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# The Interplay of Diversity Training and Diversity Beliefs on Team Creativity in Nationality Diverse Teams

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Attaining value from nationality diversity requires active diversity management, which organizations often employ in the form of diversity training programs. Interestingly, however, the previously reported effects of diversity training are often weak and, sometimes, even negative. This situation calls for research on the conditions under which diversity training helps or harms teams. We propose that diversity training can increase team creativity, but only for teams with less positive pretraining diversity beliefs (i.e., teams with a greater need for such training) and that are sufficiently diverse in nationality. Comparing the creativity of teams that attended nationality diversity training versus control training, we found that for teams with less positive diversity beliefs, diversity training increased creative performance when the team's nationality diversity was high, but undermined creativity when the team's nationality diversity was low. Diversity training had less impact on teams with more positive diversity beliefs, and training effects were not contingent upon these teams' diversity. Speaking to the underlying process, we showed that these interactive effects were driven by the experienced team efficacy of the team members. We discuss theoretical and practical implications for nationality diversity management.

*Keywords:* team nationality diversity, diversity training, team diversity beliefs, team efficacy, team creativity

Nationality diversity constitutes a mixed blessing for organizations (van Knippenberg, De Dreu, & Homan, 2004). On the one hand, nationality diversity coincides with different beliefs, thinking styles, knowledge, and ideas (Cox & Blake, 1991; Earley & Gibson, 2002). As such, it may stimulate team creativity by providing divergent perspectives on the topic at hand (Cox, Lobel, & McLeod, 1991; West, 2002). On the other hand, nationality diversity can harm creativity by activating subgroup categorization on the basis of nationality differences, resulting in negative team

processes (Dahlin, Weingart, & Hinds, 2005; van Knippenberg et al., 2004). This means that nationality diversity by itself is not a sufficient condition for team creativity (Hoever, van Knippenberg, van Ginkel, & Barkema, 2012; Hülsheger, Anderson, & Salgado, 2009). Instead, the usefulness of nationality diversity is likely contingent upon active diversity management (Bezrukova, Jehn, & Spell, 2012).

Acknowledging the challenges as well as benefits of nationality diversity, many organizations invest in nationality diversity training programs (Anand & Winters, 2008; Egan & Bendick, 2008) with the intention to build skills of their employees that are needed to make use of team nationality diversity (Bezrukova et al., 2012; Kulik & Roberson, 2008). However, a review of the professional and scientific literature revealed that after thousands of workplace interventions, diversity training effectiveness is still uncertain (Bennett, 2010; Paluck, 2006). Some studies reported positive effects of diversity training (Kalinowski et al., 2013), whereas others showed diversity training to be ineffective or even counterproductive (Anand & Winters, 2008; Ely, 2004; Naff & Kellough, 2003). The costs associated with diversity training (Galvin, 2003) and its variable effectiveness (Roberson, Kulik, & Tan, 2013) raise the question of whether diversity training is actually worth the investment.

Our research integrates theoretical and empirical knowledge on diversity effects in teams (van Knippenberg et al., 2004; van Knippenberg, van Ginkel, & Homan, 2013) with the literature on organizational (diversity) training (Aguinis & Kraiger, 2009; Rob-

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erson et al., 2013; Salas & Cannon-Bowers, 2001; Salas et al., 2008) to explain when diversity training programs aid nationality diverse teams and when they do not. We propose that diversity training can be effective in promoting team creativity, but that the effectiveness of such training depends on team members' diversity beliefs and on the level of diversity present in the team. More specifically, we argue that teams with less positive diversity beliefs are more likely to benefit from diversity training, but only if their nationality diversity is high (rather than low). To address the potential usefulness of diversity training, we employ an experimental design in which we compare a diversity training condition with a control training condition. This setup allows us to speak to the causality of the effects and helps rule out potential alternative explanations regarding diversity training effectiveness (Bezrukova et al., 2012; Paluck, 2006). In addition, we shed light on how the interactive effects of training condition, diversity beliefs, and nationality diversity come about by examining the mediating role of the team's belief in its ability to perform effectively (i.e., team efficacy; Gibson & Earley, 2007).

### Nationality Diversity and Team Creativity

Team creativity is vital to organizational success (Pil & Cohen, 2006). It can be defined as "the joint novelty and usefulness of ideas regarding products, processes, and services" (Hoever et al., 2012, p. 983; see also Amabile, 1988). Nationality diversity has been proposed as an important driver of team creativity (Bantel & Jackson, 1989; Jackson, Joshi, & Erhardt, 2003; McLeod, Lobel, & Cox, 1996; Somech & Drach-Zahavy, 2013), because members of diverse teams are exposed to different ideas, backgrounds, and approaches. This is believed to inspire divergent and flexible thinking, enable new pathways of thought, and prevent groupthink (Amabile, 1983; Cox & Blake, 1991; De Dreu & West, 2001; Janis, 1983).

At the same time, however, previous work has shown that nationality diversity can also harm team creativity. Nationality—which is a highly salient characteristic—is often used as a basis for categorization processes (Nederveen Pieterse, van Knippenberg, & van Dierendonck, 2013; Stahl, Maznevski, Voigt, & Jonsen, 2010), which can divide teams into subgroups (Byrne, 1971; Tajfel & Turner, 1986). People tend to favor members of their own nationality subgroup over members of other subgroups, which may spark conflict and undermine trust and communication between subgroups (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987; van Knippenberg et al., 2004). When diversity instigates subgroup categorization, team members' divergent perspectives may thus not be exchanged and used, limiting the utilization of the team's creative potential.

In sum, nationality diversity can be a vice as well as a virtue for team creativity (van Knippenberg & Schippers, 2007). As such, the inconsistent effects of nationality diversity on team creativity seem to necessitate active management of nationality diversity (van Knippenberg et al., 2004), and diversity training might be a crucial instrument in reaching that goal (Bezrukova et al., 2012).

### Diversity Training and Team Creativity

Nationality diversity training programs aim to increase trainees' "knowledge, skills, and attitudes" (KSAs) needed to work with

individuals from different nationalities (Aguinis & Kraiger, 2009, p. 452). As such, attending (diversity) training can potentially create positive outcomes for teams (Arthur, Bennett, Edens, & Bell, 2003; Ely & Thomas, 2001) by providing teams with the tools to make effective use of their nationality differences. However, the empirical record paints a rather inconsistent picture regarding the effectiveness of diversity training for team outcomes (Paluck, 2006; Roberson, Kulik, & Pepper, 2001). We propose that these ambiguous findings can be better understood by identifying critical contingencies of diversity training's effectiveness for team creativity.

Training effectiveness depends on an interaction between training design characteristics, trainee characteristics, and the work environment (Baldwin & Ford, 1988). First, training can only be effective if the trained KSAs can be used in the subsequent task setting (labeled *applicability* in the training literature; Blume, Ford, Baldwin, & Huang, 2010). Thus, the effectiveness of a nationality diversity training is likely to be contingent upon the degree of nationality diversity present within the team (Mathieu, Tannenbaum, & Salas, 1992; Salas, Tannenbaum, Kraiger, & Smith-Jentsch, 2012). That is, the more nationality diversity is present, the more team creativity should increase as a result of the diversity training contents' applicability to the team interaction.

Additionally, previous training research has revealed that a training is most effective for those with the largest discrepancy between actual and needed KSAs (Smith-Jentsch, Jentsch, Payne, & Salas, 1996). We argue that previously held attitudes regarding diversity determine the size of this discrepancy, such that diversity training will more strongly influence teams with less positive pretraining diversity beliefs. Diversity beliefs are the attitudes that people have about the value of diversity for team performance (Homan, van Knippenberg, Van Kleef, & De Dreu, 2007; van Knippenberg, Haslam, & Platow, 2007). In line with prior research, we conceptualize team diversity beliefs as a "configural unit property" (Klein & Kozlowski, 2000, p. 29), which captures the combination of the individual team members' attitudes toward diversity at the team level.

Teams consisting of individuals with more positive beliefs toward diversity should be better able to deal with and use their differences (i.e., have better developed diversity-related KSAs) than teams composed of individuals with less positive diversity beliefs (Homan et al., 2007; van Knippenberg et al., 2007, 2013). Supporting this reasoning, research has shown that teams with less positive diversity beliefs are more likely to experience subgroup categorization (Homan, Greer, Jehn, & Koning, 2010) and less likely to perform well than teams with more positive diversity beliefs (Homan et al., 2007, 2008). Thus, teams with less positive diversity beliefs can potentially benefit more from attending diversity training (compared with control training) than teams with more positive diversity beliefs, because they have more to gain from attending such a training.

The greater discrepancy between what is known and what is offered in the training (i.e., the increased need for the training) for teams with less (compared with more) positive diversity beliefs will result in diversity training being perceived as having a higher instrumentality. As a result, these teams will be more receptive and attentive to the ideas explicated in the diversity training (Mathieu et al., 1992). Consequently, teams with less positive diversity beliefs are more likely to scrutinize all informational input for its

relevance and usefulness (Smith-Jentsch et al., 1996), leading to more systematic information processing (Festinger, 1957; Maheswaran & Chaiken, 1991; see also De Dreu, Nijstad, & van Knippenberg, 2008). In comparison, teams with more positive diversity beliefs are less likely to experience the training information to be instrumental, because they are already aware of the potential value of diversity, which makes them less likely to engage in systematic information processing (Maheswaran & Chaiken, 1991).

Moreover, we propose that although teams with less positive diversity beliefs have the highest chance to benefit from diversity training, they might also be particularly sensitive to whether they are actually able to use the training in their work. The difference in the processing depth of training information for teams with less positive versus more positive diversity beliefs may make the degree of nationality diversity present in the team (and, thereby, the applicability of the training) more apparent for teams that previously held less positive diversity beliefs than for teams that already had more favorable attitudes toward diversity (Maheswaran & Chaiken, 1991). We argue that after diversity training (compared with control training), a higher degree of nationality diversity is seen as important for obtaining creative performance, especially for teams whose members initially had less positive diversity beliefs. Consequently, we propose that, under high nationality diversity, teams with less positive diversity beliefs will become more creative after attending diversity training compared with control training. Conversely, low levels of team nationality diversity constitute a lack of training applicability, because the KSAs that teams with less positive diversity beliefs obtained during the diversity training cannot be put to use. As a result, we argue that low nationality diversity will mitigate the positive effect of diversity training (compared with control training) on team creativity for teams with less positive diversity beliefs.

*Hypothesis 1:* There is a three-way interaction between training condition, diversity beliefs, and team nationality diversity on team creativity, such that for teams with less positive diversity beliefs, there is a positive relationship between attending diversity training (compared with control training) and team creativity, but only to the degree that the teams are high on nationality diversity.

### Team Efficacy as a Mediator

Team efficacy—the “shared belief in [the team’s] conjoint capabilities to organize and execute the course of action required to produce given levels of attainment” (Bandura, 1997, p. 447)—is considered a critical construct in understanding training effectiveness (Aguinis & Kraiger, 2009; Chen, Thomas, & Wallace, 2005; Gist, 1989; Lee & Farh, 2004; Salas & Cannon-Bowers, 2001), because “increases in self-efficacy help explain why trainees increase their use of skills learned in training back at the workplace” (Brown, 2003, p. 938). Diversity training may boost team efficacy by increasing team members’ effectiveness in dealing with diversity by means of vicarious experiences and verbal persuasion (Bandura, 1997; Salas et al., 2012). Indeed, previous research has established that diversity training results in higher “diversity efficacy beliefs” (Nelson, Poms, & Wolf, 2012, p. 49), which may, in turn, foster intentions to show positive diversity actions and initiatives (Combs & Luthans, 2007).

Similar to our reasoning pertaining to team creativity, we propose that for teams with less positive diversity beliefs (but not for teams with more positive diversity beliefs), team efficacy depends on the degree to which the KSAs learned during training can be applied to the job (Jex & Gudanowski, 1992). As a result, diversity training (compared with control training) is likely to increase team efficacy in teams with less positive diversity beliefs to the degree that there is more nationality diversity, because these teams have the opportunity to apply their newly acquired KSAs pertaining to working in nationality diverse teams. Conversely, when there is a lack of nationality diversity, it is less likely that team efficacy will increase after attending diversity training (compared with control training) in teams with less positive diversity beliefs, because the lack of nationality diversity constrains the potential applicability of the training.

*Hypothesis 2:* There is a three-way interaction between training condition, diversity beliefs, and team nationality diversity on team efficacy, such that for teams with less positive diversity beliefs, there is a positive relationship between attending diversity training (compared with control training) and team efficacy, but only among teams with relatively more nationality diversity.

Finally, we propose that team efficacy is positively related to the team’s creative performance (Bandura & Locke, 2003). Team efficacy has been found to positively influence team outcomes (Gully, Incalcaterra, Joshi, & Beaubien, 2002; Stajkovic, Lee, & Nyberg, 2009). An increase in efficacy enhances the effort teams exert to reach their goals (Earley, 1993; Gibson & Earley, 2007), which is, in turn, conducive to creativity (Amabile, 1983; Baer, Oldham, Jacobsohn, & Hollingshead, 2008). In line with Gibson and Earley (2007), we thus propose that team efficacy serves as a mediating link between diversity training and team creativity. That is, we argue that, under high (rather than low) nationality diversity, teams with less positive (rather than more positive) diversity beliefs experience increased team efficacy after diversity training (rather than control training), which, in turn, helps these teams to become more creative.

*Hypothesis 3:* Team efficacy mediates the interactive effect of training condition, diversity beliefs, and nationality diversity on team creativity.

## Method

### Design and Participants

Undergraduate students of 18 different majors at an international university in Germany participated in the experiment. Data of 192 of 202 participants was used ( $M_{\text{age}} = 20$ ;  $SD_{\text{age}} = 1.71$ ; 46% female). We excluded two three-person teams from data analysis, as well as a team in the control condition, that did not complete the team creativity task (making the final  $N = 48$  teams). A total of 41 nationalities were represented in the sample. The largest nationality groups were from Germany (30%); Romania (16%); the United States (6%); Bulgaria (5%); Macedonia, Moldova, Pakistan, and Nepal (all 4%); and China (3%). The remaining 25% of the sample was composed of members of the other 32 nationalities, such as Brazil, India, Russia, The Netherlands, and

Zimbabwe. The participants were recruited during courses and on campus. Some of the participants participated during lecture time, whereas others were directly invited to the laboratory. Within this context, participants were randomly assigned to four-person teams, and teams were randomly assigned to either the diversity training ( $n = 28$  teams) or the control training ( $n = 20$  teams) condition. Analysis of variance and chi-square tests revealed that participants in the two conditions did not differ significantly from each other with respect to age,  $F(1, 188) = .66, p = .42, \eta^2 = .003$ , gender,  $\chi^2(2, 192) = 1.64, p = .44$ , nationality,  $\chi^2(41, 192) = 48.03, p = .21$ , and major,  $\chi^2(19, 192) = 24.62, p = .17$ .

## Procedure

A week prior to the experiment, the participants completed a diversity beliefs questionnaire online. Upon arrival in the laboratory, they were welcomed, instructed, and introduced to their fellow team members. Teams then watched one of two training videos. After watching the video, they were taken to the team interaction rooms to work on a team creativity task and fill out a questionnaire. Afterward, the participants were thoroughly debriefed.

Most of the students earned class credit for participating in the experiment. To increase task motivation, all teams were told that they were eligible for voucher prizes based on their team's performance (i.e., the best performing team would receive \$20 per team member, followed by \$10 and \$5 for teams ending up in second and third place, respectively). However, because some teams had a higher chance of performing well than others because of the set-up of the experiment, we felt that it would be unfair to reward teams based on their performance. We therefore decided to offer the prizes to three random groups based on a raffle.

**Training manipulation.** Depending on condition, teams watched one of two different training videos of approximately 20 min. The diversity training video focused on how nationality diverse teams can make effective use of their diversity. To avoid confounding condition with providing a training or not, we created a control condition in which the teams watched a video on more efficient energy use, which is a topic that (a) could also easily be trained by means of a well-established training approach (see Salas et al., 2012), (b) is completely unrelated to diversity issues, and (c) is relevant and useful for many students.

The same male trainer presented the training in both videos. Both videos started with a short introduction, in which interviews with students stressed the importance of energy or nationality diversity, respectively. Thereafter, the actual training, following the steps described by Salas et al. (2012), started, comprising an instruction, a behavior modeling part, and a summary.

The instruction part of the diversity training was based on the categorization-elaboration model (van Knippenberg et al., 2004). The trainer explained both the potential drawbacks (i.e., subgroup categorization and intergroup bias) and virtues (i.e., utilization of diverse perspectives and ideas) of diversity, as well as the relationship of these processes with performance (e.g., creativity) in jargon-free language. In the behavioral modeling step, teams observed a diverse work team that first displayed ineffective, and then effective, team interaction.

The instruction part for the control condition conveyed information on the background, rationale, and means of energy saving,

all clarified by everyday examples. In the behavioral modeling part, a student role model first displayed unfavorable, environmentally unfriendly behaviors, which were then replaced by environmentally friendly behaviors.

**Team diversity beliefs.** Team members' diversity beliefs were assessed by asking participants to indicate, on a 5-point Likert scale, how strongly they agreed with four 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" ( $\alpha = .85$ ; Homan et al., 2010).

Because we used individual team member characteristics as predictors of team creativity, we needed to aggregate the diversity beliefs of the team members to the team level (Neuman & Wright, 1999). As noted earlier, we conceptualize team diversity beliefs as a "configural unit property" (Klein & Kozlowski, 2000, p. 29), capturing patterns of individual-level properties within the team. The appropriate way of aggregating these individual-level attitudes depends on the group task (Barrick, Stewart, Neubert, & Mount, 1998; Steiner, 1972). In our case, the task is best represented by an additive model (Steiner, 1972). In line with the additive composition model (Chan, 1998; Moynihan & Peterson, 2001), we used the average of the team members' scores to represent diversity beliefs at the team level (see Homan et al., 2008; Porter et al., 2003; Van Kleef et al., 2009, for representative examples of this procedure). Because individual team members may differ in their diversity beliefs, we controlled for dispersion effects (Klein & Kozlowski, 2000). The appropriate way to control for variability when examining a configural unit property is to incorporate the standard deviation of diversity beliefs as a control variable (see, e.g., Homan et al., 2008; Klein & Kozlowski, 2000; Van Kleef et al., 2009).

**Nationality diversity.** We operationalized nationality diversity as variety of different perspectives (Harrison & Klein, 2007), using Blau's (1977) index of heterogeneity. In four-person teams, the index can range from .00 to .75, with higher values indicating higher diversity (range in present sample = .00 to .75).

**Team creativity.** Teams worked for 20 min on a marketing task (see Robert & Cheung, 2010, for a similar task). Each team wrote a script for a short radio commercial for an international university. Importantly, the script was supposed to contain elements that made it appealing to a nationality diverse audience. We operationalized team creativity in a number of ways. First, we had coders evaluate the overall originality of the radio commercial (Guilford, 1967). This measure captured the overall uniqueness or originality of a team's solution (George & Zhou, 2001; rated on a 5-point scale from 1 = *not original at all* to 5 = *absolutely original*) by comparing the team's overall solution with those of the other teams ( $M = 2.40, SD = 1.18$ ). Second, we coded the number of different ideas that had a clear association with different nationalities (i.e., creative fluency; Taggar, 2002;  $M = 2.21, SD = 1.13$ ). Third, creative quality captured the quality of a team's proposed radio commercial in terms of its applicability to a nationality diverse audience (Taggar, 2002; rated on a 5-point scale from 1 = *very low quality* to 5 = *very high quality*;  $M = 2.04, SD = 0.74$ ).

Two raters (both aged 30; one male and one female) from the field of psychology and business administration, who were blind to the condition, coded the three creativity measures. Interrater reliability (prior to reconciliation of coding differences) was .66 for overall originality, .84 for nationality-specific creative fluency, and .74 for

nationality-specific solution quality. In the interest of economy of exposition, the three team creativity indices were standardized and combined into a composite team creativity measure ( $\alpha = .63$ ).<sup>1</sup>

**Team efficacy.** The team efficacy questionnaire was filled out after the teams had worked on the team creativity task, and before the independent raters coded the teams' performance. The scale consisted of two statements: "With focus and effort, this team can do anything we set out to accomplish" and "Achieving good team results was well within our reach" ( $r = .42, p < .001$ ; Edmondson, 1999; on a 5-point scale from 1 = *completely disagree* to 5 = *completely agree*). Following a referent-shift consensus model (Arthur, Bell, & Edwards, 2007), we aggregated individual ratings to the team mean. Median  $r_{wg(j)}$  (.87; James, Demaree, & Wolf, 1984) and intraclass correlation coefficients (ICCs),  $ICC(1) = .17, F(47, 144) = 1.80, p = .004$ , and  $ICC(2) = .45$ , justified aggregation to the team level (Bliese, 2000).

## Results

### Preliminary Analyses

Table 1 presents the variables' means, standard deviations, and zero-order correlations. Training condition, nationality diversity, and team diversity beliefs were not related to team creativity. Team diversity beliefs were positively related to team efficacy. Team efficacy was positively related to team creativity.

We checked whether the teams in the two training conditions were similar in terms of their diversity beliefs and nationality diversity. We found no differences between conditions in terms of the teams' prior diversity beliefs,  $F(1, 46) = 1.01, p = .32, \eta^2 = .02$ , nor in terms of their nationality diversity,  $F(1, 46) = .01, p = .93, \eta^2 = .00$ . We also checked whether other forms of diversity, as well as the team members' familiarity with each other prior to the study influenced the results. Controlling for sex diversity, university major diversity (both measured by Blau's, 1977, index), and familiarity (as indicated by the team members) did not change the pattern of results. We therefore proceeded to test our hypotheses without these controls (Becker, 2005).

### Hypothesis Testing

We conducted hierarchical regression analyses to test Hypotheses 1 and 2 (see Tables 2 and 3), which propose three-way

interactions between training condition, diversity beliefs, and nationality diversity, such that for teams with less positive diversity beliefs, attending diversity training (compared with attending control training) will be positively related to creative performance and team efficacy only if nationality diversity is high. Prior to calculating the product terms, we centered diversity beliefs and nationality diversity, and dummy-coded the training condition variable (control training = 0; diversity training = 1).

The three-way interaction between training condition, diversity beliefs, and nationality diversity was significantly related to team creativity and explained additional variance over and above the standard deviation of diversity beliefs and lower order effects ( $\beta = -0.73, t = -3.49, p = .001, \Delta R^2 = .18, F(1, 39) = 12.19, p = .001$ ). To further examine the three-way interaction, we performed simple-slope analyses (Aiken & West, 1991). We found a two-way interaction between training condition and nationality diversity on team creativity for teams with less positive diversity beliefs (1 *SD* below the mean;  $\beta = 1.66, t = 4.42, p < .001$ ), but not for teams with more positive diversity beliefs (1 *SD* above the mean;  $\beta = -.10, t = -0.46, p = .65$ ; see Figure 1). In line with Hypothesis 1, the association between attending diversity training and team creativity was positive for teams with less positive diversity beliefs and high nationality diversity ( $\beta = .81, t = 2.44, p = .02$ ). The association between attending diversity training and team creativity was negative for teams with less positive diversity beliefs when nationality diversity was low ( $\beta = -1.42, t = -3.51, p = .001$ ).

The three-way interaction between training condition, diversity beliefs, and nationality diversity was also significantly related to team efficacy, explaining additional variance over and above the *SD* of diversity beliefs and lower-order effects ( $\beta = -0.52, t = -2.57, p = .01, \Delta R^2 = .09, F(1, 39) = 6.59, p = .01$ ). We found a two-way interaction between training condition and nationality diversity on team efficacy for teams with less positive diversity beliefs ( $\beta = .74, t = 2.08, p = .04$ ), but not for teams with more positive diversity beliefs ( $\beta = -.39, t = -1.89, p = .07$ ). In line with Hypothesis 2, we find the predicted positive relationship between attending diversity training and team efficacy when nationality diversity was high ( $\beta = .80, t = 2.47, p = .02$ ). We found no significant relationship between attending diversity training and team efficacy when nationality diversity was low ( $\beta = -.32, t = -0.82, p = .42$ ; see Figure 2).

We then tested team efficacy as a mediator (Hypothesis 3) by following the product-of-coefficient approach as put forward by Morgan-Lopez and MacKinnon (2006).<sup>2</sup> The indirect effect of the three-way interaction on team creativity via team efficacy was

Table 1  
Means, Standard Deviations, and Correlations

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. <i>SD</i> diversity beliefs	0.59	0.26	—				
2. Training condition	.58	.50	.15	—			
3. Nationality diversity	.61	.19	.04	.01	—		
4. Team diversity beliefs	4.15	0.35	-.33*	-.15	-.08	—	
5. Team efficacy	5.80	0.61	-.04	.22	-.15	.49*	—
6. Overall team creativity	0.00	0.79	.29*	.23	.07	-.02	.44*

Note. *N* = 48. Control training was coded "0"; diversity training was coded "1." Overall team creativity is a standardized composite measure composed of overall originality, creative fluency, and creative quality. *SD* = standard deviation.

\*  $p < .05$ .

<sup>1</sup> The three-way interaction between training condition, diversity beliefs, and nationality diversity was significantly related to all three separate creativity indicators, and the patterns of results are similar to the results obtained using the composite creativity measure.

<sup>2</sup> Our data are not well-suited for the bootstrap approach to mediated moderation, due to the dichotomous predictor and a relatively small sample size (Hayes, 2013; also see Preacher, Rucker, & Hayes, 2007). However, we did explore our mediational model using the PROCESS tool, examining the role of team efficacy for different levels of our moderators (using 1,000 resamples and a 95% confidence interval). In line with our predictions, we find that team efficacy mediates the effects of training condition on team creativity (indirect effect = 0.44, *SE* = 0.27, 95% bias-corrected CI [0.3, 1.10]) when diversity beliefs were low and nationality diversity was high (i.e., one *SD* below/above the mean).

Table 2  
Results of Hierarchical Regression Analyses With Team Creativity As Outcome

Variable	Overall team creativity				
	Step 1	Step 2	Step 3	Step 4	Step 5
Step 1: Control					
Standard deviation diversity beliefs	.29* (0.43)	.29 (0.46)	.37* (0.48)	.22 (0.45)	.22 (0.41)
Step 2: Main effects					
Training condition		.20 (0.23)	.18 (0.23)	.10 (0.21)	-.01 (0.20)
Nationality diversity		.06 (0.58)	-.01 (0.79)	.02 (0.70)	.03 (0.63)
Team diversity beliefs		.11 (0.34)	-.26 (0.55)	-.16 (0.49)	-.46* (0.50)
Step 3: Two-way interactions					
Training Condition × Nationality Diversity			.24 (1.35)	.67* (1.42)	.59* (1.30)
Training Condition × Diversity Beliefs			.55* (0.74)	.64* (0.66)	.64* (0.60)
Nationality Diversity × Diversity Beliefs			-.01 (1.75)	.23 (1.72)	.13 (1.60)
Step 4: Three-way interaction					
Training Condition × Nationality Diversity × Diversity Beliefs				-.73* (4.07)	-.49* (3.99)
Step 5: Mediator					
Team efficacy					.46* (0.12)
$R^2$	.08	.13	.25	.43	.54
$F$	4.20*	1.66	1.90	3.66*	4.99*
$\Delta R^2$	.08	.05	.12	.18	.11
$F$ change	4.20*	0.83	2.07	12.19*	9.40*

Note.  $N = 48$ . Standardized regression coefficients ( $\beta$ ) are reported; standard errors are reported in parentheses. Control training was coded "0"; diversity training was coded "1." Overall team creativity is a standardized composite measure composed of overall originality, creative fluency, and creative quality. \*  $p < .05$ .

significant ( $b = -4.65$ ,  $SE = 2.36$ ,  $p < .05$ ; Sobel's  $z = -1.97$ ,  $p < .05$ ), supporting Hypothesis 3.

### Discussion

Nationality diversity is omnipresent in organizations, and it has been proposed to facilitate team creativity (McLeod et al., 1996). However, the relationship between nationality diversity and team creativity is elusive, and studies have documented positive as well as

negative effects of nationality diversity on team creativity (Stahl et al., 2010). This suggests that the usefulness of nationality diversity is contingent upon active diversity management (Bezrukova et al., 2012), such as diversity training. Interestingly, however, past work has shown that the effects of diversity training are also highly inconsistent (e.g., Anand & Winters, 2008; Kalinoski et al., 2013). This shows the need for a better understanding of when diversity training will be beneficial to nationality diverse teams. We argued that to

Table 3  
Results of Hierarchical Regression Analyses With Team Efficacy As Outcome

Variable	Team efficacy			
	Step 1	Step 2	Step 3	Step 4
Step 1: Control				
Standard deviation diversity beliefs	-.04 (0.57)	.10 (0.51)	.11 (0.57)	.01 (0.55)
Step 2: Main effects				
Training condition		.29* (0.25)	.30* (0.27)	.24 (0.26)
Nationality diversity		-.11 (0.64)	-.04 (0.92)	-.02 (0.86)
Team diversity beliefs		.56* (0.38)	.59* (0.65)	.66* (0.61)
Step 3: Two-way interactions				
Training Condition × Nationality Diversity			-.14 (1.58)	.17 (1.77)
Training Condition × Diversity Beliefs			-.07 (0.87)	-.00 (0.82)
Nationality Diversity × Diversity Beliefs			.05 (2.05)	.22 (2.14)
Step 4: Three-way interaction				
Training Condition × Nationality Diversity × Diversity Beliefs				-.52* (5.05)
$R^2$	.00	.35	.36	.45
$F$	0.08	5.86*	3.23*	4.05*
$\Delta R^2$	.00	.35	.01	.09
$F$ change	0.08	7.78*	0.18	6.59*

Note.  $N = 48$ . Standardized regression coefficients ( $\beta$ ) are reported, standard errors are reported in parentheses. Control training was coded "0"; diversity training was coded "1." \*  $p < .05$ .

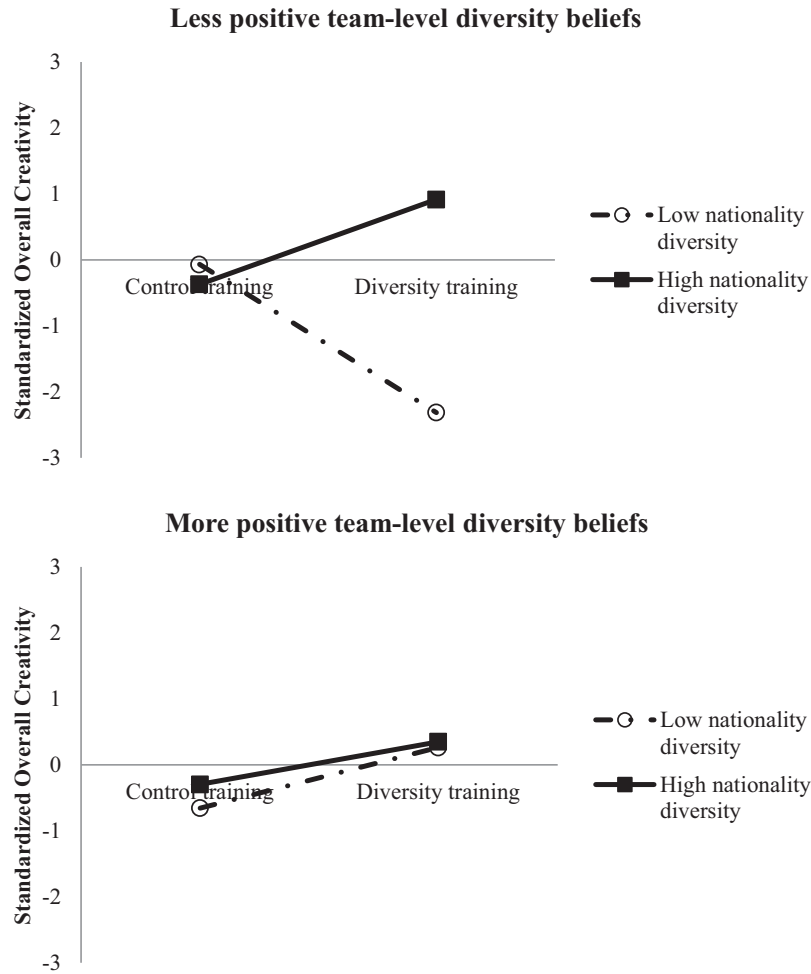


Figure 1. Graphical representation of the three-way interaction among training condition, diversity beliefs, and nationality diversity on overall team creativity.

understand these inconsistencies, we need a dual contingency model in which the effects of nationality diversity on team creativity are dependent not only on diversity training but also on team diversity beliefs. We proposed that diversity training can aid the creativity of nationality diverse teams, provided that these teams have more to gain from the diversity training (i.e., when they have less positive pretraining diversity beliefs). In line with our hypotheses, our results showed that nationality diverse teams with less positive diversity beliefs reported higher team efficacy after diversity training and developed more creative team products. Additionally, diversity training had detrimental effects on team creativity and no effect on team efficacy when there was little nationality diversity in the team and members had less positive diversity beliefs. Our findings shed new light on the complexities associated with the effective management of nationality diversity and on the promises and perils of diversity training.

**Theoretical Implications**

First, our findings contribute to theorizing on team diversity, where researchers have moved from a *main effects* to a *moderator* approach (van Knippenberg et al., 2004). We add to these findings

by showing that diversity by itself does not necessarily affect team outcomes much (van Knippenberg & Schippers, 2007), as we find no main effects of nationality diversity on our creativity measures. It is therefore important to take the context into account when predicting diversity effects. Extending previous work, we find evidence for a dual contingency model, showing that diversity training can be an effective tool to obtain the positive effects of nationality diversity for creativity when teams have less positive diversity beliefs, as the training enables them to build their KSAs in dealing with nationality diversity. Our results also indicate that the focus on diversity as a potential liability for teams might be extended to homogeneity as well. Diversity training initiatives could result in negative creativity outcomes for more homogeneous teams, but only when these teams have less positive pre-training diversity beliefs.

Our data also speak to the role of team efficacy as an underlying mechanism in explaining diversity training effectiveness. Teams with less positive diversity beliefs that attended diversity training showed higher team efficacy when the team scored higher on nationality diversity. Additionally, we showed that team efficacy



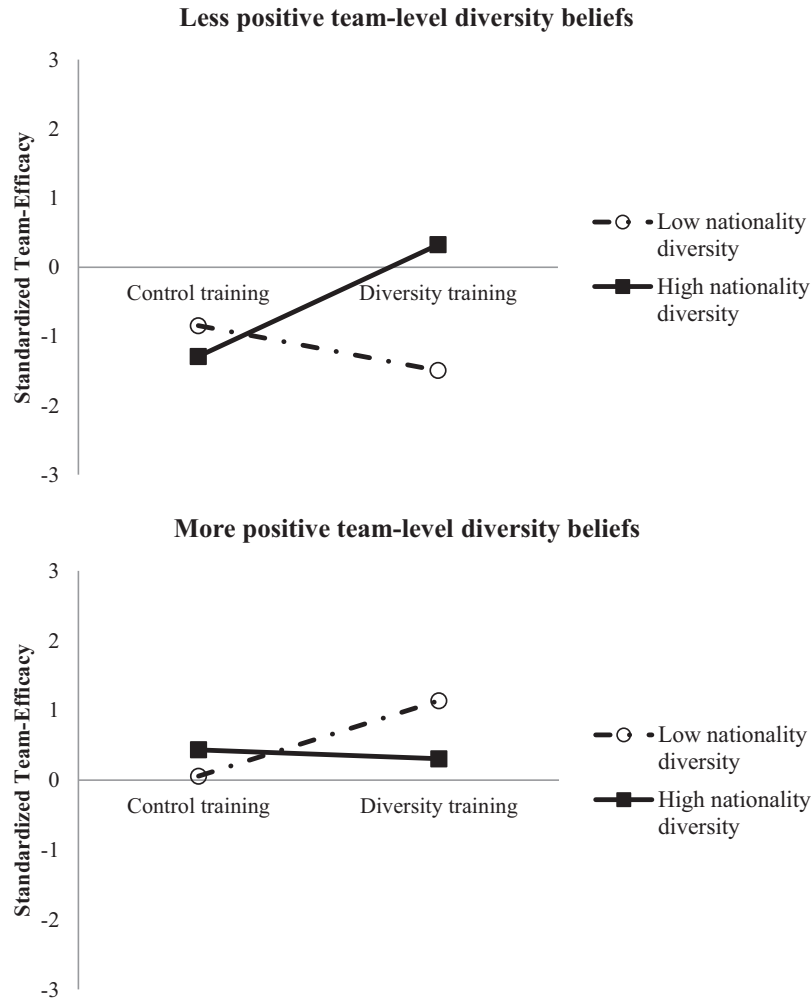


Figure 2. Graphical representation of the three-way interaction among training condition, diversity beliefs, and nationality diversity on team efficacy.

mediated the interactive effect of training condition, team diversity beliefs, and nationality diversity on team creativity. Although the positive effects of diversity training on team creativity for teams with less positive diversity beliefs were mitigated under low nationality diversity, team creativity was even harmed by diversity training under these conditions. The slightly different interaction patterns for team creativity and team efficacy suggest that additional mediators may be at play that could account for the negative effect on creativity. For instance, it is possible that teams with less positive diversity beliefs that received diversity training, but were low on nationality diversity, felt disadvantaged because they realized that the KSAs acquired during the training were not applicable in their current work situation.

We also extend previous work on diversity beliefs as a contingency factor in understanding diversity effects (van Knippenberg et al., 2013). Whereas pro-diversity beliefs were previously found to stimulate the use of differences in teams and limit subgroup categorization (e.g., Homan et al., 2007, 2008, 2010; van Knippenberg et al., 2007, 2013), the current data suggest that diversity beliefs may influence the effectiveness of organizational diversity

initiatives. That is, teams with more positive diversity beliefs seem to benefit less from diversity training, as they are already better able to utilize (nationality) diversity. Diversity training can, however, positively influence teams with less positive diversity beliefs, provided that they are able to apply the training content in a team that is characterized by high nationality diversity.

Our findings may also inform research pertaining to the previously found ambiguous effects of diversity training (Kalinowski et al., 2013; Roberson et al., 2001). Our data suggest that research on diversity training could benefit from examining moderators that fit within the “training by needs by environment” framework (Baldwin & Ford, 1988). Our results seem to hint that one moderator alone might not fully explain when diversity training is effective and when it is not, but that the interaction among multiple contextual factors must be taken into account. In this respect, we built on the argument that training is more likely to affect teams that have a greater discrepancy between what they already know and what the training teaches them (Smith-Jentsch et al., 1996; cf. Homan et al., 2008, 2010). We found that these teams (in a laboratory setting) were more likely to experience the positive

effects of diversity training, but only when the training was applicable (i.e., under high nationality diversity).

### Limitations and Future Directions

The current study has a number of limitations that open up some important and interesting avenues for future research. Although our controlled experimental research design enables us to establish causality, it also suffers from limited external validity. Even though the teams in our study performed a task that shows significant parallels with actual tasks in organizations (Amabile, 1982; Robert & Cheung, 2010), they were also created ad hoc and consisted of relatively young adults with little working experience. Consequently, it would be valuable to replicate these findings in organizational settings with long-term teams. Previous research comparing laboratory and field research has found that many findings obtained in the laboratory overlap with those obtained in the field (average correlations have been found to be between .71 and .73; Anderson, Lindsay, & Buschman, 1999; Mitchell, 2012). This suggests that our findings might indeed replicate in future organizational field studies.

Another question is whether diversity training effects persist over time. The experimental sessions were relatively short and the teams worked on the creativity task after the training manipulation. Although this short-term training evaluation showed effects depending on preexisting diversity beliefs as well as the team's nationality diversity, we could not test our hypotheses after a longer period of time. Future research, especially studies in organizational settings, could focus on the long-term effects of diversity training and its contingency factors. One could predict that the negative effect of diversity training for teams with less positive diversity beliefs, which are confronted with limited nationality diversity weaken over time, as their decreased team efficacy might be less prevalent after some time. However, it is also conceivable that, especially in relatively stable team environments, the constant experience that trained KSAs cannot be applied in the team could even result in decreased team commitment and increased team turnover (Bayazit & Mannix, 2003).

Our sample is specific in that our participants were students at a very diverse, international university. These students may in general be better able to deal with diversity (Homan et al., 2008), given that they chose to study at a university where they are constantly confronted with people from other nationality backgrounds. However, we believe that this sample feature made for a relatively conservative test of our hypotheses—that is, even for students who have generally positive diversity beliefs, we find that diversity training resulted in better creativity and higher team efficacy only for those who score relatively lower within this sample. When examining research using very similar constructs to the beliefs studied here (Flynn, 2005; Homan et al., 2008; Strauss & Sawyerr, 2009), we found that these relatively high scores are quite common for these types of constructs. It is conceivable, therefore, that our findings could be replicated in other settings and with different populations with relatively favorable diversity beliefs. However, it is unclear to what extent our findings would hold for people with negative attitudes toward diversity (e.g., people with racist beliefs). People who hold more negative beliefs about diversity may be less likely to appreciate the instrumentality of diversity training. We therefore believe that diversity training may

be ineffective and potentially counterproductive when given to individuals with strongly negative beliefs about diversity, even if the training were applicable. Future research is needed to examine this possibility.

Finally, it is unclear whether our findings are limited to nationality diversity or generalize to other forms of diversity. We were specifically interested in nationality diversity, because it is highly salient to people and often instigates subgroup categorization (e.g., Earley & Mosakowski, 2000; Kirkman, Cordery, Mathieu, Rosen, & Kukenberger, 2013), and at the same time setting the stage for creativity in teams (West, 2002). Nevertheless, many other diversity types not investigated here might also play a role in organizations (S. T. Bell, Villado, Lukasik, Belau, & Briggs, 2011) and affect teams' creative potential. Future research is needed to examine whether our findings generalize to, for instance, age or personality diversity.

### Practical Implications

Notwithstanding these limitations, our findings may have some practical implications with regard to the benefits and detriments of diversity, as well as the effectiveness of diversity training programs. First, our data suggest that a lack of nationality diversity may be a liability to organizations. Around 70% of companies invest in some sort of diversity training, regardless of the actual composition of the workforce in terms of nationality diversity (Paluck, 2006). Ironically, our findings hint at the possibility that providing diversity training to teams that are relatively low in nationality diversity and whose members hold less positive diversity beliefs could not only mitigate potential positive effects of diversity training but also may even result in reduced creative performance. Thus, we suggest that it is important to consider the level of nationality diversity in teams and organizations when designing diversity training programs.

Second, our findings speak to the question of whether diversity training should be mandatory or voluntary (M. P. Bell, Connerley, & Cocchiara, 2009). Some authors have proposed that voluntary diversity training creates a situation in which one "preaches to the converted" (Kulik, Pepper, Roberson, & Parker, 2007), missing those employees who have the greatest need for the training (Bezrukova et al., 2012). Our findings suggest that especially teams with less positive diversity beliefs may gain from diversity training, provided that they can use the trained KSAs in their work (i.e., work in nationality diverse teams). Otherwise, diversity training may backfire and actually undermine team creativity. Thus, although mandatory diversity training might be advisable for teams with less positive diversity beliefs, the team's diversity could be used as another decision rule to determine who should be trained.

### Conclusion

Nationality diversity is a double-edged sword, and research on training programs aimed at reaping the potential benefits of diversity has produced inconsistent evidence as to the effectiveness of such programs. Our findings indicate that diversity training can improve team creativity in nationality diverse teams, provided that it is combined with less positive pretraining diversity beliefs. Under conditions of low nationality diversity, diversity training

may deteriorate team creative performance when teams have less positive pretraining diversity beliefs. We hope that these results will stimulate further research to systematically examine the contingencies of the effects of nationality diversity and diversity training, thereby helping organizations to make optimal use of a diverse workforce.

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