (West & Anderson, 1996). We entered group conscientiousness and the two priming dummies respectively in the first step; and the corresponding interactions of conscientiousness and each priming dummy in the second step. Table 3 summarizes the results for all four dimensions of creativity (originality, fluency, flexibility, depth).

Similar to the extant literature (Rietzschel et al., 2007), which investigated the relationship of personal need for structure and fear of invalidity on originality, fluency, flexibility, and depth, we found no significant effects for flexibility, marginal effects for originality, and mostly significant effects for fluency and depth. Accordingly, for flexibility the overall regression model did not explain additional variance (positive vs. neutral and negative condition: $b = 0.25$, $t = 1.32$, ns, negative vs. neutral and positive condition: $b = -0.11$, $t = -0.72$, ns), while this was marginally the case for originality in case of the positive priming condition ($b = 0.32$, $t = 1.75$, $p < .10$), but not for the negative priming condition ($b = -0.09$, $t = -0.54$, ns). For both fluency (positive vs. neutral and negative condition: $b = 0.42$, $t = 2.30$, $p < .05$; negative vs. neutral and positive condition: $b = -0.34$, $t = -2.21$, $p < .05$) and depth (positive vs. neutral and negative condition: $b = 0.32$, $t = 1.68$, $p < .10$; negative vs. neutral and positive condition: $b = -0.30$, $t = -1.95$, $p < .05$), the interaction showed to be significant (except for the positive priming condition in the case of depth, which was only marginally significant). As can be seen from Table 2, there were no significant main effects of conscientiousness (and the experimental conditions). As predicted, we found a significant interaction between group conscientiousness and age priming condition for fluency, depth and partially for originality, but not for flexibility. However, for depth, the found relationship is exactly opposite to what we hypothesized, i.e. creative depth in fact benefits from positive elderly stereotypes similarly as the case for creative fluency.

Table 3
Moderated Regressions of Conscientiousness (Con), Priming Conditions and their Interaction on Indices of Creative Performance^a

Variable	Originality	Fluency	Flexibility	Depth
Conscientiousness (Con)	-0.093 (3.051)	-0.085 (5.487)	-0.078 (0.736)	-0.051 (0.539)
Contrasts btw priming conditions				
Pos. Priming vs. Neutral	0.196 (1.665)	0.117 (3.033)	0.107 (0.408)	0.054 (0.299)
Neg. Priming vs. Neutral	0.007 (1.753)	0.093 (3.138)	-0.102 (0.421)	0.164 (0.305)
Two-way interactions				
Pos. Priming vs. Neutral x Con	0.323 (5.927)*	0.423 (10.580)**	0.252 (1.469)	0.319 (1.068)*
Neg. Priming vs. Neutral x Con	-0.085 (7.368)	-0.337 (12.640)**	-0.114 (1.765)	-0.298 (1.242)**

^an=55; numbers are standardized regression coefficients (β s) with standard errors in parentheses.

*p<.10

**p<.05

Figure 2: Creative fluency

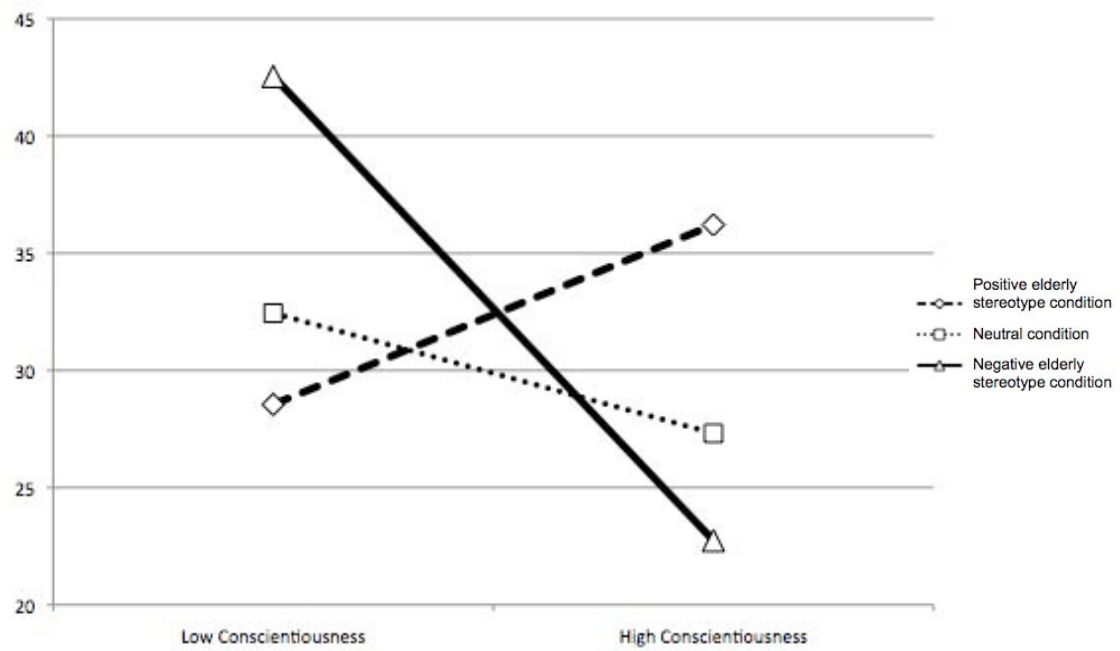
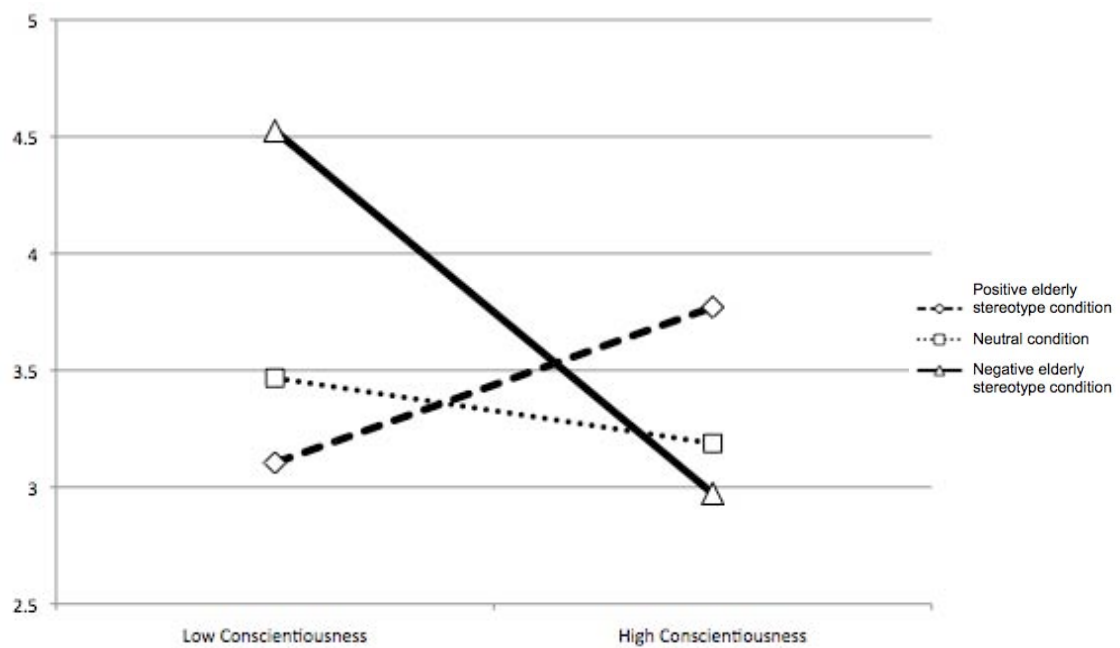


Figure 3: Creative depth



To further understand the nature of these interactions, we plotted the effect of conscientiousness for each priming condition. As can be seen from Figures 2 and 3, conscientiousness was positively related to both creative fluency and depth in the positive priming condition and negative in the negative priming condition.

Hypothesis 3

Hypothesis 3 states that intrateam dominance of the older group members further mediates the moderating effect of the priming condition on the relationship of conscientiousness and creativity. To test for mediated moderation hypothesis, we followed the steps described by Morgan-Lopez and MacKinnon (2006). Thus, we first regressed intrateam dominance of older members (the mediator) on the control, independent, and respective moderator variables, as well as the respective interactions between the independent variables and the moderator. Finally, we regressed the dependent variable on all the above variables including the mediator.

Results confirmed the posited moderating effect of age priming on the relationship of conscientiousness with creativity. In turn, the intrateam dominance of older members was negatively related to team fluency and to team depth (see Table 3, Step 4 of Model 4). Adding the respective interactions of conscientiousness with the priming dummies yielded a significant change in the amount of variance explained ($\Delta R^2_{fluency} = .09, p < .05$; $\Delta R^2_{depth} = .08, p < .05$), with significant regression coefficients for three interactions and a marginal regression coefficient for the positive priming contrast in the case of depth.

The indirect (mediated moderation) effects of the respective interactions of conscientiousness with the priming conditions via the intrateam dominance of older members on creative fluency and creative depth were both significant (for fluency: $b_{positive\ contrast} = -0.55$, $SE = 1.02$, $p < .01$ and $b_{negative\ contrast} = 0.51$, $SE = 1.12$, $p < .01$; for depth: $b_{positive\ contrast} = -0.55$, $SE = 0.10$, $p < .01$ and $b_{negative\ contrast} = -0.49$, $SE = 0.11$, $p < .01$). Thus, in line with Hypothesis 3, the interactive effects of conscientiousness with the three priming conditions on creative fluency and creative depth were mediated by the intrateam dominance of older group members.

Table 4

Results of Regression Analyses

Variable	Fluency				Depth			
	1	2	3	4	1	2	3	4
First Step: Controls								
Conscientiousness, stand. dev.	-0.01 (6.91)	-0.09 (6.97)	-0.02 (7.71)	0.13 (6.61)	0.13 (0.72)	0.10 (0.68)	0.08 (0.67)	0.24 (0.65)
Second Step: Main Effects								
Conscientiousness, mean		-0.09 (5.65)	-0.39 (7.62)	-0.32 (7.45)		-0.06 (0.56)	-0.28 (0.77)	-0.16 (0.73)
Contrasts btw priming conditions								
Pos. Priming vs. Neutral		0.12 (3.11)	0.12 (2.99)	0.17 (2.95)		0.06 (0.31)	0.06 (0.30)	0.15 (0.29)
Neg. Priming vs. Neutral		0.10 (3.32)	0.11 (3.20)	0.00 (3.26)		0.15 (0.32)	0.15 (0.31)	0.08 (-0.31)
Third Step: Interactions								
Two-way interactions								
Pos. Priming vs. Neutral x Con			0.43 (10.87)**	0.34 (11.03)*			0.32 (1.10)*	0.19 (1.08)
Neg. Priming vs. Neutral x Con			-0.35 (13.60)**	-0.24 (15.51)			-0.35 (1.32)**	-0.21 (1.46)
Fourth Step: Mediator								
Social Dominance Pos. Priming				-0.49 (0.62)***				-0.53 (0.06)***
Social Dominance Neg. Priming				-0.43 (0.66)***				-0.45 (0.06)***
Total R ²	.00	.02	.11	.27***	.01	.05	.13	.31***
ΔR ²		.02	.09**	.16***		.04	.08**	.18***

^an=55; numbers are standardized regression coefficients (βs) with standard errors in parentheses. Since the differences found were minimal, unless otherwise indicated, the values represent the values using the positive priming contrast.

*p<.10

**p<.05

***p<.01

Discussion

Our study links the literature of team diversity, age, stereotype threat, and conscientiousness. Our data suggest that elderly stereotypes moderate the effect of conscientiousness on different dimensions of group creativity. More precisely, results indicate that negative elderly stereotypes activate a cognitive style that is less appropriate for solving creative tasks. Positive elderly stereotypes, in contrast, promote creative idea generation as well as perseverant approaches to creative tasks in conscientious and age diverse groups. Finally, we found empirical indications that these processes are mediated by the intrateam dominance that older team members display within an age diverse team.

Theoretical Implications

Thus, elderly stereotypes influence creative performance in age diverse teams. The results confirm positive and negative effects of elderly stereotypes in age-diverse groups. First, in this experiment, negative elderly stereotypes had a positive influence on the younger subgroups, while they did not seem to have direct negative stereotype effects on the older subgroups. Positive elderly stereotypes in turn improved performance of older participants, while not influencing the number of ideas that their younger counterparts contributed. Thus, the effects found are likely to result from stereotype lift rather than stereotype threat.

Second, investigating the interaction of personality, environment and creative performance, we found that elderly stereotypes influence the degree to which age-diverse, conscientious groups perform in creative tasks. In this

study, pre-existing conscientiousness-related behavior, specifically a more perseverant creativity approach was – surprisingly – not activated by negative elderly stereotypes, but by positive elderly stereotype activation similar to the effects found for creative fluency. This is in contrast with prior research which finds conscientiousness to be beneficial for analytical tasks, but detrimental for creative endeavours (Robert & Cheung, 2010). However, the current results are in line with Rietzschel, De Dreu, & Nijstad (2007), finding similar results for depth and fluency. As such, this study addresses a contradiction: On the one hand, regulatory foci theory suggests that creative performance is hampered by the structured task approach that highly conscientious individuals take and which is being emphasized by priming conscientious groups with a negative elderly stereotype (especially for the older participants). On the other hand, an increase conscientiousness is also associated with higher levels of perseverance, which are beneficial for creative problem solving (Rietzschel et al., 2007). As such, future research would possibly benefit from investigating the interplay of different regulatory foci and modes of perseverance. Together with the extant literature (Rietzschel et al., 2007, Friedman & Förster, 2001), this study suggests that a promotion focus in combination with a perseverant and structured task approach might be best for fostering creative performance or a less structured approach in combination with a negative priming.

Our data shed a new light on the negative association of conscientiousness and creativity as it appears to persist especially when the perseverant and analytical tendencies of conscientious individuals or groups are activated by a stereotype threat, in this case elderly stereotypes. In contrast, when positive

elderly stereotypes were activated, these inclinations remained uninfluential and thus conscientious groups generated significantly more ideas and were in fact more perseverant in their approach towards creativity. The fact that the results of the neutral priming condition are more similar to the negative priming condition might be explained by a general societal tendency to associate age with negative rather than positive attributes in Western cultures (e.g. Rowe & Kahn, 1998).

Thus, previous findings that conscientiousness is associated with lower creative performance may not hold in all situations. In fact, certain environments, such as elicited by positive stereotypes or other factors that do not activate individual conscientiousness tendencies can possibly enable creativity. Following from these observations, in addition to their analytical abilities, conscientious teams can - due to their trait driven determination and their tendency towards deep exploration - be creative as well. Similar results have been obtained for individuals that were high in personal need for structure, but felt secure and had no fear of invalidity (Rietzschel, De Dreu, & Nijstad, 2007). In addition, teams with lower levels of conscientiousness showed a higher creative performance (both in terms of fluency and depth) when elderly stereotype priming was negative. Albeit in contrast to our original hypothesis, this finding might suggest that teams with low team conscientiousness are induced to better structure their task approach and therefore improve team creative performance. Accordingly, there seems to be an optimal middle level of team conscientiousness for creative performance, where low conscientiousness levels are “lifted” by negative priming or a prevention focus and high conscientiousness levels are lowered by positive

elderly priming or promotion focus activation. These findings suggest that we must move beyond linear analysis and incorporate curvilinear effects (similar calls for nonmonotonic inquiries have been made in connection with expertise diversity by Van der Vegt & Bunderson, 2005).

Although not a central concern of our study, our findings also suggest that conscientious age diverse teams are impacted by negative stereotyping through the dominance of the stereotyped group. We take this result as an indicator for a possible mechanism in which group creativity in age diverse teams is inhibited by activating conscientiousness especially in older group members, who then influence their team in favor of conscientious-related behavior. Thus, older conscientious group members might be determined to perform well, but when negative elderly stereotypes persist, their perseverance and structuring inclination runs the risk of influencing the entire team, thereby undermining creative team performance.

Practical implications

With demographic change, age diversity in organizations is likely to further increase (Janz, Büngeler, Eckhoff, Homan, & Voelpel, in press). This development requires that organizations recognize and react to the changing demands and challenges it poses towards management. One of these challenges is an acknowledgement and management of the organizational age climate. An organizational age climate is the overall perception of elderly stereotypes within an organization (Noack & Staudinger, 2009), which presumably influences employee behavior in similar ways as the stereotype priming influenced participants in this study. Even more so, age climate may have a relatively strong impact on work group creative performance as it

influences workers on a repeated and regular basis. Thus, our results suggest that managing age climate is of special importance to age diverse firms that rely on innovation in order to achieve competitive advantages.

Especially organizations that have over the years directly or indirectly used conscientiousness as a tool for employee selection, would benefit from measuring their current age climate. In addition, personality traits are by no means stable over the lifespan. Hence organizations are well-advised to take into consideration the general trend of increasing conscientiousness in their aging employees. Our findings suggest that individuals with different conscientiousness levels may benefit from different environmental cues to creatively perform at their best.

The results of this study suggest that the detrimental creative performance consequences of the negative elderly stereotypes were induced by dominant older group members in highly conscientious teams. Besides a heightened awareness towards and management of organizational climate and its effects on diverse teams, companies may find it helpful to implement training programs that help older employees cope with nevertheless existing stereotypes and to promote generativity, i.e. the motivation to support younger group members.

Limitations and further research

First, as in most experimental designs, the external validity of our findings may be questioned. However, as it is difficult to manipulate elderly stereotypes or age climate in an organization for various practical reasons,

the current study might be a good estimate of the influences that stereotypes might also have in an organizational context. Still, testing a slightly altered model that investigates age climate instead of age priming in the field, might be an interesting avenue for further research.

Certainly, stereotype activation may influence participants' motivation and thus be the reason for performance differences. However, if stereotype activation alters performance motivation, creativity should be affected in similar ways for all participants, i.e. with high and with low conscientiousness levels.

Second, our study looked at the interaction of personality, stereotypes and performance. Here it would be interesting to see whether other variables provide similar empirical results. For instance other personality traits such as personal need for structure or openness to experience or curiosity might be valuable avenues for further research. In our study we also refer to different facets of the conscientiousness trait, namely dependability, structuring and orderliness on the one hand and determination, perseverance and goal achievement on the other. It might be interesting to disentangle these sub-traits and measure their effects separately (for a discussion of different conscientiousness facets see for instance Hough, 1992; Jackson et al., 2010). With regards to the moderator, other stereotypes would be interesting to study in combination with personality and performance. In this study we were mainly interested in the consequences of stereotype threat on creativity. However, researchers might find it promising to examine the different effects that the conscientiousness-stereotype interaction might have on creative and analytical tasks. For instance, analytical tasks might be differently impacted by

different stereotype priming, possibly in the opposite direction as was the case for creativity in this study.

Third, in this context, it might be interesting to also investigate regulatory foci as a possible mediator, through which stereotype priming influences conscientious behavior. As described above, self-stereotypes induce regulatory foci (Seibt & Förster, 2004), which in turn might activate or deactivate certain manifestations of personality traits such as conscientiousness. This would be one promising way of mutually investigating regulatory foci with different subtraits of conscientiousness that were described above.

Conclusion

In summary, the empirical findings in this study suggest that in age diverse groups, conscientiousness may encourage idea generation and creative depth when age is portrayed as something positive. In contrast, when age is associated with negative attributes, conscientious individuals' creative performance is hampered and that of low conscientious individuals benefits. In turn, the effects of elderly stereotyping influence the group through the dominance of older group members, who thereby transfer their behavioral preference to the group. We hope that these results will stimulate further debate in both the diversity and the stereotype literature, helping organizations to reap the possible benefits of (age) diverse work groups.

CHAPTER 4

Silver bullet or Specific Tool: Diversity Training's Effectiveness Put Into Context

This chapter is based on: Eckhoff, R.A., Büngeler, C., Homan, A.C., Voelpel, S.C., & Van Ginkel, W. Silver bullet or Specific Tool: Diversity Training's Effectiveness Put Into Context.

Abstract

Organizations spend millions on training their employees to better deal with diversity issues. However, it is still unclear under which conditions these diversity trainings are actually effective. Building on the training literature, we propose that the effectiveness of diversity trainings depends on a combination of individual and situational characteristics of the trainees. More specifically, we predicted and found that the team's actual nationality diversity (i.e., the possibility to apply the training) as well as the diversity beliefs of the team members (i.e., the personal need for the training) interact in determining group creativity following a diversity training. By utilizing an experimental setup, we compared the creativity of twenty-eight student groups that attended a diversity training to twenty groups that went through a control training. Our findings showed that teams with relatively low levels of diversity beliefs benefitted most from a diversity training, provided that they could actually use the training in their nationality diverse team. When nationality diversity was low, however, teams with relatively low levels of diversity beliefs were actually less creative after attending a diversity training. Speaking to the underlying process of our findings, we found that the effects of the diversity training were driven by the experienced team efficacy of the team members.

Team diversity - in this paper operationalized in terms of nationality diversity - is a crucial aspect of organizational functioning (e.g., van Knippenberg & Schippers, 2007). Although teams can benefit from diverse backgrounds and ideas, diverse teams do not necessarily succeed (see for instance Murnighan & Conlon, 1991; van Knippenberg, De Dreu, & Homan, 2004). Many organizations therefore decide to provide their employees with diversity trainings in order to prepare them for the challenges that are associated with working in diverse teams (e.g., Bezrukova, Jehn, & Spell, 2012; Comer & Soliman, 1996; Kulik & Roberson, 2008; Overmyer Day, 1995), with the ultimate goal of making diverse teams more successful (Pendry, Driscoll, & Field, 2007).

Although diversity trainings can be aimed at reducing prejudice and discrimination and facilitating intergroup relations, we use the more specific definition of diversity training as a program that is aimed at "enhancing the skills, knowledge, and motivation of people to interact with diverse others (Bezrukova et al., 2012, p. 208; see also Pendry et al., 2007). Speaking to the popularity of diversity trainings, data show that, in 2003 alone, organizations have spent eight billion dollar on diversity and diversity trainings in the United States (Hansen, 2003). However, there are many critical voices concerning such trainings (e.g., Overmyer Day, 1995), and different studies report diversity training programs to be ineffective despite the considerable financial investment (e.g., Anand & Winters, 2008; Egan & Bendick, 2008; Hemphill & Haines, 1997; Kulik, Pepper, Roberson, & Parker, 2007; Naff & Kellough, 2003). It therefore seems crucial to explore the conditions under which diversity trainings can be beneficial to performance outcomes of nationality

diverse teams and when not.

In this paper, we build on the work on organizational training to distinguish conditions under which we propose diversity trainings to be effective (e.g., Aguinis & Kraiger, 2009; Salas & Cannon-Bowers, 2001; Tannenbaum & Yukl, 1992). Salas, Tannenbaum, Kraiger, and Smith-Jentsch (2012) argue that trainings improve team processes and performance, but that their effectiveness depends on how the training is designed and for whom. We integrate these outcomes with empirical and theoretical knowledge on diversity effects in teams, and contribute to these research fields by arguing that the diversity composition of the team as well as individual characteristics of the team members shape the usefulness of diversity training.

The first aspect we consider, deals with the team's level of diversity. Salas et al. (2012) proposed that effective trainings require trainees to engage in the same cognitive processes that they will need to engage in when they work together later on. In other words, teams should have the opportunity to transfer and apply what has been learned during the training (Salas & Cannon-Bowers, 2001). A training that is focused on dealing with nationality diversity should therefore especially be applicable to and beneficial for teams that are diverse on nationality and less so for teams that are relatively homogeneous on nationality. However, we also propose that the level of team diversity is not enough to predict diversity training effectiveness. The work on mandatory versus voluntary diversity training shows that voluntary training may result in "preaching to the choir", missing the employees who need the training most and thereby making the training less effective (Bezrukova et al.,

2012). Some employees thus might need the training more than others, and we therefore introduce a second factor that will determine the effectiveness of diversity training, namely the team members' pre-existing beliefs regarding diversity.

Salas et al. (2012) propose that training should be targeted at people "with the largest gaps between actual and needed competencies" (p. 82). Applying this to diversity training, it seems logical that people that have more difficulties working in diverse teams will benefit more from a diversity training (cf. Kulik, Pepper, Roberson, & Parker, 2007). In this respect, we propose that team level diversity beliefs (e.g., Homan, van Knippenberg, Van Kleef, & De Dreu, 2007) are likely to have differential effects on how effective the training will be. People with less positive diversity beliefs are less likely to see the benefits in diversity and are more likely to perceive their teams diversity in terms of detrimental subgroups (e.g., Homan, Greer, Jehn, & Koning, 2010; Homan et al., 2007; van Knippenberg, Haslam, & Platow, 2007). Thus, we propose that teams with relatively lower diversity beliefs will potentially benefit more from the diversity training than teams that already are positive about diversity.

Importantly, we propose that these two factors will interact in predicting the effectiveness of diversity trainings. Teams with relatively more need for diversity trainings (i.e., teams with low diversity beliefs), will benefit relatively more from diversity training when actual nationality diversity is high, but will also suffer from diversity training relatively more when nationality diversity is low. These effects will be driven by the degree to which the team members believe that they can perform specific tasks and behaviors (i.e., team efficacy;

Lindsey, Brass, & Thomas, 1995). Teams with relatively higher levels of diversity beliefs will be less influenced by diversity training, as they have less need for it.

In sum, in this paper, we attempt to illuminate under which conditions diversity trainings are beneficial. In order to test our hypotheses, we experimentally investigate the effectiveness of a diversity training and take into account the team's diversity beliefs and the actual nationality composition of the team. The contribution of this research is threefold. First, to our knowledge, this study is one of the first to experimentally investigate under which conditions diversity trainings might be effective or ineffective. Previous work paints a rather gloomy picture of diversity trainings (Overmyer Day, 1995), which is in conflict with the relatively positive effects of team trainings in general (Salas, Dias Granados, Klein, Burke, Stagl, Goodwin, & Halpin, 2008). We propose that these previously obtained negative effects might partly be due to a disregard of moderators. Second, this study moves beyond perceptions of training effectiveness and attitude change as outcomes of diversity trainings (e.g., Rynes & Rosen, 1995), by focusing on actual team performance. More specifically, we focus on team creativity and innovation. The value-in-diversity hypothesis (Cox, Lobel, & McLeod, 1991) argues that because diverse teams have more different viewpoints and perspectives available than homogeneous teams, they should actually be able to be more innovative and creative. Finally, we also aim to reveal the process by which diversity trainings can have positive effects on team performance. In this respect, we suggest that when a diversity training has positive effects, these are driven by the team's belief in their ability to succeed (e.g., Gibson, 1999).

Theoretical Background

Diversity and team creativity

Research on team diversity has been blossoming for the last decades (Kozlowski & Bell, 2003; for an overview see van Knippenberg & Schippers, 2007). Organizations have to deal with a workforce that can be diverse on many dimensions, ranging from very visible demographic differences to more invisible value differences. Diverse teams are often assumed to be an important lever required for sustained business success (Jackson et al., 2003). One of the potential benefits of diversity is that it is argued to promote creativity and innovation (Albrecht & Hall, 1991; Bantel & Jackson, 1989; Payne, 1990; van Knippenberg et al., 2004).

For organizations to be successful in increasingly competitive markets, innovation and creativity are crucial (Pil & Cohen, 2006; Porter, 1990; Voelpel, Leibold & Eckhoff, 2006). The exposure to different backgrounds, approaches, and perspectives is believed to stimulate divergent and flexible thinking and prevent group-think (Cox & Blake, 1991). Teams consisting of different team members are more likely to think outside of the box and are less likely to fall prey to conformity pressure (e.g., Janis, 1983, Neck & Manz, 1994). In sum, diversity is proposed to enhance creativity (e.g., Amabile, 1994; De Dreu & West, 2001; Richard, McMillan, Chadwick, & Dwyer, 2003; Watson, Kumar, & Michaelson, 1993). However, many empirical studies have painted a less positive image of the relationship between diversity and creativity. More specifically, diversity has been found to hamper innovation (e.g., Ancona & Caldwell, 1992; Maznevski, 1994), by increasing conflicts

within the team (e.g., Argote & McGrath, 1993; Pelled, Eisenhardt, & Xin, 1999), and by negatively influencing the exchange of creative ideas (e.g., Bhappu, Griffith, & Northcraft, 1997; van Knippenberg, De Dreu, & Homan, 2004). Diversity can thus be a vice as well as a virtue to team creativity (Joshi & Roh, 2009; van Knippenberg & Schippers, 2007).

The vice and virtue of diversity can be explained using the social categorization perspective and the information/decision-making perspective (Williams & O'Reilly, 1998). On the one hand, it has been found that diversity triggers social categorization processes, which divide the team into subgroups (Tajfel & Turner, 1986). For instance, if a team is nationality diverse, social categorization processes can lead team members to perceive the team in terms of an American and a Japanese subgroup. These subgroups, in turn, will likely experience intergroup biases. People tend to favor members of their ingroup over outgroup members, which results in conflicts, low trust, and limited communication between subgroups (Brewer, 1979; Jackson, 1992; Tajfel & Turner, 1986; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). These social categorization processes and concomitant intergroup biases can impair team creativity (e.g., Pelled et al., 1999; van Knippenberg et al., 2004). On the other hand, the information/decision-making perspective holds that diverse teams have more different perspectives, information, and ideas available than do homogeneous teams (Cox, Lobel, & Mcleod, 1991). Diverse teams can therefore potentially outperform homogeneous teams to the extent that they exchange and process this greater pool of knowledge (i.e., information elaboration; van Knippenberg et al., 2004). In sum, although diversity can potentially facilitate team creativity due to information elaboration

processes, it can also hamper team creativity when intergroup biases occur.

Evidence from studies on main effects of diversity (i.e., the direct effect of diversity on performance) present inconsistent results and therefore neither perspective is solely supported (Bowers, Pharmer, & Salas, 2008; Horwitz & Horwitz, 2007; Van Knippenberg & Schippers, 2007; Williams & O'Reilly, 1998). In order to illuminate when diversity has positive or negative effects, recent work has therefore focused on moderator variables (van Knippenberg et al., 2004; van Knippenberg & Schippers, 2007). The Categorization-Elaboration Model (CEM; van Knippenberg et al., 2004) can act as a guiding framework in this respect. This model incorporates the two main processes that diversity may bring about (i.e., subgroup categorization and intergroup bias vs. information exchange and elaboration), and it identifies groups of moderators that predict the degree to which diversity triggers these two processes. One crucial variable seems to be the degree to which people can effectively deal with diversity issues (e.g., Ely & Thomas, 2001). Many organizations believe they can address this issue by providing their teams with a diversity training (Ferdman & Brody, 1996; Rynes & Rosen, 1995). However, the actual effectiveness of diversity training for team creativity is still unclear.

Diversity Training

Despite the popularity of diversity trainings, the term does not seem to refer to one specific activity (Ferdman & Brody, 1996). Some organizations provide a short briefing, whereas others have organizationwide, day-long trainings. Our emphasis here is on trainings that are focused on sustaining business success and competitiveness (Cox, 1993). The training is developed

to provide trainees with tools to broaden and increase their skills of, their motivation to, and their knowledge about working with diverse others (Pendry et al., 2007). In these types of trainings, diversity is seen as means to an end and as a possibility for creating a competitive advantage. This idea is in line with the reasoning by Ely and Thomas (2001) who proposed that organizations that have an information-and-learning perspective on diversity, will be better able to deal with diversity issues, than organizations that merely see diversity as morally just or as access to other markets. People feel more appreciated when the organization sees their diverse background as important and valuable, making them more satisfied with the organization. However, a review of the professional and scholarly literature about diversity training reveals that after 30 years and thousands of workplace interventions, the effectiveness of diversity trainings is still unclear (Paluck, 2006). This seems especially important as a recent meta-study found diversity training to possibly be the only tool available to organizations to foster performance for race (similarly here nationality) diverse teams (Bell et al., 2011).

Although there has been narrative and survey research on the effectiveness of diversity trainings (Bezrukova et al., 2012; Holladay, Knight, Paige, & Quiñones, 2003), Paluck and Green (2009) found only eight experimental studies with random assignment of participants in which the diversity training group was compared to a control group. Moreover, most of this previous work either focused on the main effects of diversity training and , while zooming in on within-subject changes in attitudes toward diversity (e.g., Paluck, 2006; Paluck & Green, 2009). Most studies assessed change in attitudes towards diversity before and after a given training (for a review see

Kulik & Roberson, 2008), training adaption, perceived training success (Rynes & Rosen, 1995), affective responses (e.g., King, Dawson, Kravitz, & Gulick, 2010), cognitive responses, or behavioral intentions (e.g., Roberson, Kulik, & Pepper, 2001). Few studies that investigated the effects of diversity trainings actually measured performance outcomes (Ely, 2004; Wiethoff, 2004) and if they were assessed, the determinants could not be clearly identified (Kulik & Roberson, 2008). In this paper, we will fill this void by examining actual performance outcomes by focusing on team creativity after a diversity training. Moreover, we aim to not only measure general creative performance, but also distinguish between two types of creative performance, which are more and/or less related to the diversity of the team. First, we measure nationality-related creativity, which directly benefits from nationality diversity. An example would be to brainstorm about a name for a new product that could be used internationally. Second, we measure general or nationality-unrelated creativity, which is unrelated to nationality diversity. For instance, one could think of coming up with a creative solution for energy saving in a cell phone. We distinguish between these two types of creativity to provide more insights into whether general performance benefits from diversity or whether only performance outcomes that are closely related to the diversity dimension of interest improve as a result of diversity. We build on the general training literature to examine the conditions under which diversity trainings might be effective.

According to Aguinis and Kraiger (2009), "training refers to a systematic approach to learning and development to improve individual, team, and organizational effectiveness" (p. 452; also see Goldstein & Ford, 2002).

Arthur, Bennett, Edens, and Bell (2003) showed that trainings in general have an overall positive effect on job-related behaviors and performance. However, their effectiveness depends on an interaction between training design characteristics, trainee characteristics, and the work environment (Baldwin & Ford, 1988). In this paper, we will address this interactive model of training effectiveness, by focusing on crucial aspects of the trainee as well as the work environment. Training effectiveness models propose that there are many factors influencing the effectiveness of a training, such as individual differences (Noe, 1986; Smith-Jentsch, Jentsch, Payne, & Salas, 1996) and the opportunity to perform the trained behaviors on the job (Ford, Quiñones, Sego, & Sorra, 1992; Quiñones, Ford, Sego, & Smith, 1995). In addition, a study by Van der Vegt and Bunderson has found indications that diversity stimulates team learning (Van der Vegt & Bunderson, 2005). Most of the research on diversity trainings, however, has largely ignored the contingency factors of diversity training effectiveness. In this paper, we will zoom in on two factors that we propose will together determine the effectiveness of diversity trainings: the teams' actual diversity and the diversity beliefs of the team members.

Team Diversity

First, regarding the work environment, researchers have paid little attention to the degree in which the diversity training actually makes trainees engage in the same processes they will need to engage in when they return to work (Salas et al., 2012). In this respect, the actual diversity of the teams that participate in such trainings seems to be crucial. Whereas many organizations tend to provide such a training to as many employees as possible, it seems

crucial that trainees will actually be able to apply what they have learned at work. In this regard, we propose that the actual diversity of the team might be an important factor to take into account when deciding whether teams should attend a diversity training. Training teams to deal with something that is not present might actually lead to negative effects of the training, because the acquired knowledge cannot be applied in the actual work setting.

In this respect, there are reasons to assume that the tools and techniques that are being taught in diversity trainings might be detrimental for the functioning of homogeneous groups. First, trainings are proposed to increase self-efficacy in trainees by helping them to better deal with the training topic and to reinforce it afterwards (Salas & Cannon-Bowers, 2001; Salas et al., 2012). If the team members do not have the opportunity to put what they have learned into practice because their team is not diverse enough, they are likely to experience lowered self-efficacy. Second, whereas diverse teams benefit from an extensive discussion or the elaboration of task-relevant information in order to access differing viewpoints (Amason & Schweiger, 1994; Fiol, 1994), this process might be less functional for homogeneous teams as available viewpoints and information will be more similar. Thus, it might be better for more homogeneous teams to engage in less discussion and instead focus on immediate performance (Jehn, Northcraft, & Neale, 1999). In other words, the application of principles that enhance a diverse team's performance might disrupt effective group processes and performance in homogeneous teams because the assumption underlying any diversity training – namely dealing with team's actual diversity - is violated.

Diversity beliefs

Another important factor determining the effectiveness of trainings are individual characteristics of the trainee. In this respect, we focus on the pre-existing diversity beliefs that team members have. People who participate in diversity trainings are likely to have preconceptions regarding team diversity and its merits or detriments (De Meuse & Hostager, 2001).

People generally differ in the way they feel about diversity (van Knippenberg & Schippers, 2007). As a result of personality, experience, or contextual factors, they might hold beliefs that either favor diversity or similarity for composing groups (Hostager & De Meuse, 2002). Such diversity beliefs pertain to attitudes and beliefs about the value of diversity for group functioning (Van Knippenberg & Haslam, 2003). Team members that believe in the value of diversity for team functioning are found to be less likely to perceive their team in terms of subgroups (Homan, Greer, Jehn, & Koning, 2010). Because subgroup categorization and concomitant intergroup biases have been found to drive the negative effects of diversity, diversity beliefs seem to limit these potential detriments of diversity by influencing the way in which team members construe diversity. Believing in the value of diversity makes people perceive their diverse team as consisting more of unique individuals, which will make it more likely that they will use the divergent perspectives, ideas, and knowledge of their team members (Homan et al., 2010). In sum, diversity beliefs may help teams deal with diversity and avoid common creative performance barriers that diverse teams face, by improving information elaboration (Homan, Hollenbeck, van Knippenberg, Humphrey, Ilgen, & Van Kleef, 2008; Homan, Van Knippenberg, Van Kleef, & De Dreu,

2007; Meyer & Schermuly, 2012; Van Knippenberg et al., 2004).

Diversity beliefs seem to be a prerequisite for effectively dealing with diversity issues. Why do we think that these diversity beliefs are important when predicting diversity training effectiveness? When organizations train their employees, they should perform an adequate person analysis in order to avoid that the training is targeted at the wrong people (Aguinis & Kraiger, 2009; Tannenbaum & Yukl, 1992). The question of who needs the training can be answered by proposing that the training should be targeted at those with the largest gaps between actual and needed competencies (Salas et al., 2012). In other words, the relative effectiveness of the training will be higher for those people who have the most to gain by the diversity training.

Combining this reasoning with the theory on diversity beliefs, one could argue that teams that have a more negative diversity attitude will potentially benefit more from the diversity training than teams that already are more positive towards diversity.

Moreover, high diversity belief individuals will generally be more likely to have gained experience working in and with diverse groups. They will usually seize opportunities that are characterized by diversity that enable them to accumulate knowledge and experience with regard to diversity. Accordingly, positive diversity beliefs are likely to coincide with a generally higher level of voluntary exposure to different kinds of diversity (Kulik et al., 2007) and have been shown to predict voluntary participation in corporate diversity trainings (Kulik et al., 2007). In other words, those that already believe in diversity seek to learn even more, thereby possibly widening the gap between those with high and low levels of diversity beliefs. However, empirical work by Smith-

Jentsch et al. (1996) has shown that especially those with negative pre-training events that could have been helped by the training learned more than those that had more positive pre-training experiences.

People with less confidence in the usefulness of diversity, may generally be less likely to seek opportunities to learn about and experience diverse teams' functioning as well as about their inherent advantages and disadvantages. As such, they will have more difficulty in dealing routinely with situations of high team diversity. The lack of experience with such situations will make it more difficult for low diversity belief individuals to choose when and at what level to engage in an in-depth exchange of task-relevant information. Similarly to experienced soccer players, who are better able to correctly decide when to follow the strategic directions of the coach and most importantly when not to, individuals with less experience in diverse teams will be more likely to misapply the lessons-learned from the diversity training. An example of such a misapplication could be, the attempt to discuss and elaborate task-relevant information in order to access differing viewpoints in a homogeneous team with very similar perspectives. Thus, we posit that individuals with low diversity beliefs are more likely to indiscriminately apply the techniques obtained from diversity trainings to homogeneous and heterogeneous teams alike.

Following this line of thought, we expect diversity training to have a stronger effect on teams with low levels of diversity beliefs. For these teams, diversity training is much newer and unusual in terms of content. In contrast to teams with high levels of pre-existing diversity beliefs, those teams with lower levels will therefore experience a steeper learning curve (Salas et al., 2012;

Smith-Jentsch et al., 1996). Supporting the assumption that diversity training may have different effects on individuals with lower or higher levels of diversity beliefs, research on cognitive heuristics suggests that incongruent information (i.e. individuals with low diversity beliefs receiving a diversity training), is more salient and subsequently processed more systematically (Maheswaran & Chaiken, 1991; Kruglanski & Freund, 1983), as well as accompanied by better recall and recognition (for a review see Stangor & McMillan, 1992). Thus, the training impact is likely to be highest for groups with pre-existing low levels of diversity beliefs.

Combining the reasoning above, we propose that the work environment as well as the individual characteristics of the team members will interact to predict the diversity training's effectiveness. Groups with relatively lower levels of diversity beliefs, will potentially benefit more from the diversity training, but only when they actually have the opportunity to apply their knowledge at work (i.e., when their team is more diverse). When their team is not diverse, we propose that their creativity will drop due to the fact that they will be unable to adequately apply what was learned during the training. Teams with higher levels of diversity beliefs are generally more experienced with regard to diversity. Any diversity training will only add to an existing individual body of knowledge and experience. Thus, the behavioral changes and thus the effects on team performance will be less pronounced. Moreover, we propose that they will be less influenced by the diversity level of the team, as they will be less affected by the diversity training and experience less need to directly apply the knowledge that they already have. We thus hypothesize the following threeway-interaction:

Hypothesis 1. For teams with relatively lower levels of diversity beliefs, a diversity training and team nationality diversity will have an interactive effect on team creativity, such the diversity training is positively related to team creativity when nationality diversity is high and negatively related to team creativity when nationality diversity is low.

Team Efficacy as a Mediator

One crucial variable in the training literature is self-efficacy (Aguinis & Kraiger, 2009; Salas & Cannon-Bowers, 2001; Salas et al., 2012). Self-efficacy has been found to lead to better learning and performance (e.g., Cole & Latham, 1997; Eden & Aviram, 1993). Moreover, self-efficacy has been proposed to mediate the effects of training on important outcomes such as job satisfaction, use of training technologies (Christoph, Schoenfeld, & Tansky, 1998), and learning (Martocchio & Judge, 1997). As we are focusing on teams, we propose that an effective training will improve the efficacy of the team and that this improved efficacy will be related to more creativity and innovation.

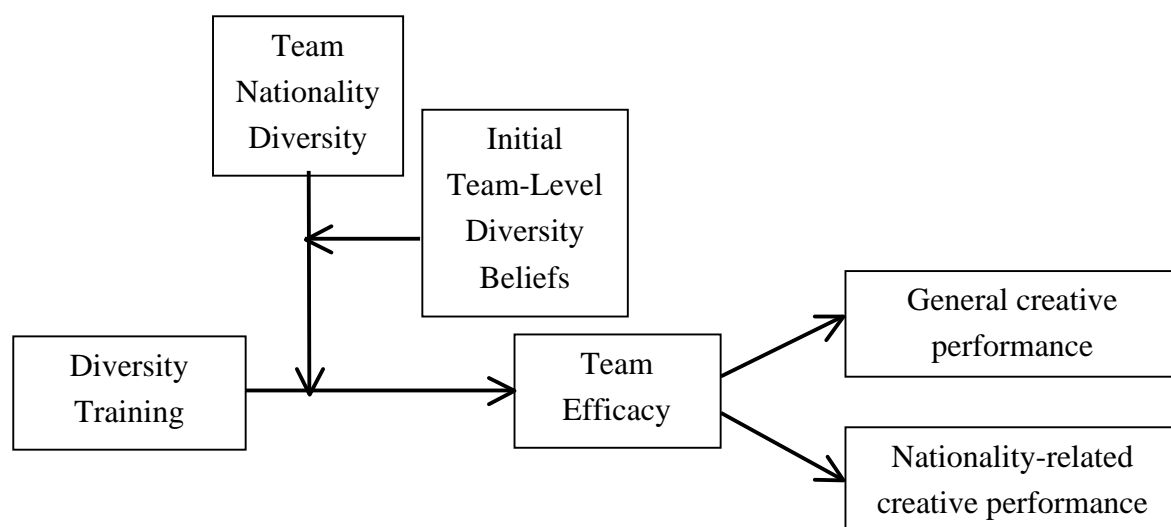
Diverse teams that are told how they should work together, are better able to actually deal with diversity issues, and in turn are more positive about their capabilities. Similar to work on *self-efficacy*, research aiming to understand the determinants of a group's effectiveness and success, has for some time looked at a group's belief in its ability to perform a certain task (i.e. team efficacy) as an important variable (Lindsley et al., 1995). High perceived team efficacy has been found to increase the effort a group exerts towards reaching their goals (Earley, 1993; Zaccaro, Blair, Peterson, & Zazanis,

1995). Thus, it is not surprising that several studies found team efficacy to lead to higher performance (Lindsley et al., 1995; Mischel & Northcraft, 1997). Moreover, different studies linked efficacy and team training (see e.g., Lee & Farh, 2004). Budworth (2011) found that groups in which the majority received a job selection training, had higher levels of team efficacy, which in turn positively influenced group performance. Following this reasoning, in our study, diversity training, in interaction with team diversity and team level diversity beliefs, should also influence team efficacy, which in turn might reflect on group performance (Gibson, 1999).

Thus, we posit that the interactive effects of diversity training, actual group diversity level and diversity beliefs are mediated by team efficacy (see Figure 1 for our research model):

Hypothesis 2: The three-way interaction among diversity training, initial diversity beliefs, and team nationality diversity on team creative performance is mediated by team efficacy.

FIGURE 1: Proposed Research Model



Methods

Design and Participants

Undergraduate students of a nationality diverse university in Germany participated in the experiment. Before participation, students were informed that the experiment aimed to investigate team work, but did not know that the study focus was on diversity training and its effects. In exchange for their participation, students either earned class credit or were able to win prizes and received a certificate confirming their participation. Groups were randomly assigned to either the diversity training or the control training condition.

Of a total of 202 participants¹, 192 participants were assigned to 48 four-person groups (20 groups in the control training condition, 28 groups in the diversity training condition). Participants of the final sample were on average 20 years old ($SD = 1.71$) and 46% were female. 41 nationalities were present among participating students, with nearly 30% of the sample being German, nearly 16% being Romanian citizens, about 6% being citizens of the United States, and about 5% being of Bulgarians nationality, followed by Macedonia, Moldova, Pakistan, and Nepal (about 4% each) and China (nearly 3%). About one quarter of the sample was composed of members of the other 32 nationalities, for instance Brazil, Zimbabwe, Russia, India, and the Netherlands. Participating students mainly pursued one of eighteen different university majors (university education courses such as Biotechnology, International Relations, Computer Science, and Social Sciences) clustered within three schools (Humanities and Social Sciences, Engineering and Science, Systems and Management). Analyses of variance and chi-square tests, respectively, revealed that participants in the two conditions did not

differ significantly from each other with respect to age ($F[1,190] = .66, p = .42, \eta^2 = .00$), gender ($\chi^2[2, 192] = 1.64, p = .44$), and nationality ($\chi^2[42, 192] = 48.03, p = .24$).

Procedure

Prior to the experiment, participants completed a short online-questionnaire. Upon arrival in the laboratory, they were informed that they were participating in a study about team work. In order to increase task motivation, all groups were told that they were eligible for voucher prizes (ranging from \$20 per team member for the best performing team, \$10 per member for the runner up, to \$5 for the members of the team ending up in third place) based upon their performance in the group creativity task. In reality, the experimenters performed a prize draw after the experiment to determine first, second, and third place.

Groups were then guided to one of two video rooms and watched one of two videos (see Stimuli section) before entering the group interaction rooms, where they received written instructions and completed a group creativity task as well as a paper-based questionnaire. After the experiment, participants were extensively debriefed in written form and were granted access to both training videos used in the study.

Independent Variables

Diversity training manipulation. Depending on condition, groups watched one of two different videos of approximately 20 minutes. The trainings were developed taking into account the steps as discussed by (Salas et al., 2012). Groups in the diversity training condition received a video-based

training on how diverse teams can make effective use of diversity and maximize their creative performance (Van Knippenberg, De Dreu, & Homan, 2004). Groups in the control condition watched a control training video that was selected based on the non-present association with diversity training and the neutrality of the topic. The topic in the control condition was energy saving. A native, English-speaking trainer presented the trainings in both videos, and the structure of both videos was comparable. Both video's started out with a short introduction, in which real-live interviews with students stressed the importance of the respective topics (i.e., energy saving or diversity). After this introduction, the actual training started. In the first training part, the presenter instructed group members on general and specific information on the topic at hand and summarized the lecture subsequently. To increase transferability, the presenter referred to examples that were directly related and applicable to everyday student life and tasks. The main goal of this section was to enhance knowledge and awareness on the topic (Holladay & Quiñones, 2008).

In the second training part, observational learning (Bandura, 1969) was stimulated by student role models. These behavioral role models first displayed unfavorable behaviors in decisive situations, which the presenter concluded with an explanation why the presented behaviors were unfavorable. Then, role models displayed favorable behaviors, followed by an explanation why these behaviors were favorable. In the summary part, the presenter repeated the key phrases of each training section and visualized them on a flipchart.

For the diversity training, the instruction part was based on the

Categorization-Elaboration Model (CEM) by Van Knippenberg et al. (2004, p. 1010) and explained the information/decision making perspective and social categorization perspective on diversity as well as its interrelations with performance in jargon-free language. On the one hand, the information conveyed how diverse teams can use their broadened pool of informational resources to come up with highly creative solutions. On the other hand, it was also explained that unfavorable subgroup building and disliking of dissimilar others might hinder the utilization of knowledge inherent in team diversity (Van Knippenberg & Schippers, 2007). In the behavioral modelling part, groups observed a diverse work group that first displayed ineffective and then effective group interaction.

The instruction part for the control condition conveyed information on background, rationale, and means of energy saving which was clarified by examples in students' daily life. In the behavioral modelling part, a student role model first displayed unfavorable, environmentally-unfriendly behaviors, which then were replaced by the respective environmentally-friendly behaviors in the same situations.

Nationality diversity. In this study, diversity was operationalized as nationality diversity, which is best examined as variety (Harrison & Klein, 2007). Accordingly, we measured nationality diversity using the Blau's (1977) index of heterogeneity ($1 - \sum p_i^2$ where p is the proportion of group members in the respective category [e.g., nationality] and i is the number of different categories [e.g., number of nationalities] existent in the group). The index ranges from 0 to 1, with higher values indicating higher diversity. In this sample, nationality diversity was on average .61 (SD = .19), ranging from .00

to .75.

Diversity beliefs. General diversity beliefs (Homan et al., 2010) of participants were measured in an online-questionnaire before participation in the study. On a 5-point Likert scale, participants indicated how strongly they agreed on the statements “Diversity is an asset for teams”, “I believe that diversity is good”, “I enjoy working together with diverse people”, and “I feel enthusiastic about diversity”. Internal consistency was .84. As we were interested in average diversity beliefs of a group regardless of the variation in the group (following an additive composition model; Chan, 1998), we aggregated individual ratings on general diversity beliefs to the group mean. In order to address potential differences in variance among the teams, we controlled for the standard deviation of diversity beliefs within the teams (Homan et al, 2008; 2010).

Measures

Manipulation check. In order to measure whether the team members were aware of the content of the training they received, we asked them an open ended question (i.e., “What was the content of the video you saw”) after the experiment. Seven individuals from the treatment group (all from different teams) and seven individuals from the control group (all from different teams) did not provide an answer or only provided vague descriptions (e.g., “useful advice”) to this question. Unfortunately, we do not know whether these individuals were not aware of the training they received or just forgot to provide an answer. However, as their three fellow team members did provide the correct answer to the manipulation check, we decided to analyze the data

including these participants and their respective teams.

Team creative performance. In the group interaction room, groups had to accomplish a marketing task within a time frame of twenty minutes. Each group had to write a manuscript on a short radio commercial for an internationally oriented university. In this task, group members had to interact with each other to come up with a high-quality, creative solution on the marketing task. Moreover, the marketing plan the teams came up with was supposed to contain elements that made it equally appealing to a nationality diverse audience. Hence, the marketing task assembles the principles of additive tasks based on Steiner (1972), as team members had to share their unique ideas and information to broaden the knowledge base of a team.

In order to capture the various aspects of the marketing task that are more or less closely related to nationality diversity, a team's creative performance was operationalized in three different ways. All three performance measures capture team performance instead of individual performance, and thus are conceptualized and measured at the team level.

First, a team's general or nationality-unrelated creative performance was measured based on the widely used creativity dimension of originality (Guilford, 1967). This measure captures the uniqueness or originality of a team's solution. Instead of singular elements of the solution, the proposed radio commercial as a whole was the focus of this measure. Two independent raters evaluated the degree of uniqueness or originality of each team's radio commercial by comparing it with those of the other teams. A team's originality was rated on a 5-point scale, ranging from 1 (*not original at all*) to 5 (*absolutely original*). An example of an original solution is an integration of

rhymes, a song and meaningful but at the same time ear-catching information in one radio commercial.

Second, nationality-related creative fluency captured the quantity or absolute number of different ideas of a team that had a clear association with different cultures and thus adhered to the task requirement of being applicable to a nationally diverse audience (e.g., presenting the introduction of the advertisement in multiple languages; introducing events in which people of different cultures can introduce their specialties, etc.). Nationality-related creative fluency ranged from 0 to 4 in this sample.

Third, the measure of nationality-related solution quality captured the quality of a team's proposed radio commercial in terms of applicability to a nationality diverse audience. Nationality-related solution quality was rated on a 5-point scale, with 1 indicating "very low quality" and 5 indicating "very high quality". An example of a high-quality solution is a commercial that starts with ear-catching nationality-specific questions (e.g., "Why do people from Nepal wear flip-flops even in winter?" or "Want a roommate from across the seven seas?") and then indicates that the audience would be able to answer these questions when studying at the respective multicultural institution.

The three group performance measures were coded by two raters (both aged 30) from the field of psychology and business administration who were blind to the study condition. Interrater reliability was .66 for originality, .84 for nationality-related creative fluency and .74 for nationality-related solution quality. Differences were resolved by discussion.

Team efficacy. Group members completed a paper-based questionnaire in which a question about the degree of perceived team efficacy in their group

was embedded. Group members indicated on a 7-point scale how much they agreed with the statement “With focus and effort, this team can do anything we set out to accomplish” (Edmondson, 1999). We were interested in team efficacy as a group-level construct, and thus followed a referent-shift consensus composition model (Chan, 1998) and aggregated individual ratings to the team mean. To justify for aggregation (as required for referent-shift consensus composition models), we calculated the median r_{wg} (James, Demaree, & Wolf, 1984) to examine agreement among individuals within groups. In addition, we examined intraclass correlation coefficients (Bliese, 2000) to indicate the ratio of between-group to total variance (ICC[1]), the respective F -tests, and the reliability of team members' average ratings (ICC[2]). The obtained values were .77 ($r_{wg(J)}$), .19 (ICC[1]), $F(47, 144) = 1.96$, $p = .002$, and .49 (ICC[2]). Based on these values, we concluded aggregation to the team level of analysis to be justified.

Control variables. To control for dispersion in group member's general diversity beliefs (Klein & Kozlowski, 2000), we included the standard deviation of diversity beliefs in addition to the above described mean score of diversity beliefs in the analyses. Gender and major diversity, also measured by the Blau's (1977) index, were included as a control variable to make sure that potential effects of nationality diversity were not caused by other diversity types. To rule out that prior differences in diversity beliefs or nationality diversity levels might have led to differential outcomes of the two treatment groups, we checked for potential differences in general diversity beliefs prior to the study as well as nationality diversity between the experimental groups at the level of subsequent analyses (i.e., team level of analysis) but neither

found differences for general diversity beliefs ($F[1,46] = .99, p = .32, \eta^2 = .02$) nor for nationality diversity ($F[1,46] = .00, p = .93, \eta^2 = .00$).

Results

Table 1 presents the means, standard deviations, and zero-order correlations among the study variables. Diversity training treatment had a positive association with general, nationality unrelated creativity, but was not associated with nationality-related performance (i.e., nationality-related fluency and solution quality). Neither nationality diversity nor diversity beliefs were related to the dependent variables of interest.

We conducted hierarchical regression analyses to test our Hypotheses 1 and 2 that posit a three-way interactive effect of training condition, nationality diversity, and diversity beliefs on creative performance. Prior to calculating product terms, we standardized all study variables but the dichotomous, dummy-coded treatment variable (control condition: 0, treatment condition: 1). In the first step, we entered the control variables of variation in diversity beliefs, gender and university major diversity. In the second step, our independent variable (training condition) and moderators (nationality diversity, diversity beliefs) were included in the regression equation. In the third step, we entered the respective two-way interactions, followed by the three-way interaction among training condition, nationality diversity, and diversity beliefs in the fourth step (see Table 2, Step 1 to 4).

TABLE 1
Means, Standard Deviations, and Correlations^a

Variable	Mean	S.D.	1	2	3	4	5	6	7	8	9
1. S.D. Diversity Beliefs	0.59	0.26	-								
2. Gender Diversity	.39	.16	.15	-							
3. Major Diversity	.70	.09	-.12	.07	-						
4. Diversity Training Treatment	.58	.50	.15	.14	-.02	-					
5. Nationality Diversity	.61	.19	.04	.01	.15	.01	-				
6. Team Level Diversity Beliefs	4.15	0.35	-.33*	-.05	.11	-.15	-.08	-			
7. Team Efficacy	5.67	0.84	-.15	-.08	.03	.22	-.02	.54**	-		
8. General Originality	2.40	1.18	.09	.23	.22	.36*	.11	-.03	.27†	-	
9. Nationality-related Fluency	2.21	1.13	.34*	.04	-.01	-.03	.08	.00	.32*	.13	-
10. Nationality-Related Quality	2.04	0.74	.25†	.23	.13	.22	-.03	-.02	.42**	.49**	.68**

^a $N = 48$. Control training treatment is coded 0, diversity training treatment is coded 1.

† $p < .10$

* $p < .05$

** $p < .01$

TABLE 2

Results of Hierarchical Regression Analyses with Creative Performance as Outcome^a

Variable	Originality					Nationality-related fluency					Nationality-related quality				
	Step 1	Step 2	Step 3	Step 4	Step5	Step 1	Step 2	Step 3	Step 4	Step5	Step 1	Step 2	Step 3	Step 4	Step5
<i>Step 1: Control</i>															
Standard Deviation Diversity Beliefs	.09	.05	.13	.01	.03	.35*	.39*	.42*	.32†	.37*	.24†	.25	.31†	.19	.24
Gender Diversity	.20	.16	.07	.04	.07	-.02	-.01	-.02	-.04	.03	.18	.16	.11	.08	.16
Major Diversity	.22	.21	.14	.13	.13	.03	.01	-.02	-.02	-.01	.15	.16	.12	.11	.13
<i>Step 2: Main effects</i>															
Diversity Training Treatment		.34*	.28†	.22	.18		-.07	-.04	-.10	-.22		.18	.18	.11	.03
Nationality Diversity		.07	.04	.07	.05		.07	.01	.03	-.02		-.06	-.09	-.06	-.12
Diversity Beliefs		.02	-.37	-.31	-.41		.12	.02	.07	-.23		.08	-.16	-.09	-.43†
<i>Step 3: Two-way interactions</i>															
Diversity Training x Nationality Diversity			.21	.56*	.52*			.14	.43	.31			.13	.49†	.34
Diversity Training x Diversity Beliefs			.58*	.67*	.65*			.19	.27	.21			.36	.45	.38
Nationality Diversity x Diversity Beliefs			-.16	.04	.01			.14	.31	.23			.05	.25	.16
<i>Step 4: Three-way interactions</i>															
Diversity Training x Nationality Diversity x Diversity Beliefs				-.60**	-.50*				-.51*	-.22				-.60*	-.28
<i>Step 5: Mediator</i>															
Team Efficacy					.17					.49*					.56**
R ²	.10	.22	.31	.42	.44	.12	.14	.20	.28	.41	.12	.16	.21	.33	.49
ΔR ²	.10	.11	.09	.12**	.01	.12	.02	.06	.09*	.12*	.12	.04	.05	.12*	.16**
F	1.68	1.87	1.85†	2.73*	2.55*	1.96	1.12	1.05	1.47	2.22*	2.05	1.30	1.13	1.85†	3.12**

^a N = 48. Standardized regression coefficients (β) are reported.

† p < .10

* p < .05

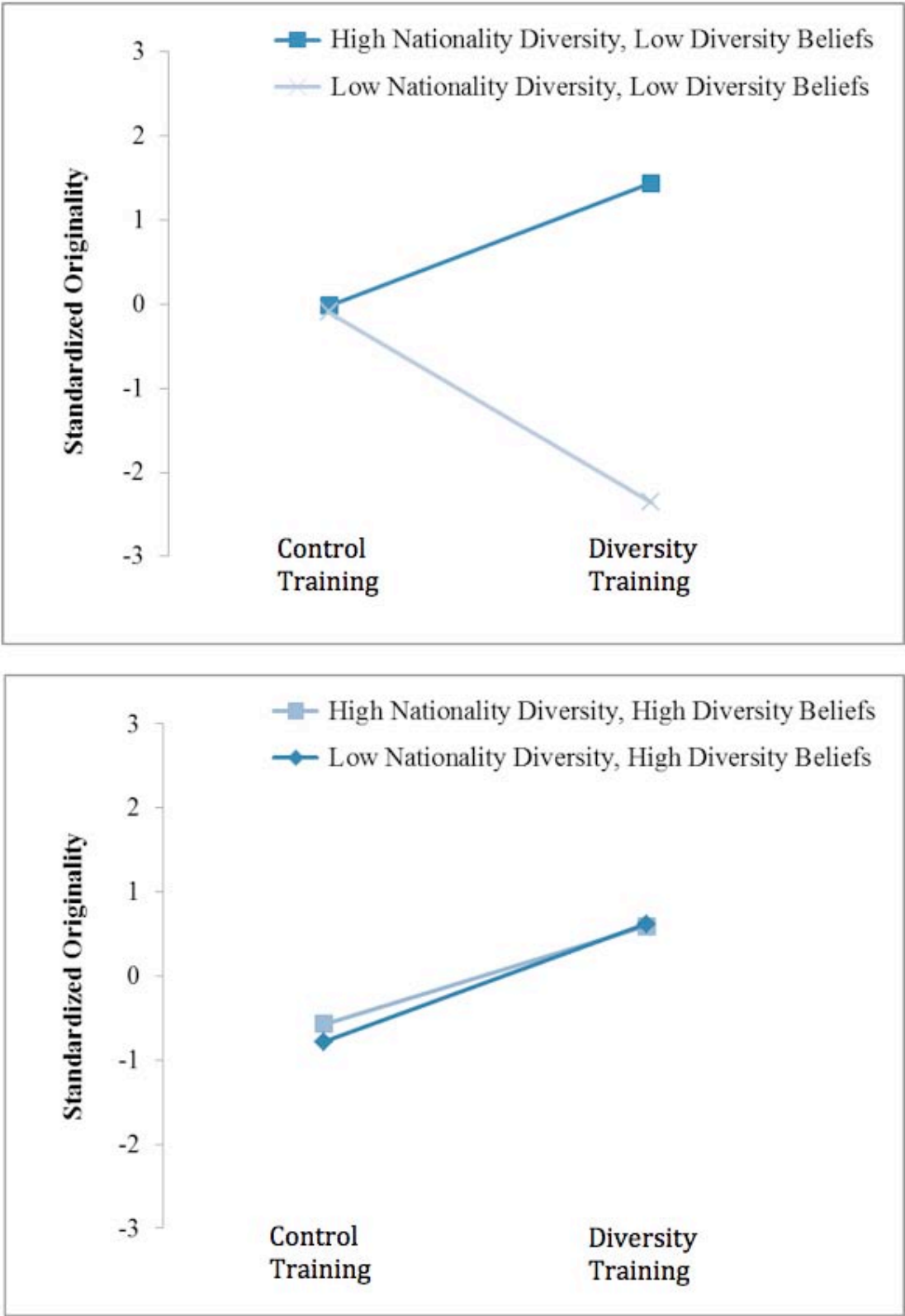
** p < .01

We found that the three-way interaction between training condition, diversity beliefs, and nationality diversity significantly explained additional variance on all three creativity indicators over and above the main effects and three two-way interactions. Similarly, and in line with Hypothesis 1, we found the three-way interaction to be significantly related to all three creativity indicators.

Following the procedure described by Aiken and West (1991) for three-way interactions, we calculated simple slope analyses to examine whether the slopes differed significantly from zero. For the nationality-unrelated dimension of creative originality (Figure 2), we found that for teams with relatively low diversity beliefs (1 SD below the mean), the diversity training was significantly negatively related to originality when nationality diversity was low ($\beta = -1.13$, $t = -2.63$, $p = .01$) but positive when nationality diversity was high ($\beta = .73$, $t = 2.08$, $p = .05$). For teams with relatively higher levels of diversity beliefs (1 SD above the mean), the diversity training was positively related to originality (i.e. nationality-unrelated creativity) when nationality diversity was low ($\beta = .70$, $t = 2.65$, $p = .01$) and when nationality diversity was high ($\beta = .59$, $t = 2.17$, $p = .04$).

FIGURE 2

Nationality Diversity and Diversity Beliefs as Moderators of the Relationship Between Diversity Training Treatment and General Creativity



Similarly, we found that for teams with relatively low levels of diversity beliefs, the diversity training was significantly negatively related to nationality-related fluency when nationality diversity was low ($\beta = -1.02$, $t = -2.13$, $p = .04$), but unrelated when nationality diversity was high ($\beta = .49$, $t = 1.24$, $p = .22$). For teams with relatively high levels of diversity beliefs, there was no relationship between diversity training and nationality-related fluency for both teams with low ($\beta = .15$, $t = .52$, $p = .61$) and high nationality diversity ($\beta = -.01$, $t = -.05$, $p = .96$). See Figure 3 for a visualization of the interaction.

Finally, for nationality-related quality of ideas (Figure 4), we found that under low levels of diversity beliefs, the relationship between diversity training and quality was significantly negative, when nationality diversity was low ($\beta = -1.04$, $t = -2.26$, $p = .03$), and positive and marginally significant when it was high ($\beta = .70$, $t = 1.87$, $p = .07$). When team levels of diversity beliefs were high, diversity training was positively and marginally significantly associated with quality performance in case of low nationality diversity ($\beta = .51$, $t = 1.81$, $p = .08$), but non-significantly in case of high nationality diversity ($\beta = .27$, $t = .93$, $p = .36$).

In sum, these findings partly confirmed Hypothesis 1. We found diversity training to affect team creativity depending on pre-existing levels of diversity beliefs and the actual diversity of the team. More specifically, the results regarding nationality-unrelated creativity (i.e., innovation) indeed showed for that teams with relatively lower levels of diversity beliefs, diversity training had a positive effect on originality when the team was more diverse on nationality, but a negative effect when the team was relatively more homogeneous on nationality. Although we did not predict a strong association between diversity,

FIGURE 3

Nationality Diversity and Diversity Beliefs as Moderators of the Relationship between Diversity Training Treatment and Nationality-related Fluency

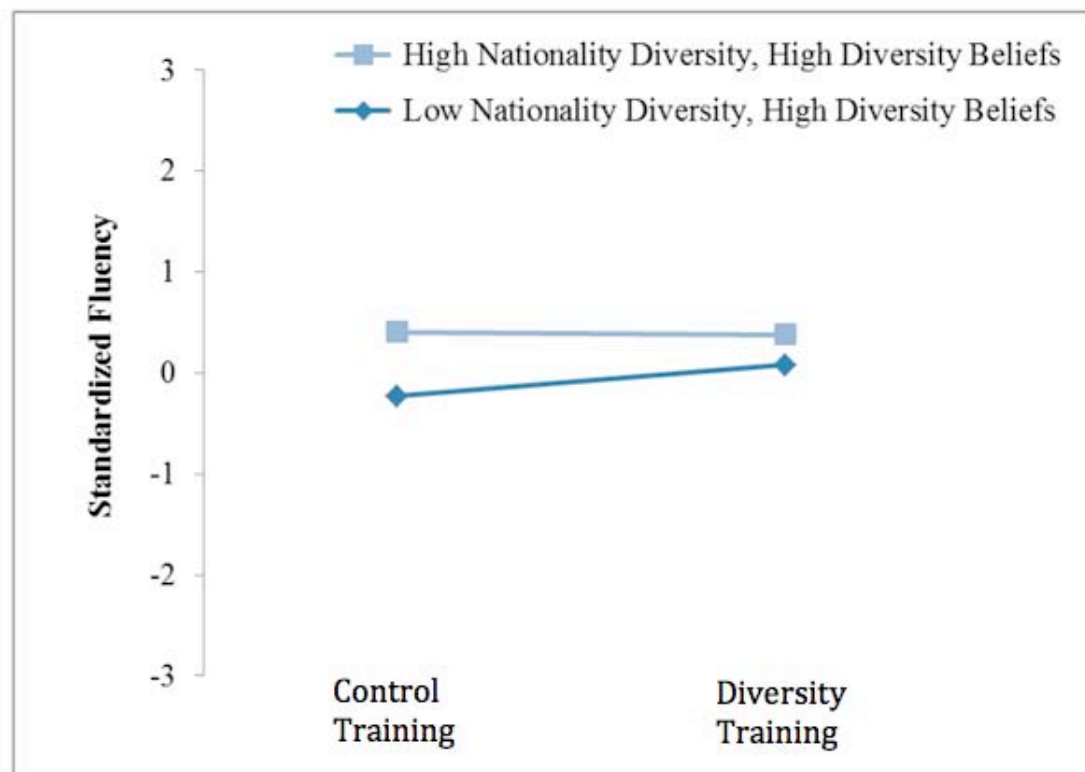
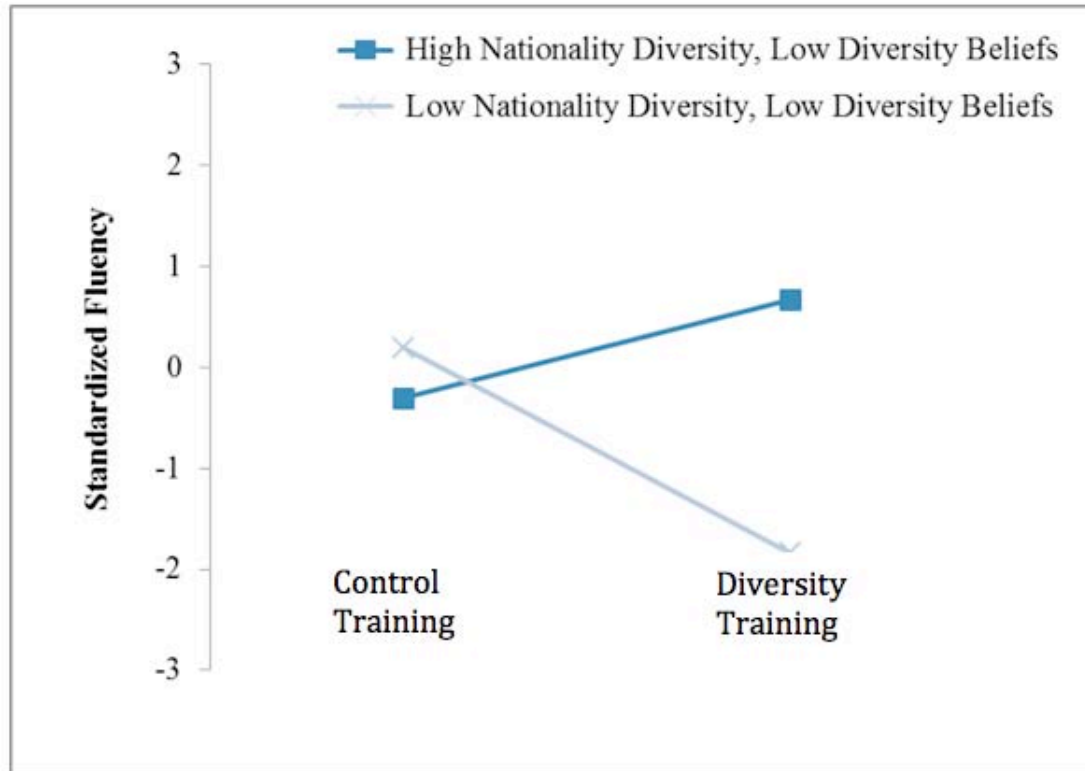
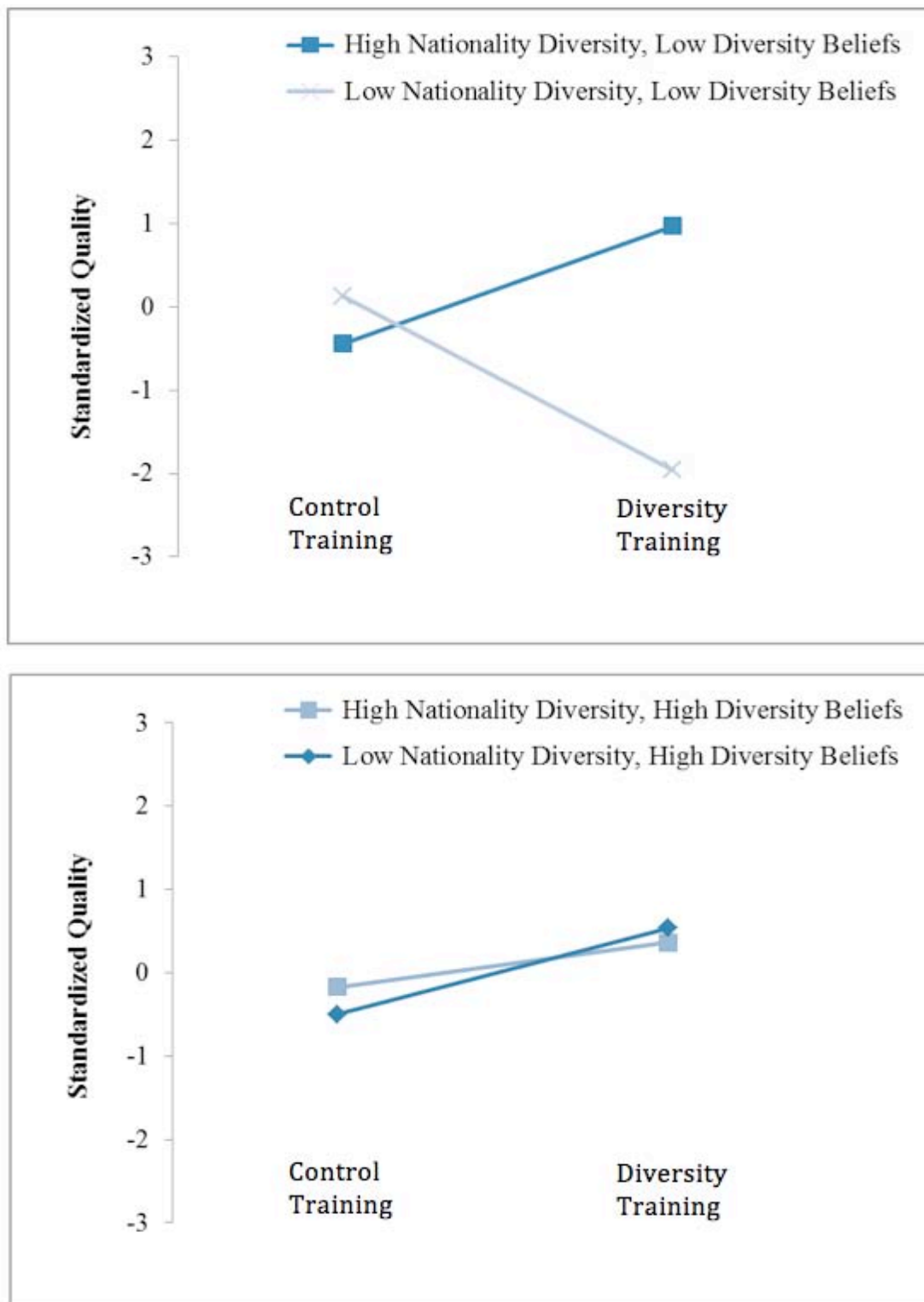


FIGURE 4

Nationality Diversity and Diversity Beliefs as Moderators of the Relationship between Diversity Training Treatment and Nationality-related Quality



training and nationality-unrelated creativity in case of high diversity beliefs results indicated significantly positive simple slopes when diversity belief levels were high, independent of nationality diversity of the team.

In addition, regarding the diversity-related dimensions of creativity (nationality-related quality and fluency of ideas), results were partly in line with Hypothesis 1. Teams with relatively lower levels of diversity beliefs, showed a negative relationship between diversity training and nationality-related creativity in case of low nationality diversity, but the hypothesized positive relationship between nationality diversity and creativity was only marginally significant for quality and non-significant for fluency.

Hypothesis 2 posits that team efficacy mediates the interactive effects among diversity training, nationality diversity, and diversity beliefs on nationality-related and nationality-unrelated dimensions of creativity, respectively. We first examined the three-way interaction of diversity training, diversity beliefs, and team diversity on team efficacy. As expected, this three-way interaction explained significantly more variance than the main effects and two-way interactions ($\Delta R^2 = .51, p = .01$). Simple slopes analyses showed that under low levels of diversity beliefs, the relationship between diversity training and team efficacy was negative, albeit not significant, when nationality diversity was low ($\beta = -.50, t = -1.25, p = .22$), and significantly positive when nationality diversity was high ($\beta = .84, t = 2.60, p = .01$). When team levels of diversity beliefs were high, diversity training was positively associated with team efficacy in case of low nationality diversity ($\beta = .59, t = 2.41, p = .02$), but not positively associated with team efficacy in case of high nationality diversity ($\beta = .04, t = 0.18, p = .86$).

TABLE 3
Results of Hierarchical Regression Analyses with Team Efficacy as Outcome^a

Variable	Mediator: Team Efficacy			
	Step 1	Step 2	Step 3	Step 4
<i>Step 1: Control</i>				
Standard Deviation Diversity Beliefs	-.14	.00	.02	-.09
Gender Diversity	-.06	-.09	-.11	-.13
Major Diversity	.02	-.03	-.02	-.03
<i>Step 2: Main effects</i>				
Diversity Training Treatment		.32*	.31*	.25†
Nationality Diversity		.03	.08	.11
Diversity Beliefs		.59**	.55*	.61**
<i>Step 3: Two-way interactions</i>				
Diversity Training x Nationality Diversity			-.08	.26
Diversity Training x Diversity Beliefs			.03	.11
Nationality Diversity x Diversity Beliefs			-.03	.16
<i>Step 4: Three-way interactions</i>				
Diversity Training x Nationality Diversity x Diversity Beliefs				-.57**
R^2	.03	.39	.40	.51
ΔR^2	.03	.37**	.01	.11**
F	.41	4.40**	2.77*	3.78**

^a n = 48. Standardized regression coefficients are reported.

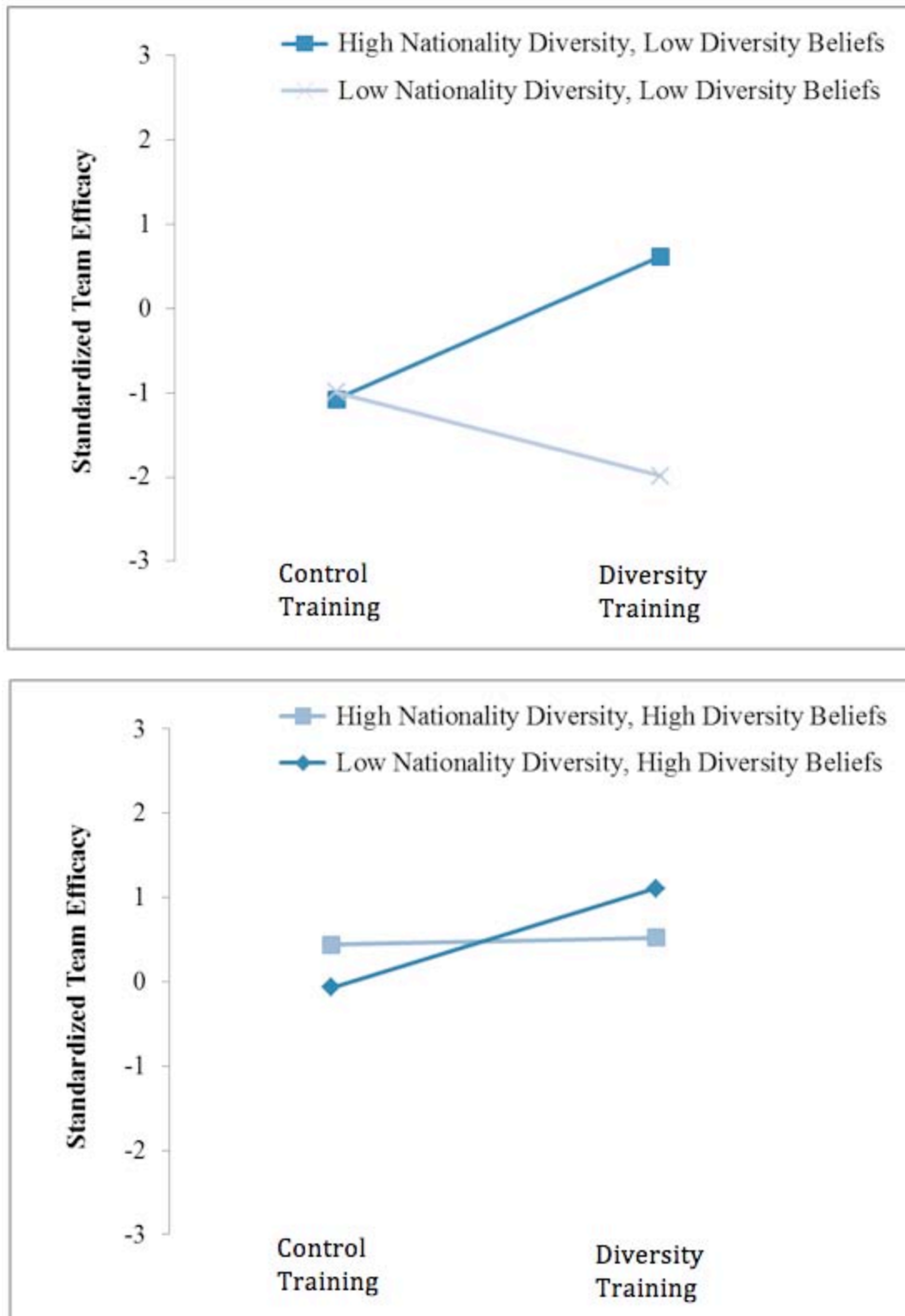
† $p < .10$

* $p < .05$

** $p < .01$

FIGURE 5

Nationality Diversity and Diversity Beliefs as Moderators of the Relationship between Diversity Training Treatment and Team Efficacy



To test for mediated moderation, we followed the product of coefficient approach as put forward by Morgan-Lopez and MacKinnon (2006). First, we regressed the hypothesized mediator on the control, independent, and two moderator variables, as well as the respective two-way and three-way interactions among the independent variable and the moderators (see Table 3, Step 1 to 4). Second, we regressed the dependent variable on this set of variables but also included the mediator (see Table 2, Step 5). A point estimate of the indirect effect is obtained by the product of the path linking the three-way interaction term with the mediator and the path linking the mediator with the dependent variable. To test for significance of the mediated moderation effect, the point estimate is divided by the respective standard error (Morgan-Lopez & MacKinnon, 2006).

The indirect effects of the three-way interaction among diversity training treatment, nationality diversity, and diversity beliefs on nationality-related creativity (quality and fluency) via team efficacy were significant for quality ($b = .53$, $SE = .24$, $p = .03$) and fluency ($b = .47$, $SE = .24$, $p = .05$). However, there was no mediated moderation effect for nationality unrelated, thus general originality ($b = .16$, $SE = .18$, $p = .38$).

In sum, team efficacy mediated the moderated effect of nationality diversity and diversity beliefs on nationality-related creative quality and quantity, but not on more general originality. Hence, we found partial support for Hypothesis 2.

Discussion

The millions of dollars spend on diversity training and their inconsistent effects warrant a closer examination of the conditions under which these trainings are actually beneficial to team performance. The present experiment investigated the effects of diversity training on creative performance of teams that varied with regards

to their levels of team diversity as well as their diversity beliefs. Results suggest that diversity training may have positive or negative effects depending on the applicability of the training (i.e., team nationality diversity) and the need for the training (i.e., initial diversity beliefs of the team members). More specifically, creative performance was negatively affected by diversity training for teams that are nationality homogeneous and with relatively lower levels of pre-existing diversity beliefs. However, diversity trainings have positive effects for teams with relatively lower levels of diversity beliefs that could actually apply their knowledge in a nationality diverse team. Teams with relatively higher levels of pre-existing diversity beliefs also benefitted slightly from diversity trainings, independent of the nationality diversity in their team.

Theoretical implication

As a starting point for our research, we built on the work on organizational training (e.g., Aguinis & Kraiger, 2009; Salas & Cannon-Bowers, 2001; Tannenbaum & Yukl, 1992) and we proposed that, in line with Salas et al. (2012), that the effectiveness of diversity trainings would depend on characteristics of the team and the team members. By integrating empirical and theoretical knowledge on diversity effects in teams with the knowledge on organizational trainings, we predicted that the nationality composition of the team as well as the precognitions of the team members regarding diversity would interact in predicting the outcomes of diversity trainings.

In line with Salas et al. (2012), our findings indeed show that trainees are more likely to benefit from a training if they could actually transfer and apply what is learned in their work situation (see also Salas & Cannon-Bowers, 2001). As our training was focused on dealing with nationality diversity, the most benefits were obtained for teams that were relatively more diverse on nationality. Additionally, this effect was further qualified by the team members' pre-existing beliefs regarding

diversity. We proposed that teams in which members would require more competencies regarding nationality diversity would be more likely to benefit from the training than people that were already positive about diversity (cf. Kulik et al., 2007). People with more positive diversity beliefs are more likely to see and obtain the benefits in diversity (e.g., Homan et al., 2007; 2008; 2010) compared to people with more negative diversity beliefs who are less able to adequately deal with diversity. The latter group is therefore more likely to benefit from the training. Interestingly enough, these teams with lower levels of diversity beliefs are also likely to be harmed by a diversity training when they are not able to apply their learned knowledge because their team is more homogeneous on nationality. For teams with lower initial diversity beliefs, diversity trainings can build team efficacy - the conviction of the members that the diverse team can perform well - but this efficacy will be damaged if the knowledge cannot be put to use.

Our study adds to the training literature by showing that, indeed, effectively applying diversity trainings requires pre-existing knowledge of the trainees (Salas et al., 2012). We distinguish two factors that have not been examined before alone nor in combination and show that the composition of the team as well as precognitions of the team members in terms of diversity beliefs affect the effectiveness of diversity trainings. Moreover, we show that team efficacy, which is a crucial variable in the training literature (Aguinis & Kraiger, 2009; Salas & Cannon-Bowers, 2001; Salas et al., 2012), is a driver of the effects of diversity trainings. Whereas being able to put the acquired knowledge to use in subsequent performance leads to higher efficacy and better creative performance, not being able to use the trained knowledge and capabilities leads to lower experienced team efficacy and lower subsequent creative performance.

Regarding the work on diversity, we show that one crucial predictor of diverse

team performance is whether or not teams went through a diversity training. Again, nationality diversity alone is not a predictor of team outcomes (see van Knippenberg et al., 2004), but moderators determine whether or not nationality diversity has a positive effect on team creativity. By including diversity beliefs, we show that the effects of diversity also depend on the way team members feel about diversity. Our results suggest that diversity trainings may serve as a compensation for low levels of diversity beliefs, but only to the extent that teams actually are diverse and thus have a broadened pool of resources that they can utilize. Thus, for those groups that have low levels of previously held diversity beliefs, i.e. similarity-beliefs, our diversity training had the strongest impact. The newly acquired techniques and skills for working in diverse teams only improved performance for heterogeneous teams because they might have enabled the team to utilize an otherwise unused resource, namely diversity. In contrast, homogeneous teams that had low levels of diversity beliefs did not profit from the diversity training. In these teams, the training assumption – that of high levels of team diversity – was violated. The fact that they could not implement what they just learned resulted in lower team efficacy, which in turn resulted in less creative performance (Salas et al., 2012).

The findings regarding the teams with relatively higher levels of diversity beliefs are somewhat more puzzling. Although these teams seem to benefit slightly from a diversity training in general, they do not benefit more when their team is diverse. One possible explanation for this finding is that groups with high levels of pre-existing diversity beliefs are likely to interact more often with diverse groups and most probably have gained a better understanding of the benefits and pitfalls of working in diverse teams. This experience might help them to distinguish situations in which certain techniques, beneficial to diverse groups, are disruptive. In this case, they did not seem to fall prey to the same ‘mistake’ the low diversity-belief-groups made by

applying techniques that work in a diverse team to a non-diverse team. Moreover, following from the simple slope analyses, it seems that the creativity measure that was closely associated with nationality diversity in these teams did not benefit from the diversity training, but the more general creativity, i.e. originality did. In other words, they prevented misapplication of the training with regards to nationality-related content that they did not have the resources for, but gained skills that were relevant in a nationality-unrelated, thus more general domain in which other differences between team member might have supported originality. These teams might have profited from the training by utilizing resources other than nationality diversity, such as for instance more deep-level diversity (e.g. Harrison, Price, Gavin, & Florey, 2002). Future research could set out to examine whether diversity training helps pro-diversity teams to capitalize on a broader range of diversity dimensions.

More generally, we conclude that despite widespread application, diversity training is not always the silver bullet organizations hope it to be. Instead, diversity trainings may even have detrimental effects and one needs to consider environmental factors such as actual diversity level and pre-existing diversity beliefs in order to carefully craft the most effective diversity training.

Practical implications

Due to demographic developments, globalization, and increasing knowledge requirements in modern societies, team diversity in organizations is constantly increasing (Janz, Buengeler, Eckhoff, Homan, & Voelpel, in press). If companies are to successfully master these challenges and leverage the advantages of a heterogeneous workforce, they have to endow their teams with the skills and capabilities needed to make use of this diversified body of knowledge.

Interestingly enough, most organizations provide diversity trainings for all their

employees, arguing that they should be prepared to deal with diversity. However, our results show that this might be an ineffective way of training the workforce. If indeed some teams are largely unaffected, and others are even harmed by diversity trainings, organization should be more attuned to important characteristics of the team and trainees. Our results suggest that – under specific circumstances – diversity trainings might have the expected favorable results that organizations hope for. However, a misapplication of diversity training might disrupt a team's performance and thus endanger organizational success.

For one, as diversity trainings prepare for working in diverse teams, neglecting the actual level of the team's diversity is a serious shortcoming. Based on the assumption that diversity is able to enhance innovative performance, companies have invested innumerable financial resources to provide their teams with more or less rigorously conceptualized diversity trainings. The decision on whether teams should be trained or not has mostly been done regardless of the actual diversity in these teams as well as regardless of pre-existing attitudes towards team diversity. However, as organizations are increasingly pressurized to save the scarce financial and human resources, the question whether and when these diversity trainings are effective or not is vital.

Moreover, pre-existing diversity beliefs seem to be a crucial factor as well, and organizations are wise to assess these before having teams participate in a diversity training. Although teams with higher levels of diversity beliefs do not seem to be harmed by a diversity training, they do not necessarily gain anything by it either. Moreover, making these types of trainings voluntary also seems to be problematic based on our findings. Previous work has shown that people with more positive beliefs about diversity are also most likely to attend diversity trainings (see for instance Bezrukova et al., 2012). As a consequence, optional corporate diversity

trainings may carry the danger of preaching to the choir, without actually improving the effectiveness of diverse teams.

Hence, organizations are well-advised to first determine a team's boundary conditions to decide whether a diversity training is indicated or not. For heterogeneous teams, diversity training might be a powerful way to stimulate a team's creative output. Accordingly, the practice of mandating diversity trainings will help to increase performance, especially for employees with initially low beliefs in diversity, who are less likely to participate in such trainings when they are optional. However, companies should be highly cautious which kind of training to apply whenever teams are homogeneous and do not believe in the value of diversity. Our findings seem to suggest that it is detrimental to make these teams participate in diversity trainings.

Concluding, managers should be aware that positive effects of diversity trainings are by no means self-evident. Companies that take into account whether diversity training is indicated for a specific team or not, will be more successful in their efforts to manage diversity and in addition may save scarce resources that can be employed more effectively elsewhere.

Limitations and further research

First, while controlled experimental designs provide high internal validity, their external validity in turn is limited. However, to clearly establish causal links for the effectiveness of a training, a laboratory experiment is necessary (Ilgen, 1986), which – in a second step – can be transferred and further validated in field settings. Albeit controlled manipulation of treatment in organizations is difficult, future research is warranted that examines the external validity of our findings in the field. However, the teams that participated in our study performed an highly motivating and involving

task, which shows significant parallels with actual tasks in organizations, creating considerable psychological realism (Dipboye, 1990).

Second, groups in this study completed one creativity task. It would be interesting to know whether it is possible to replicate our findings to tasks that are more typically used in creativity research, such as an alternative uses task (e.g. Plucker & Renzulli, 1999) or tasks that differ in terms of their complexity (i.e. gestalt completion tasks; Friedman & Förster, 2000) or creative drawing tasks (Maddux & Galinsky, 2009). We decided to choose the described marketing task to create a team creativity setting which is comparable to creativity tasks in actual organizations. Relatedly, we decided to focus on creativity as our outcome variable in order to stay close to the "value-in-diversity" hypothesis (Cox et al., 1991), which proposes that diversity leads to more innovative teams. However, this begs the question of whether these findings would also be obtained for different performance measures such as decision-making, negotiating conflicts of interest, or executing work (McGrath, 1984).

Third, in this study, we focused on team efficacy as mediator, because this construct has been seen as crucial to training effectiveness (e.g., Salas et al., 2012). Other mediators, such as team motivation, post-training diversity beliefs, or elaboration of task-relevant information might be interesting mediators to look at. Thus, future research might also test our model based on other explanatory mechanisms to disentangle the relative explanatory power of differing mediational processes.

Finally, our sample was inherently diverse on nationality, making this the focal diversity dimension of interest. Of course, there are many other diversity dimensions in organizations and future research might warrant examining whether our findings also replicate to, for instance, sex, age, or personality diversity. Based on previous reasoning (van Knippenberg et al., 2004), proposing that all diversity dimension can

potentially lead to positive and negative effects, we do not expect that findings would be different for other diversity dimensions, but this is of course still an empirical question.

Conclusion

In sum, the empirical findings in this study suggest that – under certain conditions – diversity training can help teams to achieve high creative performance. High team diversity, but low favorable diversity beliefs provide an optimal basis on which diversity training can be successful, while training under the condition of low diversity – given equally low diversity beliefs – may seriously deteriorate team performance. We hope that these results will stimulate further research in the realm of diversity training, helping organizations to make full use of a diverse workforce.

Footnote

¹ Two participants did not show up for the experiment, leaving two groups with only three group members. One of the groups (control condition) did not complete the group creativity task. These groups were excluded from data analysis.

CHAPTER 5

General Discussion

In the previous chapters, I presented empirical studies with different foci, but with common and recurring topics, creativity and diversity being the two most important ones. The findings of each study have so far been discussed separately in each chapter. In this last chapter, I will discuss the topics that recurred in this thesis and conclude with the more general relevance of this thesis and point to opportunities for future research.

General Discussion

For many, creativity is just a way to produce art such as paintings, music or poems. However, I strongly believe that creativity is a fundamental human capability that is needed in everyday life (Richards, 1990) and in organizations as well (Voelpel, Leibold, & Eckhoff, 2006). In other words, creativity is not just a “nice to have”, but an essential ingredient to cope with and being successful in a fast paced and changing innovation society such as ours (Voelpel, Leibold, Eckhoff, 2006).

Parallel to the innovation mega-trend, demographic change increases workforce age diversity as well as other kinds of diversity, such as nationality diversity.

As such, understanding the factors enabling diverse teams to exploit their creative performance potentials is essential for sustained organizational success and for innovations that help improve the lives of so many, be it in terms of a new product, a new service, a new process or other kinds of innovative outputs that originate in a diverse team’s creativity.

In this dissertation, I started by asking how diverse teams are composed and if older individuals are more likely to select a diverse team for a complex and thus creative task. More specifically, in Chapter 2, I examined the degree of diversity or

homogeneity that adults below 30 and above 50 years of age would select for solving a simple or complex task. I found that older adults, even more so if they were comparatively open to new experiences, are more likely to select a diverse team for a complex task, which should according to the literature (e.g. Jehn et al., 1999) lead to better performance. If older managers in fact do select diverse teams for creative tasks, it is important to ask what factors can help or hamper the performance of such diverse teams. Therefore, in Chapter 3, I examined how elderly stereotypes influence the success of younger and older individuals working together on a creative and therefore complex task. Following from the results of this study, positive or negative beliefs about older individuals influence the cognitive style and thus the creative output a team generates. Having found such differences and that differences, i.e. in terms of diversity, can, in combination with certain beliefs, influence creative team performance, I was consequently interested in the factors that can help overcome the problems that some diverse teams may face. In organizations, an often used method to achieve this are diversity trainings. Consequently, in Chapter 4, I investigated why diversity training seems to sometimes be helpful and sometimes not (Paluck, 2006), identifying beliefs about diversity and the actual level of team nationality diversity as important team characteristics to consider.

Below I will discuss the most important theoretical implications that result from the studies presented in this dissertation and conclude by indicating future research opportunities that may follow. In doing so, I will focus on the general and reoccurring issues of this thesis.

Recurrent issues of this thesis and general insights

Creativity and diversity

What are drivers of group creativity? How can organizations help teams to be creative and create an environment in which teams can attain their full creative potential? Previous studies on group creativity, have often found that groups in fact generate fewer ideas than the sum of its individual members would (Diehl & Stroebe, 1991). Still, in more and more organizations, the knowledge needed for innovative solutions is seldom contained within one individual only, but usually dispersed. For the development of a new online tool for instance, developers, user interface designers, content providers and management have to come together to create a successful product. This was already the case when the first computer mouse was created. The scientists from XEROX had the product, but without the business mind of Steve Jobs and the engineering skills of IDEO, the mouse was just a scientific gadget at PARC. Scientists from XEROX, an entrepreneur from Apple and a team of engineers from IDEO were needed to finally turn the computer mouse into a success (see Gladwell, 2011 for a more detailed account).

However, as the extant literature suggests (Williams & O'Reilly, 1998; van Knippenberg & Schippers, 2007), the success of diverse groups is not self-evident and depends on a number of contingency factors. One such factor for instance is the level of task complexity. While simple tasks are thought not to benefit from team diversity, this has been found to be the case for complex tasks (Jehn et al., 1999). Almost by definition, creativity is complex as it is characterized by a multitude of possible solutions, while the outcome is not yet known. In Chapter 2, I did not address creativity directly, but looked at the different team selection choices that simple versus complex task elicited. One may – with caution – transfer these results

to tasks in which creativity is crucial. Extrapolating from Chapter 2, it might be the case that older individuals, especially those high in openness to experience, would also choose a more diverse team for creative tasks as compared to simpler tasks. This decision should generally lead to better creative team performance (Bowers, Pharmer, & Salas, 2008; Jehn et al., 1999; Higgs, Plewnia, & Ploch, 2005; Horwitz & Horwitz, 2007; Stewart, 2006; Van der Vegt & Van de Vliert, 2005).

Since in times of demographic change and rising retirement age in many European countries, age diversity in organizations is likely to increase (Leibold & Voelpel, 2006), Chapter 3 investigated the implications of positive and negative elderly stereotypes on creative performance of age diverse teams. Accordingly, in comparison to younger group members, older group members' creative fluency suffered from negative elderly stereotype priming, while benefiting from positive elderly stereotype priming. Moreover, Chapter 3 investigated the effects of stereotyping in conjunction with team level conscientiousness. I proposed a dual pathway towards creativity that would also be present in teams, which was only confirmed for fluency, but not for the depth dimension. Stereotypes, therefore, may act as stopper or pusher for conscientious-related behavior that in turn can hamper or support creativity, depending on individual or group conscientiousness level. The more traditional view of creativity is that conscientiousness will lead to decreased levels of creativity, usually measured in terms of fluency (or flexibility and originality; Guilford, 1967; Torrance, 1966). However, in Chapter 3, I also found some evidence for a second pathway, namely one that enables highly conscientious teams to be creative. Under a negative elderly stereotype priming condition, these teams seem to use their more conscientiousness-related processing style, namely perseverance and

structuring for creative ideas possibly too much. In contrast, it might be exactly this more structured and perseverant approach that is induced by a negative stereotyping that motivates less conscientious teams to become more structured with positive results for their creative output. Similar to Rietzschel et al. (2007), I found that both fluency and depth benefitted from a positive environment, namely elderly stereotype priming, when teams were highly conscientious. In contrast, for less conscientious teams the results were diametrically opposed and negative stereotyping in fact improved creative performance on both dimensions.

In other words, conscientious teams can be creative given the right environment that is probably associated with a promotion rather than a prevention focus. As such, negative elderly priming seems to have induced a more structured approach for those generally low in conscientiousness and diminished a structured approach in case of already conscientious teams. Chapter 3 thus confirms and extends Rietzschel et al.'s results on a team level and with yet a different personality trait that induces individuals to use a more structured and perseverant task approach to creativity. In this, Chapter 3 found that stereotype threat can in fact have negative and also positive results depending on the level of team conscientiousness. This might be a new avenue for research as to our knowledge, most studies on stereotype functioning (e.g. Steele, 1997) associate stereotype threat with lower performance.

While increasing age diversity is one direct outcome of demographic change, it is of course not the only dimension of diversity that has been increasing (Leibold & Voelpel, 2006). One of the most important diversity dimensions for organizational performance is nationality diversity (see for instance van Knippenberg & Schippers, 2007), which is the focus of Chapter 4. If teams are so vulnerable to outside

influences as Chapter 3 has shown, it is important to know when and how to best cope with or benefit from negative (and positive) influences. Many organizations therefore choose to provide their employees with diversity training (e.g., Bezrukova et al., 2012; Overmyer Day, 1995). Chapter 4 found diversity training, actual team diversity and diversity beliefs to interact in determining group creativity. These effects were driven by the team's perceived efficacy – at least in the case of nationality-related creativity. More specifically, diversity training had an effect on team efficacy for groups with low levels of diversity beliefs, such that team efficacy was higher when actual team nationality diversity was high rather than low. Team efficacy seemed to be related to nationality-related creativity, but not to nationality-unrelated creativity. Thus, for teams with low levels of diversity beliefs, diversity training seems to have an effect through team efficacy on performance, such that training, team characteristics and creativity task content have to be aligned, in this case towards nationality diversity. Interestingly, for teams with high diversity beliefs, this did not seem to be the case. These teams were less influenced by the level of actual team nationality diversity and thus might have been able to utilize deep level differences of the team (e.g. Harrison, Price, Gavin, & Florey, 2002). In sum, the findings of this dissertation support therefore the contingency approach to investigating team diversity and extend it towards different creativity dimensions and moderators, such as beliefs or training.

Age, personality and diversity competence

The advantages of an age diverse workforce have often been discussed (see for instance Leibold & Voelpel, 2006). While younger employees usually have higher levels of fluid intelligence, older employees are supposed to have gained through

their life experience, a higher level of crystallized intelligence (Baltes, Lindenberger, & Staudinger, 2006). Chapter 2 tests a variation of this theory and finds that indeed, older individuals better sense the advantages and disadvantages of diverse teams for different task complexity levels, most likely due to their higher crystallized intelligence. This was especially the case when older individuals were open to new experiences. I suggested that the openness to experience trait supports individuals in gaining experience and thus knowledge over their lifetime, especially with regards to working in diverse teams.

While not focusing on age, Chapter 4 seems to find a similar mechanism: Creativity of groups with high pre-existing diversity beliefs was not hampered after diversity training by low levels of actual nationality diversity, as it was the case for teams with low diversity beliefs. In other words, high levels of diversity beliefs were associated with a smaller likelihood to misapply the given diversity training to a non-diverse group. Similar to older individuals high in openness to experience, individuals with high diversity beliefs are likely to seek diversity more and thus may gain a better tacit knowledge of when and how to apply certain diversity skills. Thus, the ability to decide when diversity is beneficial and how to work in diverse teams is part a more general diversity competence that seems to be promoted by both openness to experience and diversity beliefs, which are – as pointed out earlier – positively related to each other (Homan et al., 2008, 2010). More generally, experience with diverse teams, originating from diversity beliefs or being open to respective experiences over the lifetime, seem to support individual and thus teams in making diversity work and help diverse teams perform better by overcoming some of the performance barriers that these teams often face. In addition, diversity training

needs to be seen in combination with other important influencing factors such as actual diversity level and preexisting beliefs. As in the diversity literature, it seems to be time to take a contingency approach to research on diversity training as well.

The importance of beliefs

This thesis was based on the findings in the literature that the effect of team diversity depends on moderators, such as for instance beliefs (van Knippenberg & Schippers, 2007). Both Chapter 3 and 4 address different beliefs as moderators. In Chapter 3, beliefs were represented as positive and negative stereotypes – i.e. the belief that a certain group has stereotypical characteristics. Accordingly, positive elderly stereotypes improved creative performance in older participants, while negative elderly stereotypes improved the creative performance of younger participants. Significant negative effects on either subgroup were not found. Thus, the results hint towards a mechanism that is based on stereotype lift rather than stereotype threat. Furthermore, the negative stereotype priming seems to have “switched on” heightened and – in case of low-conscientious teams - more functional conscientiousness-related behaviors associated with perseverance or structuring, leading to a better creative performance than was the case under positive stereotype priming. In other words, stereotypical beliefs about a certain group can direct entire teams, especially when the stereotyped subgroup is dominant, towards one or another task approach, resulting in lower or higher levels of creativity.

In Chapter 4, I identified diversity beliefs yet again as a moderator, influencing the relationship of diversity training, actual diversity and creative performance, such that the relationship was stronger when diversity beliefs were low rather than high. Thus,

when teams had low levels of diversity beliefs, the impact of the diversity training was highest. In addition, these effects affected group performance through the group's belief in its own success, i.e. group efficacy. Accordingly, the interaction of diversity training, actual diversity and diversity beliefs impacted creative performance through group-efficacy.

Thus, following previous findings (Homan et al., 2010), this dissertation finds beliefs, especially those that are related to diversity, either as stereotypical beliefs about another group or as general beliefs about diversity itself, to potentially explain some of the inconsistent findings regarding team diversity effects on performance (van Knippenberg & Schippers, 2007).

Next steps for research: Future Directions (Overarching)

Although the present research addresses some questions of how creativity in diverse teams can be promoted, there are still some open questions that are beyond the scope of this dissertation.

Dual pathway of creativity

In addition to the individual-level study by Rietzschel et al. (2007), this dissertation provides further evidence on a group level for a second pathway towards creativity. As such, it seems increasingly plausible that a structured and perseverant approach to creativity can lead to creativity as compared to a more flexible approach that is usually associated with creative fluency. Since there are only few studies to date investigating these different pathways, more research is needed to disentangle the processes involved and to identify the driving contextual factors (such as age,

personality or beliefs) that switch “on” and “off” the tendencies to use either the flexible or the perseverant route. Equipped with this knowledge, the myth of the happy and thus cognitively flexible creator might be tarnished. Some research in this area has already found that creativity may benefit from both the positive and negative affect (George & Zhou, 2007), which is again associated with different cognitive processes or regulatory foci. Accordingly, future research might investigate how alternating between both creativity approaches over time may lead to the best creative solutions.

Also, the question of group versus individual studies remains an interesting one, that might be addressed in future research. Here multilevel studies incorporating individual and group influences on both, the road to creativity (i.e. flexible or structured) will likely be beneficial.

In addition, transferring the existing experimental studies to the field might yield interesting empirical results. Following the current studies, there is still little known about how appropriate either creative task approach is for coming up with, working on and implementing innovations in a real business context. Which is better, the flexible approach or the perseverant? As George and Zhou’s study (2007) suggests, both approaches need to be combined. To find empirical support for either hypothesis would likely add value to the literature.

Finally, the scope of the creative problem might represent an informative variable. For instance, creative approaches might need to differ when attempting to come up with incremental innovations, such as improving an existing computer mouse, as compared to radical innovation where a broader, more flexible approach might at first be more beneficial.

Stereotype effects in groups

In Chapter 3, I have found that when older group members were dominant, the creativity of their younger group members was not utilized and the resources that the group originally had were not fully exploited. In this area, more research is needed in order to achieve a better understanding of the possible spill-over effects that accompany subgroup stereotyping and that transfer certain cognitive styles to the entire group. While in the present study, intra-team dominance seemed to have played a role, it would be interesting to know how exactly this process works and whether other mediators might have similar effects. Also relatively rare to date are studies investigating the different stereotype effects that pertain to groups with regards to direct and indirect stereotype lift as well as direct and indirect stereotype threat within one study. Thus, more studies that include all four effects (direct and indirect stereotype threat and stereotype lift respectively) are needed.

In this dissertation, I focused on elderly stereotypes, however, it is easy to conceive of a similar study design that investigates stereotypes against younger individuals. Here, it would be interesting to see whether similar effects can be found, i.e. whether stereotypes against the younger subgroup also influence the entire group's creative approach.

In addition, the stereotype content may be changed. While this dissertation focused on elderly stereotypes, there are plenty of other stereotypes to be investigated, such as gender, nationality, race, to name but a few.

Finally, while stereotypes are likely to create subgroup categorization (Richards & Hewstone, 2001), this might not be the main reason for suboptimal group performance (van Knippenberg, De Dreu, & Homan, 2004). Accordingly, performance losses often stem from subgroup biases that often accompany

subgroup stereotyping, which might be buffered by group diversity beliefs (Homan, van Knippenberg, Van Kleef, & De Dreu, 2007).

The importance of beliefs and diversity competence for team diversity

In the two later empirical chapter, beliefs were an important moderator. Homan, Greer, Jehn, and Koning (2010), proposed that diversity beliefs determine how actual diversity translates into perceived diversity. They argue that diversity beliefs help construe diversity as individual differences, instead of subgroups. Following the present results, I propose that there is a general relationship between diversity beliefs and a general diversity competence as described above. This is not necessarily the same, as diversity competence can lead to better decisions, as in Chapter 2, or avoid negative consequences from misapplying a diversity training as in Chapter 4. Accordingly, future research would benefit from investigating whether diversity competence is in fact a consequence of high diversity beliefs or whether the causal link can be established the other way around. And if diversity training does prove to be beneficial, the contextual factors that promote diversity training's effectiveness, such as personality traits or prevention or promotion cues, need to be investigated.

In this vein, diversity beliefs have been shown to be strongly associated with openness to experience (Homan et al., 2007, 2008), implying that beliefs might have played a role during team selection as well. Accordingly, future scientists might formulate and test the hypothesis that positive beliefs about diversity may, similar to openness to experience, enhance the abilities of older individuals to make appropriate team choices. Thus, the ability to decide when diversity is beneficial and how to work in diverse teams is part of a more general diversity competence that seems to be promoted by both openness to experience and diversity beliefs.

Chapter 2 addressed openness towards experience which was associated with better team staffing decisions of older individuals and with higher diversity competence. As I suggested, openness to experience might in general lead to a higher degree of involvement with diverse groups or diversity at large. However, in combination with team staffing decisions, this is so far an untested thesis, which needs to be tested by further research to understand the process through which openness promotes diversity competence, possibly over the lifespan. As such, future studies might focus on how openness determines how individuals interact in diverse groups and as a result thereof enjoy a better ability to match team diversity to team task demands.

I thus suggest future research to investigate how the openness to experience trait supports tendencies of individuals to gain experience with diversity over their lifetime, especially with regards to working in diverse teams and thus benefit in terms of diversity competence.

While in Chapter 3, stereotypes about one subgroup were manipulated and in Chapter 4, diversity beliefs were assessed by means of a questionnaire, it would be interesting to manipulate diversity beliefs directly (Homan et al., 2007). One way in which this is done in practice is diversity training. However, while some studies do find positive effects of diversity training on diversity beliefs (Whitt, Edison, Pascarella, Terenzini, & Nora, 2001), the data of the study presented in Chapter 4 did not support such training effects on diversity beliefs. In general, while a variation of the standardized Multicultural Awareness-Knowledge-Skills Survey (MAKSS; D'Andrea, Daniels, & Heck, 1991), is often used to assess diversity knowledge, diversity beliefs are less frequently investigated in relation with diversity training outcomes (Kulik &

Roberson, 2008). This begs the question as to what are appropriate measures to boost diversity beliefs in a society or organization.

Conclusion

How do diverse teams come into existence? Are they allocated to the right kind of tasks? How do elderly stereotypes influence age diverse groups? How can different pathways towards creativity be best utilized? What makes diversity training effective? And what role do different creativity dimensions, such as fluency, originality, flexibility, depth or nationality-related and nationality-unrelated creativity, play in assessing all the above? The theoretical and empirical work presented in this dissertation addressed the above questions and showed that team creativity is a complex issue, even more so if coupled with team diversity. Many factors including personality, age, and beliefs have to be taken into account. However, besides all moderators and mediators, mediated three-way interactions and other scientific approaches to solve this puzzle, this thesis demonstrates that the path to achieving creativity in diverse teams is more difficult and paved with more obstacles than it is the case for homogeneous teams, but at the same time team diversity is the much more promising route to take.

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Summary

FINDING LEVERS FOR INNOVATION IN DIVERSE TEAMS

How do diverse teams come into existence? Are they allocated to the right kind of tasks? How do elderly stereotypes influence age diverse groups? How can different pathways towards creativity be switched on or off? What makes diversity training effective? And what role do different creativity dimensions, such as fluency, originality, flexibility, depth or nationality related and nationality unrelated creativity, play in assessing all the above? The theoretical and empirical work presented in this dissertation addresses the above questions and shows that team creativity is a complex issue, even more so if coupled with team diversity.

First, this dissertation investigates age-related differences with regard to team staffing decisions. Accordingly, older individuals were better able to match task type (e.g. simple or complex/creative tasks) and team diversity level (homogeneous or heterogeneous).

Second, in four-person groups consisting of two younger and two older adults, elderly stereotypes were manipulated. This thesis finds that the creative fluency and depth of highly conscientious age-diverse teams was higher when elderly stereotypes were positive, and respectively lower for the control group and the negative age-stereotype condition.

Third, this thesis finds that a team's actual nationality diversity (i.e., the possibility to apply the training) as well as the diversity beliefs of the team members (i.e., the personal need for the training) interact in determining group creativity following a diversity training. Accordingly, teams with relatively low levels of diversity beliefs benefitted most from a diversity training, provided that they could actually use the training in their nationality diverse team

In sum, many factors including personality, age, and beliefs have to be taken into account. The path to achieving creativity in diverse teams is more difficult and paved with more obstacles than it is the case for homogeneous teams, but at the same time team diversity is the much more promising route to take.

Appendix

Appendix Chapter 2

Study 1: Programming instructions and question items for online questionnaire

Vielen Dank für die Teilnahme an dieser Studie. Im folgenden stellen wir Ihnen eine Anzahl an Fragen zu Ihrer Persönlichkeit. Hierbei gibt es keine "richtige" oder "falsche" Antwort. Menschen sind verschieden und wir sind daran interessiert, wie Sie persönlich diese Fragen beantworten. Die Fragen beziehen sich auf wichtige Persönlichkeitsdimensionen, die sehr wichtig für diese Studie sind. Die Antworten die Sie geben sind anonym und können somit nicht mit Ihrer Person in Verbindung gebracht werden.

Lesen sie die Instruktionen genau durch und beantworten Sie bitte die darauf folgenden Fragen.

Vorerst einige wenige Angaben zu Ihrer Person:

Frage	Output (keine Mehrfachnennungen möglich; alle Felder mandatory falls nicht anders erwähnt)
Wie alt sind Sie?	<Eingabefeld>
Staatsangehörigkeit:	<drop down menu inkl. "andere" mit Eingabefeld>
Zu welchem Kulturkreis fühlen Sie sich zugehörig?	<drop down menu inkl. "andere" mit Eingabefeld>
Geschlecht	Männlich / weiblich <check box>
Bildung	
IF Studium: Studium (Studienrichtung)	<Eingabefeld>
IF Studium: Studium (Weitere Studienrichtung, falls vorhanden)	<Eingabefeld> optional

<BFI

Skala:

sehr gut

gut

teils/teils

wenig

überhaupt nicht>

<keine mehrfachnennungen möglich, alle Fragen mandatory, für die Auswertung: starke Ablehnung = 1 ... starke Zustimmung = 5>

Bitte bewerten Sie, inwieweit jede der folgenden Aussagen auf Sie zutrifft oder nicht zutrifft.

Ich sehe mich selbst als jemand der...	sehr gut 1	gut 2	teils/teils 3	wenig 4	überhaupt nicht 5
... gesprächig ist, sich gerne unterhält					
... dazu neigt, andere zu kritisieren					
... Aufgaben gründlich erledigt					
... deprimiert, niedergeschlagen ist					
... originell ist, neue Ideen entwickelt					
... eher zurückhaltend und reserviert ist					
... hilfsbereit und selbstlos gegenüber anderen ist					
... etwas achtlos sein kann					
... entspannt ist, sich durch Stress nicht aus der Ruhe bringen lässt					
... vielseitig interessiert ist					
... voller Energie und Tatendrang ist					
... häufig in Streitereien verwickelt ist					
... zuverlässig ist und gewissenhaft					
... leicht angespannt reagiert					
... tief sinnig ist, gern über Sachen nachdenkt					
... begeisterungsfähig ist, andere mitreißen kann					
... nicht nachtragend ist, anderen leicht vergibt					
... dazu neigt, unordentlich zu sein					
... sich viele Sorgen macht					
... eine lebhaft Vorstellungskraft hat, fantasievoll ist					
... eher still und wortkarg ist					
... anderen Vertrauen schenkt					
... bequem ist und zur Faulheit neigt					
... nicht leicht aus der Fassung zu bringen ist					
... erfinderisch und einfallsreich ist					
... durchsetzungsfähig und energisch ist					
... sich kalt und distanziert verhalten kann					
... nicht aufgibt, ehe die Aufgabe erledigt ist					
... manchmal etwas launisch sein kann					
... künstlerische und ästhetische Eindrücke schätzt					
... manchmal schüchtern und gehemmt ist					
... rücksichtsvoll und einfühlsam zu anderen ist					
... tüchtig ist und flott arbeitet					
... ruhig bleibt, selbst in angespannten Situationen ausgeglichen ist					
... routinemäßige und einfache Aufgaben bevorzugt					
... aus sich herausgeht, gesellig ist					
... schroff und abweisend zu anderen sein kann					
... Pläne macht und diese auch durchführt					
... leicht nervös und unsicher wird					
... gerne Überlegungen anstellt, mit Ideen spielt					
... nur wenig künstlerische Interessen hat					
... es mag mit anderen zu kooperieren					
... leicht ablenkbar ist, nicht bei der Sache bleibt					
... sich gut in Musik, Kunst und Literatur auskennt					
... gesprächig ist, sich gerne unterhält					
... dazu neigt, andere zu kritisieren					
... Aufgaben gründlich erledigt					
... deprimiert, niedergeschlagen ist					
... originell ist, neue Ideen entwickelt					
... eher zurückhaltend und reserviert ist					
... hilfsbereit und selbstlos gegenüber anderen ist					

*<Learning & Performance Orientations
Skala:*

1 – starke Ablehnung

2 – Ablehnung

3 – Neutral

Zustimmung

starke Zustimmung>

<keine mehrfachenennungen möglich, alle Fragen mandatory

Auswertung: starke Ablehnung = 1 ... starke Zustimmung = 5>

1. Ich ziehe es vor Dinge zu tun, in denen ich gut und nicht schlecht bin.
2. Ich bin am glücklichsten bei der Arbeit, wenn ich Aufgaben mache, von denen ich weiß, dass ich keine Fehler machen werde.
3. Die Dinge, die ich am liebsten mache, sind die Dinge, die ich am Besten kann.
4. Die Meinungen von anderen darüber wie gut ich bestimmte Dinge tun kann sind mir wichtig.
5. Ich fühle mich schlau, wenn ich etwas tue ohne einen Fehler zu machen.
6. Ich ziehe es vor, relativ sicher zu sein, dass ich eine Aufgabe erfolgreich beenden kann, bevor ich sie anfangen.
7. Ich arbeite gerne an Aufgaben, in denen ich in der Vergangenheit gut war.
8. Ich fühle mich schlau wenn ich etwas besser kann als die meisten anderen.
9. Gelegenheit zu haben, herausfordernde Aufgaben anzugehen, ist mir wichtig.
10. Wenn ich es nicht schaffe eine schwierige Aufgabe zu lösen, nehme ich mir vor das nächste Mal härter dafür zu arbeiten.
11. Ich ziehe Aufgaben vor, die mich zwingen neue Dinge zu lernen.
12. Die Gelegenheit neue Dinge zu lernen ist mir wichtig.
13. Ich gebe mein Bestes, wenn ich an einer relativ schweren Aufgabe arbeite.
14. Ich gebe mir große Mühe meine vorherigen Leistungen zu verbessern.
15. Die Gelegenheit die Reichweite meiner Fähigkeiten auszuweiten ist mir wichtig.
16. Wenn ich Schwierigkeiten habe ein Problem zu lösen, versuche ich gerne verschiedene Herangehensweisen um zu sehen welche funktioniert.

Lesen Sie die folgenden Aussagen und entscheiden Sie inwiefern Sie mit Ihnen übereinstimmen, basierend auf Ihren Einstellungen, Vorstellungen und Erfahrungen. Bitte nutzen Sie die folgende Skala und verwenden Sie jeweils nur eine Ziffer für Ihre Antwort.

<Need for closure

Skala:

starke Ablehnung

moderate Ablehnung

schwache Ablehnung

schwache Zustimmung

moderate Zustimmung

starke Zustimmung>

<keine mehrfachenennungen möglich, alle Fragen mandatory

Auswertung: starke Ablehnung = 1 ... starke Zustimmung = 6>

- 1 Bei Unsicherheiten ziehe ich es vor eine schnelle Entscheidung zu treffen, was auch immer sie sein wird.
- 2 Wenn ich mich mit verschiedenen, potentiell richtigen Alternativen konfrontiert sehe, entscheide ich mich schnell und ohne zu zögern für eine der Alternativen.
- 3 Ich bin noch nie zu spät zur Arbeit oder zu einer Verabredung gekommen.
- 4 Ich ziehe es vor mich für die erste verfügbare Lösung zu entscheiden, anstatt lange darüber nachzudenken welche Entscheidung ich treffen soll.
- 5 Ich werde ärgerlich wenn die Dinge um mich herum nicht an ihrem Platz sind.
- 6 Generell vermeide ich es an Diskussionen über verschwommene und kontroverse Probleme teilzunehmen.
- 7 Wenn ich mit einem Problem konfrontiert bin, denke ich nicht zu lange darüber nach und entscheide ohne zu zögern.
- 8 Wenn ich ein Problem lösen muss, verschwende ich generell keine Zeit damit verschiedene Sichtweisen dazu zu beachten.
- 9 Ich ziehe es vor mit Menschen zusammen zu sein, die gleiche Ideen und Geschmäcker haben wie ich selbst.
- 10 Generell suche ich nicht nach alternativen Lösungsmöglichkeiten für Probleme, für die ich bereits eine Lösung greifbar habe.
- 11 Ich fühle mich unwohl wenn ich es nicht schaffe schnell eine Antwort auf Probleme zu geben, mit denen ich mich konfrontiert sehe.
- 11 Ich habe noch nie die Gefühle einer anderen Person verletzt.
- 12 Jede Lösung für ein Problem ist besser als in einem Zustand der Unsicherheit zu verweilen.
- 13 Ich ziehe Aktivitäten vor, wo immer klar ist was getan werden muss und wie es getan werden muss.
- 14 Nachdem eine Lösung für ein Problem gefunden wurde, glaube ich, dass es eine nutzlose Verschwendung von Zeit ist, weitere verschiedene Lösungsmöglichkeiten in Betracht zu ziehen.
- 15 Ich ziehe Dinge die ich gewohnt bin solchen vor, die ich nicht kenne und die ich nicht vorhersehen kann.

<Personal Need for Structure (Thompson, Naccarato, & Parker, 2001)

Skala:

starke Ablehnung

moderate Ablehnung

schwache Ablehnung

schwache Zustimmung

moderate Zustimmung

starke Zustimmung>

<keine mehrfachnennungen möglich, alle Fragen mandatory

Auswertung: starke Ablehnung = 1 ... starke Zustimmung = 6>

- 1 Es stört mich in eine Situation hinein zu gehen, ohne zu wissen was ich erwarten soll.
- 2 Ich fühle mich nicht gestört durch Dinge, die meine tägliche Routine unterbrechen.

- 3 Ich finde Gefallen daran eine klare und strukturierte Lebensweise zu haben.
- 4 Ich mag es für alles einen Platz zu haben und alles an seinem Platz zu haben.
- 5 Ich mag es spontan zu sein.
- 6 Ich finde, dass ein gut geordnetes Leben, mit regelmäßigen Zeiten mein Leben langweilig macht.
- 7 Ich mag unklare Situationen nicht.
- 8 Ich hasse es meine Pläne in der letzten Minute zu ändern.
- 9 Ich hasse es mit Menschen zusammen zu sein, die unberechenbar sind.
- 10 Ich finde, dass eine beständige Routine es mir erlaubt mein Leben mehr zu genießen.
- 11 Ich genieße das Hochgefühl in einer unberechenbaren Situation zu sein.
- 12 Ich fühle mich unwohl wenn die Regeln in einer Situation nicht klar sind.

<Diversity Beliefs (Homan, Greer, Jehn, & Koning, 2008, under review)

Skala:

starke Ablehnung

moderate Ablehnung

schwache Ablehnung

schwache Zustimmung

moderate Zustimmung

starke Zustimmung>

<keine mehrfachnennungen möglich, alle Fragen mandatory

Auswertung: starke Ablehnung = 1 ... starke Zustimmung = 6>

1. Vielfalt ist wertvoll für Gruppen
2. Ich glaube das Vielfalt gut ist
3. Ich mag es mit Menschen zusammen zu arbeiten, die verschieden sind.
4. Ich bin von Vielfältigkeit begeistert.

Die folgenden Fragen beschäftigen sich mit spezifischen Erlebnissen in Ihrem Leben. Bitte antworten Sie indem Sie die entsprechende Zahl anklicken.

<Prention – Promotion / Skala: jeweils unter der Frage angegeben; keine mehrfachnennungen möglich, alle Fragen mandatory; Auswertung: *siehe unten*>

1. Sind sie im Vergleich zu den meisten anderen Menschen normalerweise nicht im Stande im Leben das zu erreichen, was Sie erreichen wollen?

1	2	3	4	5
Nie oder selten		manchmal		sehr oft

2. Hätten Sie in Ihrer Kindheit oder Jugend jemals die Grenze dessen überschritten, die Ihre Eltern nicht mehr toleriert hätten?

1	2	3	4	5
Nie oder selten		manchmal		sehr oft

3. Wie oft haben Sie Dinge geschafft, die Sie „angetrieben haben“ haben noch härter zu arbeiten?

1	2	3	4	5
---	---	---	---	---

- | Nie oder selten | ein paar Mal | viele Male |
|---|------------------|------------------------|
| 4. Sind Sie Ihren Eltern oft auf die Nerven gegangen, als sie aufgewachsen sind? | | |
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| Nie oder selten | manchmal | sehr oft |
| 5. Wie oft haben Sie Regeln befolgt, die von Ihren Eltern aufgestellt wurden? | | |
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| Nie oder selten | manchmal | immer |
| 6. Als Sie aufwuchsen, haben Sie jemals Dinge getan, die Ihre Eltern verwerflich fanden? | | |
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| Nie oder selten | manchmal | sehr oft |
| 7. Sind Sie oft erfolgreich mit verschiedenen Dingen die Sie ausprobieren? | | |
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| Nie oder selten | manchmal | sehr oft |
| 8. Ich komme ab und zu in Schwierigkeiten, weil ich nicht vorsichtig genug war | | |
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| Nie oder selten | manchmal | sehr oft |
| 9. Wenn es darum geht Dinge zu erreichen, die mir wichtig sind, finde ich, dass ich es nicht so gut schaffe, wie ich es idealerweise gewollt hätte. | | |
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| Nie richtig | manchmal richtig | sehr oft richtig |
| 10. Ich habe das Gefühl, dass ich mich gut weiterentwickelt habe um in meinem Leben erfolgreich zu sein. | | |
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| auf jeden Fall falsch | | auf jeden Fall richtig |
| 11. Ich habe sehr wenig Hobbies oder Aktivitäten in meinem Leben, die mein Interesse wecken und mich motivieren mich für sie anzustrengen. | | |
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| auf jeden Fall falsch | | auf jeden Fall richtig |

Lesen Sie die folgenden Aussagen und entscheiden Sie inwiefern diese charakteristisch für Sie sind. Falls die Aussage überhaupt nicht charakteristisch ist für Sie, wählen Sie bitte "*gar nicht charakteristisch*"; falls die Aussage sehr charakteristisch für Sie ist, wählen Sie bitte "*sehr charakteristisch*", usw.

<Need for Cognition

Skala:

gar nicht charakteristisch

einigermaßen wenig charakteristisch

weiß nicht

einigermaßen charakteristisch
sehr charakteristisch

<keine mehrfachenennungen möglich, alle Fragen mandatory

Auswertung: *gar nicht charakteristisch* = 1 ... *sehr charakteristisch* = 5; RC =
 Reverse coded, also 1 = 6, 2 = 5, 3 = 3, 4 = 2, 5 = 1>

1. Ich bevorzuge komplexe gegenüber einfachen Problemen.
2. Ich mag es, die Verantwortung zu tragen für den Umgang mit Situationen, die viel Nachdenken erfordern.
3. Denken entspricht nicht meiner Vorstellung von Spaß. (RC)
4. Ich würde lieber etwas tun, was wenig Denken erfordert, als etwas, das ganz sicher meine Denkfähigkeit herausfordert. (RC)
5. Ich versuche Situationen, in denen ich wahrscheinlich tiefgründig über etwas nachdenken muss, vorherzusehen und zu vermeiden. (RC)
6. Ich empfinde es als angenehm, gründlich und lange über etwas nachzudenken.
7. Ich denke nur so gründlich wie nötig über etwas nach. (RC)
8. Ich denke lieber über kleine, alltägliche Projekte nach als über langfristige Dinge. (RC)
9. Ich mag Aufgaben, die wenig Nachdenken erfordern, nachdem ich sie gelernt habe. (RC)
10. Mir gefällt die Vorstellung, dass ich im Leben vorankomme, indem ich mich auf meine Denkfähigkeit verlasse.
11. Ich genieße Aufgaben, bei denen ich neue Lösungen für Probleme entwickeln muss.
12. Es begeistert mich nicht sonderlich, neue Wege des Denkens zu lernen. (RC)
13. Ich mag es, wenn mein Leben aus vielen kleinen Rätseln besteht, die ich lösen muss.
14. Mich reizt die Vorstellung, über etwas Abstraktes nachzudenken.
15. Ich würde einer Aufgabe, die intellektuell, schwierig und wichtig ist, bevorzugen gegenüber einer Aufgabe, die nicht viel Denken erfordert.
16. Ich bin erleichtert statt begeistert, wenn ich eine Aufgabe erledigt habe, die große geistige Anstrengung erfordert. (RC)
17. Es reicht mir, wenn etwas erledigt wird; es interessiert mich nicht, wie oder warum es funktioniert. (RC)
18. Ich denke meist selbst dann über Dinge nach, wenn sie mich nicht persönlich betreffen.

<Power & Willingness to Use Scale

Skala:

starke Ablehnung

moderate Ablehnung

schwache Ablehnung

neutral

schwache Zustimmung

moderate Zustimmung

starke Zustimmung>

<keine mehrfachenennungen möglich, alle Fragen mandatory

Auswertung: starke Ablehnung = 1 ... starke Zustimmung = 7; RC = Reverse coded, also 1 = 7, 2 = 6, 3 = 5, 4 = 4, 5 = 3, 6 = 2, 7 = 1>

In meinen Beziehungen zu anderen Menschen...

fallen meine Wünsche nicht sehr ins Gewicht (RC)

Selbst wenn ich sie artikuliere haben meine Ansichten wenig Einfluss

werden meine Ideen und Meinungen oft ignoriert (RC)

kann ich Menschen dazu bringen mir zuzuhören

kann ich andere dazu bringen zu tun was ich sage

schaffe ich es nicht meinen Willen durchzusetzen, selbst wenn ich es versuche (RC)

habe ich das Gefühl erheblichen Einfluss zu haben

Wenn ich möchte bin ich es der/die die Entscheidungen trifft

Wenn ich meinen Willen bekommen kann, werde dies auch verfolgen

Ich mag es so oft wie möglich meinen Willen zu bekommen

Ich benutze meinen Einfluss wo immer ich kann

Es ist nicht so wichtig für mich meinen Willen zu bekommen (RC)

Wenn ich bekommen kann was ich will, werde ich es nehmen

Ich bin nicht daran interessiert die Situation zu kontrollieren (RC)

Ich möchte nicht immer sagen wo es lang geht (RC)

Ich möchte anderen meine Ansichten nicht aufzwingen (RC)

Nun haben Sie einige Fragen zu Ihren Einstellungen, Vorstellungen und Erfahrungen beantwortet.

Jetzt geht es um Teamarbeit.

Dabei werden sie später eine <condition 1: "relativ komplexe" ODER condition 2:

"relativ einfache"; 50% der Teilnehmer bekommen Condition 1 und 50% Condition 2>

Aufgabe zusammen im Team lösen. Hierzu haben Sie im folgenden die Möglichkeit

Ihr Wunsch-Team zusammenzustellen. Überlegen Sie mit welcher

Teamzusammensetzung Sie die bestmögliche Leistung erreichen können wenn es um eine komplexe Aufgabe geht und wählen Sie hiernach aus.

	Teammitglied 1	Teammitglied 2	Teammitglied 3
Geschlecht	<männlich / weiblich, keine Mehrfachnennung>	<männlich / weiblich, keine Mehrfachnennung>	<männlich / weiblich, keine Mehrfachnennung>
Alter (zwischen 17 und 71)	<Eingabefeld 2stellige Zahl; Zahl >17 und < 71>	<Eingabefeld 2stellige Zahl; Zahl >17 und < 71>	<Eingabefeld 2stellige Zahl; Zahl >17 und < 71>
Nationalität	<Liste von Ländern zum anklicken – siehe unten>	<Liste von Ländern zum anklicken – siehe unten>	<Liste von Ländern zum anklicken – siehe unten>
Bildung	<keinen Schulabschluss / Schulabschluss (Haupt-/Realschulabschluss/Abitur / Ausbildung (angefangen	<siehe erste Spalte>	<siehe erste Spalte>

	o. abgeschlossen) / Studium (angefangen o. abgeschlossen)		
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<all selections mandatory>

< Participants press the button, hier ist es besonders wichtig, dass jeder eine komplette Auswahl trifft, da sonst alles was folgt umsonst ist! >

Auswahl bestätigen

< They then get a message (next window) saying that the experimenter will need a few minutes to see whether the wishes can be fulfilled: >

Vielen Dank. Es wird nun wenige Minuten dauern bis wir das Team zusammengestellt haben. Wir werden uns große Mühe geben Ihre Auswahl möglichst genau zu berücksichtigen.

„Bitte beantworten Sie in der Zwischenzeit folgende 7 Fragen:

- Ich habe diese Teamzusammensetzung gewählt, weil ich ein homogenes oder vielfältiges Team wollte.
- Ich habe diese Teamzusammensetzung gewählt, weil ich es mag mit ähnlichen oder verschiedenen Menschen zusammen zu arbeiten.
- Ich habe das Team so ausgewählt, das es die Aufgabe möglichst gut lösen kann.
- Die kurze Beschreibung der Aufgabe (und wie complex oder einfach sie ist) hat eine Rolle bei der Auswahl gespielt
- Ich habe dieses Team ausgewählt, weil ich möchte, dass wir uns gut im Team verstehen
- Ich habe dieses Team ausgewählt, weil ich interessante Menschen kennen lernen möchte.
- Ich habe dieses Team ausgewählt, weil ich möchte, dass wir als Team die bestmögliche Leistung erbringen.

Wir bitten Sie noch um ein wenig Geduld. Ihr Team wird gerade zusammengestellt. In spätestens 5 Minuten wird Ihnen die Auswahl bestätigt.

<automatisch nach 30 Sekunden geht es weiter zum nächsten Fenster bzw. einem Pop-Up Fenster in dem folgender Text erscheint. Condition A und B werden randomisiert, so dass 50% der Participants die die Condition 1 hatten nun Condition A bekommen (und 50% B). Für Condition 2 gilt jeweils das gleiche.>

<Condition A>

Ihr Team wurde nun zusammen gestellt. Wir konnten Ihre Wünsche erfüllen.

Ihr Wunschteam bestand aus folgenden Mitgliedern:	Ihr Team für die folgenden Aufgaben besteht aus:
--	---

Teammitglied 1 <männlich/weiblich> <Alter><kulturelle Zugehörigkeit><Bildung> Teammitglied 2 <männlich/weiblich> <Alter><kulturelle Zugehörigkeit><Bildung> Teammitglied 3 <männlich/weiblich> <Alter><kulturelle Zugehörigkeit><Bildung>	Teammitglied 1 <männlich/weiblich> <Alter><kulturelle Zugehörigkeit><Bildung> Teammitglied 2 <männlich/weiblich> <Alter><kulturelle Zugehörigkeit><Bildung> Teammitglied 3 <männlich/weiblich> <Alter><kulturelle Zugehörigkeit><Bildung>
<Wunschteam und "wirkliches Team" sind identisch>	

<Condition B>

Ihr Team wurde nun zusammen gestellt. Wir konnten Ihre Wünsche leider nicht erfüllen.

Ihr Wunschteam bestand aus folgenden Mitgliedern:	Ihr Team für die folgenden Aufgaben besteht aus:
Teammitglied 1 <männlich/weiblich> <Alter><kulturelle Zugehörigkeit><Bildung> Teammitglied 2 <männlich/weiblich> <Alter><kulturelle Zugehörigkeit><Bildung> Teammitglied 3 <männlich/weiblich> <Alter><kulturelle Zugehörigkeit><Bildung>	Teammitglied 1 <männlich=weiblich/weiblich=männlich> <für Alter >43, Alter – 25; für Alter <43, Alter + 25><Nationalität=siehe unten><Bildung = siehe unten> Teammitglied 2 <männlich/weiblich> <Alter><Nationalität><Bildung = siehe unten> Teammitglied 3 <männlich/weiblich> <Alter><Nationalität><Bildung = siehe unten>

Bildung

kein Schulabschluss = Ausbildung;

Schulabschluss (Hauptschulabschluss, Realschulabschluss, Abitur) = Studium

Ausbildung (angefangen oder abgeschlossen) = kein Schulabschluss

Studium (angefangen oder abgeschlossen) = Schulabschluss

Nationalität

Western

Österreich, Belgien, Frankreich, Deutschland, Großbritannien, Irland, Liechtenstein, Luxemburg, Monaco, Niederlande, Dänemark, Schweden, Finnland, Norwegen, Island, Spanien, Portugal, Italien, Griechenland, Schweiz, Portugal, Gibraltar, USA, Kanada, Australien, Neuseeland, Malta, Polen, Slowakei, Kroatien, Slovenien, Tschechei, Ungarn,

Islamic

Mongolei, Afghanistan, Pakistan, Algerien, Ägypten, Lybien, Marocco, Sudan, Tunesien, Azerbaijan, Bahrain, Irak, Jordanien, Kuwait, Libanon, Oman, Saudi-Arabien, Syrien, Vereinigte Arabische Emirate, Jemen, Türkei, Albanien, Bangladesch, Indonesien, Malaysia, Somalia

Orthodox

Armenien, Weißrussland, Bulgarien, Zypern, Georgien, Griechenland, Moldau, Montenegro, Mazedonien, Rumänien, Russland, Serbien, Ukraine, Usbekistan, Kirgistan, Turkmenistan, Tadschikistan, Kasachstan

Latein Amerika

Mexiko, Kuba, Dominikanische Republik, Puerto Rico, Belize, Jamaika, Brasilien, Argentinien, Chile, Peru, Uruguay, Venezuela, El Salvador, Panama, Kolumbien, Bolivien, Ecuador, Paraguay

Hindu

Indien, Nepal

Sinic

China, Korea, Singapur, Taiwan, Vietnam

Japan

Sub-Sahara

Angola, Kongo, Ruanda, Burundi, Zentral-Afrika, Kamerun, Chad, Equatorial Guinea, Gabon, Kenia, Tansania, Uganda, Äthiopien, Eritrea, Djibuti, Somalia, Botswana, Malawi, Mozambique, Mauritius, Namibia, Süd-Afrika, Sambia, Simbabwe, Ghana, Nigeria, Sierra Leone, Benin, Burkina Faso, Elfenbeinküste, Mali, Nigeria, Senegal, Togo

Buddhist

Bhutan, Kambodscha, Laos, Mongolei, Myanmar, Sri Lanka, Thailand, Nepal

Japan=Orthodox

Western= Islamic

Hindu=Latin

Sinic =African

Beispiel: Jemand wünscht sich jemanden aus Indien. Indien (Kategorie Hindu wird zu Kategorie Latin) aus der Kategorie Latin wird zufällig ein Land ausgewählt, z.B. Argentinien. Anstatt Indien bekommt der Teilnehmer Argentinien.

Alles was nicht genannt wird, z.B Japan, wird automatisch mit asiatischen Ländern gepaart, damit kein "Error" angezeigt wird.>

<Scale:

1 = gar nicht

2 = ein bisschen

3 = einigermaßen

4 = erheblich

5 = äußerst

Reihenfolge der Adjektive randomisiert!!>

Wie fühlen Sie sich im Moment?

aktiv	bekümmert
interessiert	verärgert
freudig erregt	schuldig
stark	erschrocken
angeregt	feindselig
stolz	gereizt
begeistert	beschämt
wach	nervös
entschlossen	durcheinander
aufmerksam	ängstlich

Für die Gesamtleistung des Teams sind zwei Komponenten ausschlaggebend: die Summe der folgenden drei Aufgaben, die jedes Teammitglied alleine löst, sowie die Gruppenaufgabe. Beide Komponenten gehen jeweils zur Hälfte in die Teamwertung ein. Mit anderen Worten, je besser Sie bei den folgenden drei Aufgaben abschneiden, desto mehr Punkte steuern Sie zur Teamleistung bei.

Creativity task: Brick task

Aufgabe 1: Es gibt viele Möglichkeiten was man mit einem Ziegelstein machen kann. Bitte schreiben Sie im folgenden möglichst viele Verwendungsmöglichkeiten eines Ziegelsteins auf (pro Textfeld eine Verwendungsmöglichkeit). Sie haben hierfür 10 Minuten Zeit.

<bitte folgendes Bild einfügen:>



<nach der Aufgabe so viele Textfelder wie irgendwie möglich. Nach 7:30 Minuten wird eine Nachricht eingeblendet: "Sie haben noch 2 Minuten für diese Aufgabe". Nach 10 Minuten wird die Aufgabe automatisch beendet und folgende Botschaft wird eingeblendet: "Leider sind die 10 Minuten nun um. Vielen Dank. Wenn Sie nun "weiter" klicken kommen Sie zur nächsten Aufgabe">

<Skala:

starke Ablehnung

Ablehnung

Neutral

Zustimmung

starke Zustimmung>

<keine Mehrfachnennungen möglich, alle Fragen mandatory, für die Auswertung:

starke Ablehnung = 1 ... starke Zustimmung = 5>

<**Identification** (adopted from Doosje, B., Ellemers, N., & Spears, R., 1995)>

Ich erwarte, dass ich mich mit der Gruppe identifizieren werde.

Ich erwarte, dass ich mich als ein Mitglied der Gruppe sehen werde

Ich bin froh, dass ich zu dieser Gruppe gehören werde.

Ich erwarte, dass ich mich mit den Menschen in der Gruppe verbunden fühlen werde.

<**Subgroup formation** (adopted from Zellmer-Bruhn, Maloney, Bhappu, Salvador, 2008, OBHDP)>

1. Ich erwarte, dass es offensichtlich werden wird, dass unser Team gespalten ist

2. Ich erwarte, dass unsere Gruppe im Bezug auf die Interaktionen zwischen den Teammitgliedern, in Wirklichkeit eher aus zwei Untergruppen bestehen wird.

3. Ich erwarte, dass unser Team in kleinere Untergruppen gespalten sein wird.

<**Anticipated Elaboration of task-relevant information** (Kearney et al.)>

1. Die Mitglieder dieses Teams werden sich gegenseitig ergänzen, indem sie ihr Wissen offen miteinander teilen.

2. Die Mitglieder dieses Teams werden alle Perspektiven sorgfältig prüfen, um die optimale Lösung zu finden.

3. Die Mitglieder dieses Teams werden besondere Informationen, die von individuellen Teammitgliedern beigesteuert werden, sorgfältig prüfen.

4. Als ein Team werden wir Ideen und Lösungen finden, die viel besser sind als die, die wir als Individuen finden könnten.

<Skala:

trifft gar nicht zu

trifft sehr wenig zu

trifft kaum zu

weiß nicht

trifft ein wenig zu

trifft stark zu

trifft absolut zu>

<keine Mehrfachnennungen möglich, alle Fragen mandatory

Auswertung: *trifft gar nicht zu* = 1 ... *trifft absolut zu* = 7>

<**Anticipated task conflict** (adapted from Jehn & Mannix, 2001)>

1. Wieviel Ideenkonflikte wird es in Ihrer Gruppe geben?

2. Wie oft werden Sie in Ihrer Gruppe Meinungsverschiedenheiten über die

Aufgabenstellung haben?

3. Wie oft werden Sie in Ihrer Gruppe widersprüchliche Meinungen über die Aufgabe haben, an der Sie arbeiten sollen?

<Anticipated process conflict (adapted from Jehn & Mannix, 2001)>

1. Wie oft wird es Meinungsverschiedenheiten darüber geben, wer in Ihrer Gruppe was tun soll?
2. Wieviel Konflikt wird es in Ihrer Gruppe darüber geben, wer für eine Teilaufgabe verantwortlich ist.
3. Wie oft werden Sie verschiedene Meinungen über den Einsatz von Ressourcen (z.B. Zeit) haben?

<Relationship conflict (Jehn & Mannix, 2001 – AMJ)>

1. Ich erwarte Reibereien zwischen den Teammitgliedern
2. Ich denke Teammitglieder könnten während der Zusammenarbeit ein wenig unghalten werden.
3. Ich erwarte, dass es kleinere emotionale Konflikte in unserer Gruppe geben wird

<Skala:

starke Ablehnung

moderate Ablehnung

schwache Ablehnung

neutral

schwache Zustimmung

moderate Zustimmung

starke Zustimmung>

<keine Mehrfachnennungen möglich, alle Fragen mandatory

Auswertung: starke Ablehnung = 1 ... starke Zustimmung = 7>

<Anticipated team performance (adapted from Zellmer-Bruhn & Gibson, 2006, AMJ)>

Ich bin zuversichtlich, dass dieses Team die gemeinsame Aufgabe gut lösen wird.
Ich bin zuversichtlich, dass dieses Team die individuellen Aufgaben gut lösen wird.
Ich bin zuversichtlich, dass dieses Team insgesamt gut abschneiden wird.
Ich bin zuversichtlich, dass dieses Team die Anforderungen schaffen wird.
Ich bin zuversichtlich, dass dieses Team seine Mission erfüllen wird.
Ich bin zuversichtlich, dass dieses Team den Zweck erfüllen wird, für den es bestimmt ist.

<Perceived token status>

1. Die anderen Teammitglieder werden eine Untergruppe bilden, die mich außen vor lässt.
2. Ich werde mich wahrscheinlich allein in meinem Team fühlen.
3. Ich werde mich von den anderen Teammitgliedern ausgeschlossen fühlen.

<Perceived Similarity>

1. Mein Team ist sich sehr ähnlich im Bezug auf sein Geschlecht.
2. Mein Team ist sich sehr ähnlich im Bezug auf seine ethnische Herkunft.
3. Mein Team ist sich sehr ähnlich im Bezug auf das Alter.
4. Mein Team ist sich sehr ähnlich im Bezug auf die Nationalität.
6. Mein Team ist sich sehr ähnlich im Bezug auf den Bildungshintergrund.
7. Ich bin den Mitgliedern meines Teams sehr ähnlich.

<Differences perceptions>

1. Mein Team besteht aus unterschiedlichen Individuen.
2. Alle Teammitglieder unterscheiden sich voneinander
3. Mein Team besteht aus einzigartigen Individuen

Appendix Chapter 3

Study 2: Questionnaire 1 (filled in online before coming on premise)

Cover story:

Einfluss von Persönlichkeitsvariablen auf Arbeitsweisen im Team.

NEO-FFI (Costa & McCrae bzw. Borkenau & Ostendorf)

(Original deutsche Skala)

Hinweise: Dieser Fragebogen umfasst 60 Aussagen, welche sich zur Beschreibung Ihrer eigenen Person eignen könnten. Lesen Sie bitte jede dieser Aussagen aufmerksam durch und überlegen Sie, ob diese Aussage auf Sie persönlich zutrifft oder nicht. Zur Bewertung jeder der 60 Aussagen steht Ihnen eine fünffache Skala zur Verfügung. Kreuzen Sie bitte an:

SA – starke Ablehnung

A – Ablehnung

N – Neutral

Z – Zustimmung

SZ – starke Zustimmung

1. Ich bin leicht beunruhigt
2. Ich habe gerne viele Leute um mich herum
3. Ich mag meine Zeit nicht mit Tagträumereien verschwenden
4. Ich versuche zu jedem, dem ich begegne freundlich zu sein.
5. Ich halte meine Sachen ordentlich und sauber.
6. Ich fühle mich anderen oft unterlegen.
7. Ich bin leicht zum Lachen zu bringen.
8. Ich finde philosophische Diskussionen langweilig.
9. Ich bekomme häufiger Streit mit meiner Familie und meinen Kollegen.
10. Ich kann mir meine Zeit recht gut einteilen, so dass ich meine Angelegenheiten rechtzeitig beende.
11. Wenn ich unter starkem Stress stehe, fühle ich mich manchmal, als ob ich zusammenbräche.
12. Ich halte mich nicht für besonders fröhlich.
13. Mich begeistern die Motive, die ich in der Kunst und in der Natur finde.
14. Manche Leute halten mich für selbstsüchtig und selbstgefällig.
15. Ich bin kein sehr systematisch vorgehender Mensch.
16. Ich fühle mich selten einsam oder traurig.
17. Ich unterhalte mich wirklich gerne mit anderen Menschen.
18. Ich glaube, dass es Schüler oft nur verwirrt und irreführt, wenn man sie Rednern zuhören lässt, die kontroverse Standpunkte vertreten.
19. Ich würde lieber mit anderen zusammenarbeiten, als mit ihnen zu wetteifern.
20. Ich versuche, alle mir übertragenen Aufgaben sehr gewissenhaft zu erledigen.
21. Ich fühle mich oft angespannt und nervös.
22. Ich bin gerne im Zentrum des Geschehens.
23. Poesie beeindruckt mich wenig oder gar nicht.

24. Im Hinblick auf die Absichten anderer bin ich eher zynisch und skeptisch.
25. Ich habe eine Reihe von klaren Zielen und arbeite systematisch auf sie zu.
26. Manchmal fühle ich mich völlig wertlos.
27. Ich ziehe es gewöhnlich vor, Dinge allein zu tun.
28. Ich probiere oft neue und fremde Speisen aus.
29. Ich glaube, dass man von den meisten Leuten ausgenutzt wird, wenn man es zulässt.
30. Ich vertrödele eine Menge Zeit, bevor ich mit einer Arbeit beginne.
31. Ich empfinde selten Furcht oder Angst.
32. Ich habe oft das Gefühl, vor Energie überzuschäumen.
33. Ich nehme Notiz von den Stimmungen oder Gefühlen, die verschiedene Umgebungen hervorrufen
34. Die meisten Menschen, die ich kenne, mögen mich.
35. Ich arbeite hart, um meine Ziele zu erreichen.
36. Ich ärgere mich oft darüber, wie andere Leute mich behandeln.
37. Ich bin ein fröhlicher, gut gelaunter Mensch.
38. Ich glaube, dass wir bei ethischen Entscheidungen auf die Ansichten unserer religiösen Autoritäten achten sollten.
39. Manche Leute halten mich für kalt und berechnend.
40. Wenn ich eine Verpflichtung eingehe, so kann man sich auf mich bestimmt verlassen.
41. Zu häufig bin ich entmutigt und will aufgeben, wenn etwas schief geht.
42. Ich bin kein gut gelaunter Optimist.
43. Wenn ich Literatur lese oder ein Kunstwerk betrachte, empfinde ich manchmal ein Frösteln oder eine Welle der Begeisterung.
44. In Bezug auf meine Einstellungen bin ich nüchtern und unnachgiebig.
45. Manchmal bin ich nicht so verlässlich oder zuverlässig, wie ich sein sollte.
46. Ich bin selten traurig oder deprimiert.
47. Ich führe ein hektisches Leben.
48. Ich habe wenig Interesse, über die Natur des Universums oder die Lage der Menschheit zu spekulieren.
49. Ich versuche stets rücksichtsvoll und sensibel zu handeln.
50. Ich bin eine tüchtige Person, die ihre Arbeit immer erledigt.
51. Ich fühle mich hilflos und wünsche mir eine Person, die meine Probleme löst.
52. Ich bin ein sehr aktiver Mensch.
53. Ich bin sehr wissbegierig.
54. Wenn ich Menschen nicht mag, so zeige ich ihnen das auch offen.
55. Ich werde wohl niemals fähig sein, Ordnung in mein Leben zu bringen.
56. Manchmal war mir etwas so peinlich, dass ich mich am liebsten versteckt hätte.
57. Lieber würde ich meine eigenen Wege gehen, als eine Gruppe anzuführen.
58. Ich habe oft Spaß daran, mit Theorien oder abstrakten Ideen zu spielen.
59. Um zu bekommen, was ich will, bin ich notfalls bereit, Menschen zu manipulieren.
60. Bei allem, was ich tue, strebe ich nach Perfektion.

Lesen Sie die folgenden Aussagen und entscheiden Sie inwiefern Sie mit Ihnen übereinstimmen, basierend auf Ihren Einstellungen, Vorstellungen und Erfahrungen. Bitte nutzen Sie die folgende Skala und verwenden Sie jeweils nur eine Ziffer für Ihre Antwort.

- 1 – starke Ablehnung
- 2 – moderate Ablehnung
- 3 – schwache Ablehnung
- 4 – schwache Zustimmung
- 5 – moderate Zustimmung
- 6 – starke Zustimmung

- 1a Bei Unsicherheiten, ziehe ich es vor eine schnelle Entscheidung zu treffen, was auch immer sie sein wird.
- 2a Wenn ich mich mit verschiedenen, potentiell richtigen Alternativen konfrontiert sehe, entscheide ich mich schnell und ohne zu zögern für eine der Alternativen.
- F Ich bin noch nie zu spät zur Arbeit oder zu einer Verabredung gekommen.
- 3a Ich ziehe es vor mich für die erste verfügbare Lösung zu entscheiden, anstatt lange darüber nachzudenken welche Entscheidung ich treffen soll.
- 4b Ich werde ärgerlich wenn die Dinge um mich herum nicht an ihrem Platz sind.
- 5b Generell vermeide ich es an Diskussionen über verschwommene und kontroverse Probleme teilzunehmen.
- 6a Wenn ich mit einem Problem konfrontiert bin, denke ich nicht zu lange darüber nach und entscheide ohne zu zögern.
- 7a Wenn ich ein Problem lösen muss, verschwende ich generell keine Zeit damit verschiedene Sichtweisen dazu zu beachten.
- 8b Ich ziehe es vor mit Menschen zusammen zu sein, die gleiche Ideen und Geschmäcker haben wie ich selbst.
- 9a Generell suche ich nicht nach alternativen Lösungsmöglichkeiten für Probleme, für die ich bereits eine Lösung greifbar habe.
- 10b Ich fühle mich unwohl wenn ich es nicht schaffe schnell eine Antwort auf Probleme zu geben, mit denen ich mich konfrontiert sehe.
- F Ich habe noch nie die Gefühle einer anderen Person verletzt.
- 11b Jede Lösung für ein Problem ist besser als in einem Zustand der Unsicherheit zu verweilen.
- 12b Ich ziehe Aktivitäten vor, wo immer klar ist was getan werden muss und wie es getan werden muss.
- 13a Nachdem eine Lösung für ein Problem gefunden wurde, glaube ich, dass es eine nutzlose Verschwendung von Zeit ist, weitere verschiedene Lösungsmöglichkeiten in Betracht zu ziehen.
- 14b Ich ziehe Dinge die ich gewöhnt bin solchen vor, die ich nicht kenne und die ich nicht vorhersehen kann.

Nota: Filler DS. Filler Item of Social Desirability.

The scale is monofactorial one; or two first order sub-factors (**a = seizing and b = freezing**) and one second order factor.

Personal Need for Structure Scale

Lesen Sie die folgenden Aussagen und entscheiden Sie inwiefern Sie mit Ihnen übereinstimmen, basierend auf Ihren Einstellungen, BELIEFS und Erfahrungen. Es gibt kein „richtig“ oder „falsch“. Menschen sind verschieden und wir sind daran interessiert wie Sie persönlich diese Fragen beantworten. Bitte nutzen Sie die folgende Skala und verwenden Sie jeweils nur eine Ziffer für Ihre Antwort.

- 1 – *starke Ablehnung*
 2 – *moderate Ablehnung*
 3 – *schwache Ablehnung*
 4 – *schwache Zustimmung*
 5 – *moderate Zustimmung*
 6 – *starke Zustimmung*

- 1 Es wühlt mich innerlich auf in eine Situation hinein zu gehen, ohne zu wissen was ich erwarten soll.
- 2 Ich fühle mich nicht gestört durch Dinge, die meine tägliche Routine unterbrechen.
- 3 Ich finde Gefallen daran eine klare und strukturierte Lebensweise zu haben.
- 4 Ich mag es für alles einen Platz zu haben und alles an seinem Platz zu haben.
- 5 Ich mag es spontan zu sein.
- 6 Ich finde, dass ein gut geordnetes Leben, mit regelmäßigen Zeiten mein Leben langweilig macht.
- 7 Ich mag unklare Situationen nicht.
- 8 Ich hasse es meine Pläne in der letzten Minute zu ändern.
- 9 Ich hasse es mit Menschen zusammen zu sein, die unberechenbar sind.
- 10 Ich finde, dass eine beständige Routine es mir erlaubt mein Leben mehr zu genießen.
- 11 Ich genieße das Hochgefühl in einer unberechenbaren Situation zu sein.
- 12 Ich fühle mich unwohl wenn die Regeln in einer Situation nicht klar sind.

Prevention vs. Promotion

Higgins, Friedman, Harlow, Idson, Ayduk & Taylor (2001)

European Journal of Social Psychology

11 items ($\alpha = 0.73$ for the Promotion scale; $\alpha = 0.80$ for the Prevention scale -- test-retest reliability promotion scale = 0.79 ($p < 0.0001$); prevention scale = 0.81 ($p < 0.0001$))

Die folgenden Fragen beschäftigen sich mit spezifischen Erlebnissen in Ihrem Leben. Bitte antworten Sie in dem Sie die entsprechende Zahl ankreuzen.

1. Sind sie im Vergleich zu den meisten anderen Menschen normalerweise nicht so sehr im Stande im Leben das zu erreichen, was Sie erreichen wollen? [-0.65]

1	2	3	4	5
Nie oder selten		manchmal		sehr oft
2. Hätten Sie in Ihrer Kindheit oder Jugend jemals die Grenze dessen überschritten, die Ihre Eltern nicht mehr toleriert hätten? [-0.80]

1	2	3	4	5
---	---	---	---	---

Nie oder selten

manchmal

sehr oft

3. Wie oft haben Sie Dinge geschafft, die Sie „befeuert“ haben noch härter zu arbeiten? [0.37]

1

2

3

4

5

Nie oder selten

ein paar Mal

viele Male

4. Sind Sie Ihren Eltern oft auf die Nerven gegangen, als sie aufgewachsen sind? [-0.65]

1

2

3

4

5

Nie oder selten

manchmal

sehr oft

5. Wie oft haben Sie Regeln befolgt, die von Ihren Eltern aufgestellt wurden? [0.56]

1

2

3

4

5

Nie oder selten

manchmal

immer

6. Als Sie aufwuchsen, haben Sie jemals Dinge getan, die Ihre Eltern verwerflich fanden? [-0.84]

1

2

3

4

5

Nie oder selten

manchmal

sehr oft

7. Sind Sie oft erfolgreich mit verschiedenen Dingen die Sie ausprobieren? [0.54]

1

2

3

4

5

Nie oder selten

manchmal

sehr oft

8. Ich komme ab und zu in Schwierigkeiten, weil ich nicht vorsichtig genug war [-0.55]

1

2

3

4

5

Nie oder selten

manchmal

sehr oft

9. Wenn es darum geht Dinge zu erreichen, die mir wichtig sind, finde ich, dass ich es nicht so gut schaffe, wie ich es idealerweise gewollt hätte. [-0.51]

1

2

3

4

5

Nie richtig

manchmal richtig

sehr oft richtig

10. Ich habe das Gefühl, dass ich gut weiterentwickelt habe um in meinem Leben erfolgreich zu sein. [0.81]

1

2

3

4

5

auf jeden Fall falsch

auf jeden Fall richtig

11. Ich habe sehr wenig Hobbies oder Aktivitäten in meinem Leben, die mein Interesse wecken und mich motivieren mich für sie anzustrengen. [-0.53]

1

2

3

4

5

auf jeden Fall falsch

auf jeden Fall richtig

Need for Cognition (Original deutsche Skala)

Instructions: For each of the statements below, please indicate to what extent the statement is characteristic of you. If the statement is extremely uncharacteristic of you (not at all like you) please write a "1" to the left of the question; if the statement is extremely characteristic of you (very much like you) please write a "5" next to the question. Of course, a statement may be neither extremely uncharacteristic nor extremely characteristic of you; if so, please use the number in the middle of the scale that describes the best fit. Please keep the following scale in mind as you rate each of the statements below: 1 = extremely uncharacteristic; 2 = somewhat uncharacteristic; 3 = uncertain; 4 = somewhat characteristic; 5 = extremely characteristic.

- 1 – *extrem charakteristisch*
- 2 – *einigermaßen charakteristisch*
- 3 – *weiß nicht*
- 4 – *einigermaßen charakteristisch*
- 5 – *extrem charakteristisch*

1. Ich bevorzuge komplexe gegenüber einfachen Problemen.
2. Ich mag es, die Verantwortung zu tragen für den Umgang mit Situationen, die viel Nachdenken erfordern.
3. Denken entspricht nicht meiner Vorstellung von Spaß. (RC)
4. Ich würde lieber etwas tun, was wenig Denken erfordert, als etwas, das ganz sicher meine Denkfähigkeit herausfordert. (RC)
5. Ich versuche Situationen, in denen ich wahrscheinlich tiefgründig über etwas nachdenken muss, vorherzusehen und zu vermeiden. (RC)
6. Ich empfinde es als angenehm, gründlich und lange über etwas nachzudenken.
7. Ich denke nur so gründlich wie nötig über etwas nach. (RC)
8. Ich denke lieber über kleine, alltägliche Projekte nach als über langfristige Dinge. (RC)
9. Ich mag Aufgaben, die wenig Nachdenken erfordern, nachdem ich sie gelernt habe. (RC)
10. Mir gefällt die Vorstellung, dass ich im Leben vorankomme, indem ich mich auf meine Denkfähigkeit verlasse.
11. Ich genieße Aufgaben, bei denen ich neue Lösungen für Probleme entwickeln muss.
12. Es begeistert mich nicht sonderlich, neue Wege des Denkens zu lernen. (RC)
13. Ich mag es, wenn mein Leben aus vielen kleinen Rätseln besteht, die ich lösen muss.
14. Mich reizt die Vorstellung, über etwas Abstraktes nachzudenken.
15. Ich würde eine Aufgabe, die intellektuell, schwierig und wichtig ist, bevorzugen gegenüber einer Aufgabe, die nicht viel Denken erfordert.
16. Ich fühle Erleichterung statt Begeisterung, wenn ich eine Aufgabe erledigt habe, die viel geistige Anstrengung erfordert. (RC)
17. Es reicht mir, wenn etwas erledigt wird; es interessiert mich nicht, wie oder warum es funktioniert. (RC)
18. Ich denke meist selbst dann über Dinge nach, wenn sie mich nicht persönlich betreffen.

Diversity Beliefs

- 1 – *starke Ablehnung*
- 2 – *Ablehnung*
- 3 – *Neutral*
- 4 – *Zustimmung*
- 5 – *starke Zustimmung*

5. Diversity ist wertvoll für Gruppen

6. Ich glaube das diversity gut ist
7. Ich mag es mit Menschen zusammen zu arbeiten, die verschieden sind.
8. Ich bin diversity begeistert.

Learning and performance orientations

Trait learning and performance orientations were assessed using two 8-item scales developed by Button et al. (1996). (1 _ *strongly disagree* to 5 _ *strongly agree*).

1 – *starke Ablehnung*

2 – *Ablehnung*

3 – *Neutral*

4 – *Zustimmung*

5 – *starke Zustimmung*

17. Ich ziehe es vor Dinge zu tun, in denen ich gut und nicht schlecht bin.
18. Ich bin am glücklichsten bei der Arbeit, wenn ich Aufgaben mache, von denen ich weiß, dass ich keine Fehler machen werde.
19. Die Dinge, die ich am Liebsten mache, sind die Dinge, die ich am Besten kann.
20. Die Meinungen von anderen darüber wie gut ich bestimmte Dinge tun kann sind mir wichtig.
21. Ich fühle mich smart/klug, wenn ich etwas mache ohne einen Fehler zu machen.
22. Ich ziehe es vor, relativ sicher zu sein, dass ich eine Aufgabe erfolgreich beenden kann, bevor ich sie anfrage.
23. Ich arbeite gerne an Aufgaben, in denen ich in der Vergangenheit gut war.
24. Ich fühle mich schlau/klug wenn ich etwas besser kann als die meisten anderen.
25. Die Gelegenheit herausfordernde Aufgaben anzugehen ist mir wichtig.
26. Wenn ich es nicht schaffe eine schwierige Aufgabe zu lösen, nehme ich mir vor das nächste Mal härter dafür zu arbeiten.
27. Ich ziehe Aufgaben vor, die mich zwingen neue Dinge zu lernen.
28. Die Gelegenheit neue Dinge zu lernen ist mir wichtig.
29. Ich bin am Besten, wenn ich an einer relativ schweren Aufgabe arbeite.
30. Ich versuche sehr meine vorherigen Leistungen zu verbessern.
31. Die Gelegenheit die Reichweite meiner Fähigkeiten auszuweiten ist mir wichtig.
32. Wenn ich Schwierigkeiten habe ein Problem zu lösen, versuche ich gerne verschiedene Herangehensweisen um zu sehen welche funktioniert.

Button et al. (1996, OBHDP) found that a two-factor model of goal orientation fit better than did a one-factor model in four different samples. In addition, Button et al. (1996) provided construct validity evidence for the measures. They found the two goal orientation measures to be uncorrelated and systematically and meaningfully related to a number of relevant demographic and substantive variables. In the current study, reliability (coefficient alpha) was .77 for learning orientation and .73 for performance orientation. (Bell & Kozlowski, JAP, 2002)

- 1 – *starke Ablehnung*
- 2 – *Ablehnung*
- 3 – *Neutral*
- 4 – *Zustimmung*
- 5 – *starke Zustimmung*

Anticipated collective team identification (Van der Vegt & Bunderson, 2005)

Ich denke, dass ich mich emotional zu meinem Team hingezogen fühle sobald wir anfangen zusammen die Aufgabe zu lösen.

Ich denke, dass ich mich zu meinem Team zugehörig fühlen werde sobald wir anfangen zusammen die Aufgabe zu lösen.

Ich denke, dass ich das Gefühl haben werde, dass die Probleme des Teams und von mir die Gleichen sind.

Ich denke, dass ich mich in meinem Team ein bisschen wie in einer Familie fühlen werde.

Anticipated team performance (adapted from Zellmer-Bruhn & Gibson, 2006, AMJ)

Ich bin zuversichtlich, dass dieses Team seine Ziele erreichen wird.

Ich bin zuversichtlich, dass dieses Team seine Zielsetzung erreichen wird.

Ich bin zuversichtlich, dass dieses Team die Anforderungen schaffen wird.

Ich bin zuversichtlich, dass dieses Team seine Mission erfüllen wird.

Ich bin zuversichtlich, dass dieses Team will serve the purpose it is intended to serve.

Anticipated relationship conflicts (adapted from Jehn et al., 1999, ASQ)

Ich erwarte viele Reibereien zwischen den Teammitgliedern

Ich erwarte, dass es viele Persönlichkeitskonflikte in meinem Team geben wird.

Ich erwarte viele Spannungen zwischen den Mitgliedern meines Teams

Ich erwarte viele emotionale Konflikte zwischen den Mitgliedern meines Teams.

Study 2: Questionnaire 2 (right before the group performance task on premise)

Bitte bewerten Sie folgende Aussagen:

	gar nicht charakteristisch	einigermaßen wenig charakteristisch	weiß nicht	einigermaßen charakteristisch	sehr charakteristisch
Ich mag Aufgaben, die wenig Nachdenken erfordern, nachdem ich sie gelernt habe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mir gefällt die Vorstellung, dass ich im Leben vorankomme, indem ich mich auf meine Denkfähigkeit verlasse.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ich genieße Aufgaben, bei denen ich neue Lösungen für Probleme entwickeln muss.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Es begeistert mich nicht sonderlich, neue Wege des Denkens zu lernen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich mag es, wenn mein Leben aus vielen kleinen Rätseln besteht, die ich lösen muss.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mich reizt die Vorstellung, über etwas Abstraktes nachzudenken.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich würde eine Aufgabe, die intellektuell, schwierig und wichtig ist, bevorzugen gegenüber einer Aufgabe, die nicht viel Denken erfordert.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich bin erleichtert statt begeistert, wenn ich eine Aufgabe erledigt habe, die große geistige Anstrengung erfordert.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Es reicht mir, wenn etwas erledigt wird; es interessiert mich nicht, wie oder warum es funktioniert.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich denke meist selbst dann über Dinge nach, wenn sie mich nicht persönlich betreffen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Was kann man mit einem Ziegel alles machen?

Es gibt viele Möglichkeiten was man mit einem Ziegelstein machen kann. Bitte schreiben Sie im folgenden möglichst viele Verwendungsmöglichkeiten eines Ziegelsteins auf. Sie haben hierfür 5 Minuten Zeit.

Nutzen Sie bitte pro Idee immer nur eine Zeile und drücken danach jeweils die "Enter"(\rightarrow)-taste, so dass es ungefähr wie folgend aussieht:

Bitte geben Sie hier die Verwendungsmöglichkeiten ein:



Bitte wählen Sie im folgenden die 6 Ideen aus, von denen Sie denken, dass sie am kreativsten sind (also originell und zugleich relevant oder nützlich). Alle Ideen die nicht zu den **TOP 6** gehören, brauchen Sie nicht zu markieren.

1.

2.

3.

4.

5.

6.

Sätze bilden

Bitte bringen Sie die folgenden Worte in die grammatikalisch richtige Reihenfolge.

Um Vor- oder Nachteile zwischen Menschen, die gut bzw. schlecht mit einer Computer-Tastatur umgehen können zu vermeiden, schreiben Sie die richtigen Sätze bitte auf eines der bereitgestellten DIN A4 Blätter.

Bilden Sie dabei aus den 6 angezeigten Worten jeweils einen grammatikalisch richtigen Satz mit 5 Worten. Somit wird immer eines der 6 Wörter im Lösungssatz weggelassen.

Übungsaufgabe 1

Beispiel 1

einkaufen gehe ich heute noch immer

Lösung

Ich gehe heute noch einkaufen.

Übungsaufgabe 2

Beispiel 2

Winter Maus kalt es im ist

Lösung

Im Winter ist es kalt.

1. er war belesen sie sehr immer
2. das Stuhl wirkte Buch geistreich recht
3. Apfel sie hat gegessen will den
4. Gerät zuverlässiges er braucht sie ein
5. ist EmmaTante kultiviert scheint ziemlich
6. wirf Ball den her gib bitte
7. gut sich wenig er es überlegt
8. Florida fliegensie Temperatur nach häufig
9. die tanzen lass anleitend Puppen mal
10. der wird lyrisch gibt manchmal Verkäufer
11. Problemegleich besonnen löst besser man
12. regelmäßig drücken bitte wasche Kleidung deine
13. umsichtigfährt er sehr agiert meistens
14. er sie sanftmütig sieht aus an
15. noch meine ist Nachbarin unsere rüstig
16. er gegessen alles auf hat will
17. gegessen gediegen gestern wir früher haben

Positive Elderly Priming

18. Birne die geworden Orange schlecht war

19. sehr sie erfahren ist meistens darin

20. man uns Tier empfangen würdevoll hat

21. sie willkommen ihm waren meistens treffen

22. bin reif ich fürs Theater Wochenende

23. gutherzig viel ist sie zu oft

24. schicke ich es rüber bringe gerne

25. trifft Kuh eine weise er Entscheidung

26. es ehrwürdiges Katze Haus ein ist

27. Himmel der wolkenlos ist gerade heute

28. sehr schmeckt Saft gut lebenserfahren mir

29. herab Berg der Gras erhaben schaut

30. anhalten den er Zug sah Hammer

1. er war normal sie sehr immer
2. grün der ist Deich heute grau
3. Apfel sie hat gegessen will den
4. Bild gutes er braucht sie ein
5. hat Emma schönes Tante ein Telefon
6. wirf Ball den her gib bitte
7. muss Baum bricht gegossen werden der
8. Florida fliegensie Temperatur nach häufig
9. die tanzen lass Hose Puppen mal
10. die wird Lampe gibt manchmal warm
11. Problemegleich Garage löst besser man
12. regelmäßig drücken bitte wasche Kleidung deine
13. Rasen fährt er den mag gerne
14. bemerkt sie Tisch verschiebt den blauen
15. noch meine ist Nachbarin unsere neutral
16. er gegessen alles auf hat will
17. gegessen Brötchen gestern wir früher haben

Neutral Elderly Priming

18. Birne die geworden Orange schlecht war

19. Koffer nicht ist hat der schwer

20. man uns Stift empfangen nett hat

21. sie willkommen ihm waren meistens treffen

22. suche ein Blatt ich Papier Wochenende

23. Straße viel ist sie auf der

24. schicke ich es rüber bringe gerne

25. trifft Wand eine gute er Entscheidung

26. es heller Katze Ordner ein ist

27. Himmel der wolkenlos ist gerade heute

28. die schmeckt Wein gut Flasche mir

29. relativ hart Stein der Gras ist

30. anhalten den er Zug sah Hammer

1. das Stuhl wirkte Buch spießig recht
2. Apfel sie hat gegessen will den
3. Gerät kraftloses er braucht sie ein
4. ist EmmaTante hilfsbedürftig scheint ziemlich
5. wirf Ball den her gib bitte
6. gut ist wenig er ein verwirrt
7. Florida fliegensie Temperatur nach häufig
8. die tanzen lass halbtot Puppen mal
9. der wird grummelig gibt manchmal Verkäufer
10. Problemegleich autoritär löst besser man
11. regelmäßig drücken bitte wasche Kleidung deine
12. intolerant fährt er sehr agiert meistens
13. er sie grantig sieht aus an
14. noch meine ist Nachbarin unsere einsam
15. er gegessen alles auf hat will
16. gegessen zurückgezogen gestern wir früher haben

Negative Elderly Priming

17. Birne die geworden Orange schlecht war

18. sehr sie vergesslich ist meistens darin

19. man uns Tier empfangen zittrig hat

20. sie willkommen ihm waren meistens treffen

21. bin krank ich am Theater Wochenende

22. engstirnig viel ist sie zu oft

23. schicke ich es rüber bringe gerne

24. trifft Kuh eine hilflose er Entscheidung

25. es unflexible Katze Haus eine ist

26. Himmel der wolkenlos ist gerade heute

27. sehr schmeckt Saft gut senil mir

28. herab Berg der Gras klagend schaut

29. anhalten den er Zug sah Hammer

30. er war klagend sie sehr immer

Appendix Chapter 4

Study 3: Online questionnaire (filled a day before being on premise)**Online Questionnaire****Personal Need for Structure (Neuberg & Newsom 1993, JPSP)**

Read each of the following statements and decide how much you agree with each according to your attitudes, beliefs, and experiences. It is important for you to realize that there are no "right" or "wrong" answers to these questions. People are different, and we are interested in how you feel. Please respond according to the following 6-point scale:

9.

1 = *strongly disagree*

2 = *moderately disagree*

3 = *slightly disagree*

4 = *slightly agree*

5 = *moderately agree*

6 = *strongly agree*

It upsets me to go into a situation without knowing what I can expect from it.

I'm not bothered by things that interrupt my daily routine.⁸

I enjoy having a clear and structured mode of life.

I like to have a place for everything and everything in its place.

I enjoy being spontaneous.^{2*}

I find that a well-ordered life with regular hours makes my life tedious.³

I don't like situations that are uncertain.

I hate to change my plans at the last minute.

I hate to be with people who are unpredictable.

10. I find that a consistent routine enables me to enjoy life more.

11. I enjoy the exhilaration of being in unpredictable situations.*

12. I become uncomfortable when the rules in a situation are not clear.

* Item is reversed scored. ^b Note that we have dropped this item from our use of the scale.

BigFive Short Scale (Rammstedt & John 2007)

Instruction: How well do the following statements describe your personality?

I see myself as someone who

is reserved...

is generally trusting...

tends to be lazy...

is relaxed, handles stress well...

has few artistic interests...

is outgoing, sociable...

tends to find fault with others...

does a thorough job...

gets nervous easily...

has an active imagination...

Scale:

1 - Disagree strongly; 2 – Disagree a little; 3 - Neither agree nor disagree; 4 – Agree a little; 5 – Agree strongly

Short Form of the Need for Cognition Scale (Cacioppo, Petty, Jarvis 1996)

Instructions: For each of the statements below, please indicate to what extent the statement is characteristic of you. If the statement is extremely uncharacteristic of you (not at all like you) please write a "1" to the left of the question; if the statement is extremely characteristic of you (very much like you) please write a "5" next to the question. Of course, a statement may be neither extremely uncharacteristic nor extremely characteristic of you; if so, please use the number in the middle of the scale that describes the best fit. Please keep the following scale in mind as you rate each of the statements below: 1 = extremely uncharacteristic; 2 = somewhat uncharacteristic; 3 = uncertain; 4 = somewhat characteristic; 5 = extremely characteristic.

1. I would prefer complex to simple problems.
2. I like to have the responsibility of handling a situation that requires a lot of thinking.
3. Thinking is not my idea of fun."
4. I would rather do something that requires little thought than something that is sure to challenge my thinking abilities."
5. I try to anticipate and avoid situations where there is a likely chance I will have to think in depth about something.8
6. I find satisfaction in deliberating hard and for long hours.
7. I only think as hard as I have to."
8. I prefer to think about small, daily projects to long-term ones.*
9. I like tasks that require little thought once I've learned them.*
10. The idea of relying on thought to make my way to the top appeals to me.
11. I really enjoy a task that involves coming up with new solutions to problems.
12. Learning new ways to think doesn't excite me very much.*
13. I prefer my life to be filled with puzzles that I must solve.
14. The notion of thinking abstractly is appealing to me.
15. I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought.
16. I feel relief rather than satisfaction after completing a task that required a lot of mental effort.*
17. It's enough for me that something gets the job done; I don't care how or why it works.*
18. I usually end up deliberating about issues even when they do not affect me personally.

* Reverse scored.

Learning and performance orientations

Trait learning and performance orientations were assessed using two 8-item scales developed by Button et al. (1996). Learning orientation items included “The opportunity to learn new things is important to me” and “I prefer to work on tasks that force me to learn new things.” Performance orientation items included “I feel smart when I do something without making any mistakes” and “The opinions others have about how well I can do certain things are important to me” (1 _ *strongly disagree* to 5 _ *strongly agree*). Button et al. (1996, OBHDP) found that a two-factor model of goal orientation fit better than did a one-factor model in four different samples. In addition, Button et al. (1996) provided construct validity evidence for the measures. They found the two goal orientation measures to be uncorrelated and systematically and meaningfully related to a number of relevant demographic and substantive variables. In the current study, reliability (coefficient alpha) was .77 for learning orientation and .73 for performance orientation. (Bell & Kozlowski, JAP, 2002)

Performance goal orientation (Button et al., 1996, OBHDP)

1. I prefer to do things that I can do well rather than things that I do poorly. (P1)
2. I'm happiest at work when I perform tasks on which I know that I won't make any errors. (P2)
3. The things I enjoy the most are the things I do the best. (P3)
4. The opinions others have about how well I can do certain things are important to me. (P4)
5. I feel smart when I do something without making any mistakes. (P5)
6. I like to be fairly confident that I can successfully perform a task before I attempt it. (P6)
7. I like to work on tasks that I have done well on in the past. (P7)
8. I feel smart when I can do something better than most other people. (P8)

Learning goal orientation (Button et al., 1996, OBHDP)

1. The opportunity to do challenging work is important to me. (L1)
2. When I fail to complete a difficult task, I plan to try harder the next time I work on it. (L2)
3. I prefer to work on tasks that force me to learn new things. (L3)
4. The opportunity to learn new things is important to me. (L4)
5. I do my best when I'm working on a fairly difficult task. (L5)
6. I try hard to improve on my past performance. (L6)
7. The opportunity to extend the range of my abilities is important to me. (L7)
8. When I have difficulty solving a problem, I enjoy trying different approaches to see which one will work. (L8)

Self-Expression values

General Self-Efficacy

Some people feel they have completely free choice and control over their lives, while other people feel that what they do has no real effect on what happens to them. Please use this scale where 1 means "no choice at all" and 10 means "a great deal of choice" to indicate how much freedom of choice and control you feel you have over the way your life turns out (code one number):

No choice at all A great deal of choice
1 2 3 4 5 6 7 8 9 10

Political Action

Now I'd like you to look at this card. I'm going to read out some forms of political action that people can take, and I'd like you to tell me, for each one, whether you have done any of these things, whether you might do it or would never under any circumstances do it (read out and code one answer for each action):

	Have done	Might do	Would never do
	1	2	3
Signing a petition			

Tolerance

Please tell me for each of the following actions whether you think it can always be justified, never be justified, or something in between, using this card. (Read out and code one answer for each statement):

	Never justifiable									
Homosexuality	1	2	3	4	5	6	7	8	9	10
Prostitution	1	2	3	4	5	6	7	8	9	10
Divorce	1	2	3	4	5	6	7	8	9	10
Incest (love between brother and sister)	1	2	3	4	5	6	7	8	9	10

Materialistic vs. Postmaterialistic Values

People sometimes talk about what the aims of this country should be for the next ten years. On this card are listed some of the goals which different people would give top priority. Would you please say which one of these you, yourself, consider the most important? (Code one answer only under "first choice"):

And which would be the next most important? (Code one answer only under "second choice")

	First choice	Second choice
A high level of economic growth	1	1
Making sure this country has strong defense forces	2	2
Seeing that people have more say about how things are done at their jobs and in their communities	3	3
Trying to make our cities and countryside more beautiful	4	4

If you had to choose, which one of the things on this card would you say is most important? (Code one answer only under "first choice"):

And which would be the next most important? (Code one answer only under "second choice"):

	First choice	Second choice
Maintaining order in the nation	1	1
Giving people more say in important government decisions	2	2
Fighting rising prices	3	3
Protecting freedom of speech	4	4

Generalized Trust

Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people? (Code one answer):

1 Most people can be trusted.

2 Need to be very careful.

Diversity Beliefs

1. Diversity is an asset for teams	1	2	3	4	5
2. I believe that diversity is good	1	2	3	4	5
3. I enjoy working together with diverse people	1	2	3	4	5
4. I feel enthusiastic about diversity	1	2	3	4	5

Study 3: Questionnaire (filled in right after the performance task)

Dear participant,

Please rate the following statements as to reflect how much you agree or disagree with them. All questions refer to the **Jacobs Radio Commercial** you just completed.

It is important for you to realize that there are no 'right' or 'wrong' answers to these questions, we are interested in your opinion. In order to ensure your anonymity, please provide the pseudonym you used for the first questionnaire, during today's session, and the letter you were assigned. Thank you!

What is the name of your team? _____

Which is your pseudonym? _____

Which letter were you assigned? ☐ A ☐ B ☐ C ☐ D

[illegible]

TEAM LAB STUDY - Final Questionnaire

Dear participant,

Thank you very much for participating in our Team Lab Study! In the following, we will ask you a few questions about the experiences that you have had today. It is important for you to realize that there are no 'right' or 'wrong' answers to these questions. People are different, and we are interested in how you feel. Please answer the questions according to your individual opinion. The results of the survey will only be used on an aggregate level for the purpose of research and we will keep the individual results strictly confidential and anonymous. In order to ensure your anonymity, please provide the pseudonym you used for the first questionnaire and during today's session.

Which is your pseudonym? _____

1. Please rate the following statements as to reflect how much you agree or disagree with them.

[illegible]

[illegible]

[illegible][illegible]

[illegible][illegible][illegible]

[illegible][illegible]

[illegible][illegible]

2. Please tick the box that best represents *how similar you think you and the other team members are in the following aspects:*

	Very dissimilar						Very similar
	1	2	3	4	5	6	7
Personality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Academic ability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Values	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Social class	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Political orientation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Attitudes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interests	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spirituality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Social skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Popularity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In general	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

What do you think is the main aspect you and your team members have in common? _____

Please tick the box that best represents *how different you think you and the other team members are in the following aspects.*

	Very similar						Very different
	1	2	3	4	5	6	7
Personality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Academic ability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Values	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Social class	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Political orientation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Attitudes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interests	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spirituality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Social skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Popularity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In general	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

What do you think is the main aspect you and your team members have in common? _____

3. Thinking about yourself and how you normally feel, to what extent do you generally feel:

	Never	Seldom	Neither often nor seldom	Often	Always
	1	2	3	4	5
upset	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
hostile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
alert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ashamed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
inspired	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
nervous	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
determined	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
attentive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
afraid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
active	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. What was the pseudonym of your team leader? _____

5. Did you perceive a team member acting as the team leader? Yes ☐ No ☐

If yes, please mention who: _____

6. What role did you have within your team? Team leader ☐ Team member ☐

7. Did you know your team mates from before?

Not at all				Very well
1	2	3	4	5
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. If you knew your team mates from before, then how positive were these experiences?

Not positive 1	2	3	4	Very positive 5
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. Please rate the following statements as to reflect how much you agree or disagree with them.

[illegible]

9. Which video did your leader watch? _____

10. Which video did your team watch? _____

11. Which video did you watch? _____

12. Did you like the instructor of the video?

Not at all 1	2	3	4	Very much 5
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13. With whom did you watch the video? Your leader ☐ Your team ☐ Random people ☐

14. Did you perceive that your team was composed of members of different genders? Yes ☐ No ☐

15. Did you perceive that your team was composed of members of different ages? Yes ☐ No ☐

16. What is your relationship status?

Single 1	It's complicated 2	Romance 3	Relationship 4	Engaged 5	Married 7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

17. What grade did you receive in your TOEFL exam? PBT ☐ CBT ☐ IBT ☐ other proof of English language proficiency ☐

18. What is your GPA? _____

19. What was your SAT grade? _____

Dear participant,

Thank you very much for participating in the Team Lab Study!

After study completion, you will receive an extensive study debriefing via email explaining thoroughly what the aim of this study was and what the goals behind this Team Lab Study were. Then, you will also receive your corresponding Diversity Certificates from your USC instructors. Please hand in this questionnaire to the team's envelope and leave. Thank you!

