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## Conflict and Cooperation in Diverse Workgroups

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*This article reviews research examining the influence of diversity on conflict and cooperation within the context of the workplace. In particular, we describe how heterogeneity in surface characteristics, such as race and gender, as well as deeper characteristics, such as affect, experience, and knowledge, relate to key workgroup processes and outcomes. Of particular interest is the disparate strength and directionality of the effects reported in the literature. In an effort to provide clarity to the confusion, we emphasize the roles of group longevity and the type of diversity being examined. In addition, we recommend greater specificity with respect to the particular group processes and outcomes being examined.*

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Every modern assessment of the demographic composition of the American workforce suggests that the prototype of a White male employee is becoming more and more antiquated. Instead, recent figures show that organizations are becoming increasingly diverse. For example, women already comprise at least half of all personnel employed in management, professional, financial, education, health services, and leisure and hospitality fields (U.S. Department of Labor, 2006). Furthermore, census projection data suggest that by the year 2020, more than 14% of the American workforce will be Hispanic, 11% Black, and 6% Asian

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The second author attended graduate school with Michele Grossman Alexander 15 years ago. Even in those early days, Michele was highly dedicated to pursuing research on diversity-related issues. We are happy to contribute to this volume dedicated to her memory and will continue to miss her.

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2 (Tolbert, 2002). At the same time, organizational use of team-based structures  
3 for work also has increased dramatically (Ilgen, 1999). In fact, some research Q2  
4 suggests that the primary structural strategy through which organizations have  
5 attempted to cope with dynamic and competitive markets of the 21st century is  
6 team-based work (Devine, Clayton, Philips, Dunford, & Meiner, 1999). Given  
7 the simultaneous and pervasive nature of demographic and structural changes in  
8 organizations, the potential effects of diversity on team processes and outcomes  
9 are being examined in a growing body of empirical research. This research has  
10 yielded equivocal conclusions; some studies espouse positive outcomes associated  
11 with diverse groups, while others claim that diversity has negative effects on group  
12 processes and outcomes (see van Knippenberg & Schippers, 2007).

13 The purpose of this article is to review this research with a particular focus on  
14 the impact of group heterogeneity on the processes of conflict and cooperation.  
15 These processes are central components of intragroup dynamics and ultimately  
16 of group performance (Lewin, 1947). The ubiquity of team-based structures in  
17 organizations, together with the increasingly diverse American workforce, make  
18 it critical to consider what is known about the effects of diversity on team  
19 processes as well as what needs to be learned. Thus, this article makes three primary  
20 contributions to the literature. First, this article offers the first focused review  
21 of workgroup diversity literature with regard to the processes of conflict and  
22 cooperation, thereby summarizing the state of knowledge in this area. Second,  
23 the unique lens of conflict and cooperation enables a thorough examination of  
24 the strengths and weaknesses of extant theory. Third, this perspective elucidates  
25 intervening variables that may clarify existing equivocal research findings. In  
26 service of these goals, we begin by drawing from organizational and social psy-  
27 chological theory in defining each of the central constructs. Next, we describe  
28 the major theoretical perspectives that have directed research on linkages between  
29 heterogeneity in groups and conflict and cooperation: social categorization and  
30 information/decision-making approaches (Williams & O'Reilly, 1998). We then  
31 review empirical findings on the topic and consider explanations for equivocal  
32 conclusions. Finally, we conclude our review of the literature by identifying unan-  
33 swered questions and areas for future research.

### 34 35 **Conceptual Definitions**

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37 Before summarizing research in the area of workgroup processes related to  
38 diversity, we specify what is meant by "diversity," "workgroup," and "processes."  
39 Previous reviews of research on these topics suggest that the definitions chosen  
40 to reflect these constructs may partially explain the contradictory nature of many  
41 findings (Milliken & Martins, 1996; van Knippenberg & Schippers, 2007). For  
42 example, if a particular study relies on a conceptualization of diversity that is  
43 limited to visible demographic differences (e.g., gender, race) and another study

2 captures diversity with regard to functional expertise, the associated patterns of  
3 interactions indeed may be quite disparate. Accordingly, we begin by discussing  
4 several of the most prominent conceptualizations of each of the central constructs.

5  
6 *Diversity*  
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8 There is little consensus about what should be meant by *diversity* in social  
9 and organizational psychology. On one hand, some scholars contend that the most  
10 meaningful differences are those that reflect systematic and historical trends with  
11 regard to advantaged and disadvantaged social identity status (Konrad, Prasad, &  
12 Pringle, 2006). From this perspective, women, ethnic minorities, nonheterosexual  
13 individuals, individuals with disabilities, and other stigmatized group members  
14 represent social identity groups that have been historically disadvantaged and thus  
15 should be the focus of discussions of diversity. In fact, Konrad and colleagues  
16 (2006) argued that “studies that assume away status and power differences be-  
17 tween groups threaten to result in a misleading set of findings that could direct  
18 organizational efforts away from the problems and opportunities with the greatest  
19 impact on outcomes” (p. 3). Thus, one set of researchers retain a specified, some-  
20 what narrow definition of diversity and members who comprise diverse groups.

21 On the other hand, additional scholars argue that diversity exists and is mean-  
22 ingful in a much broader sense. For example, van Knippenberg, De Dreu, and  
23 Homan (2004) specified that diversity refers to “differences between individuals  
24 on any attribute that may lead to the perception that another person is different  
25 from the self” (p. 1008). Similarly, Harrison and Sin (2006) proposed that diversity  
26 can be defined as “the collective amount of differences among members within  
27 a social unit” (p. 196). Although Harrison and Sin conceded that their definition  
28 could apply to differences on any variable, the authors suggested that researchers  
29 should stay within “the realm of demographics, skills, abilities, cognitive styles,  
30 perceptual orientations, personality dimensions, values, attitudes and beliefs that  
31 are germane to group functioning given a specific research context and theoretical  
32 orientation toward teams.” As such, a second set of researchers tends to cast a wide  
33 net when they consider attributes of group members. In fact, in the broadest sense,  
34 all individuals may have characteristics that make them different from others.

35 Given that these definitions range from narrow to broad in scope, many re-  
36 searchers have attempted to clarify the underlying dimensions of diversity in  
37 groups. One of the major models of diversity that adopts this approach differ-  
38 entiates between two dimensions: task relatedness (task vs. relational) and ob-  
39 servability (surface vs. deep) (Jackson, May, & Whitney, 1995; Pelled, 1996).  
40 The former dimension is anchored by features that are highly task oriented (e.g.,  
41 educational level, department membership, knowledge, skills, abilities) and those  
42 that are relations oriented (e.g., sex, age, race, values, personality). Diversity can  
43 also be described with regard to observability: the most observable characteristics

2 are surface-level attributes (e.g., age, sex, race/ethnicity), whereas deep-level at-  
3 tributes (e.g., attitudes, beliefs, values, knowledge, skills, abilities) are “subject  
4 to construal and more mutable” (Jackson et al., 1995, p. 217). These dimensions  
5 capture both social category diversity (i.e., readily detectable attributes such as  
6 gender, age, and race) and informational or functional diversity (i.e., less visible  
7 attributes that may be more related to the job, such as educational background;  
8 Van Knippenberg et al., 2004).

9 We sympathize with Konrad and colleagues’ (2006) argument that diversity  
10 with regard to devalued social identities, particularly as they relate to social and  
11 interactive processes (Alexander, Brewer, & Herrmann, 1999; Alexander, Brewer,  
12 & Livingston, 2005; Alexander, Levin, & Henry, 2005), is of utmost importance  
13 in understanding and avoiding inequity. Moreover, we share their concern that  
14 research that relies upon a broader definition of diversity may dilute (or at the  
15 least, muddy) the potential functions and dysfunctions associated with interactions  
16 between advantaged and disadvantaged individuals (see Hebl & Dovidio, 2005). In  
17 this article, however, we include a discussion of attributes that differentiate between  
18 members of a social unit but do not necessarily convey status for two primary  
19 reasons. First, this wider framework is common in the literature, and thus worth  
20 inclusion in a review article. Second, careful analysis of inconsistency in the  
21 conceptualization of diversity also may help to clarify existing equivocal findings.

### 22 *Workgroup*

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25 Like definitions of diversity, terminology around the label of “group” has been  
26 debated in the literature. Some researchers use the term “team” to convey greater  
27 synergy or interdependence than would be expected from a “group.” However,  
28 Guzzo and Dickson (1996) provided an inclusive definition: “a workgroup is made  
29 up of individuals who see themselves and are seen by others as a social entity, who  
30 are interdependent because of the tasks they perform as members of a group, who  
31 are embedded in one or more larger social systems (e.g., community, organization),  
32 and who perform tasks that affect others” (p. 308). More recent refinements in  
33 team research have extended this conceptualization by referring to teams as,  
34 “complex, dynamic systems, existing in larger systemic contexts of people, tasks,  
35 technologies, and settings” (Ilgen, Hollenbeck, Johnson, & Jundt, 2005). In the  
36 interest of simplicity, this work follows Guzzo and Dickson’s definition and uses  
37 the terms “group” and “team” interchangeably.

### 38 39 *Conflict and Cooperation as Process*

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41 In the traditional input–process–output model of teamwork, process can be  
42 understood as those things that go on inside of a group that influence its effective-  
43 ness (McGrath, 1964; see also Worchel, Coutant-Sassic, & Grossman, 1991). More

2 contemporary models of team functioning continue to examine such interactive,  
3 interdependent processes as communication and coordination (Brannick, Roach,  
4 & Salas, 1993) and parallel or recursive aspects of groups such as their level of  
5 cohesion (Marks, Mathieu, & Zaccaro, 2001). In their recent review of teamwork,  
6 Ilgen et al. (2005) outlined the stages of team development in which such pro-  
7 cesses occur. The first stage involves formation of trust in the team's efficacy as  
8 well as psychological safety, planning for task completion, and structuring norms  
9 and interaction patterns. The second stage involves general team functions such  
10 as bonding, adapting, and learning. Task finishing or team termination is the final  
11 stage of team development. Across stages, the interpersonal and interdependent  
12 nature of team-based structures requires that members work together to accom-  
13 plish the developmentally appropriate behaviors or tasks. The characteristics of  
14 interactions within teams, including the amount of conflict and cooperation that  
15 exist, are of utmost importance in determining team effectiveness, and thus are the  
16 focus of a great deal of scholarly research.

17 In broad terms, conflict can be defined as the "the process resulting from the  
18 tension between team members because of real or perceived differences" (De Dreu  
19 & Weingart, 2003, p. 741). With regard to conceptualizations of conflict, Pelled,  
20 Eisenhardt, and Xin (1999) differentiated between two distinct components: task  
21 conflict and emotional conflict. Task conflict occurs when group members disagree  
22 about task-related issues, including procedures, goals, and decisions (Jehn, 1994).  
23 Relational or emotional conflict is characterized by disagreements or tension with  
24 regard to personal taste or interpersonal style. An additional conceptualization of  
25 conflict that has regained attention is the idea of "constructive conflict," which  
26 involves searching out a variety of opinions, openly confronting differences, and  
27 critiquing alternative options (Kirchmeyer & Cohen, 1992; Tjosvold & Deemer,  
28 1980). A group that manifests constructive conflict could be characterized by high  
29 task conflict and low relational conflict. Importantly, it may be this type of inter-  
30 action that ultimately facilitates effective team performance through constructive  
31 divergence (Ilgen et al., 2005).

32 Although it is often implicitly or explicitly described as the polar opposite  
33 of conflict, cooperation represents an inversely related but separable process that  
34 can occur in teams. That is, a team could be characterized by high levels of  
35 conflict as well as high levels of cooperation. Some authors discuss cooperation  
36 in terms of motives for working together to obtain shared goals (Chatman,  
37 Polzer, Barsade, & Neale, 1998), whereas others emphasize interactive and re-  
38 lational behavior that is directed toward the achievement of group goals (Milton  
39 & Westphal, 2005). Such behaviors include offering help and assistance to each  
40 other, being receptive of others' ideas and opinions, and working toward consen-  
41 sus for the good of the group (Campion, Medsker, & Higgs, 1993). Interactions  
42 characterized by cooperation offer opportunities for learning (Sonnentag, 2001)  
43 as well as coordination of involvement in complementary tasks (Guastello &

2 Guastello, 1998), and thus are vital for effective team functioning when tasks are  
3 interdependent.

4 Frequently in the groups and teams literature, scholars are unclear in distin-  
5 guishing between conflict, cooperation, and group cohesion. To some extent, this  
6 is understandable, as many definitions of cohesion include elements of cooperation  
7 (e.g., task cohesion, commitment, or attraction) and a relative lack of conflict (e.g.,  
8 social cohesion, integration, or interpersonal attraction; see Beal, Cohen, Burke,  
9 & McLendon, 2003; Carron, Brawley, & Widmeyer, 2002; and Festinger, 1950  
10 for more details on definitions of cohesion). Despite the conceptual overlap be-  
11 tween these constructs, we will facilitate our exposition by offering the following  
12 clarification: cohesion is a state of a group as perceived by members of the group  
13 (although those outside of the group could also form perceptions of cohesion of  
14 the group). This perception is formed by any factor that would cause the group to  
15 remain intact. Cooperation and conflict certainly represent two such factors, but  
16 are not the only factors that contribute to perceptions of cohesion (e.g., perceptions  
17 of common fate, similarity, affective states of the members, etc.). Cohesion does  
18 not serve only as an outcome of these factors, however, as the perception of co-  
19hesion can cause group members to increase or decrease conflict and cooperation  
20 with other group members. In the remainder of our review, we will avoid studies  
21 that focus entirely on the cohesion construct, but include studies examining facets  
22 of cohesion that are closely related to conflict or cooperation. Now that we have  
23 provided some basic conceptual definitions and clarifications, we turn now to a  
24 review of existing theoretical and empirical work that has considered the patterns  
25 of interrelations between team diversity, conflict, and cooperation.

### 26 27 **Review of Research** 28

29 On one hand, some data indicate that diverse groups perform better than or  
30 equivalent to homogeneous groups over an extended period of time (e.g., Harrison,  
31 Price, Gavin, & Florey, 2002; Simons, Pelled, & Smith, 1999; Watson, Kumar,  
32 & Michaelsen, 1993). On the other hand, similar studies revealed no relationship  
33 between diversity and performance (e.g., West & Schwenk, 1996), or even that  
34 heterogeneity in groups can decrease cohesion, increase conflict, and interfere  
35 with task performance (e.g., Jehn, Northcraft, & Neale, 1999; Tsui, Egan, &  
36 O'Reilly, 1992). A number of researchers have reviewed these general findings,  
37 beginning with Milliken and Martins (1996) and updated most recently by Van  
38 Knippenberg and Schippers (2007) in the *Annual Review of Psychology*. Each of Q3  
39 these reviews concludes that consistent, overarching linkages between diversity  
40 and group processes and outcomes are, at best, elusive.

41 Milliken and Martins' review of the literature between 1989 and 1994 yielded  
42 34 studies that addressed the topic of diversity in organizational settings. In a  
43 more comprehensive search, Williams and O'Reilly (1998) reviewed over 80

2 studies published over the course of 40 years. Building from these previous re-  
3 views, Van Knippenberg and Schippers (2007) focused on those articles that were  
4 published between 1997 and 2005. Given the strength of these previous reviews,  
5 and consistent with the goal of the current issue, this article takes a somewhat  
6 different approach than previous reviews by focusing on the processes of con-  
7 flict and cooperation. That is, this article provides a unique, selective overview  
8 of studies that have examined the effects of workgroup diversity on the specific  
9 outcomes of conflict and cooperation. By providing a narrow review of influential  
10 empirical papers on group diversity and the processes of conflict and cooperation,  
11 we are able to make stronger conclusions regarding the conditions that give rise to  
12 positive and negative effects of group diversity. Moreover, by carefully articulat-  
13 ing the theoretical rationale that is used to account for associations between these  
14 central components of group dynamics (Lewin, 1947) and workgroup diversity,  
15 we discover weaknesses in extant theory.

16 We begin by briefly describing each of the major theoretical perspectives that  
17 have been brought to bear on the issue of workgroup diversity. We then describe  
18 the empirical findings that have emerged from each theoretical foundation. It is  
19 important to recognize that much of the research draws from multiple theoretical  
20 perspectives, and that the results of a study from one theoretical framework actu-  
21 ally may be better explained with another approach. Thus, the following review  
22 represents an alignment of theory and results wherever possible with the goal of  
23 clarifying both theory and data.

#### 24 *Overview of Theoretical Rationale*

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27 Two primary theoretical perspectives have been used to explain why di-  
28 versity in member composition might influence general patterns of interactions  
29 within a team (see Williams & O'Reilly, 1998). First, social categorization per-  
30 spectives suggest that diverse personal attributes create beliefs about similarities  
31 and differences across social identity groups (Tajfel & Turner, 1986). Second,  
32 information/decision-making models contend that the same attributes function  
33 to represent a range of knowledge, skills, and abilities (e.g., Clark, Anand, &  
34 Roberson, 2000). In general, a social categorization perspective would predict that  
35 group diversity should be related to increased relational conflict and decreased  
36 cooperation, whereas an information/decision-making perspective anticipates that  
37 group diversity should be associated with increased task conflict and performance  
38 on complex tasks.

39 These models have dominated team diversity research until more recent, "hy-  
40 brid" perspectives have emerged. An example of such a perspective would be  
41 to consider the effects of diversity on group processes as curvilinear, with opti-  
42 mal levels dependent on particular aspects of the context. Such "hybrid" models  
43 specify that efforts to understand the direct effects of diversity on team process

2 and outcomes are likely fruitless, and that instead, team member heterogeneity  
3 likely operates differently as a function of situational and contextual variables  
4 (Van Knippenberg & Schippers, 2007). In other words, it is argued that such inte-  
5 grative models are necessary to understand the conditions under which diversity  
6 has positive and negative effects on teams (e.g., Van Knippenberg et al., 2004).  
7 Thus, the effects of team diversity are beginning to be examined with regard to  
8 interactions rather than main effects.  
9

10 *Social categorization and group diversity.* The social categorization model  
11 implies that differences among team members (particularly those based on deeply  
12 rooted and visible social identities such as race; Williams & O'Reilly, 1998)  
13 aggravate interpersonal interactions. When social categories are salient, groups  
14 may become comprised of members who view each other as "us" and "them"  
15 rather than "we." Because individuals are more likely to favor those they believe  
16 to be similar to them (e.g., Tajfel & Turner, 1986; see also Dovidio, Maruyama,  
17 & Alexander, 1998), it may be anticipated that dissimilarity among teammates  
18 lessens cooperative process. Similarly, heightened social category boundaries that  
19 reinforce differences between team members also may lead to heightened tension  
20 that inflames relational or interpersonal forms of conflict when identities are  
21 threatened or resources are scarce (Jehn et al., 1999). In summary, social identity  
22 and self-categorization theories predict that groups that comprise individuals from  
23 a variety of salient social categories will experience greater relational conflict  
24 and less cooperation than groups in which individuals belong to the same social  
25 category.

26 Researchers began to consider the effects of workgroup diversity on cooperative  
27 processes as early as the 1920s (Manheim, 1960), when Mayo and colleagues  
28 examined the interpersonal dynamics of women working together in relay assembly  
29 tasks (Mayo, 1933). The processes of social categorization in diverse groups  
30 were explored in Sherif and colleagues' classic work on intergroup conflict and co-  
31 operation among boys at a summer camp (Sherif, Harvey, White, Hood, & Sherif,  
32 1954), which demonstrated that minimal distinctions between groups could create  
33 conflict and that conflict can be reduced through cooperative goals, was influential  
34 immediately after its publication (and continues to be so in the 21st century). It  
35 was during this era that Campbell and Levine (1961) conducted in-depth inter-  
36 views and observations with individuals across dozens of cultures, and formulated  
37 ideas about the accuracy and falseness of stereotypes (1967). These ideas drove  
38 empirical work such as Wilson and Kayatani's (1968) study of the extent to which  
39 Caucasian and Japanese individuals would exhibit cooperative behaviors toward  
40 in-group and out-group members in a modified prisoners' dilemma game. Results  
41 suggested that racially diverse dyads were equally cooperative as racially ho-  
42 mogenous dyads, but that cooperation was more likely to occur toward in-group  
43 members overall. Soon thereafter, Quoy (1972) fueled interest in such research



2 by publishing a paper, "Functions and Dynamics of Work Groups" in the *Ameri-*  
3 *can Psychologist* that emphasized the prevalence and importance of small groups  
4 and lamented the lack of empirical research on these units. McGrath's (1984)  
5 subsequent emphasis on process models drew attention to social interactions as a  
6 determinant of team outcomes. These early contributions to workgroup diversity  
7 scholarship helped to shape what has become a voluminous literature on social  
8 identity and self-categorization processes in diverse groups.

9 In the late 1980s and early 1990s, organizational psychologists began to  
10 direct a great deal of attention, much of which drew on social category explana-  
11 tions, to the implications of workgroup diversity for interpersonal interactions. For  
12 example, O'Reilly, Caldwell, and Barnett (1989) considered patterns of interrela-  
13 tions between group diversity and "social integration," a construct closely related  
14 to conflict (or the lack thereof) in that it encompasses attraction to the group,  
15 satisfaction with the group, and social interaction among group members. Hetero-  
16 geneity in group members' age and tenure were negatively associated with social  
17 integration. This early group-level study provided empirical evidence, consistent  
18 with the predictions of social categorization rationale, that heterogeneous groups  
19 may be less likely than homogenous groups to engage in cohesive or cooperative  
20 behaviors.

21 At about the same time, George (1990) theorized that variability in team mem-  
22 bers' affective experiences also may be a meaningful aspect of team composition.  
23 The findings of her initial study (which have been confirmed by follow-up studies;  
24 George, 1996) suggested that positive group affective tone was related to prosocial  
25 behaviors. That is, homogeneity in affect was positively related to a cooperative Q4  
26 behavior.

27 Watson et al. (1993) studied student groups who engaged in four separate,  
28 class-related tasks over the course of several months. Initial results suggested  
29 that homogenous groups scored higher than culturally diverse groups on overall  
30 team process (which includes aspects of cooperation and coordination) and perfor-  
31 mance. However, over the course of 17 weeks, differences between heterogeneous  
32 and homogenous groups were eliminated. These results might be explained from  
33 a social categorization perspective, as social identity theory has been interpreted  
34 to suggest that intergroup differences that are extremely salient in the early stages  
35 of interpersonal interaction become less critical over time; time can allow super-  
36 ordinate identities to form, or for deep-level similarities to be recognized.

37 A study of top management teams in the technology sector (Smith et al.,  
38 1994) tested comparative models relating heterogeneity and social integration  
39 processes to team performance. Their results showed that functional heterogene-  
40 ity (i.e., diversity in expertise or functional area) and heterogeneity of experi-  
41 ence were negatively correlated with social integration processes, which in turn  
42 was a meaningful predictor of organizational performance. Finding that both so-  
43 cial integration and performance were negatively related to functional diversity

2 supports the social categorization model and refutes the information/decision-  
3 making perspective.

4 Classification of diverse attributes became increasingly important throughout  
5 the 1990s. For example, Harrison, Price, and Bell (1998) compared the effects of  
6 surface- and deep-level diversity (ethnicity and attitudinal diversity, respectively)  
7 on group cohesion among hospital and supermarket teams. As predicted, the effect  
8 of time on group cohesion differed with regard to the type of diversity; over time,  
9 the effect of surface-level diversity weakened whereas the effect of deep-level  
10 diversity strengthened.

11 As another example, a novel conceptualization and measurement strategy with  
12 regard to diversity also emerged around this time. Lau and Murnighan (1998)  
13 introduced the concept of group faultlines, which were described as “hypothet-  
14 ical dividing lines that may split a group into subgroups based on one or more  
15 attributes” (p. 328). According to Lau and Murnighan, the strength of a faultline  
16 increases as individuals share more attributes with subgroup members. For exam-  
17 ple, a faultline may be particularly strong in a group that comprises two Caucasian  
18 men who are in their 50s and two African-American women in their 20s. It may  
19 be expected that the likelihood of some form of conflict would be enhanced, and  
20 cooperation lessened, under such strong faultline conditions. This multifaceted  
21 approach to understanding the emergence of theoretically meaningful manifesta-  
22 tions of group diversity will likely be very influential in future research in this  
23 area (Van Knippenberg & Schippers, 2007).

Q5

24 Research in the area of workgroup diversity from a social categorization per-  
25 spective has burgeoned in the beginning of the 21st century. An emerging trend  
26 in this research appears to be increased attention to “bottom-line” implications of  
27 diversity, and the consideration of diversity and its consequences at the organiza-  
28 tional level of analysis (e.g., Richard, 2000; Sacco & Schmitt, 2005). However,  
29 research of relevance to the processes of conflict and cooperation also continues  
30 to flourish.

31 For example, in a study of top management teams, Barsade, Ward, Turner, and  
32 Sonnenfeld (2000) found that heterogeneity in affect was associated with increases  
33 in task and emotional conflict, as well as lower levels of cooperation. That is,  
34 among top management teams in the Fortune 500, groups low and heterogeneous  
35 with regard to positive affectivity reported the greatest levels of conflict and least  
36 levels of cooperation. Building on George’s (1990, 1996) seminal work on group  
37 affective tone, this study confirms that group affective composition can influence  
38 both cooperation and conflict. In addition, the results are generally consistent with  
39 the expectations of a social categorization model in that diversity was positively  
40 related to conflict and negatively related to cooperation.

41 In a thorough and direct analysis of the relationship between demographic  
42 heterogeneity and cooperation, Chatman and Flynn (2001) examined the inter-  
43 personal interactions and performance of student teams and teams in a financial

2 services company. Drawing from social categorization theory, it was argued that  
3 the negative effects of demographic diversity would be strongest for team newcom-  
4 ers and for newly developed teams, whereas the effect of diversity on cooperation  
5 later in the course of team development would actually be positive. The results  
6 of their study provided some support for their hypotheses and suggested that  
7 the effect of demographic heterogeneity led to group norms emphasizing lower  
8 cooperation, but these effects weakened over time.

9 Harrison et al. (2002) also considered the effects of time on interaction pro-  
10 cesses among diverse team members. Student teams worked together over the  
11 course of a semester on projects specific to the content of the course in which they  
12 were enrolled. The results of their study suggested that in the initial phases of group  
13 formation, diversity can stifle cooperative social interaction processes (in partic-  
14 ular, collaboration and social integration). However, over time, these processes  
15 can act as mitigating forces whereby the negative consequences of demographic  
16 diversity are reduced. This paper, taken with Chatman and Flynn (2001), Harrison  
17 and colleagues (1998), and Watson and colleagues (1993), suggest that the effects  
18 of social categorization on group processes and outcomes change over the life of  
19 the group.

20 Mohammed and Angell (2004) argued that the social categorization model  
21 could be extended to include not only surface-level attributes (e.g., gender, eth-  
22 nicity), but also those that are less visible, or deep-level characteristics (i.e., time  
23 urgency, extraversion). This is an important idea given that the basic premises of  
24 the theory apply primarily to identities that are visible, as opposed to those that  
25 may not be readily seen. The results of a study of student project teams over time  
26 suggested that gender diversity and time urgency diversity influenced relationship  
27 conflict. However, these effects were weakened in groups where positive interac-  
28 tion processes (including cooperation) occurred. This is particularly relevant given  
29 the focus of this article; it appears that cooperation and conflict may be influenced  
30 by (or influence the effects of) team diversity conjointly, and that the effects of  
31 deep-level diversity may manifest in categorization in much the same way as do  
32 surface-level attributes.

33 As a final example of contemporary research on the implications of work-  
34 group diversity for conflict and cooperation, Sawyer, Houlette, and Yeagley (2006)  
35 recently conducted an experimental test of the group faultline model by assigning  
36 undergraduate participants to groups in which race and job functions were varied.  
37 The results of their study suggested that the *structure* of diversity (rather than the  
38 demographic characteristics alone) influenced information sharing and social inte-  
39 gration such that groups structured with members who represented crosscutting of  
40 race and functional lines had more positive social interactions than those in which  
41 clear-cut group boundaries existed. These findings confirm that faultlines (which  
42 emerge from social categories) can negatively impact team processes, and that  
43 overlapping group boundaries can weaken faultlines and their consequences.

2 *Information/decision-making and group diversity.* Whereas the social cate-  
3 gorization model predicts uniformly grim consequences of team diversity with  
4 regard to conflict and cooperation, the information/decision-making perspective  
5 implies that productive forms of conflict may actually be more likely to emerge  
6 when individuals from a variety of backgrounds, functions, and perspectives work  
7 together (Van Knippenberg et al., 2004; Williams & O'Reilly, 1998). From this  
8 perspective, diversity reflects greater resources for creative problem solving, de-  
9 cision making, and idea generation as well as fuel for task-related conflict (Jehn,  
10 Chadwick, & Thatcher, 1997; Pelled et al., 1999). That is, group diversity is a  
11 proxy for members' unique sources of knowledge or information that can be  
12 brought to bear on group tasks. The information/decision-making model suggests  
13 that, compared to homogenous teams, heterogeneous teams may debate key ques-  
14 tions longer, discuss unique information or dissenting opinions more frequently,  
15 and avoid reaching consensus prematurely.

16 In line with this rationale, and in one of the first studies to focus on and  
17 empirically test the effects of diversity on the process of cooperation, Cox, Lobel,  
18 and McLeod (1993) asked undergraduate participants to engage in a two-party  
19 prisoner's dilemma task. The results of this laboratory study suggested that racially  
20 diverse dyads were more likely than nondiverse (Caucasian-only) dyads to arrive  
21 at thoughtful and balanced cooperative decisions, suggesting that negotiation in  
22 diverse dyads may be more productive than in homogeneous dyads.

23 In a comprehensive examination of workgroup characteristics, processes,  
24 and outcomes, Campion et al. (1993) surveyed work groups in a large financial  
25 services organization. With regard to group diversity, the results of their study  
26 suggested that heterogeneity with regard to abilities and experience was positively  
27 correlated with intragroup cooperation and communication. That is, consistent  
28 with the information/decision-making perspective, in a large-scale analysis of  
29 team-based work, diverse workgroups exhibited more functional communication  
30 patterns than did homogeneous groups.

31 The themes of the information/decision-making perspective are also evident  
32 in Gruenfeld, Mannix, Williams, and Neale's (1996) work on information sharing  
33 in groups in which they argued that diversity might enhance problem solving  
34 through cognitive conflict. This type of conflict, characterized by the existence  
35 of a devil's advocate, the discussion of faulty assumptions, proposing unusual  
36 solutions, and generating multiple arguments, was expected to account for the  
37 effects of diversity on team outcomes. However, contrary to the initial expecta-  
38 tions and the information/decision-making model, groups that comprised members  
39 who were familiar to each other (i.e., low with regard to attribute diversity) en-  
40 gaged in more effective discussion processes regarding unshared information than  
41 did those that comprised strangers (i.e., high with regard to diversity). An ex-  
42 tension of these findings implies that diversity can reduce productive forms of  
43 conflict.

2 Conflict was a focus of Chatman and colleagues' (1998) study of MBA stu-  
3 dents in a simulated organizational setting in which results opposite to Gruenfeld  
4 and colleagues' findings emerged. In this study, the effects of demographic diver-  
5 sity on conflict depended on whether individual or collective outcomes were made  
6 salient. Emphasis on the organization as an entity rather than particular individual  
7 goals was positively associated with social interactions. Moreover, as dissimilarity  
8 increased, so did perceptions of beneficial forms of conflict.

9 Some of these divergent findings have been explained by different defini-  
10 tions of diversity. Over time, conceptualizations of diversity have broadened to  
11 go beyond race, gender, and functional background to include deeper-level char-  
12 acteristics such as values and personality. For example, multiple assessments of  
13 team heterogeneity in personality and ability (e.g., mean, variance, minimum,  
14 maximum) were considered by Barrick, Stewart, Neubert, and Mount (1998). The  
15 results of their laboratory research suggested that mean levels of extraversion, neu-  
16 roticism, and cognitive ability were related to the team's viability through positive  
17 social interactions. More relevant to the issue of heterogeneity is their finding that  
18 variability in cognitive ability was negatively related to team conflict, whereas  
19 variability in agreeableness was positively related to conflict in the team. These  
20 findings can be interpreted from an information/decision-making framework to  
21 suggest that the unique individual differences that team members' bring to team  
22 tasks influence their interactions.

23 To understand the potential influence of organizational factors on group pro-  
24 cess, Ely and Thomas (2001) conducted a qualitative study of three organizations  
25 in which three different organizational perspectives of workforce diversity were  
26 examined: integration and learning, access and legitimacy, and discrimination and  
27 fairness. The results of their analysis suggested that the organization's framework  
28 for diversity influenced feelings of respect, management of tensions, and inter-  
29 personal processes within teams. In particular, the most positive outcomes for  
30 intergroup relations seemed to be associated with the integration and learning per-  
31 spective, which directly emphasizes diversity as a resource for learning and change  
32 that should be integrated throughout the organization. These results suggest that,  
33 at the organizational level, focusing on the unique information and perspectives  
34 that each team member brings may facilitate positive interpersonal processes.

35 A recent example of the way in which information/decision-making perspec-  
36 tives can be applied to group processes is a study conducted by Phillips and  
37 Loyd (2006) in which the authors suggested that incongruity between surface- and  
38 deep-level characteristics could create unique interpersonal processes. Specifi-  
39 cally, the authors were interested in situations in which members of the social  
40 majority (i.e., those who are similar with regard to surface-level diversity) might  
41 offer dissenting opinions (i.e., be in a deep-level minority). The results of two  
42 laboratory studies with three-person student groups revealed that dissenting so-  
43 cial majority members enabled groups to engage in longer discussions in which

2 divergent opinions were shared (i.e., task-related conflict). Consonant with the  
3 information/decision-making rationale, the authors concluded that, “the presence  
4 of surface-level diversity can facilitate the sharing of unique task perspectives”  
5 (p. 157).  
6

7 *Hybrid theories of group diversity.* Despite the large number of studies that  
8 have supported both social categorization and information/decision-making theo-  
9 ries independently, Van Knippenberg and colleagues (2004, 2007) have argued  
10 that these existing theories do not adequately account for the range of empirical  
11 findings on the effects of workgroup diversity. Instead, these and other authors  
12 have suggested that the effects of group diversity may be best understood through  
13 an integration of models. One example of a hybrid approach is the work by Van  
14 Knippenberg and colleagues (2004), who drew from both social categorization  
15 and information/decision-making models to develop a hybrid, integrative model  
16 that suggests diversity is related to elaboration of task-relevant information *and*  
17 that social categorization can influence affective reactions. This categorization-  
18 elaboration model (CEM) specifies that affective reactions to social category dis-  
19 tinctions moderate the relationship between diversity and elaboration. The CEM  
20 takes a slightly different approach to explaining team conflict than previous mod-  
21 els. Van Knippenberg and colleagues (2004) argue that the focus on elaboration  
22 (which involves the exchanging of information, ideas, and perspectives) will of-  
23 fer greater explanatory power than the construct of “conflict,” which is typically  
24 expected to reflect dissonant exchange of viewpoints. According to the CEM,  
25 elaboration is associated with all types of diversity and is a direct determinant of  
26 group performance.

27 Beyond this theoretical work, several empirical pieces have explicitly taken  
28 an integrative approach to understanding group diversity. In addition, the results of  
29 other papers provide implicit support for the joint effects of social categorization  
30 and information. For example, work in the mid 1990s that was alluded to in pre-  
31 vious sections involved a refinement of typologies of diversity that accounted for  
32 different patterns of effects. In line with the previously described work by Jackson  
33 and colleagues (1995), Pelled (1996) suggested that demographic diversity vari-  
34 ables could be organized along the dimensions of visibility and job relatedness.  
35 Pelled advanced the idea that visibility of demographic diversity variables would  
36 influence affective conflict (which in turn should influence affective outcomes),  
37 whereas job relatedness of demographic diversity variables would influence sub-  
38 stantive conflict (which in turn should influence cognitive task performance).  
39 This perspective significantly influenced subsequent work, including, for exam-  
40 ple, McLeod, Lobel, and Cox’s (1996) experimental study in which heterogeneous  
41 groups generated more ideas but were characterized by less intragroup attraction  
42 than homogenous groups.

43 As another example, in a field study of employees in a household goods mov-  
ing company, different types of diversity were found to exacerbate different forms

2 of conflict (Jehn et al., 1999). Specifically, informational diversity (heterogeneity  
3 with regard to education and functional area) was related to task conflict, and so-  
4 cial category diversity (heterogeneity with regard to gender and race) was related  
5 to relational conflict. In addition, diversity in values was related to greater task,  
6 process, and relational conflict.

7 In another paper that exemplifies such conceptualizations of diversity,  
8 Simons et al. (1999) took a unique perspective of the interrelations among di-  
9 versity, conflict, and performance. In a study of top management teams, Simons  
10 and colleagues found that diversity with regard to job-related, but not demo-  
11 graphic, diversity (functional, education, tenure diversity) positively influenced  
12 financial performance. Moreover, the effects of diversity on performance were  
13 most positive for teams in which debate (i.e., task-related conflict) was present.  
14 Whereas previous studies focused almost exclusively on conflict as a mediator of  
15 the relationship between diversity and outcomes, this study instead considered the  
16 interaction pattern as a moderator of this relationship.

17 Contextual moderators are common in research that takes an integrative theo-  
18 retical approach. As an example of the kind of moderators that were examined prior  
19 to the year 2000, Pelled et al. (1999) examined teams in the electronics divisions  
20 of three organizations. Consistent with previous research and their hypotheses,  
21 functional diversity was associated with task conflict, while diversity with regard  
22 to ethnicity and organizational tenure were correlated with emotional conflict.  
23 The contribution of this particular study is their finding that the routineness of the  
24 team's task and longevity of the group moderated these relationships. Specifically,  
25 task routineness reduced the relationship between diversity and relational conflict,  
26 but bolstered the relationship between diversity and task conflict. In addition, the  
27 effect of diversity on conflict weakened over time.

28 Timmerman (2000) also examined contextual factors, and was interested in  
29 the impact of team diversity in contexts in which cooperation was necessary (i.e.,  
30 tasks with high interdependence) relative to contexts in which coordination is  
31 not as vital (i.e., low interdependence). To examine this issue, archival data were  
32 used to analyze the composition and performance of professional basketball and  
33 professional baseball teams. In the sport in which cooperation is most necessary  
34 (basketball), but not in a relatively independent team context (baseball), both age  
35 and racial diversity were negatively associated with team performance. This group  
36 of studies provides some support for integrative approaches to understanding the  
37 effects of group diversity, but does not necessarily clarify which set of constructs  
38 should be integrated.

#### 40 *Limitations of Current Theory*

41  
42 There are several noteworthy limitations to the aforementioned major theo-  
43 ries driving research on workgroup diversity and their application to empiri-  
cal research on conflict and cooperation. With regard to cooperation, neither

2 information/decision-making perspectives nor hybrid models address the possible  
3 effect of heterogeneity on interactional patterns of cooperative effort as evidenced  
4 by several characteristics of each approach. First, the primary task context to  
5 which these models apply seems to be decision making or cognitively laden tasks.  
6 Though the CEM includes affective responses (such as relational conflict), elaboration  
7 is a cognitively loaded construct. For example, why might elaboration be  
8 necessary in a team whose objective is to build an automobile? Obviously, cog-  
9 nition is an important element in group functioning, but we feel that an emphasis  
10 on cognition at the expense of cooperation (e.g., “cooperation” does not appear  
11 in Knippenberg’s 2004 theoretical paper) provides an incomplete picture of group  
12 process.

13 Second, and relatedly, these models seem to implicitly be more concerned  
14 with performance-related activities rather than with the patterns of interactions  
15 that may support such effort. This distinction is similar to the traditional focus  
16 on task performance without regard to contextual performance (e.g., Borman &  
17 Motowidlo, 1997); the former refers to the activities through which raw materials  
18 are translated into the goods and services offered by the organization whereas the  
19 latter refers to a set of behaviors that support the broader social environment of  
20 the team and organization. Contemporary organizational scholars have reached  
21 consensus that both task and contextual performance are critical to organizational  
22 effectiveness (Borman & Motowidlo, 1997). Similarly, cooperation must be in-  
23 corporated into theoretical perspectives of team-based work. At present, the only  
24 model that directly addresses issues related to such behaviors is the social catego-  
25 rization approach, which draws from similarity–attraction paradigms to suggest  
26 that helping behaviors are more likely between similar individuals than those that  
27 are different (Tajfel & Turner, 1986), or that heterogeneity in teams will lead to  
28 decreased cooperation.

29 With regard to conflict, several limitations of these theoretical perspectives  
30 arise. Specifically, these models do not adequately explain existing empirical find-  
31 ings with regard to strategies that are used to cope with intergroup interactions,  
32 or with regard to the validity of the distinction between task and relationship con-  
33 flict. Research conducted from the perspective of social categorization typically  
34 predicts greater diversity (greater categorization) to be associated with greater  
35 conflict (see Milliken & Martins, 1996). Similarly, information/decision-making  
36 models and hybrid approaches also predict greater dissent or elaboration under  
37 conditions of heterogeneity. The primary difference between the two classes of  
38 theory deals with the distinction between task and relationship conflict; social  
39 categorization models tend to emphasize affective or relationally oriented con-  
40 flict, whereas information/decision-making perspectives emphasize the cognitive  
41 or task-related conflict patterns.

42 Some evidence, however, suggests that the distinction between task and rela-  
43 tional conflict that has permeated much of the literature in the area of workgroup



diversity may be a false dichotomy. De Dreu and Weingart (2003) meta-analyzed the results of 26 studies on team conflict, performance, and member satisfaction. The results suggested that both task and relational conflict had moderate negative correlations with the performance of teams; the average corrected correlation coefficient for task conflict was  $-.23$ , whereas the correlation with relationship conflict was  $-.22$ . These results directly contradict the argument that conflict related to the task can be beneficial for teams. Moreover, even when considering the type of group as a moderator, all average correlations were negative. Thus, it is possible that expectations derived from social categorization, information/decision-making, and hybrid models are not supported by empirical evidence, bringing into question the relative value of each approach. However, research findings detailed in the following sections demonstrate at least some degree of discriminant validity between task and relational conflict, suggesting that more research is needed before discarding the two-factor taxonomy.

Ignoring for a moment this issue of task and relational conflict, limitations of current models suggest that the degree to which *any* kind of conflict should be expected in diverse groups deserves renewed attention. With regard to social categorization models, even Tajfel and Turner (1986) suggested that individuals engaged in interactions with out-group members may actually strive to avoid conflict in an effort to avoid upsetting interpersonal dynamics, appearing prejudiced, or confirming negative stereotypes about their in-group. Instead of engaging in conflict or expressing divergent opinions, members of heterogeneous groups may engage in impression management behaviors or influence tactics such as personal trait enhancements, social recategorization (which involves dissociating oneself from one's social identity group or assimilating to the majority), or positive distinctiveness (which involves integration of positive aspects of one's social identity) (Roberts, 2005). Prediction of these behaviors, which are likely indicative of the absence of conflict, can be derived from offshoots of social categorization perspectives (Brewer, 1991; Tajfel, 1978), but is inconsistent with the typical prediction that diversity will be associated with conflict. Despite such limitations, it is important to recognize that these models have been the driving force behind decades of useful and important research.

In the following section, we will synthesize the patterns of findings across this body of research. We will highlight issues that are relevant to cooperation and conflict, and emphasize the manner in which these findings may help to clarify inconsistencies in research findings related to workgroup diversity.

### Integrative Summary

In general, as an area of study, research on workgroup diversity has been plagued by consistently inconsistent findings. Van Knippenberg and Schippers concluded that, "narrative reviews and meta-analyses alike seem to corroborate

2 the conclusions that this main effects approach is unable to account for the effects  
3 of diversity adequately,” and that, “it seems time to declare the bankruptcy of the  
4 main effects approach” (2007; p. 518) in favor of a new way of understanding  
5 diversity’s effects on group functioning. We agree that consideration of diversity  
6 as a sole and direct predictor of group outcomes is likely fruitless. However, we  
7 believe that the articles reviewed here provide evidence that researchers have been  
8 working toward understanding mediating and moderating processes affecting the  
9 relationship between group heterogeneity and outcomes for decades. Of particular  
10 interest to this article, several themes have emerged with regard the patterns  
11 of relations between diversity, conflict, and cooperation that are evident in this  
12 selective review of the literature.

#### 14 *Conflict*

15  
16 Much of the work in the area of conflict has contrasted task (i.e., produc-  
17 tive, cognitive conflict) and relational manifestations (i.e., emotional, interper-  
18 sonal conflict; Pelled, 1996). On the one hand, dissimilarity has been linked with  
19 productive forms of conflict (demographic diversity, Chatman et al., 1998; educa-  
20 tional and functional diversity, Jehn et al., 1999; functional diversity, Pelled et al.,  
21 1999; functional, education, tenure diversity, Simons et al., 1999). On the other  
22 hand, dissimilarity also has been linked with destructive forms of conflict (social  
23 category diversity, Jehn et al., 1999; gender diversity and time urgency diversity,  
24 Mohammed & Angell, 2004; ethnic and tenure diversity, Pelled et al., 1999). Thus,  
25 despite a few examples that diversity and conflict may be inversely or not at all  
26 related, the research evidence reviewed here suggests that heterogeneous teams  
27 are more likely to experience conflict (whether productive or destructive in nature)  
28 than homogenous teams (see also Grossman, 1997).

#### 31 *Cooperation*

32  
33 In general, it has been surmised that cooperative behavior is most likely  
34 to be directed toward similar others (e.g., Tajfel, 1978). Consonant with this  
35 expectation, some evidence suggests that dissimilarity among group members  
36 (i.e., team diversity) can have negative outcomes on cooperative behaviors in  
37 groups (age and tenure diversity, O’Reilly et al., 1989; functional heterogeneity,  
38 Smith et al., 1994; racial diversity, Watson et al., 1993). However, there is also  
39 evidence that diverse groups are often equally or more cooperatively (or “socially  
40 integrated”) than homogeneous groups (personality heterogeneity, Barrick et al.,  
41 1998; diversity in abilities and experience, Campion et al., 1993; racial diversity,  
42 Cox et al., 1993; affective similarity, George, 1990; Wilson & Kayatani, 1968).  
43 Although social categorization theory (the primary model that would apply to

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cooperative behaviors) would typically suggest that similarity fosters cooperation, there is substantial evidence that this is not always the case.

*Potential Explanations*

One possible explanation for these equivocal patterns of relations, as well as the ambivalent prediction of team performance from diversity, was offered by Chatman and Flynn (2001). It was found that, across student and nonstudent samples, the effect of heterogeneity on team cooperation was moderated by team longevity or tenure. Similarly, Harrison and colleagues (2002) found that diversity stifled positive social interaction processes in early stages of group formation but ultimately supported group functioning over time. Thus, it may be that, “bringing time more fully into the open provides a compelling medium and conceptual lever for theorizing about diversity’s effects in teams, minimizing its potentially negative consequences, and developing mechanisms to capitalize on it” (Harrison et al., 2002, p. 1043).

The type of diversity under consideration may offer another explanation for disparate findings (Williams & O’Reilly, 1998). In contrast to van Knippenberg and Schippers (2007) conclusions, we believe that it is too early to abandon existing typologies of diversity. Though there are examples of weak validity of the distinction between surface- and deep-level differences, for example, there are also examples of explanatory power (e.g., Harrison et al., 1998, 2002). However, we agree that multidimensional measures of workgroup diversity may prove particularly useful, and thus certainly encourage their exploration (cf., van Knippenberg & Schippers, 2007). Consistent with this recommendation, preliminary research conducted on faultlines suggests that dissolution, rather than strengthening, of faultlines is associated with positive social interactions (Sawyer et al., 2006) and that strengthened faultlines are associated with greater conflict (Molleman, 2005; Thatcher, Jehn, & Zanutto, 2003). Understanding how different attributes function in multidimensional space will be a critical task facing researchers in the area of workgroup diversity.

A third explanation for variability in the effects of workgroup diversity may be variability in the dependent variables of interest. Because much of the research on workgroup diversity has been driven by interest in unit-level performance, there has been a relative shortage of work on the social processes that do not directly predict effectiveness. In particular, we have argued that existing models of diversity do not fully capture the “contextual” behaviors (Borman & Motowidlo, 1997) in which teammates engage to support the team’s “task performance.” Because interpersonal helping can be framed as being nontask related, this emphasis may partially explain why the effects of diversity on cooperative interactions are particularly divergent. For example, one unstudied mechanism that may partially determine the directionality of diversity’s effects is impression management

2 (Roberts, 2005). It may be that salient social category distinctions actually in-  
3 crease the likelihood of concerns over how one is perceived by others (see Frey  
4 & Tropp, 2006), resulting in cooperative actions as a strategy through which to  
5 manage impressions of teammates and supervisors. Thus, even in conditions in  
6 which differences are highlighted, heterogeneity might actually create seemingly  
7 cooperative interactions.

8 Another explanation for inconsistency across studies of workgroup diversity  
9 is the variability in tasks. Some studies rely on tightly controlled decision-making  
10 paradigms in laboratory settings, whereas others examine the creative products of  
11 research and development teams, while still others consider student groups work-  
12 ing on course projects. Steiner (1972) suggested that the nature of team tasks can be  
13 classified as additive (i.e., requires summation of resources), compensatory (i.e.,  
14 requires the average of team inputs), conjunctive (i.e., depends on performance  
15 of lowest performing member), or disjunctive (i.e., depends on performance of  
16 highest performing member). A dimensional taxonomy that has been utilized to  
17 describe teams considers variation in product type (i.e., information processing  
18 vs. physical activity) and the temporal nature of the team (i.e., short-term vs.  
19 long-term teams; Devine et al., 1999). The type of team, or at least the degree to  
20 which the tasks of a team require particular inputs, processes, and outcomes, likely  
21 alters the effects of diversity. For example, one study directly compared contexts  
22 in which interdependence of processes were high (basketball) to those in which  
23 interdependence was low (baseball), and found that diversity has a negative effect  
24 on outcomes in highly interdependent tasks, but not in less interdependent tasks  
25 (Timmerman, 2000). The effects of workgroup diversity may be most pronounced  
26 for highly interdependent teams whose performance requires constant communi-  
27 cation and coordination. In general, these effects have not been incorporated in  
28 investigations of workgroup diversity, so little is understood about how task type  
29 may influence resulting patterns of interactions.

### 30 31 32 **Conclusion**

34 Diversity with regard to intra- and cross-cultural demographics, as well as  
35 personality, experience, and value attributes, will define the context of work in the  
36 upcoming decades. Thus, it is in the best interest of individuals, organizations, and  
37 policy makers to continue to consider the implications of workgroup diversity for  
38 team processes and outcomes. The inconclusiveness of much of the research on  
39 outcomes of team heterogeneity necessitates persistent and focused attention to  
40 understanding mediating and moderating factors. It is incumbent upon researchers  
41 and practitioners to determine conditions under which diversity can have positive  
42 effects and for policy makers and organizational decision makers to enact and  
43 support such conditions.

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UNCORRECTED PROOF

### Queries

- Q1** Author: Please provide the complete address of the corresponding author.
- Q2** Author: Ilgen, 1999; McGrath, 1964; Milton & Westphal, 2005; West & Schwenk, 1996; Tsui, Egan, & O'Reilly, 1992; Tajfel & Turner, 1986; Mayo 1933; Cox, Lobel, and McLeod 1993; and Knippenberg, 2004 have not been included in the reference list. Please provide full publication details.
- Q3** Author: The order of the names Milliken & Martins has been reversed in the sentence "A number of researchers have reviewed these general . . . ." Please confirm that it is correct.
- Q4** Author: George, 1995 has been changed to George, 1996 so that this citation matches the reference list. Please confirm that this is correct.
- Q5** Author: Van Knippenberg & Schippers, 2006 has been changed to Van Knippenberg & Schippers, 2007 so that this citation matches the reference list. Please confirm that this is correct.
- Q6** Author: Champion et al., 1996; Cox et al., 1991; Jackson, 1992; Jackson et al., 1991; Mannix & Neale, 2005; Messick & Mackie, 1989; O'Reilly et al., 1998; Sessa & Jackson, 1995; Sherif & Sherif, 1953; Tsui et al., 1995; and Turner et al., 1987 have not been cited in the text. Please indicate where they should be cited; or delete from the Reference List.
- Q7** Author: Please check the page range in reference McLeod et al., 1996.
- Q8** Author: Please distinguish the citations of references Pelled, 1996 and Pelled, 1996b in the text. Pelled, 1996 can be numbered as 1996a.
- Q9** Author: Please provide the location of the publisher in reference Sherif et al., 1954.
- Q10** Author: Please provide the accessed date in reference U.S. Department of Labor Bureau of Statistics, 2006.