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When surface and deep-level diversity collide: The effects on dissenting group members ☆

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Abstract

Diversity researchers have distinguished between surface-level (e.g., social categories) and deep-level (e.g., attitudes, opinions, information, and values) diversity, but have not fully explored the complexities of their simultaneous existence in groups. We examined how the relationship between surface-level and deep-level diversity impacts the emotional and behavioral reactions of dissenting group members and the effectiveness of decision-making groups. We conducted two studies focusing on dissenting social majority members (individuals who hold dissenting deep-level task perspectives yet belong to the surface-level majority) in three-person groups. The results show that surface-level diverse groups (with two similar and one dissimilar individuals) were perceived as more positive and accepting, fostered more persistent and confident voicing of dissenting perspectives, and displayed greater task engagement than surface-level homogeneous groups (containing all similar individuals). Surface-level diversity (both task-relevant and irrelevant) may be beneficial for groups even when the group member who is different on the surface does not have a different deep-level task perspective to share. We discuss implications for understanding how surface-level diversity affects organizational work groups.

Keywords: Diversity; Dissent; Social categorization; Expectations of similarity

Diversity can exist on many different dimensions, including race, sex, functional background, personality, attitudes, and values, to name a few, and over the years several distinctions have been made between the types of characteristics that can impact groups (e.g., Harrison, Price, & Bell, 1998; Jackson, May, & Whitney, 1995; Jehn, Northcraft, & Neale, 1999; Milliken & Martins, 1996; Pelled, 1996). Researchers have recently focused on the distinction between underlying *deep-level* characteristics, like attitudes, opinions, information, and values, which take time to emerge in groups (Harrison et al., 1998; Harrison, Price, Gavin, & Florey, 2002; Jehn et al., 1999) and salient *surface-level* characteristics that are more immediately apparent (Jackson et al., 1995; Riordan, 2001). This distinction has been helpful for understanding the isolated effects of different kinds of diversity in groups, but there has been less attention paid to how they interact to affect group and individual behavior. Developing a better understanding of the relationship between these different sources of diversity and how they impact behavior is critical for organizations that use work groups as a way to pool the deep-level task perspectives (i.e., information, knowledge, preferences, and opinions) of its members.

Much of the previous research on diversity has assumed that surface-level characteristics are a proxy for

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or are congruent with deep-level characteristics (e.g., Chatman, Polzer, Barsade, & Neale, 1998; Lawrence, 1997). People who look the same on the surface are expected to share the same task perspective, and people who look different are expected to have a different task perspective to share, even when the surface-level characteristic is not related to the task (e.g., African-American and Hispanic accountants making a decision about which accounting rule to use; Allen & Wilder, 1979; Chen & Kenrick, 2002; Phillips, 2003). Recent research by Phillips and colleagues found that there are both psychological and performance benefits to confirming this expectation of congruence between surface-level and deep-level characteristics in small decision-making groups (Phillips, 2003; Phillips, Mannix, Neale, & Gruenfeld, 2004). Congruence reinforces group members' expectations about who should support whom, and frees group members to focus on the task, rather than on reconciling the discrepancy in their relationships with surface-level similar others (Heider, 1958; Newcomb, 1968).

Using a modified hidden-profile paradigm (Stasser & Titus, 1985, 1987; Stasser & Stewart, 1992), Phillips et al. (2004) found that congruent groups, where the group member who had a different deep-level characteristic (i.e., unique information), also had a different surface-level characteristic (i.e., was a stranger or was from a different social group), discussed information more thoroughly and performed better than incongruent groups, where the group member who had a different deep-level characteristic shared a surface-level characteristic with at least one other group member (i.e., was another familiar or was in the social majority). Phillips (2003) used a similar group decision-making procedure but examined the task opinions held by group members as the deep-level characteristic and functional and geographical categories as the surface-level characteristics. Here in the current work, we continue to focus on deep-level characteristics that are relevant for the task (Harrison et al., 1998), such as the information, preferences, and opinions that group members bring to the decision-making setting. We refer to these deep-level characteristics as the task perspectives held by group members.

Based on this work and other diversity research (see Williams & O'Reilly, 1998; Jackson, Joshi, & Erhardt, 2003 for reviews), one might conclude that surface-level diversity is only beneficial to groups when it is congruent with differences in deep-level characteristics, that is when people who are different on the surface also bring a different task perspective to the group. However, surface-level and deep-level characteristics are not always congruent and deep-level differences in task perspective may come from where they are not expected (Janis, 1982; Jehn et al., 1999; Lawrence, 1997). In fact, these incongruent situations may be even more prevalent than congruent ones given the poor signaling power of many surface-level characteristics. Despite the recognition by researchers that "social category diversity may not always reflect other types of diversity (e.g., information diversity and value diversity)" (Jehn et al., 1999, p. 742), little diversity research has moved beyond this assumption of congruence to better understand situations where surface-level and deep-level diversity collide.

In this article, we systematically examine such collisions or incongruencies. They occur in groups where the person who holds a different task perspective, shares surface-level characteristics with at least one other group member (i.e., is a social category majority member; Phillips et al., 2004). We focus on the reactions of dissenting majority (with respect to social category or surface-level characteristics) members who are not expected to voice different task perspectives, yet are in the unique position to benefit the group when they do so (Gruenfeld, 1995; Nemeth, 1986).

As we detail in our hypothesis development below, generally when individuals enter a group they expect those who are surface-level similar to themselves to agree with them more than those who are dissimilar to themselves (e.g., Allen & Wilder, 1975, 1979; Chen & Kenrick, 2002; Phillips, 2003). When a dissenting member of a social category majority—such as a male in a group that is predominantly male—realizes that he holds a dissenting task perspective, he is likely to have negative affective reactions toward the surface-level similar others—the other males in this case—and expect those similar others to be less accepting of him (cf., Abrams, Wetherell, Cochrane, Hogg, & Turner, 1990). In fact, because group members tend to compare themselves to overtly similar instead of dissimilar others (Festinger, 1954), dissenting social majority members should feel less accepted in groups that are composed solely of similar others (i.e., surface-level homogeneous; the rest of the group is male) than in groups with dissimilar others (i.e., surface-level diverse; the rest of the group is a mix of males and females). These negative feelings and the anticipated backlash, in turn, should diminish the persistence and confidence with which the dissenting majority member—the male in this case—expresses his perspective. Under these conditions, because the expression of dissenting perspectives leads to greater consideration of alternatives and elaboration of the available information (e.g., Gruenfeld, 1995), surface-level homogeneous groups should engage *less* in the task than surface-level diverse groups, and their performance should suffer.

The elaboration and consideration of these dissenting task perspectives is important for a better decision-making process (e.g., Nemeth, 1986; Van Knippenberg, De Dreu, & Homan, 2004). Minority influence researchers have shown that the mere exposure of a majority within a group to the views of a dissenting minority leads to greater consideration of alternatives, divergent thinking, and integration of multiple perspectives, which can improve the quality of group decisions (e.g., Gruenfeld, 1995; Nemeth, 1986; Wood, Lundgren, Ouellette, Busceme, & Blackstone, 1994). When the individual with the

dissenting task perspective also has a better solution, it is even more important that this perspective and the information on which it is based be considered by the entire group. One challenge is that, unlike a purely intellective task such as a mathematics problem where a "truth wins" strategy is possible (Laughlin, 1980; Laughlin & Ellis, 1986), the less intellective tasks frequently encountered in organizations, often do not have clearly demonstrable correct answers. In fact, even the person with the better task perspective may not realize its superiority. As such, similar to the challenge faced in the hidden-profile information sharing paradigm (Stasser & Stewart, 1992; Stasser & Titus, 1985; see Wittenbaum & Stasser, 1996; Wittenbaum, Hollingshead, & Botero, 2004 for reviews), it is imperative that the dissenting task perspective (e.g., unique information) be discussed to benefit the group.

Thus, in two studies we examine the potential benefit of surface-level diversity for facilitating the expression of these dissenting task perspectives. Note that we are not reiterating prior research which prescribes teams should have greater surface-level diversity because the members who are overtly different will bring congruent differences in underlying perspectives or information that are helpful to the team. Instead, we are proposing that the presence of such diversity also *helps to uncover incongruent* (with surface-level differences) but equally helpful information. Specifically, in Study 1 we compare the expectations and reactions of *dissenting social majority members*, those who belong to the dominant surface-level or social category yet bring a unique task perspective to the group, in both surface-level diverse and surface-level homogeneous groups (see Fig. 1 for a depiction of these two types of groups). Study 1 uses an apparently task-relevant surface-level category (functional background). Study 2 tests the robustness of the phenomenon using an apparently task-irrelevant surface-level category (geographic location) to again examine the expectations and reactions of dissenting social majority members. Study 2 also goes further to test the subsequent impact of these reactions on group outcomes.

Hypothesis development

Expectations of similarity

The relationship between surface-level and deep-level diversity can be better understood by jointly considering the similarity-attraction and social categorization paradigms, both of which play a dominant role in explaining the influence of diversity on groups (Williams & O'Reilly, 1998). When using the theoretical framework of social categorization, organizational researchers generally argue

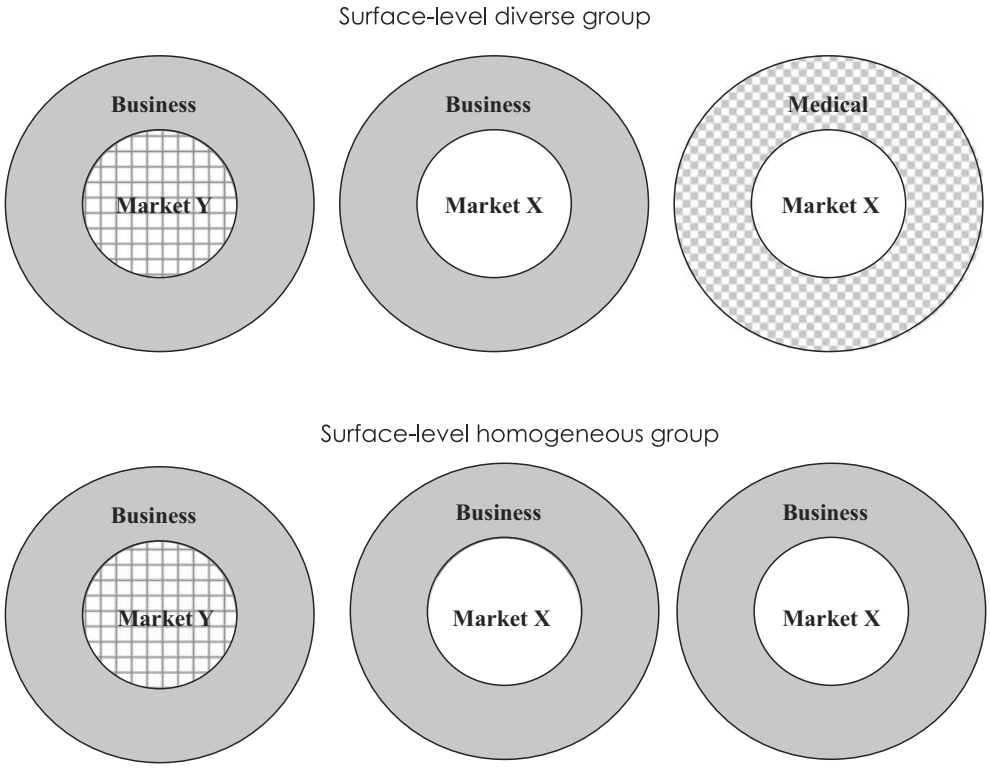

Fig. 1. Illustration of the two types of incongruent groups examined (and study design). The surface-level characteristic is represented by the outer ring, and the deep-level task perspective is represented by the inner circle. The shading is a visual representation of the different characteristics and perspectives present in the group.

that any number of salient surface-level characteristics or social categories (e.g., race, tenure, functional background, status, and office location) can promote the creation of "in-groups" (us) and "out-groups" (them) and trigger biased behaviors and attitudes (e.g., Ashforth & Mael, 1989; Williams & O'Reilly, 1998). We adopt this perspective and acknowledge that the salience of any particular surface-level characteristic is affected by the social context in which individuals are embedded (e.g., Lau & Murnighan, 1998; Tajfel & Turner, 1986; Williams & O'Reilly, 1998). Once a particular surface-level characteristic is made salient, people generally assume that they hold more similar attitudes and beliefs with individuals who share their surface-level characteristics than with people who do not, on topics both relevant and irrelevant to the salient distinction (e.g., Allen & Wilder, 1975, 1978, 1979; Chen & Kenrick, 2002; Diehl, 1988; Holtz & Miller, 1985; Phillips, 2003; Tajfel, 1969; Wilder, 1984).

For instance, Allen and Wilder (1979) divided students into two groups allegedly on the basis of their preferences for oil paintings and found greater assumed deep-level similarity between self and similar others than between self and dissimilar others on opinions about art and politics. Chen and Kenrick (2002) found this same pattern of assumed similarity when examining the relationship between surface-level characteristics like sexual orientation and opinions about current controversial topics, like affirmative action and the death penalty. Phillips (2003) found that this consequence of the social categorization process carries over to group decision-making settings and impacts subsequent feelings and behavior. Especially at the beginning of a group's existence, when surface-level characteristics are expected to be most salient (Harrison et al., 1998; Harrison et al., 2002), individuals are likely to use these social distinctions, whether relevant (Study 1) or irrelevant (Study 2) to the task, to predict who shares deep-level task perspectives with whom.

Hypothesis 1. Group members will expect greater task perspective similarity with those who share their surface-level characteristic than with those who do not share their surface-level characteristic.

Violation of expectations

The expectations that individuals hold about who *should* share task perspectives with themselves are likely to influence how they respond when they find that they have a dissenting task perspective. Over time, deep-level task perspectives are likely to become known in groups through verbal and non-verbal communication among group members (Harrison et al., 1998, 2002). In general, individuals do not like it when others disagree with them; however, they have been shown to respond more negatively when surface-level similar instead of dissimilar individuals disagree with them (Crano & Cooper, 1973; Heider, 1958; Newcomb, 1968; Phillips, 2003). People care more about their relationships with and attend more to information from surface-level similar others, so disagreement with them should be more consequential than disagreement with surface-level dissimilar others (Festinger, 1954; Heider, 1958; Phillips et al., 2004).

Phillips (2003) found disagreement with individuals from a similar rather than different surface-level category leads to greater feelings of surprise and irritation, two emotions that are primary consequences of violated expectations (Charlesworth, 1969; Izard, 1977; Scherer, 1984). Surprise is instigated by unexpected events and has been called a cognitive affect (Buck, 1999). The more one expects an individual to share his or her deep-level characteristics, the more surprised he or she should be when that expectation is violated. Surprise is the first response to violated expectations, and it can be positive or negative in valence (Teigen & Keren, 2003). In this case, we expect its valence to be negative. Therefore, we also measure irritation, a negative emotion on the emotion circumplex (Watson, Clark, & Tellegen, 1988).

Hypothesis 2. Dissenting social majority members will report more (a) surprise and (b) irritation when disagreeing with those who share their surface-level characteristic than when disagreeing with those who do not share their surface-level characteristic.

Moreover, when social majority members learn that they hold a dissenting task perspective, they are likely to experience surface-level homogeneous groups as less positive and accepting than surface-level diverse groups. This is partially due to their expectations of similarity and partially due to how they expect other group members to treat them. First, as stated above, individuals respond negatively to group settings when their (incorrect) expectations of similarity are not met (e.g., Crano & Cooper, 1973; Heider, 1958; Jones & Wein, 1972; Newcomb, 1968; Phillips, 2003). And, they are more likely to attend to violations of these expectations in surface-level homogeneous groups than in surface-level diverse groups because individuals are more likely to use similar instead of dissimilar others as a standard of comparison (Festinger, 1954). Second, people who express dissenting opinions risk social disapproval from others (Schachter, 1951; Wood et al., 1994) and actually expect others to like them less than individuals whose perspectives are consistent with the rest of the group (Deutsch & Gerard, 1955). Social approval and acceptance from similar others tends to be more important than approval from dissimilar others (Turner, 1985). Therefore, in a group, *dissenting* members of a majority social category should feel less accepted when everyone else is also in that category (i.e., surface-level homogeneous) than when the other members represent multiple social categories (i.e., surface-level diverse).

Hypothesis 3. Dissenting social majority members will have a less accepting group experience in surface-level homogeneous groups than in surface-level diverse groups.

The presence of a positive and accepting or psychologically safe atmosphere in groups is one of the factors that can promote the expression of dissenting perspectives (Edmondson, 1999; Hackman, 1987; McLeod, Baron, Marti, & Yoon, 1997). Thus, dissenting social majority members in surface-level homogeneous groups should be less willing to voice their dissenting perspectives than when in surface-level diverse groups. Moreover, in group decision-making settings, individuals may take a lack of deep-level similarity from surface-level similar others as an indication of the accuracy of their own perspectives (Abrams et al., 1990; Festinger, 1954). Individuals look to similar others to determine what is right in ambiguous situations, where the correct solution is not always readily recognized, as with many of the decision-making situations faced by organizational members (Festinger, 1954; Levine & Moreland, 1986; Sherif, 1936). Furthermore, individuals are less likely to challenge the perspective of a majority composed of surface-level similar rather than dissimilar group members (Abrams et al., 1990). In surface-level diverse as compared to homogeneous groups, the overt differences present provide the dissenting social majority member with a convenient attribution for why they hold a dissenting perspective—that is, because they are obviously different from at least one of the group members. Thus, the mere presence of surface-level diversity may make it more likely for a dissenting social majority member to voice his or her task perspective. In Study 1, we examine willingness to voice one's perspective, and in Study 2, we test the actual persistence and confidence with which dissenting social majority members speak during the discussion.

Hypothesis 4. Dissenting social majority members in surface-level homogeneous groups will be less willing to voice their task perspectives (i.e., with persistence and confidence) than dissenting social majority members in surface-level diverse groups.

We now present tests of these hypotheses for our first study. We discuss the importance of identification with the surface-level characteristic in this process before presenting our second. We also expand on the consequences of these emotional and behavioral reactions for the group.

Study 1

Method

Participants and overview

One hundred twelve first-year MBA students from a U.S. west coast university participated in this research. Students participated anonymously and on a voluntary basis as part of a classroom demonstration. The survey was presented as research designed to "gain a better understanding of the things that influence the success of work teams here at the [Business School]." About half of the participants ($n = 53$) were asked to consider being a member of a three-person group that was surface-level diverse. The other half ($n = 59$) were asked to consider being a member of a group that was surface-level homogeneous. Participants in the surface-level diverse condition were told that one of the other two group members was from their same functional category (business) and the other was from a different functional category (medicine). In the surface-level homogeneous condition, all group members were from the same category (business). In both conditions, the participant was an MBA student who held a task perspective different from that held by the other two members of the group, thus the participant was always a dissenting social majority member (see Fig. 1). The task perspective difference was operationalized as the opinion about the best market to target in a business plan (Phillips, 2003). The students were debriefed about the purpose of the research during class the week following data collection.

Procedures

Participants were asked to "please read the following information about a student group working on a business plan:" The second condition is noted in italics.

You, an MBA and a visiting Medical student (*and two MBA's*) are working on a business plan for the Entrepreneurship: Formation of New Ventures course. The product, developed by a team of professors in the Medical School, is a Magnetic Resonance Imaging (MRI) system that allows for the accurate imaging and diagnosis of the heart that is totally non-invasive. You are all committed to working on this project and you have put in a lot of time. Funding for the business plan is contingent on a full launch so you need to be careful about choosing the right market to target. You plan to discuss a number of issues at this meeting including estimated sales, cost of production and development, financial requirements, risks, and the target market. A third of the way into the meeting you enter into a discussion about what each of you believes is the best market to target. You are all very committed to your opinions and….

At this point, the participants were asked four questions to measure expectations of task perspective similarity and probability of agreement with each of the other members of the group. Following these items the task perspective manipulation was introduced:

…after much research you believe Market Y is the best market to target. The MBA student (*MBA-G*) disagrees with your opinion and suggests that the group target

Market X. The Med student (*MBA-J*) also disagrees with your opinion and suggests that the group target Market X.

Thus, the participant was always a dissenting social majority member in the group with both group members disagreeing with the participant and agreeing with each other.

On subsequent pages of the survey participants responded to questions regarding their anticipated experience in the group which serve as the key dependent variables for Study 1. At the top of each page of the survey, we included a table describing the surface-level characteristic (MBA or Med student) and the deep-level task perspective (e.g., Market X or Market Y) of each of the group members to keep the conditions salient to the participants. The order of presentation in the surface-level diverse groups was counterbalanced such that the Medical student was presented first to half of the participants and second to the other half. The order of presentation made no difference for our results so for simplification we present data from the MBA student first and the Medical student second throughout the paper.

Dependent variables

Expectations of similarity. Consistent with past research on this phenomenon (e.g., Allen & Wilder, 1975), we used a within-subjects design to measure expectations of deep-level similarity with each of the other group members. Participants were asked a total of two questions regarding each of the other group members (the MBA and the Med student in surface-level diverse groups and MBA-G and MBA-J in surface-level homogeneous groups), for a total of four questions measuring expectations of similarity taken from Phillips (2003). Participants were asked, "To what extent do you expect [the other group member] to agree with you about the best market to target?" This question was measured on a 9-point Likert scale with the following labels; 1 = not at all, 3 = slightly, 5 = moderately, 7 = strongly, and 9 = extremely. The second question asked, "What is the probability that [the other group member] will identify a market that is similar to the one you identified?" This question was measured using a scale of 0–100 percent with 10-point increments. For ease of interpretation and to be consistent with the first measure we converted this scale to 9-points by multiplying the participants' responses by 9/100. This algebraic transformation did not affect the properties of the variable.

We formed two "expectation of similarity" scales. In one, we averaged the two questions directed toward the first member of the group—the MBA in the surface-level diverse condition and MBA-G in the surface-level homogeneous condition (average Cronbach's $\alpha = .79$). In the other, we averaged the two questions directed toward the second member of the group—the Medical student in the surface-level diverse condition and MBA-J in the surface-level homogeneous condition (average Cronbach's $\alpha = .76$).

Surprise and irritation. To assess initial reactions to finding that their task perspective differed from those of their other group members, we measured how surprised and how irritated participants would be about the perspectives of each of the other group members (Phillips, 2003). Participants were asked to "Indicate the extent to which you would feel surprised by the [other group member's] position." Likewise they were asked to "Indicate the extent to which you would feel irritated by the [other group member's] position," for a total of four questions. These questions were assessed on the 9-point Likert scale described above.

Accepting group experience. Three questions were used to measure participants' expectations regarding how accepting their group setting would be. Participants were asked to "Indicate the extent to which you would feel comfortable interacting in this situation," to "Indicate the extent to which you would feel like you belong in this group during the discussion," and "What is the probability that you would enjoy participating in this group." The last question was measured using a scale of 0–100 percent with 10-point increments. For ease of interpretation and to be consistent with the first two questions we again converted this scale to 9-points. We averaged the three items into a reliable scale (Cronbach's $\alpha = .81$).

Willingness to express voice. Finally, in Study 1 to measure participants' willingness to voice their dissenting perspective we asked, "How much would you voice your opinion about the target market?" and to "Indicate the extent to which you would feel comfortable voicing your opinion about the target market." Both of these items were measured on the 9-point Likert scale described earlier, and the two items were averaged into a reliable scale (Cronbach's $\alpha = .75$).

Results

Expectations of similarity

Table 1 provides means and correlations for the entire sample on all of the variables reported in Study 1. A significance level of .05 was used for all statistical tests and we report Cohen's *d* for each test where applicable. We conducted exploratory factor analyses on all of the items included in our constructs using an oblique rotation as suggested by Fabrigar, Wegener, MacCallum, and Strahan (1999). The factor analyses showed that the variables in each factor loaded on the expected construct at .57 or above (with the majority of them being above .82) with cross-loadings below .35 (the majority of them were

Table 1
Means, standard deviations, and correlations for Study 1 variables ($N = 112$)

	Mean (*SD*)	1	2	3	4	5	6	7	8
1. Group type (surface-level diverse = 1)	0.47 (0.50)	1							
2. Expected similarity member 1	5.57 (1.44)	0.17†	1						
3. Expected similarity member 2	4.81 (1.51)	−0.20*	0.49**	1					
4. Surprised with member 1	4.90 (1.78)	0.01	0.51**	0.14	1				
5. Surprised with member 2	4.00 (1.61)	−0.28**	0.18†	0.46**	0.54**	1			
6. Irritated with member 1	3.73 (1.86)	−0.22*	0.11	0.03	0.36**	0.22*	1		
7. Irritated with member 2	3.33 (1.79)	−0.31**	−0.02	0.15	0.15	0.29**	0.81**	1	
8. Acceptance by Group	5.25 (1.50)	0.20*	−0.05	0.07	−0.31**	−0.19*	−0.52**	−0.49**	1
9. Willingness to express voice	6.93 (1.24)	0.01	0.02	0.14	−0.12	−0.10	−0.25**	−0.19*	0.38**

Note. For participants in the surface-level homogeneous groups both the first and the second variable response is for a surface-level similar group member (MBA). For participants in the surface-level diverse groups the first variable response is for a surface-level similar group member (MBA) and the second is for a surface-level dissimilar group member (Medical student).

* $p < .05$.
** $p < .01$.
† $p < .10$.

at .22 or lower). These results provided preliminary evidence for convergent and discriminant validity of the constructs.

Our first hypothesis was that individuals would expect greater task perspective similarity with surface-level similar than with surface-level dissimilar others. We found initial support for our hypothesis from a repeated measures ANOVA with the measures of expected similarity with the first member of the group (the MBA or MBA-G) and the second member of the group (the Medical student or MBA-J) as the within-subjects factor and group type (surface-level diverse or surface-level homogeneous) as a between-subjects factor. The interaction between the repeated measures factor and group type was significant, $F(1,110) = 17.29$, $p < .01$, $d = .79$. This indicates that the difference in expected task perspective similarity with surface-level similar and surface-level dissimilar group members in diverse groups ($M_{\text{difference MBA−Med student}} = 1.19$) was significantly greater than the difference found with the two surface-level similar group members in homogeneous groups ($M_{\text{difference MBA-G−MBA-J}} = .27$). A simple effects test showed that, as hypothesized, participants expected greater task perspective similarity with the MBA student ($M = 5.89$, 95% confidence interval: 5.57 vs. 6.22) than with the Medical student ($M = 4.70$, 95% confidence interval: 4.37 vs. 5.04), $t\,(52) = 6.17$, $p < .01$, $d = .96$.

Response to violation of expectations

Surprise and irritation. Our second hypothesis predicted that once participants learn that they hold a dissenting task perspective, they should report greater (a) surprise at and (b) irritation with the deep-level task perspectives of surface-level similar than surface-level dissimilar individuals. For the variable of surprise, we found support for our hypothesis from a repeated measures ANOVA with the surprise question directed toward the first member of the group and that directed toward the second member of the group as a within-subjects factor and group type as a between-subjects factor. The interaction between the repeated factor and group type was significant, $F(1,110) = 9.90$, $p < .01$, $d = .60$. This indicated that the magnitude of the difference in surprise with the two group members in surface-level diverse groups ($M_{\text{difference MBA−Med student}} = 1.39$) was significantly greater than the difference found in surface-level homogeneous groups ($M_{\text{difference MBA-G−MBA-J}} = .46$). This pattern provides support for Hypothesis 2a. As predicted, participants (who were themselves MBAs) were more surprised by disagreement from the MBA student ($M = 4.93$, 95% confidence interval: 4.44 vs. 5.41) than by disagreement from the Medical student ($M = 3.53$, 95% confidence interval: 3.11 vs. 3.95), $t(52) = 5.51$, $p < .01$, $d = .82$ (see Fig. 2A, for all means).

We followed the same procedure to test the effects of group membership on feelings of irritation with the disagreement of the other group members. The interaction between the repeated factor and group type, $F(1,110) = 1.69$, did not reach significance, but there was a between subjects effect for group type, $F(1,110) = 9.04$, $p < .01$, $d = .57$. Participants reported greater average irritation with disagreement in surface-level homogeneous groups ($M = 3.98$, 95% confidence interval: 3.55 vs. 4.42) compared to surface-level diverse groups ($M = 3.03$, 95% confidence interval: 2.57 vs. 3.49). A direct test of our hypothesis showed that participants in surface-level diverse groups were significantly more irritated by disagreement from the MBA student ($M = 3.30$, 95% confidence interval: 2.81 vs. 3.80) than they were by disagreement from the Medical student ($M = 2.76$, 95% confidence interval: 2.29 vs. 3.22), $t(52) = 3.23$, $p < .01$, $d = .33$ providing support for Hypothesis 2a. The mere presence of surface-level diversity diminished feelings of irritation toward *both* surface-level similar and surface-level dissimilar individuals. Participants were more irritated by disagreement with the surface-level similar individuals in homogeneous settings ($M = 3.98$) than with the surface-level similar individual in diverse

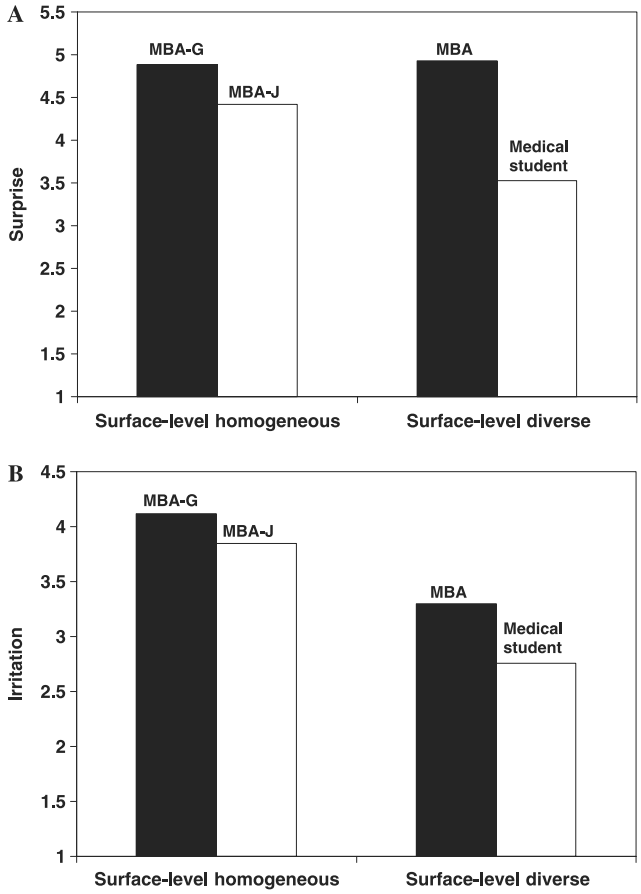

Fig. 2. Reaction to disagreement with other group members in Study 1.

settings ($M = 3.30$), $t(169) = 3.37$, $p < .01$, $d = .38$ (see Fig. 2B, for all means).

The correlations between the expectations of similarity, surprise, and irritation variables provide the opportunity to test the basic premises underlying our arguments. From Table 1 the correlations show that the more participants expected similarity with another group member, the more surprised they were by disagreement from that group member. And, feelings of irritation were significantly correlated with feelings of surprise. This suggests that greater expectations of similarity are related to greater feelings of surprise, which in turn are related to greater feelings of irritation. Moreover, when we split the sample, the pattern of results was driven by those in surface-level homogeneous groups. Unexpected disagreement with surface-level similar others led to increased irritation. Having a surface-level dissimilar person in the group buffers the individual from the irritation caused by disagreement.

Accepting group experience. Our third hypothesis was that dissenting social majority members would expect a more positive and accepting group experience in surface-level diverse rather than surface-level homogeneous groups. Hypothesis 3 was supported. Participants in surface-level diverse groups ($M = 5.57$, 95% confidence interval: 5.17 vs. 5.97) reported that the setting would be more positive and accepting, $t(110) = 2.17$, $p < .05$, $d = .42$, than those in surface-level homogeneous groups ($M = 4.96$, 95% confidence interval: 4.58 vs. 5.34).

Willingness to voice. Our fourth hypothesis was that dissenting social majority members would be more willing to voice their unique task perspectives in surface-level diverse rather than surface-level homogeneous groups. Participants reported no difference in how much they would voice their opinions in the two types of groups ($M = 6.93$, 95% confidence interval: 6.70 vs. 7.17), $F < 1$. Thus, Hypothesis 4 was not supported here.

Discussion

The results of this first study support most elements of the psychological process that we proposed would arise for dissenting social majority members in surface-level diverse versus surface-level homogeneous groups. First, we found that when group members see similarity on a surface-level characteristic they expect similarity on a deep-level characteristic. Participants expected surface-level similar others to agree with their deep-level task perspective more than surface-level dissimilar others. Second, when those expectations were violated, dissenting social majority members were more surprised and irritated with the perspectives of surface-level similar rather than dissimilar others. The greater levels of irritation we found in surface-level homogeneous groups compared to surface-level diverse groups lend more support for the idea that surface-level diversity may buffer dissenting social majority members from the negative emotion that can accompany having a unique task perspective. Moreover, because it is important for individuals to receive support from socially similar others (Festinger, 1954), dissenting social majority members felt they would be less accepted and would have a less positive group experience in surface-level homogeneous than in surface-level diverse groups. We expected these more negative emotional reactions to be accompanied by less willingness to voice their dissenting perspectives; however our findings did not support this prediction. Self-reports of willingness to voice dissenting perspectives may not be a true reflection of what would actually happen during a group discussion (of course, the same could apply to other self-report data that supported our findings as well). Therefore, in Study 2 we examine the actual behavior of the dissenting social majority members.

In our examination of the relationships between our dependent variables we found that violated expectations were more related to feelings of surprise and subsequent irritation with surface-level similar others than with surface-level dissimilar others. Furthermore, in surface-level homogeneous groups, overall feelings of surprise were

negatively correlated with how positive and accepting individuals perceived the group to be ($r = -.40$, $p < .01$). Overall, the pattern of correlations for these variables provides further support for our argument that in groups that are surface-level homogeneous as opposed to surface-level diverse, heightened expectations of deep-level similarity held by social majority members lead to negative affective reactions. The presence of surface-level differences in diverse groups can reduce this problem by decreasing expectations of deep-level similarity and minimizing the negative emotions that can impede the sharing of unique perspectives in surface-level homogeneous groups (Abrams et al., 1990; Chen & Kenrick, 2002; Janis, 1982; Phillips, 2003).

Our first study has provided evidence that surface-level or social category diversity may be beneficial for groups, not just when people who are different on a surface-level characteristic bring different deep-level task perspectives to the group, but also when the differing task perspectives are held by social majority members. Therefore, in addition to the traditional benefits of functional background diversity that can accrue when congruence is present (Lawrence, 1997; Phillips, 2003), there may also be an indirect benefit to using cross-functional teams. In Study 1, the functional background difference represented a task-relevant social category (Pelled, 1996). In our second study, we demonstrate the robustness of this psychological phenomenon in interacting groups using a task-irrelevant social category (geographic location). Furthermore, we examine how much and with how much confidence dissenting social majority members actually voice their dissenting perspectives and the impact this has on the group process and performance.

Task relevance and behavioral outcomes of surface versus deep incongruence

In organizational settings both task-relevant, and task-irrelevant surface-level characteristics may become salient during group interaction. Pelled (1996) argued that functional background, which is often a salient surface-level characteristic, is higher in "job-relatedness" or task relevance because it is likely to directly reflect task perspectives and technical skills. This is the case in Study 1 where the functional distinction (MBA vs. Medical Student) is relevant to the decision being made (i.e., where to market a medical device). However, task-irrelevant surface-level characteristics may also be salient in groups. For example, gender, which can become a salient surface-level distinction in groups (Harrison et al., 2002), would be considered task-irrelevant when making a group decision about where to market the same medical device. According to Pelled's (1996) definition, a task-irrelevant surface-level characteristic would be less likely to directly reflect task perspectives and technical skills. This suggests that for task-irrelevant surface-level characteristics, individuals should not expect similarity in deep-level task perspectives with similar others. However, psychological research suggests that characteristics that are task-irrelevant (i.e., low in job-relatedness) may also trigger expectations of similarity (Allen & Wilder, 1979; Chen & Kenrick, 2002).

Individuals simplify the world by categorizing people according to whatever surface-level characteristic is salient. Then they assume that people who share the same category as them also share more similar values, attitudes, perspectives, and information with them than do people who do not share their category. This is a fundamental consequence of the categorization process (Tajfel, 1969). However, the extent to which people use a given surface-level characteristic to infer similarity on deep-level dimensions may depend on how important that characteristic is to the person's identity. Many factors may impact how much an individual in an organizational work group identifies with a given surface-level category, including the culture of the organization (collectivistic vs. individualistic), the topic of the task or decision to be made, and the composition of the group (i.e., majority/minority factions). In our first study, the relevance of the task (choosing a target market for a medical product) to the surface-level distinction (MBA vs. Medical student) may have made the basis of that distinction relatively important to the participants. In Study 2, we use a task-irrelevant surface-level characteristic and measure how much individuals identify with it to show the importance of identity in this process. Further, in Study 2 we extend our test of the impact of group composition based on a task-*irrelevant* surface-level characteristic on expectations of similarity (H1), perceptions of an accepting environment (H3), and the persistence and confidence in voicing dissenting perspectives (H4).

Consequences for group outcomes

Both perceptions of the group atmosphere and the behavioral style used by dissenting social majority members have been found to be important determinants of social influence (Maas & Clark, 1984; Mugny, 1982; Wood et al., 1994). In this study we examine interacting groups which allows us to observe the influence of the dissenting social majority members on the rest of the group. Expressing a dissenting task perspective in a group is often difficult for individuals because they fear having their perspective dismissed, inciting conflict in the group, and being disliked by the other group members (Asch, 1952; Moscovici, 1980, 1985; Mugny, 1982; Schachter, 1951). The effect of these feelings is often a suppression of unique perspectives and a subsequent detriment to group performance.

The classic work of Asch (1952, 1956) on conformity in groups demonstrated the powerful effects of the majority and the reluctance of dissenting group members (especially when their perspective is also unique in the group) to voice their opinion, even when it was objectively true. The ability of dissenting social majority members to influence the consideration of their task perspective depends on whether and how they voice that perspective. Dissenting group members are more influential when they voice themselves in a persistent and confident manner and they should do this more in surface-level diverse than homogeneous groups (Hypothesis 4) (Maas & Clark, 1984; Mugny, 1982; Wood et al., 1994). Moreover, in surface-level diverse groups as compared to surface-level homogeneous ones, even when the salient social category is task-irrelevant, all group members should be more prepared to consider the dissenting perspective that is present because there is greater expectation of differences in opinion—in general. This more positive and accepting environment in surface-level diverse groups should also increase the social majority members' willingness to express a dissenting perspective, which should promote more discussion of the task (Hackman, 1987; McLeod et al., 1997). Thus, the dissenting social majority members' feelings and behavior, along with the expectations of the other group members, should lead to longer discussions and greater consideration of the task information.

Hypothesis 5. Surface-level homogeneous groups with a dissenting social majority member will (a) spend less time discussing the task and (b) discuss less task-relevant information than will surface-level diverse groups with a dissenting social majority member.

Greater consideration of dissenting perspectives should lead to better decision-making in a group. This is consistent with a large body of research on minority influence which suggests that whether the dissenting perspective is correct or incorrect, it can be beneficial for group decision-making (e.g., Gruenfeld, 1995; Nemeth, 1985, 1986). If the dissenting social majority member is not able to influence the group members to think more thoroughly about the decision, by considering more task-relevant information and discussing the task longer (as in Hypothesis 5), then the group should be more likely to make the "wrong" decision. Thus, our final hypothesis is that because of the lack of contribution by dissenting social majority members, surface-level homogeneous groups should be more likely to make incorrect decisions than surface-level diverse ones.

Hypothesis 6. Surface-level homogeneous groups with a dissenting social majority member will be more likely to make incorrect decisions than surface-level diverse groups with a dissenting social majority member.

Study 2a: Establishing expectations of similarity (Hypothesis 1)

Method

Overview and participants

Given the evidence from Study 1 and other research on expectancy violations, we believed that asking the expectations of similarity questions prior to an actual group interaction might reveal too much about the purpose of the study and unduly influence participants' behavior in the group decision-making setting. Thus, in Study 2a we used a separate group of participants to establish expectations of similarity in this context. Here, we provide only necessary details about the methods and procedures and go into more depth when describing Study 2b below.

The surface-level characteristic used in Studies 2a and b was the "side of campus" where the student participants lived (North or South campus). This distinction is a salient one for students at this midwestern university and it represented a natural, but task-irrelevant, surface-level distinction. Twenty-eight students (15 North, 13 South) were asked to take 20 min to read the instructions and company information in the ACME Investments, Inc. task (adopted from McLeod et al., 1997). They were instructed to rank three possible companies for acquisition from best to worst (see below for more details). When it was ostensibly time for the group discussion to occur, these participants were put into a separate breakout room and asked to complete a questionnaire measuring their expectations of similarity with surface-level similar (i.e., same side of campus) and surface-level dissimilar (i.e., opposite side of campus) students, as well as their level of identification with their side of campus. The data collected from these participants was used to show that individuals would use the surface-level characteristic of "side of campus" to predict who is likely to share deep-level perspectives about which company ACME Investments should acquire, even though there was no logical connection between the surface- and deep-level characteristics.

Dependent variables

Expectations of similarity. We used the same within-subjects procedure as in Study 1 to measure expectations of task perspective similarity with surface-level similar and surface-level dissimilar others. Participants were asked, "To what extent do you expect students from [your or the other side of campus] to agree with you about the best company for ACME to acquire?," and "What is the probability that students from [your or the other side of campus] will rank the three companies in the same order that you ranked the companies?" We averaged the two items measuring expectations of similarity such that two scales were formed. One combined the two questions directed toward students from the same ("your") side of campus (Cronbach's $\alpha = .85$). Another combined the two

items directed toward students from the other side of campus (Cronbach's $\alpha = .84$).

Identification. Identification with the side of campus that the participant lived on was assessed in both Studies 2a and b at the end of the post-task questionnaire. We measured identification using the 10-item scale developed by Brown, Condor, Matthews, Wade, and Williams (1986) ($\alpha = .87$). The items were measured on a 10-point Likert scale from 1 = never to 10 = very often and then summed to create a scale ranging from 10 to 100. Sample items include "I am a person who considers living on [North/South] campus important," "I am a person who identifies with [North/South] campus," and "I am a person who criticizes [North/South] campus" (reverse scored).

Results

Expectations of similarity

Our goal here was to establish that individuals participating in this study would use the surface-level characteristic of side of campus to predict who was more likely to share their deep-level task perspectives about the ACME task, even though this task was not relevant to the surface-level distinction. Moreover, we expected social identification to affect these expectations of similarity. We conducted a repeated measures ANOVA with the expectations of similarity with students from "your" and the "other" side of campus as within-subjects variables, and level of identification with one's side of campus as a covariate. From this analysis we found support for Hypothesis 1. Individuals expected greater similarity with students from their own side of campus ($M = 5.15$, 95% confidence interval: 4.51 vs. 5.80) than with students from the other side of campus ($M = 4.77$, 95% confidence interval: 4.04 vs. 5.49), $F(1,26) = 5.84$, $p < .05$, $d = .21$. Expected similarity judgments were also affected by how much individuals identified with their side of campus, $F(1,26) = 7.65$, $p < .05$. The more identification reported with one's own side of campus ($M = 76.21$, $SD = 16.81$), the more task perspective similarity was expected with students from one's own side of campus ($r = .51$, $p < .01$). To control for this relationship, we included identification as a covariate in the relevant analyses conducted in Study 2b. With the expectations of similarity for this context established, we turned to Study 2b to focus in on dissenting social majority members and the group outcomes.

Study 2b: Testing Hypotheses 3–5 in interacting groups

Method

Participants and overview

Eighty-seven undergraduate students (50 North, 37 South) from a midwestern University participated in this study. The majority of the participants were female (75%). Controlling for gender whenever possible, participants were randomly assigned into three-person groups that were either surface-level diverse or surface-level homogeneous. In surface-level diverse groups there was one group member from one side of campus and two from the opposite side of campus. In the surface-level homogeneous condition all group members were from the same side of campus. After making individual decisions participants were put into groups such that one of the group members—the dissenting social majority member—held an opinion that was different from that held by the rest of the group and that was also the correct decision for the task. We operationalized the opinion difference as one's choice of the best company out of three for a larger company to acquire. Each participant was paid $10 for participating in the hour-long study. The students were debriefed about the purpose of the research at the conclusion of the study.

Procedures

Participants arrived at the laboratory at a prearranged time to participate in the study. While they waited in the hallway outside the lab, they read and signed consent forms, and the experimenter matched the participants on sex before randomly assigning each participant to a group. In assigning the groups we also counter-balanced the representation of North and South campus participants so that there was equal representation of both in the dissenting social majority position. Eighty percent of groups were same sex. The results presented below did not change when controlling for gender composition of the group.

As they were being called into the large laboratory room participants were given an envelope containing the materials needed for making a decision regarding which of three companies ACME, Inc. should acquire (materials adapted from McLeod et al., 1997). On the outside of each envelope, a large number was written indicating the group the participant would be a member of during the group discussion phase of the study. To make regional identification the most salient surface-level characteristic, we used the following procedures. On two opposite walls in the large lab room colored signs labeled "North" and "South" were posted. A colored line of tape also visually divided the room. Participants were directed to sit on the side of the room corresponding to the side of campus on which they lived. At each seat was a nametag color-coordinated with the sign. Each participant wrote his or her initials on the nametag with a black marker and displayed it in plain view for everyone to see. Students were directed to refer to themselves and the other participants by their initials if necessary.

Participants were given 20 min to read the instructions and company information in their envelopes and to rank the three companies for acquisition in order

from best to worst. After making this decision, the participants convened into their assigned groups, and moved into smaller breakout rooms where the group interaction was videotaped. Upon entering the breakout rooms, all participants were instructed to state their initials, the side of campus on which they lived, and which company they felt was the best one for ACME to acquire as a start to the group discussion. This further heightened the salience of the surface-level distinction and made sure that everyone in the group knew that there was a dissenting member in the group. All groups were given up to 30 min to come to a group decision about how to rank the three companies. Group discussions ranged from 4.24 to 28.40 min. Each participant then completed an individual post-task questionnaire that contained several of the key dependent variables.

Group task

We used a modified version of the hidden profile task, "Acme Investments, A Group Decision-Making Task," developed by McLeod and colleagues (see McLeod et al., 1997). The participants were told that they were representatives of the top management team for the ACME Investments Company. Their task was to decide which of three companies ACME Investments should acquire. Participants read information about the companies and individually ranked them from best to worst as acquisition prospects.

Each information packet contained information about the companies and guidelines provided by ACME Investments to assist in making the decision. The dissenting social majority member's packet contained information that was different from that given to the other two members of the group. This information was designed to lead to the selection of "Company A" as the best company for ACME Investments to acquire. The other two participants were given information designed to lead to the selection of "Company B" as the best company for ACME to acquire. If all the information were considered, the company selected by the dissenting social majority member (Company A) would be the best choice for the group. Under these hidden profile conditions (see Gigone & Hastie, 1993; McLeod et al., 1997; Stasser & Titus, 1985), the information held by the dissenting social majority member needs to be considered and integrated for the group to perform at its best (Stasser & Titus, 1985).

Dependent variables

Accepting group experience. Six questions were asked on the post-task questionnaire to assess how accepting the participants thought their group was (Hackman, 1987; McLeod et al., 1997). These questions, drawn from work by Gruenfeld, Mannix, Williams, and Neale (1996) and Phillips et al. (2004), were more specific to the group interaction than those presented in Study 1, capturing how dissenting social majority members felt about the group atmosphere and the receptivity of the other group members. Participants were asked how strongly they endorsed the following statements on a 9-point Likert scale: (1) "I felt that other group members were interested in what I had to say," (2) "Group members were open to learning from one another," (3) "My group members were cooperative and helpful during the group discussion," (4) "There seemed to be personality conflicts evident in my group" (reverse scored), (5) "As a group, the three of us worked effectively together," and (6) "Our group was comfortable working together." We averaged the six items measuring an accepting group experience into a reliable scale (Cronbach's $\alpha = 0.93$).

Persistence and confidence. After data collection was completed, two coders blind to the hypotheses, watched each of the recordings of the group discussion to assess how much and how confidently members spoke. The length of the group discussion was measured from the time participants stated their initials, side of campus and task preference until a final decision was reached. The group discussion was then divided into eight equal segments. For each segment, coders rated the percentage of time that each of the participants spoke (in 5% increments). They then rated how confidently each group member presented his or her perspective during that segment on a 7-point Likert scale where 1 = "not at all" and 7 = "extremely." Example statements that suggested a lack of confidence including hedges and disclaimers were provided to the coders to help in establishing a baseline for these ratings. Before the coders were allowed to code individually, one of the authors worked with them to establish a shared understanding of what distinguished high confidence from low confidence. The eight ratings made across the segments were averaged to create an overall measure of how much dissenting social majority members voiced themselves (i.e., persistence) and a confidence rating. For each of these variables, an intraclass correlation was computed to evaluate how reliably the two judges coded the videotapes. These correlations were .93 for speaking amount and .76 for confidence. The final assessments were obtained by averaging the rankings of the two coders. This also resolved any disagreements between the two coders. This procedure took advantage of the fact that both judges coded every videotape (cf., Hill, 1982).

Task engagement. The overall length of the group discussion and the amount of information shared during the group discussion were used as measures of task engagement. Two additional coders, independent of those who measured persistence and confidence and blind to the hypotheses, coded the sharing of information during the group discussion. To unitize the videotapes, the two watched the tapes and identified each

instance where a person was voicing a piece of information that could be found in the materials. Once it was identified that a piece of information had been shared, each coder independently recorded which piece of information it was from a master list of clues. Discrepancies were resolved by the two coders with the help of the second author. There were a total of 1001 statements coded as information from the case. Of these, there were 15 (1.5%) discrepancies that needed to be resolved. This low discrepancy rate gave us confidence that the information sharing was accurately coded (98.5% agreement). Across the entire discussion for each group we summed the total number of times a piece of information was voiced during the discussion. This gave us a group score for the total number of times any information from the case was discussed by the group.

Group performance. Group performance was determined by the final decision made by the group. This decision was recorded as the team recommendation on a memo directed to the chair of the ACME board of directors. When the team recommended Company A they were given a 1 on this variable for being correct, otherwise they received a 0. We also measured group members' private opinions after the group discussions. Examination of these private opinions indicated very little deviation from the preference recorded by the group so little additional insight could be gained from that data.

Results

Manipulation checks

As previously explained, the groups were composed according to campus affiliation ("North" or "South") and task perspective was operationalized by the packet of materials the participants received ("A" or "B"). Eighty-nine percent of the participants chose the expected company during the individual decision portion of the task. This is consistent with the response rate achieved by McLeod et al. (1997). However, the discrepancies meant that eight groups had to be discarded from the analysis because they did not have the correct constellation of individual opinions. The final sample size included in the analyses below has a total of 21 groups (11 surface-level homogeneous and 10 surface-level diverse) and thus 21 dissenting social majority members.

To make sure there were no systematic differences in identification due to our manipulation, we measured level of identification with one's side of campus. There were no differences in identification across the conditions of the study, and the average identification reported was 74.95 ($SD = 12.30$) on a 100-point scale. This is relatively high compared to other samples where this scale has been used (e.g., Brown et al., 1986). Table 2 provides means and correlations on all of the variables reported in Study 2 for the dissenting social majority members, and Table 3 contains the group level variables. As in Study 1, we conducted exploratory factor analyses on all of the items included in our constructs using an oblique rotation as suggested by Fabrigar et al. (1999). In this case the factors loadings were .66 or higher with all cross-loadings below the acceptable level at .32 or lower.

Dissenting social majority members

We tested whether dissenting social majority members would perceive a more positive and accepting group experience, voice themselves more persistently, and be

Table 2
Means, standard deviations, and correlations between Study 2 variables for dissenting social majority members ($N = 21$)

	Mean (*SD*)	1	2	3	4	5
1. Group type (surface-level diverse = 1)	0.47 (0.50)	1				
2. Identification with "side of campus"	74.95 (12.30)	0.28	1			
3. Acceptance by Group	6.65 (1.87)	0.44*	−0.38†	1		
4. Persistence of voice (% speaking time)	37.52 (15.59)	0.46*	−0.16	−0.08	1	
5. Confidence of voice	4.02 (0.79)	0.47*	0.01	0.05	0.72**	1

* $p < .05$.
** $p < .01$.
† $p < .10$.

Table 3
Means, standard deviations, and correlations between Study 2 variables for the decision-making groups ($N = 21$)

	Mean (*SD*)	1	2	3	4
1. Group type (surface-level diverse = 1)	0.47 (0.50)	1			
2. Discussion time	10.71 (5.79)	0.44*	1		
3. Information shared	15.95 (7.35)	0.32	0.68**	1	
4. Group performance (correct decision = 1)	0.24 (0.44)	0.14	0.07	0.32	1

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

more confident, in surface-level diverse groups compared to surface-level homogeneous groups. We conducted an overall MANOVA to examine the effects of group type on these three variables (positive and accepting group experience, persistence, and confidence) using campus identification as a covariate. We found an effect for campus identification, $F(3,16) = 12.61$, $p < .01$, and the univariate tests revealed that it only had a significant effect on the extent to which dissenting social majority members perceived the group experience to be accepting, $F(1,18) = 9.44$, $p < .01$. The MANOVA also revealed an overall main effect for type of group in support of our hypotheses, $F(3,16) = 19.87$, $p < .01$. Univariate tests indicate that dissenting social majority members reported that the group was more accepting in surface-level diverse ($M = 7.80$, 95% confidence interval: 6.82 vs. 8.77) than in surface-level homogeneous settings ($M = 5.61$, 95% confidence interval: 4.68 vs. 6.54), $F(1,18) = 11.22$, $p < .01$, $d = 1.54$, lending support to Hypothesis 3. Likewise, dissenting social majority members voiced themselves more persistently ($M = 46.27$, 95% confidence interval: 36.95 vs. 55.59) and spoke with greater confidence ($M = 4.43$, 95% confidence interval: 3.94 vs. 4.93) in surface-level diverse than in surface-level homogeneous groups ($M = 29.55$, 95% confidence interval: 20.68 vs. 38.42 and $M = 3.68$, 95% confidence interval: 3.18 vs. 4.12), $F(1,18) = 7.16$, $p < .05$, $d = 1.23$ and $F(1,18) = 5.55$, $p < .05$, $d = 1.08$, respectively. This latter pattern of data supports Hypothesis 4.

Group level analysis

To test Hypothesis 5 regarding task engagement we conducted a MANOVA at the group level of analysis. The effect of group type in the MANOVA for group discussion time and amount of information discussed did not reach significance $F(2,18) = 2.18$ ns. However, the univariate test for discussion time showed that surface-level diverse groups ($M = 13.32$, 95% confidence interval: 9.79 vs. 16.85) discussed the task longer than surface-level homogeneous groups ($M = 8.33$, 95% confidence interval: 4.97 vs. 11.70), $F(1,19) = 4.56$, $p < .05$, $d = .98$. The univariate test for amount of information discussed during the group discussion did not reach significance, $F(1,19) = 2.18$ ns.

Finally, Hypothesis 6 predicted that dissenting social majority members would have more influence on surface-level diverse groups than surface-level homogeneous ones—leading to a greater likelihood of making a correct decision. There was no significant difference in group performance under the two conditions. In both cases, it was very difficult for the dissenting social majority member to convince the other group members to change their minds—only 5 out of the 21 groups selected the correct choice advocated by the dissenting social majority member as their group decision.

Discussion

The results of Study 2 replicate the findings from Study 1 and further demonstrate the interactive effects of surface-level and deep-level diversity on group behavior. In this interacting group study we first established that even a task-irrelevant surface-level characteristic can trigger expectations of where deep-level similarities are likely to exist. Further, how much an individual identified with their salient surface-level characteristic was an important moderator of this finding. We also found, as expected, that dissenting social majority members found surface-level diverse groups to be more positive and accepting than surface-level homogeneous groups. Moreover, in surface-level diverse groups, dissenting social majority members spoke with more persistence and with greater confidence than in surface-level homogeneous groups.

The emotional and behavioral reactions of the dissenting social majority member had consequences for the group. Groups spent a longer time discussing the task in the surface-level diverse as opposed to the surface-level homogeneous conditions. Moreover, the minority opinion holder was more involved in the group discussion, talking a higher percentage of the time in diverse compared to homogeneous groups. Unfortunately, this increased involvement did not result in significantly more information sharing or more influence on the accuracy of the groups' decisions. To get the correct solution to this decision-making task, dissenting social majority members needed to convince the other group members to change their minds. This may have been an especially daunting task given how difficult it is to be the only dissenting member of a group (e.g., Asch, 1952; Nemeth, 1986). We discuss the implications and limitations of both of the studies in the conclusion below.

Conclusion

We conducted two studies designed to test how deep-level and surface-level diversity interact to affect the emotional and behavioral responses of dissenting social majority members and their groups. Most researchers and managers alike believe that surface-level diversity can be beneficial for group decision-making when individuals who look different on the surface bring different task perspectives to the table (i.e., the surface- and deep-level characteristics are congruent) (Phillips, 2003; Phillips et al., 2004). However, surface- and deep-level characteristics are sometimes incongruent, and deep-level differences in task perspective may come from people who do not appear different on the surface (Janis, 1982; Jehn et al., 1999; Lawrence, 1997). The current studies demonstrate that when this is the case, the mere

presence of surface-level diversity can facilitate the sharing of unique task perspectives which can be beneficial to group performance (e.g., Gruenfeld, 1995; Nemeth, 1985, 1986). This body of work provides evidence that congruence between surface- and deep-level characteristics is more beneficial than incongruence (Phillips, 2003; Phillips et al., 2004), but having surface-level diversity present in incongruent groups may be more beneficial than having no surface-level diversity at all.

We found support for the following hypothesized process through which the presence of surface-level diversity benefits incongruent groups. First, individuals expected more deep-level (task-perspective) similarity with surface-level similar others than with surface-level dissimilar others. This was true for surface-level characteristics that were both relevant (Study 1) and irrelevant (Study 2a) to the task. Second, when individuals realized they had a unique task perspective (i.e., they disagreed with the other group members), they had more negative reactions toward surface-level similar than dissimilar others. In fact, because group members tend to compare themselves more to similar instead of dissimilar others (Festinger, 1954), individuals who held a dissenting task perspective felt less accepted in groups that were surface-level homogeneous instead of diverse. Third, these negative feelings diminished the persistence and confidence with which the dissenting member expressed his or her perspective. Finally, as a result, surface-level diverse groups engaged more in the task than surface-level homogeneous groups. We found no difference in group performance, but, in general, the greater expression of dissenting perspectives should lead to greater consideration of alternatives and elaboration of information which should be beneficial for decision-making groups. Future research should further examine this potential impact on group performance.

Limitations and future research

Several additional avenues for future research follow from the limitations of this work. Here, we consider a few that may be important for understanding the implications of this work for organizational work groups. First, our examination was limited to three-person groups. However, as group size increases, disagreement from others, even surface-level similar individuals, may become less unexpected and reduce the negative emotional and behavioral reactions of the group members. As a result, the benefits of surface-level diversity may become less pronounced. Moreover, group composition and group size may also interact to reverse the benefits of surface-level diversity. Consider five-person incongruent groups where the dissenting group member faces an agreeing majority who are either surface-level diverse (e.g., two socially similar and two socially dissimilar members) or homogeneous (e.g., four socially similar members). In the surface-level diverse group, the agreement between socially similar and dissimilar group members might actually give greater credibility to the majority position and make it harder for dissenting group members to express their views than in the surface-level homogeneous groups. Clearly, expanding beyond a group of three members is critical for understanding a potential boundary condition of the phenomenon that we found here.

Second, the surface-level characteristics examined here were free of the status differences that are inherent in many social categories (e.g., gender and race). Dissenting group members may have even more reason to believe that their views are valid when they disagree with lower status group members. This could then lead to more sharing and discussion of unique task perspectives and benefit group performance. Future research should consider whether having surface-level diversity would still be beneficial for groups if there are status differences inherent in the characteristics examined.

Third, we focused our examination on the dissenting group member's experience in the group. However, a closer look at the information sharing results suggests that the two agreeing group members played an important role in the group process. In Study 2b, we found that the two agreeing group members discussed the available information significantly more in surface-level diverse ($M = 17.10$, 95% confidence interval: 12.87 vs. 21.33) than in surface-level homogeneous groups ($M = 10.27$, 95% confidence interval: 6.24 vs. 14.30), $F(1,19) = 5.89$, $p < .03$, $d = 1.11$. One set of explanations for this effect centers around the diverse group and the behavior of the non-dissenting surface-level similar individual (e.g., the Business student who agrees with the Medical student in Fig. 1). First, this individual, may have been motivated to seek information and thoroughly discuss the pros and cons of it in an effort to help the dissenting group member (a similar other) save face or not feel bad in front of a dissimilar other. A second explanation is that this individual may have had concerns about agreeing or allying with a dissimilar individual. This may have motivated the individual to seek more information and reconcile the incongruence being experienced (Phillips, Liljenquist, & Neale, 2005). More research on the experiences and role of the other (non-dissenting) group members in this process is warranted.

Finally, our research essentially tests the effects of having faultlines between surface- and deep-level characteristics in a group. Research on diversity has recently been focused on how multiple sources of surface-level diversity (e.g., ethnicity and gender) come together in a task group to influence the experience of the group and its members (Lau & Murnighan, 1998, 2005; Thatcher, Jehn, & Zanutto, 2003). According to Lau and Murnighan (2005), "if group members fall into two distinct non-overlapping subgroups based on demographic

characteristics—e.g., young Hispanic women and old Caucasian men—a strong faultline is present" (p. 645). These strong "faultlines" can hinder group performance because of a failure to communicate effectively across the subgroups. This rationale would suggest that congruence between surface- and deep-level characteristics should have negative consequences for groups because essentially there would be a strong faultline—e.g., two North-siders who like company A and a South-sider who likes company B. However, congruence between surface- and deep-level characteristics can be beneficial for groups because it improves the communication of critical task perspectives (Phillips, 2003; Phillips et al., 2004). Future research should consider the extent to which the faultline propositions apply to the overlap between surface- and deep-level characteristics. Furthermore, the size of the subgroups may also be important to consider because much of the faultlines work has considered situations where the subgroups are of equal size which may be very different than having numerical minority and majority subgroups (Phillips et al., 2004, Study 2).

Implications

This research has implications for managing diversity in organizations that researchers and managers should consider. Conventional wisdom assumes that diversity is beneficial to groups because people who are "different" bring different perspectives to the table. Although this is sometimes true, this assumption implies that the person who is different always brings a different perspective to the table, which may put more responsibility on the shoulders of individuals who, due to their distinctiveness, may already be in a difficult position in the organization. This assumption also suggests that people who are not different on the surface have nothing unique to add to the group. This expectation is problematic because, given the self-fulfilling nature of expectancies (Snyder, 1992), it may hinder the organization from uncovering and benefiting from all of the diversity that it truly possesses.

In contrast to the conventional wisdom about the benefits of diversity, we have shown that surface-level diversity may be beneficial for groups, not only because people who are different can bring different perspectives to the table (Phillips, 2003; Phillips et al., 2004), but also because the mere presence of surface-level diversity reduces expectations of similarity, thereby improving individuals' likelihood of expressing dissenting perspectives (also see Phillips, Northcraft, & Neale, 2006). To realize the potential benefits of diversity in groups, organizations should reconsider their framing and expectations around these benefits. Furthermore, our research suggests that some of the focus that organizations direct at improving the relationships between individuals from different surface-level categories should be shifted to better understanding how relationships between surface-level similar group members contributes to the problem. There is still a lot of work to be done in understanding the psychological effects of diversity on group functioning. Our work takes one more step toward accomplishing that goal.

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