Diversity and Team Creativity: Exploring Underlying Mechanisms

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Past research demonstrates that the relationship between distinct subgroups within teams can be improved using interventions that emphasize commonalities, such as a superordinate team identity. By comparing the creative outcomes of 51 racio-ethnically diverse teams, comprised of both majority and minority racio-ethnic subgroups, this study shows when a common ingroup identity will lead to higher creativity. We hypothesize that there is a combined effect of racio-ethnic identity and superordinate team identity salience on the usefulness as well as the novelty of team's ideas. Accordingly, we found that superordinate team identity salience had a positive effect on novelty, but only when differences between subgroups were also made salient. There was no joint influence on the usefulness of ideas. Furthermore, our results showed that the relationship between the simultaneous salience of the superordinate team and racio-ethnic identities on the novelty of ideas generated was mediated by team member's perception of the team as unified and inclusive. Collectively, racio-ethnic subgroup and superordinate identity salience foster a feeling of a common "we," which in turn support the generation of novel ideas. Limitations and suggestions for future research are discussed.

Keywords: racio-ethnic diversity, teams, novelty, identity, heterogeneity

Companies must continuously generate new ideas, services, and products to remain innovative and prosper in today's increasingly global marketplace (Pil & Cohen, 2006; Subramaniam & Youndt, 2005). Collectively developing creative outputs requires that small, diverse groups are able to draw on members' perspectives and expertise to generate new and potentially useful ideas (Amabile, 1988; Nemeth, 1997; Woodman, Sawyer, & Griffin, 1993). Because creativity involves combining previously unrelated things into something new or borrowing ideas or insights from one area and adapting them for another (Amabile, 1996), heterogeneity stemming from diversity in racio-ethnic backgrounds of team members may afford teams with the cognitive resources generate novel products and solutions to better meet customer needs (Cox, 1995; Cox & Blake, 1991; McLeod, Lobel, & Cox, 1996). Yet, teams often struggle to leverage their diversity because their heterogeneity can also trigger negative reactions, such as reduced liking (Tsui & O'Reilly, 1989) and less communication (Smith et al., 1994), which can undermine team processes and creative performance (Milliken, Bartel, & Kurtzberg, 2003). Overt demographic differences—those that are readily available such as race or gender (Harrison, Price, & Bell, 1998; Harrison, Price, Gavin, & Florey, 2002), for instance, can create a team divide and trigger an "us" versus "them" orientation that undermines both inter-

action (Tajfel & Turner, 1986) and a team's capacity to generate novel ideas (Nishii & Goncalo, 2008).

Past research demonstrates that interventions that emphasize commonalities among members can reduce bias and support improved relations between distinct factions within teams (see Gaertner, Dovidio, Anastasio, Bachman, & Rust, 1993; Gaertner & Dovidio, 2000, 2012; for reviews), which can help to overcome challenges that diverse teams face. Evidence has generally supported the positive influence of a superordinate team identity on facilitating key team outcomes such as information sharing, learning, and effectiveness in multidisciplinary and cross-functional teams (Jehn & Bezrukova, 2004: Mitchell, Parker, & Giles, 2011; Van der Vegt & Bunderson, 2005). Scholars, however, are also increasingly recognizing that the strategy of focusing on a superordinate team identity may not always be effective in reducing intergroup bias and relations when collectives are comprised of minority and majority subgroups (Dovidio, Gaertner, Ufkes, Saguy, & Pearson, 2016). Rather, it is important to consider the nature of the identity itself as well as features of the context (Haslam & Ellemers, 2005, 2011). When subgroup identities are important to the self-concept of team members, for instance, emphasizing the superordinate identity and eclipsing differences between members could potentially reduce the willingness of team members to bring their unique perspectives to bear on the team task. Thus, there remains an important gap in the social identity literature: to date, we know little about when emphasizing a common group identity, which can distract from differences between subgroups (Dovidio, Gaertner, & Saguy, 2009), will positively impact team creative outcomes of teams with racio-ethnic heterogeneity. As it stands, research on the interventions focused on the common "we" has tended to overlook how processes of assimilation can affect team members for whom the subgroup identity may be important to the self-concept (Brewer, 1991).

Ideas are often deemed as creative depending on how novel and useful they are (Amabile, 1982; Fujita, Trope, Liberman, & Levin-Sagi, 2006). While novelty is related to originality (Baughman & Mumford, 1995; Chua & Iyengar, 2008; Mobley, Doares, & Mumford, 1992), the usefulness of an idea is associated with its practicality (Diehl & Stroebe, 1987; Rietzschel, Nijstad, & Stroebe, 2007) or effectiveness at addressing a problem or need (Runco & Charles, 1993). Drawing on the conceptual definition of creativity (Amabile, 1982), the majority of creativity studies assess the creativity of ideas using a composite score that combines these two criteria together. Evidence suggests, however, that novelty and usefulness are conceptually quite distinct and influenced by very different antecedents (Lee, Walsh, & Wang, 2015; Yong, Sauer, & Mannix, 2014). In this research, we are careful not to blur the conceptual and empirical distinctions between novel and useful ideas and examine the combined influence of racio-ethnic identity and superordinate team identity salience on each separately.

In accordance with the fusion model of cross-cultural team collaboration, which proposes and finds that cultural differences within a team can coexist and jointly contribute to facilitating team creativity (Crotty & Brett, 2012; Janssens & Brett, 2006), we develop and test our hypothesis that interventions focused on commonalities, such as a superordinate team identity, may be limited in facilitating a team's ability to generate novel ideas in some circumstances. When subgroup differences are not salient, an intervention emphasizing a common ingroup identity can promote unification between subgroups, but will not arouse the motivation of diverse subgroup members to draw upon their unique ideas and perspectives. To overcome this limitation, especially in teams working on tasks where diversity is critical for task performance, interventions emphasizing a collective group identity will be most effective if the features that differentiate subgroups are also accentuated.

This study focuses on teams where features of surface-level diversity among members, in terms of racio-ethnic background, are immediately visible from the first moments of interaction (Harrison et al., 2002; Zellmer-Bruhn, Maloney, Bhappu, & Salvador, 2008). We seek to understand if and/or when interventions that focus on a common "we" will help teams to leverage their surface-level diversity to generate novel and useful creative outcomes. To accomplish this aim, we sought: (a) to investigate whether the effectiveness of an intervention emphasizing a common ingroup depends on the salience of surface-level (i.e., racio-ethnic) sub-

group differences and (b) to identify an underlying mechanism (i.e., perceptions of a team's inclusiveness) that explains how racio-ethnic identity and superordinate team identity salience jointly influence two distinct components of creativity—novelty and usefulness. Answering the call for research to better understand the mechanisms underlying multicultural teams' higher levels of creative performance observed by earlier researchers (Earley & Gibson, 2002; Jackson, May, & Whitney, 1995), we also aim to identify that team members' perceptions of a team as inclusiveness and unified explains the joint influence that racio-ethnic subgroup and team superordinate identities have on the novelty and usefulness of the team's ideas.

Background and Hypotheses

When individuals identify with or categorize themselves as members of a social aggregate, this membership can define their sense of self-certainty and self-esteem (Brewer & Brown, 1998; Hewstone, Rubin, & Willis, 2002). If the subgroup identity is not central to the self-concept of team members, a superordinate identity intervention can easily encourage members of distinct subgroups to assimilate within the subordinate group. When subgroup members define themselves in terms of the superordinate group rather than their subgroup, this has a positive impact on intergroup relations (Gaertner & Dovidio, 2000). The salience of a common ingroup identity can lead members to recast former "outgroup members" as ingroup members and to perceive them more favorably in terms of trustworthiness, honesty, and likability (Dovidio, Gaertner, Niemann, & Snider, 2001). Indeed, when a strong superordinate identity exists, members are more willing to consider the contributions of unfamiliar team members (Kane, Argote, & Levine, 2005; Kane, 2010). Superordinate group identity has been shown to improve the development of novel ideas within diverse teams that included members working across departments (Dokko, Kane, & Tortoriello, 2014).

Research on optimal distinctiveness theory suggests that a threat to distinctiveness can erode harmony between subgroups and undermine collaborative potential (Brewer, 1991). For instance, members of subgroups can resist defining themselves in terms of the superordi-

nate identity (e.g., Brown & Wade, 1987; González & Brown, 2006), especially when subgroup differences that make them unique are overlooked (Breakwell, 1983; Hornsey & Hogg, 2000; Jetten, Spears, & Manstead, 1997). So, whereas the primacy of the superordinate team identity may foster motivation for subgroup members to exert effort for the benefit of the collective, failure to acknowledge the subgroup's distinctiveness—especially when the racio-ethnic identity is meaningful to some team members—can pose a threat to the subgroup's sense of uniqueness and undermine the orientation toward working to achieve the aims of the superordinate group (Branscombe, Ellemers, Spears, & Doosje, 1999; Hornsey & Hogg, 2000; Jetten, Duck, Terry, & O'Brien, 2002). Findings from group-based reactions to mergers, for instance, indicate that when employees can maintain their premerger identity during and following a merger that identification with the superordinate postmerger group is enhanced (Jetten et al., 1997; van Leeuwen, van Knippenberg, & Ellemers, 2003). Taken together, these studies provide evidence that when subgroup identities are not threatened by the superordinate identity but are equally emphasized, harmonious cross-boundary attitudes can emerge to support intergroup interaction (González & Brown, 2003; Hornsey & Hogg, 2000; Jetten et al., 1997; van Leeuwen et al., 2003). We extend this research to explore whether the joint benefits of emphasizing both subgroup differences and a superordinate identity can extend beyond influencing intergroup attitudes and beliefs to also affect the novelty and usefulness of team's ideas.

The Joint Effect of Identities on Team Idea Novelty and Usefulness

Novelty and usefulness, albeit both components of creativity, can hardly be combined (Erez & Nouri, 2010). Several studies elucidate how some antecedents of idea novelty do not predict idea usefulness (Lee, Walsh, & Wang, 2015; Yong et al., 2014). More recently, scholars elucidate that individuals generate new ideas and solutions when they are intrinsically motivated (Grant & Berry, 2011), feel safe to take risks, and are willing to explore new domains (Hirst, Van Knippenberg, & Zhou, 2009). Useful solutions, on the other hand, are facilitated

when individuals consider the perspectives of others (Grant & Berry, 2011) and are motivated to reduce uncertainty by drawing on well-known practices and knowledge (Janssen & van Yperen, 2004). Although working in diverse groups should stimulate the consideration of non-obvious alternatives (Cox, Lobel, & McLeod, 1991; McLeod & Lobel, 1992), it can also be anxiety-provoking because of the cognitive and affective demands of interacting with people from a group other than one's own (Blascovich, Mendes, Hunter, Lickel, & Kowai-Bell, 2001; Richeson & Trawalter, 2005). In this study, we will extend this body of research and test the effect of racio-ethnic identity and superordinate team identity salience on each of these creativity components separately.

We argue that making both the superordinate team identity and surface-level subgroup differences salient simultaneously will enable team members of diverse teams to use all the unique and diverse knowledge that they possess. This theorizing is consistent with the central tenets of optimal distinctiveness theory (Brewer, 1991). This theory posits that a balance between the superordinate and subgroup identities is ideal for highlighting sharedness, but also cautions that subgroup uniqueness should not be over-looked. In teams with racio-ethnic diversity, therefore, the salience of both superordinate and racio-ethnic subgroup identities will reduce the likelihood that any single identity will eclipse the other, enabling members to identify with the team and with their subgroup identity.

The salience of the racio-ethnic identity in diverse teams shapes the ability of a diverse team to generate novel ideas. Divergent perspectives through which team members understand and approach the team task are shaped by their experiences as members of different cultural groups, each of which adheres to distinct social norms, values, and traditions (Chua, 2013). Demographic differences, such as racio-ethnic background, can be indicators of deeper differences in the knowledge, skills, and abilities that individual team members possess, as well as their general understanding of the world (Chua, Morris, & Mor, 2012; McGrath, Berdahl, & Arrow, 1995). The variety of knowledge corresponding to racio-ethnic differences among team members, therefore, is a possible intellectual resource that can be leveraged in the idea generation processes to stimulate novel

team outputs (Chua, 2013; Giambatista & Bhappu, 2010). When racio-ethnic subgroup boundaries in a team are made salient, we argue that the heterogeneity of knowledge that ethnically diverse members possess will become be more apparent. Enhanced exposure to divergent perspectives can promote team members collective understanding of who knows what (Austin, 2003; Lewis, 2004) and foster new and divergent pathways of thought necessary to generate novel ideas (Shalley, Zhou, & Oldham, 2004).

Although the variety of knowledge can become more apparent to team members when overt demographic differences among them are made salient (Pearsall, Ellis, & Evans, 2008), such subgroup differentiation can also make members resistant to cross-subgroup collaboration. To counter this tendency, the salience of a superordinate identity can override the adverse effects of subgroup identity differences in diverse teams (Brewer & Miller, 1984). High superordinate identity enhances the perception of intrateam similarities and leads to the psychological acceptance of members from other racio-ethnic groups (Gaertner, Dovidio, & Bachman, 1996), thereby reducing bias (Hewstone, 1990) and fostering more positive relations between different subgroups (Hornsey & Hogg, 2000). Moreover, when a superordinate team identity is made salient, team members will appreciate the unique contributions of members from other racio-ethnic groups more because they will associate team members' motives with advancing the group's goals (Haslam, Adarves-Yorno, Postmes, & Jans, 2013). When coupled the explicit acknowledgment of racio-ethnic differences, a shared superordinate identity should stimulate the cross-fertilization of novel ideas among diverse team members. Given the importance of combining seeming unrelated knowledge together for the collective generation of novel ideas (Amabile, Conti, Coon, Lazenby, & Herron, 1996; Paulus, 2000; Perry-Smith & Shalley, 2003), teams will therefore generate more novel ideas when both the racio-ethnic subgroup and superordinate team identity are both salient (Figure 1). Thus, we hypothesize the following:

> *Hypothesis 1a:* The positive relationship between racio-ethnic identity salience and the novelty of ideas generated will be
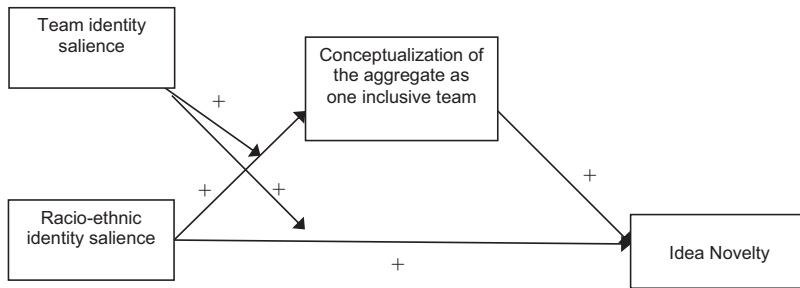
Figure 1. Conceptual research model for Hypotheses 1a and 2.

strengthened when a team identity is also salient.

To generate more useful ideas, the salience of racio-ethnic diversity may not have the same positive impact as it has on novelty. When working on a generative task, heightened uncertainty can enhance a tendency to draw upon well-known practices and frameworks than consider risky and uncommon alternatives (Janssen & van Yperen, 2004). Research also demonstrates that working in a diverse team can cause a great deal of anxiety because of the cognitive and affective demands associated with working with people from other social groups (Blascovich et al., 2001; Richeson & Trawalter, 2005). Examinations of interracial encounters suggest that both White majority and racio-ethnic minority individuals can often feel anxious, self-conscious, and uncomfortable (Mendoza-Denton, Downey, Purdue, Davis, & Pietrzak, 2002; Stephan & Stephan, 2002). Self-disclosure between members has been found to reduce this felt uncertainty during such intergroup situations (Islam & Hewstone, 1993; Voci & Hewstons, 2003). Thus, when members are not given the opportunity to talk about their unique racio-ethnic backgrounds, like in the no racio-ethnic identity salience condition, intergroup tensions will be heightened. More useful ideas and nonrisky ideas will, therefore, be generated in teams where racio-ethnic differences are not explicitly shared or made salient among members.

A shared identity is argued to help team members see more similarities among themselves (Tajfel, 1981), which could potentially reduce the bias that can make team members overlook or reject the perspectives of fellow team members from other racio-ethnic groups (Hogg & Abrams, 1988; Levine & Moreland, 1987). A superordinate team identity, for instance, has been shown to help members to recast former outgroup members as ingroup members, thereby increasing their willingness to consider and act upon fellow team members' contributions (Kane, 2010). Although a superordinate identity can be beneficial in teams where differences among members are made salient, we see difficulties with this strategy with regards to the development of useful ideas in teams where meaningful differences are overlooked.

In a team with a greater tendency to develop more useful ideas, such as in group settings where meaningful racio-ethnic differences are suppressed, the salience of a shared superordinate identity will reduce this uncertainty somewhat to foster the exchange of ideas among members. Without the salience of racio-ethnic identity, however, the exchange of ideas will likely consist of mostly useful rather than novel ideas because members will continue to be hesitant to draw upon their risky or unique perspectives. On the other hand, when a superordinate team identity is not made salient, the level of uncertainty experienced in teams where racio-ethnic differences will remain unchanged. Uncertainty experienced by team members will likely increase their tendency to develop useful and nonrisky ideas (Janssen & van Yperen, 2004)—especially when neither a superordinate team identity nor ethnic identity is made salient. Thus, we hypothesize that the negative relationship between racio-ethnic identity salience and the usefulness of ideas will be strengthened

when a superordinate team identity is not salient (Figure 2).

> *Hypothesis 1b:* The negative relationship between racio-ethnic identity salience and the usefulness of ideas will be strengthened when a superordinate team identity is not salient.

Mediating Effect of Team Inclusiveness

Besides parsing out *when* the salience of a team identity will interact with racio-ethnic identity salience will improve the novelty of team ideas in racio-ethnically diverse teams, it is important to understand *how* these two factors have their joint influence. The salience of subgroup and superordinate identities can affect the cognitive representations that members have of their team as one unified and inclusive unit (Gaertner et al., 1993). First, when subgroup boundaries are made salient along with a superordinate identity, the team members will be more willing to believe that distinct ethnic groups can maintain the features that make them distinct while coexisting with one another. In addition, the simultaneous salience of the racio-ethnic identities and team superordinate identities can help team members in forming a more complex view of the superordinate category as having several different characteristics or prototypes (e.g., distinct ethnic groups; Wenzel, Mummendey, & Waldzus, 2007). Taken together, a salient team identity that is present when subgroup boundaries are also made salient can facilitate the perception of the collective as unified and inclusive of differences.

When an individual believes that two distinct groups can coexist, it can have a positive influence on both the novelty of the ideas that they produce. The perception that two cultures are compatible, for instance, enables bicultural individuals to effectively access and combine in-

sights from the various cultures that they have experienced to generate novel ideas (Cheng, Sanchez-Burks, & Lee, 2008). In a similar vein, perceiving a diverse team to be inclusive and unified may trigger a cognitive shift for team members enabling greater consideration and integration of cultural perspectives contributed by members of other subgroups within the team. This flexible processing of information, or cognitive flexibility (De Dreu, Nijstad, & Baas, 2011), has been positively linked to the generation of novel ideas in teams (e.g., Nemeth & Nemeth-Brown, 2003; van Knippenberg, de Dreu, & Homan, 2004). Increased cognitive flexibility and willingness of team members to consider a broad variety of perspectives will, therefore, be more common in teams when members perceive diverse racio-ethnic subgroups as unified within the collective, and help the team to generate more novel ideas. We predict that the simultaneous salience of the superordinate team identity and on racio-ethnic subgroup differences can foster a perception of the aggregate unit as inclusive despite ethnic differences among team members, which in turn will foster idea novelty (Figure 1).

> *Hypothesis 2:* The conditional indirect effect of racio-ethnic identity salience in predicting idea novelty via members' perception of the team as inclusive will be stronger for those teams with a salient superordinate team identity.

Method

Sample

All participants were enrolled as full-time students at a university in the southeastern United States. Prior to participating in the laboratory portion of the experiment, individuals completed a brief prescreening questionnaire.
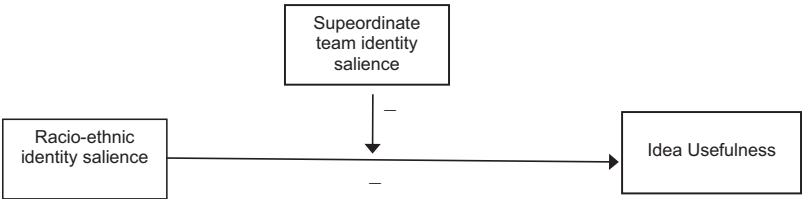

Figure 2.   Conceptual research model for Hypothesis 1b.

From their responses to options also used by the U.S. Census Bureau, we asked participants to indicate their racio-ethnic background by choosing from the following: (a) White/Caucasian, Anglo, European American; not Hispanic; (b) Black/African American; (c) Hispanic or Latino, including Mexican American, Central American; (d) Asian or Asian American, including Chinese, Japanese; (e) Pacific Islander or Native Hawaiian; (f) American Indian; and (g) Alaskan Native. Biracial individuals who selected more than one were excluded from the study. According to the U.S. Census Bureau (https://www.census.gov/topics/population/race/about.html), all the previously mentioned are considered a race, except for Hispanic or Latinos, which is viewed as an ethnicity (see Table 1 for a demographics in our study sample).

In total, we had 204 undergraduates voluntarily participate in the laboratory experiment. Participants chose to receive either credit to apply toward their class research requirement or a $10 gift card. Each team consisted of two minority and two majority Caucasian members. Within each team, minority members were from the same racio-ethnic group. In our sample, we had 17 racio-ethnic diverse teams comprised Black/African American dyads, 20 with His-

panic or Latino dyads, 13 with Asian or Asian American dyads, and 1 team with an American Indian dyad. Teams were randomly assigned to one of the four conditions: (1) low racio-ethnic identity salience, no superordinate team identity; (2) high racio-ethnic identity salience, no superordinate team identity; (3) low racio-ethnic identity salience, superordinate team identity; or (4) high racio-ethnic identity salience, superordinate team identity.

Experimental Task

Upon participants' arrival, each team was placed in a private conference room for the experiment, which took approximately an hour to complete. After filling out the informed consent form and an initial set of measures, the participants were asked to support war reconstruction efforts in an area of a very racially and ethnically diverse population. Examples of war reconstruction efforts include helping to make society safe, secure, and prosperous. Participants were told that their task was to design and create slogans for an advertising campaign to aid volunteer recruitment. This task was adapted from previous creativity research that used slogan development to assess creativity

Table 1
Sample Demographics

Demographics	Experimental conditions				Total
N	64[1]	36[2]	56[3]	48[4]	204
Sex					
Female	63%	88%	86%	58%	62%
Male	37%	12%	14%	42%	38%
Age	20.95	23.02	19.21	21.14	21.08
Race and ethnicity					
Caucasian	50%	50%	50%	50%	50%
Black/African	15%	20%	16%	19%	17.5%
Hispanic/Latino	22%	25%	12%	19%	19.5%
Asian/Asian American	13%	5%	17%	12%	11.75%
American Indian	0%	0%	5%	0%	1.25%
College major					
Psychology	20%	25%	14%	15%	19%
Biology	22%	23%	14%	19%	20%
Engineering	10%	14%	9%	17%	13%
Business	8%	14%	9%	6%	9%
Nursing	5%	9%	5%	8%	7%
Others/undecided	35%	15%	49%	35%	33%

Note. N = 204.
[1] No superordinate identity/no racio-ethnic identity salience condition. [2] No superordinate identity/racio-ethnic identity salience condition. [3] Superordinate identity/no racio-ethnic identity salience condition. [4] Superordinate identity/racio-ethnic identity salience condition.

(Beersma & De Dreu, 2005; Goncalo & Staw, 2006). When surface-level demographic diversity are relevant dimensions for the task, such as race and ethnicity, teams identify a variety of perspectives (Watson, Kumar, & Michaelsen, 1993) and produce higher quality (McLeod et al., 1996) and more creative ideas (Pearsall, Ellis, & Evans, 2008). Our slogan task, written by researchers, was one where task performance was likely to benefit from the racio-ethnic diversity present in the team.

Previous research has supported the idea that individually brainstorming and then coming together yields better idea generation than just working in groups (Girotra, Terwiesch, & Ulrich, 2010). Each participant was given 5 min to develop slogans for the advertising campaign independent from their team members. Next, the experimenter explained the objective of the team task. The objective was the same as for the individual task, with the exception participants were asked to generate their slogans collectively rather than individually.

Participants discussed their possible slogans for 10 min. Then, the experimenter told the participants they had 3 min to come to a consensus and pick one of the slogans as a team. Each team indicated their final slogan by circling it on the paper provided. All discussion periods were audio and video recorded. After executing the task, participants completed a final questionnaire and were debriefed.

Experimental Manipulations

We manipulated the racio-ethnic and superordinate team identity salience as follows.

Racio-ethnic identity salience manipulation. The racio-ethnic identity salience had two levels: low salience (i.e., visual expression of difference) and high salience (i.e., visual and verbal expression of difference). Each team was comprised of two participants who had self-identified as Caucasian, and two participants who had self-identified as having the same racio-ethnic background other than Caucasian (e.g., both Asian or both Hispanic) were randomly assigned to these various conditions. In the low racio-ethnic identity salience condition ($N = 30$), there was no mention of members' racio-ethnic differences made during the experimental session. In the high salience condition ($N = 21$), in addition to having the visual cue of racio-ethnic heterogeneity, participants stated their racio-ethnic background when introducing themselves to the group. We coded the low salience condition as 0 and the high salience condition as 1.

Superordinate team identity salience manipulation. The perception of a superordinate identity can be altered through the manipulation of cues in the social context (Ashforth & Mael, 1989). Distinct cues were used in this study to distinguish the high team identity versus low team identity conditions in teams. Drawing on manipulations used by other scholars (Kane et al., 2005), in the high superordinate team identity salience conditions ($N = 26$), the experimenter asked participants to come up with a team name and referred to them by this team name. Also, the team members all received name tags and pens of the same color. The use of a common team name and uniform supplies were intended to foster the perception of similarities among group members and enhance team identification. Conversely, participants who were in the no salient team identity condition ($N = 25$) did not have to come up with a team name, and rather than being referred to collectively as a team, team members were addressed individually as "you." In line with this rationale, participants in this condition received nametags and pens of different colors. Teams in the no team identity condition were coded as 0, whereas those in the condition where the superordinate identity was made salient were coded as 1.

Measures

Study variables were collected from either validated self-report measures or qualitative coding of team products. All questionnaire items were measured on a 5-point Likert scales. We created scale scores by averaging members' responses to the respective scale items. To support aggregation, we computed interrater agreement, $rw_{g(j)}$, following James, Demaree, and Wolf's (1984) recommendation, with median rwg values of .70 generally considered sufficient to support aggregation. In addition, we calculated intraclass correlation ICC(1), which represents the perception of the members' variance that is attributable to team membership, and ICC(2), which indicates the reliability index of mean scores (Bliese, 2000). Values of 0.70 and higher are considered acceptable, values

between 0.50 and 0.70 are marginal, and values lower than 0.50 are poor (Klein, Bliese, Koslowski, et al., 2000).

Creativity. The dependent variable of team creative outcomes had two components: novelty and usefulness of ideas. Novelty refers to ideas that are not common (Goncalo & Staw, 2006). Two raters who were blind to both the experimental manipulations and the hypotheses coded each idea for creativity; they were told to categorize the "novelty" of the slogans, using a Likert scale ranging from 1 (*Is it another organization/industry/business's slogan or it is a generic or very common statement?*) to 6 (*Is the slogan/statement unlike anything you've ever heard (i.e., is it rhythmic or catchy)?*). In addition, each rater was instructed to think about and assess the usefulness of the slogan for task completion, using a Likert scale ranging from 1 (*Does the slogan seem completely unrelated?*) to 5 (*Does the slogan capture/mention a combination of the key words* [*e.g., recruitment AND security AND home/community*] *and can it be understood within the context of the goal?*). Each slogan was double-coded by each of these two external raters after all the data was collected from the experiments. After being provided with our coding instructions, raters first worked independently to code slogans from pilot data. At the onset of coding, coders discussed discrepancies in their coding to help improve interrater reliability. Then, coders rated experimental data. Once all ratings were complete, interrater agreement for subjective ratings of novelty was .75 and usefulness was .78, thus considered acceptable and justified these scores' inclusion in further analysis (Cicchetti & Sparrow, 1981). Accordingly, the average of the ratings from the two raters represented the operationalization of the dependent variables in this study.

Perception of the team as one inclusive group. The mediating variable assessed the extent to which team members perceived the group as unified and inclusive. We drew upon a one-item measure developed and used by Gaertner, Rust, Dovidio, Bachman, and Anastasio (1994) that recognizes the existence of difference groups within the context of a common superordinate identity which stated, "Although there are different groups of students at this school, it feels as though we are all playing on the same team." To fit our research context, our adapted measure stated, "Despite differences among team members, there's frequently the sense that we are all just one group," on a scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Higher scores indicated that the team felt united and had undergone the process of recategorizing from separate individuals to one group. Participants responses showed high agreement (rwg = .74, rwg$_{\text{moderately skewed}}$ = .86) and acceptable levels of interrater reliability, ICC(1) = .59, ICC(2) = .64. Although within an acceptable range, the ICC(2) value prompted further exploration of whether demographic differences in terms of subgroup racioethnic backgrounds could be affecting the reliability of this psychological perception of the team in a supplementary analysis.

Manipulation check—superordinate team identification. To verify the effectiveness of the distinct cues employed by the research team to make a superordinate identity salient and alter team identification of group members, participants indicated the degree to which they agreed with the statement, "I identify with my team," using a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). This single item has been shown to be equivalent to social identity scales with multiple items (Postmes, Haslam, & Jans, 2013). The ratio of between-groups to total variance was acceptable with ICC(1) = .63, along with the reliability of average group perceptions, ICC(2) = .76. These values, along with the acceptable level of agreement between members' reported team identification was also acceptable (rwg = .73, rwg$_{\text{moderately skewed}}$ = .86) to justify aggregation.

Manipulation check—racio-ethnic identification. Our racio-ethnic identity salience manipulation aimed to make the racio-ethnic differences between subgroups more salient to the team members. Tso ascertain the effectiveness of this manipulation, we analyzed team members' response to the question, "How similar are you to [each member of the team] with regards to race?" Participants responded to this question for each other team member separately using a 5-point Likert scale ranging from 1 (*not at all similar*) to 5 (*very much similar*). The ratio of between-groups to total variance was acceptable with ICC(1) = .73, along with the reliability of average group perceptions, ICC(2) = .74. These values, along with the acceptable level of agreement between mem-

bers' reported was also acceptable (rwg = .72, rwg_{moderately skewed} = .94) to justify aggregation. Thus, we averaged the perception of race similarity across a team's members to obtain a team-level indicator.

Results

Table 2 displays the descriptive statistics and intercorrelations for the variables in our study. We tested our hypotheses using analysis of variance in SPSS version 23.0 (IBM Corp., 2015) with dummy-coded variables to reflect the teams' assignment to the experimental conditions. More specifically, we tested Hypothesis 1a and 1b using a 2 (racio-ethnic identity salience: low or high) × 2 (team identity salience: low or high) between-groups design. For the mediated moderation proposed in Hypothesis 2, we tested the differences in conditional indirect effects through different mediators using a procedure by Preacher and Hayes (2008). Our analysis relied on Process Model 8 and relied on 5,000 bootstrapped estimates for the construction of 95% bias-corrected confidence interval to examine whether they included zero. In addition to being a widely acceptable procedure in team research (e.g., Eddy, Tannenbaum, & Mathieu, 2013; Mell, van Knippenberg, & van Ginkel, 2014), bootstrapping methods are recommended to assess mediation when the sample is small to moderate (Efron & Tibshirani, 1994) and when variables, such as our mediator, are skewed (Shrout & Bolger, 2002).

Manipulation Checks

Team identification. A 2 (low vs. high racio-ethnic identity salience) × 2 (no superordinate team identity vs. superordinate identity) ANOVA on the team identity manipulation rat-

ing revealed a significant main effect for superordinate team identity salience, $F(1, 47) = 12.97$, $p = .001$, $\eta_p^2 = .21$, that was in line with the manipulation. There was no main effect of racio-ethnic subgroup salience or an interaction effect. Teams in the superordinate identity condition showered significantly higher levels of identification ($M = 3.83$, $SD = .32$) than the teams in the no superordinate condition ($M = 3.51$, $SD = .32$). This result suggests a successful manipulation of superordinate team identity salience.

Racio-ethnic identification salience. A 2 (low vs. high racio-ethnic identity salience) × 2 (no superordinate team identity vs. superordinate identity) ANOVA on the racio-ethnic identity salience manipulation rating revealed a significant main effect for racio-ethnic identity salience $F(1, 47) = 4.15$, $p = .04$, $\eta_p^2 = .08$, that supports the efficacy of the manipulation. In the high racio-ethnic identity salience condition where individuals were told to explicitly share their racio-ethnic background, participants reported lower perceptions of racial or ethnic similarity ($M = 2.62$, $SD = .34$) than in the low racio-ethnic identity salience condition ($M = 2.90$, $SD = .51$). There was no main effect for the superordinate team identity or the interaction term found.

Test of Hypotheses

To test Hypotheses 1a, we conducted a two-way ANOVA of racio-ethnic identity salience (low or high) and superordinate team identity salience (no or yes) on slogan novelty. Figure 3 illustrates mean differences across experimental conditions. A main effect of racio-ethnic identity salience was found such that slogan novelty was higher when racio-ethnic identity was made

Table 2
Means, SDs, and Correlations

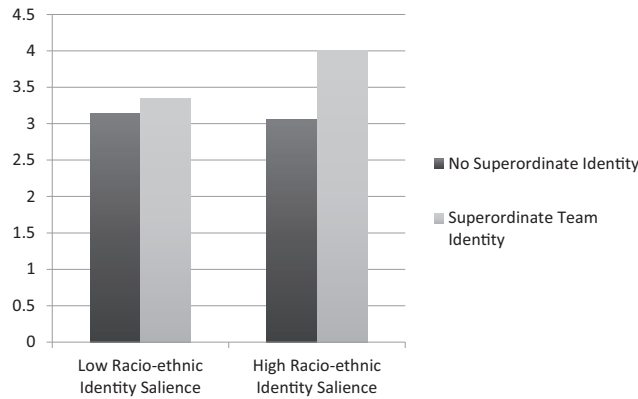| Variable	M (SD)	1	2	3	4	5
1. Racio-ethnic identification	1.37 (.48)	—				
2. Team identification	.49 (.50)	.10	—			
3. Conceptualization of the aggregate:						
One inclusive team	4.05 (.39)	.26	−.00	—		
4. Slogan usefulness	2.40 (.48)	−.28	.12	−.19	—	
5. Slogan novelty	3.39 (.68)	.30	.42**	.41**	.01	—

** $p < .01$.

Figure 3. Effect of interaction between racio-ethnic diversity and team identity on slogan novelty.

salient ($M = 3.61$, $SD = .13$) than when it was not, ($M = 3.24$, $SD = .11$), $F(1, 47) = 5.07$, $p = .029$, $\eta_p^2 = .07$. A main effect was also found for the superordinate identity manipulation, $F(1, 47) = 15.84$, $p = .00$, $\eta_p^2 = .21$. When a superordinate identity was made salient, teams produced more novel slogans ($M = 3.75$, $SD = .11$), compared with when it was not ($M = 3.09$, $SD = .13$). The racio-ethnic identity and superordinate team identity salience interaction was also significant, $F(1, 47) = 7.75$, $p = .008$, $\eta_p^2 = .10$. In teams where the superordinate identity was made salient, the novelty of slogans was higher when racio-ethnic identity was salient ($M = 4.16$, $SD = .16$) compared with when it was not ($M = 3.34$, $SD = .16$), $F(1, 47) =$ 13.45, $p = .001$, $\eta_p^2 = .28$. In comparing the novelty of slogans in conditions where team identity was not made salient, there was no significant difference between teams where racio-ethnic identity was made salient ($M = 3.05$, $SD = .19$) compared with when it was not ($M = 3.14$, $SD = .15$), $F(1, 47) = .13$, $p = .72$.

To test Hypotheses 1b, we conducted a two-way ANOVA of racio-ethnic identity salience (low or high) and superordinate team identity salience (no or yes) on slogan usefulness. Figure 4 illustrates mean differences across experimental conditions. A main effect of racio-ethnic identity salience was found, $F(1, 47) = 4.97$, $p = .03$. More specifically, we find that teams generated more useful slogans when
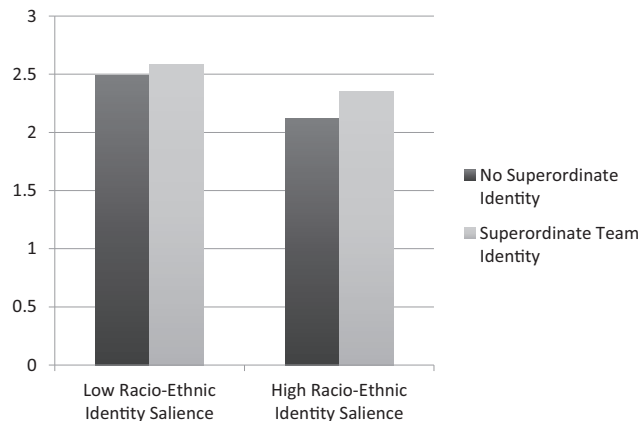

Figure 4. Effect of interaction between racio-ethnic diversity and team identity on slogan usefulness.

racio-ethnic identity salience was lower ($M =$ 2.53, $SD = 2.24$) than when it was higher ($M =$ 2.24, $SD = .10$). We do not, however, find an interaction effect of racio-ethnic identity and superordinate team identity salience on idea usefulness. Thus, Hypotheses 1b is not supported.

We hypothesized that the combination between racio-ethnic identity and superordinate team identity salience directly and indirectly—through the conceptualization of the aggregate as one inclusive team—influenced slogan novelty. We first find that racio-ethnic identity salience predicted our mediator, members' perception of the team as one inclusive group ($B =$ .19, bootstrapped $SE = .09$, 95% confidence interval [CI] [.001, .377]), whereas superordinate team identity salience did not ($B = -.02$, bootstrapped $SE = .10$, 95% CI [−.223, .183]). The interaction between the racio-ethnic and superordinate team identity salience conditions was, however, positively related to our mediator ($B = .47$, bootstrapped $SE = .19$, 95% CI [.096, .844]). The positive relationship between racio-ethnic identity salience and our mediator, an inclusive group, was enhanced when a superordinate team identity was also salient during team member interaction.

Next, we find that our mediator has a significant and positive influence on slogan novelty, controlling for both racio-ethnic and superordinate identity salience ($B = .59$, bootstrapped $SE = .19$, 95% CI [.215, .968]). In this mediation model, neither the main effect of racio-ethnic identity salience on slogan novelty is significant ($B = .27$, bootstrapped $SE = .17$, 95% CI [−.099, .624]), nor is the relationship between the interaction effect and slogan novelty ($B = .64$, bootstrapped $SE = .37$, 95% CI [−.110, 1.38]). At the highest order of interaction, the indirect effect of the mediator was significant and the confidence interval did not include zero ($B = .28$, bootstrapped $SE = .15$, 95% CI [.057, .634]). A closer examination of the PROCESS macro results suggests that the conditional direct effects were significant only when the superordinate identity was salient ($B = .58$, 95% CI [.164, .994]), but not when it was not ($B = -.05$, 95% CI [−.662, .546]). These results can be found in Table 3.

Supplementary Dyadic Level Analyses

Given the moderate level of consistency at the group level, we probed further at the dyadic level and found that the team identification manipulation had distinct effects of racio-ethnic majority and minority dyads. Among Caucasians, identification with the team was higher when the superordinate identity was salient than when it was not, $F(1, 45) = 5.71$, $p = .02$. The mean level of team identification among Caucasians in the superordinate condition was 4.19 ($SD = .49$), which was higher compared with when there was no superordinate identity ($M =$ 3.72, $SD = .73$). In contrast, the mean level of team identification for racio-ethnic dyads was not significantly different when there was or

Table 3
Moderated Mediation Effect of Conceptualization of the Aggregate as One Inclusive Team on the Relationship Between Racio-Ethnic Identity Salience and Novelty of Team Slogans, Moderated by Superordinate Team Identity Salience ($N = 204$)

Effect	b	95% Confidence interval	
		Lower	Upper
Conditional direct effects			
No superordinate team identity salience	−.05	−.662	.546
Superordinate team identity salience	.58	.164	.994
Conditional indirect effects			
No superordinate team identity salience	−.50	−.179	.093
Superordinate team identity salience	.49	.057	.569
Indirect effect of highest order interaction			
COA: One inclusive team	.28	.057	.634

Note. COA = Conceptualization of the aggregate.

there was not a salient superordinate identity, $F(1, 45) = .04$, $p = .83$. This finding suggests that making the superordinate team identity salient had little effect on enhancing minority dyads' identification with the team.

On the other hand, we also found that the perception of the collective as inclusive was higher among minority dyads in the superordinate team condition when their racio-ethnic identity was made more salient ($M = 4.35$, $SD = .41$) compared with minority dyads in the superordinate condition when racio-ethnic identity was not accentuated ($M = 3.50$, $SD = .85$), $F(3, 43) = 2.99$, $p = .04$. It is interesting that this difference was not found when examining the Caucasian dyad only. The mean perception of the collective as inclusive for Caucasian team members when racio-ethnic identity differences between subgroups were made salient was 4.3 ($SD = .48$) compared with 4.2 ($SD = .46$) when racio-ethnic differences were not referenced, $F(3, 43) = .30$, $p = .53$. Taken together, this finding suggests that Caucasian dyads did not feel a heightened sense of inclusion when both the subgroup and superordinate identities were made salient, but minority dyad members did.

Discussion

In this study, we sought to understand the independent and joint influence of racio-ethnic subgroup and superordinate team identity salience on both the novelty and usefulness of team ideas. This study found that idea novelty was highest when both racio-ethnic subgroup and a superordinate team identity were salient. In contrast, a superordinate identity intervention did not significantly improve idea novelty when the racio-ethnic differences between subgroups were glossed over. This result suggests that when a subgroup identity is relevant to the self-concept, such as a racio-ethnic identity, there are limits to the use of a strategy that myopically focuses on a common ingroup identity without also recognizing subgroup differences. The variety of knowledge resources associated with member surface-level heterogeneity remained latent and were not brought to bear on the team task when both subgroup differences and superordinate identity were not salient.

In contrast to the previous finding related to the novelty of ideas generated, we find that racio-ethnic identity salience was found to be negatively related to the generation of useful ideas. The superordinate identity intervention did not have any influence on this negative relationship between racio-ethnic identity salience and the usefulness of ideas. This inconsistency may be attributed to the differences between the requirements of generating novel compared with useful ideas (Erez & Nouri, 2010). Our results, do, however, contribute to a growing stream of literature identifying distinct antecedents of idea novelty and usefulness (Lee, Walsh, & Wang, 2015; Yong et al., 2014). We believe that our findings may be valuable to managers at different points in the innovation process where the first phase focuses on the generation of novel ideas, and the latter emphasizes the identification of select ideas based on criteria, such as usefulness (Nijstad & De Dreu, 2002). Because the antecedents of usefulness seem to differ from novelty, we encourage the study of different underlying mechanisms (e.g., anxiety, bias) to understand the complex relationship between identities and usefulness. Future research can take this a step further by identifying structural and motivation forces that can encourage racio-ethnic diverse teams to come up with more useful ideas.

This article also uncovered one psychological mechanism, namely the perception of the team as one inclusive group, which mediated the relationship between racio-ethnic subgroup salience and the novelty of team ideas generated only when the superordinate team identity was also salient. The findings suggest that the formative process of enabling diverse team members to express their differences, while also encouraging them to define themselves in terms of the superordinate team, fosters members' perception of the team as one inclusive and unified entity—especially in the eyes of minority dyad team members. Despite these interesting results, we recommend that future studies rely on a multiitem rather than a single-item mediator scale.

A supplementary analysis also revealed that our superordinate team identity manipulation did not have a uniform effect across conditions. While the salience of a team identity facilitated an increase in team identification among Caucasian dyads within teams, a similar effect was not found among minority dyads. One possibility is that majority team members may be more easily persuaded into behaving as "one" be-

cause it does not require them to pay attention to differences between subgroups, which could be potentially threatening and uncomfortable. On the other hand, the power of "we" was less impactful among minority dyads perhaps because of resistance to have to assimilate. This insight supports the possibility that the reaction to social contextual cues to foster a superordinate identity is contingent on the importance of the subgroup to individual team members, and their desire to maintain distinctiveness (González & Brown, 2003; Hornsey & Hogg, 2000; Jetten et al., 1997; van Leeuwen et al., 2003). This finding suggests that making a superordinate identity salient is not a one-size-fits-all intervention and more research is needed to understand when it will be most impactful and for whom (Gaertner, Dovidio, Guerra, Hehman, & Saguy, 2016).

This article is not without limitations. First, we did not explicitly instruct teams in our study to generate more novel or useful ideas. Despite the lack of clear guidance, teams generated ideas that naturally varied along each of these specific dimensions of creative performance. To address this limitation, we recommend that future studies explore the impact of explicit task instructions to generate novel and useful ideas in diverse teams. Moreover, goals to be creative and to perform or learn affect whether teams generate more novel or useful ideas (Goncalo & Staw, 2006; Miron-Spektor & Beenen, 2015). In groups with racio-ethnic subgroups, it would be of value to understand whether explicit task instructions would also have had the same influence on the production of novelty and usefulness of ideas.

Our data was collected from a university in the United States. Fortunately, because of the multiethnic composition of the city in which the study took place, our available pool of participants consisted of individuals with a breadth of cultural and ethnic backgrounds, and our sample did include individuals with a range of ethnic backgrounds. Despite this feature, we were unable to conduct supplementary analyses related to specific ethnic minority subgroups within our sample to see if there were any dyadic differences across teams comprised of Asian, Hispanic or African American minority pairs. Research suggests that some racio-ethnic groups in the United States report more occurrences of negative intergroup contact experiences with majority members (e.g., Hayward,

Tropp, Hornsey, & Barlow, 2017), and it is highly likely that these different experiences would affect the efficacy or identity strategies. Future research should explore this possibility.

In congruence with the findings of Pearsall et al. (2008), who found that making gender differences salient in teams enhanced creativity, this research finds that enhancing another surface-level in teams (e.g., racio-ethnic subgroup salience) had a similar effect on idea novelty. In this laboratory-based study, we increased the salience of racial and ethnic differences by asking individuals to mention their ethnic background explicitly. Bringing attention to any individual based on ethnicity or race in this manner would be an inappropriate and perhaps illegal practice in most organizations. One alternative possibility for accentuating racioethnic differences is to compare the effect of tasks that vary in the degree to which racioethnic knowledge is relevant for performance. Although our task highlighted racio-ethnic differences, we did not vary this feature of the task across conditions. Future research should more directly compare the effect of tasks where the relevance of racio-ethnic diversity to task performance varies from low to high on activating racio-ethnic differences in teams.

As we have identified, one underlying mechanism that explains the relationship between salient racio-ethnic subgroup differences and idea novelty when superordinate team identity is also salient, we urge researchers to explore others. For instance, diversity scholars are starting to unveil that not only exchanging information is important, but also discussing them and integrating (i.e., information elaboration) as a mediator of the diversity-performance relationship (van Knippenberg et al., 2004). To be able to capture the nuances of communication within diverse teams, future research should consider content analysis to have a more contextualized and richer understanding of this phenomenon. Research suggests that content analysis is especially useful when the application of less precise methods might not allow the researcher to discover subtle indicators stemming from the interaction of two variables (Brislin, 1980). Thus, a thorough analysis of how task-related processes such as information sharing and pooling ideas varied during team interaction depending on contextual cues of subgroup and superordinate identity would be beneficial. This can allow

one to pinpoint how manipulations influence dyads from different racio-ethnic backgrounds, shaping their intergroup dialogue and interaction, thus providing insights into theory and practice. Albeit the use of multiple methodologies to capture the nuances of intergroup team processes during experiments consisting of diverse racio-ethnic subgroups isn't always possible, it should be in the forefront for future research in this area.

Conclusion

The current research adds nuance to the social identity literature by demonstrating that a common-group identity strategy may be limited when it comes to producing novel team outcomes in diverse teams when subgroup identities are not also acknowledged. Although emphasizing a superordinate team identity can create harmony, our results suggest that its use in isolation does not help diverse teams leverage the variety of unique perspectives that members possess. Rather, simultaneously emphasizing subgroup differences is also important for novel idea generation. Additionally, a more complex representation of group identity—stemming from acknowledgment and emphasis of *both* the subgroup and the superordinate identity—was found to be the underlying key to facilitating novelty in teams with racio-ethnic subgroups.

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