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.

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

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

**Conceptual Definitions**

Before summarizing research in the area of workgroup processes related to diversity, we specify what is meant by “diversity,” “workgroup,” and “processes.” Previous reviews of research on these topics suggest that the definitions chosen to reflect these constructs may partially explain the contradictory nature of many findings (Milliken & Martins, 1996; van Knippenberg & Schippers, 2007). For example, if a particular study relies on a conceptualization of diversity that is limited to visible demographic differences (e.g., gender, race) and another study...
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captures diversity with regard to functional expertise, the associated patterns of interactions indeed may be quite disparate. Accordingly, we begin by discussing several of the most prominent conceptualizations of each of the central constructs.

Diversity

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

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

Given that these definitions range from narrow to broad in scope, many researchers have attempted to clarify the underlying dimensions of diversity in groups. One of the major models of diversity that adopts this approach differentiates between two dimensions: task relatedness (task vs. relational) and observability (surface vs. deep) (Jackson, May, & Whitney, 1995; Pelled, 1996). The former dimension is anchored by features that are highly task oriented (e.g., educational level, department membership, knowledge, skills, abilities) and those that are relations oriented (e.g., sex, age, race, values, personality). Diversity can also be described with regard to observability: the most observable characteristics
are surface-level attributes (e.g., age, sex, race/ethnicity), whereas deep-level attributes (e.g., attitudes, beliefs, values, knowledge, skills, abilities) are “subject to construal and more mutable” (Jackson et al., 1995, p. 217). These dimensions capture both social category diversity (i.e., readily detectable attributes such as gender, age, and race) and informational or functional diversity (i.e., less visible attributes that may be more related to the job, such as educational background; Van Knippenberg et al., 2004).

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

Workgroup

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

Conflict and Cooperation as Process

In the traditional input–process–output model of teamwork, process can be understood as those things that go on inside of a group that influence its effectiveness (McGrath, 1964; see also Worchel, Coutant-Sassic, & Grossman, 1991). More
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contemporary models of team functioning continue to examine such interactive, interdependent processes as communication and coordination (Brannick, Roach, & Salas, 1993) and parallel or recursive aspects of groups such as their level of cohesion (Marks, Mathieu, & Zaccaro, 2001). In their recent review of teamwork, Ilgen et al. (2005) outlined the stages of team development in which such processes occur. The first stage involves formation of trust in the team’s efficacy as well as psychological safety, planning for task completion, and structuring norms and interaction patterns. The second stage involves general team functions such as bonding, adapting, and learning. Task finishing or team termination is the final stage of team development. Across stages, the interpersonal and interdependent nature of team-based structures requires that members work together to accomplish the developmentally appropriate behaviors or tasks. The characteristics of interactions within teams, including the amount of conflict and cooperation that exist, are of utmost importance in determining team effectiveness, and thus are the focus of a great deal of scholarly research.

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

Although it is often implicitly or explicitly described as the polar opposite of conflict, cooperation represents an inversely related but separable process that can occur in teams. That is, a team could be characterized by high levels of conflict as well as high levels of cooperation. Some authors discuss cooperation in terms of motives for working together to obtain shared goals (Chatman, Polzer, Barsade, & Neale, 1998), whereas others emphasize interactive and relational behavior that is directed toward the achievement of group goals (Milton & Westphal, 2005). Such behaviors include offering help and assistance to each other, being receptive of others’ ideas and opinions, and working toward consensus for the good of the group (Campion, Medsker, & Higgs, 1993). Interactions characterized by cooperation offer opportunities for learning (Sonnentag, 2001) as well as coordination of involvement in complementary tasks (Guastello &
Guastello, 1998), and thus are vital for effective team functioning when tasks are interdependent.

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

**Review of Research**

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

Milliken and Martins’ review of the literature between 1989 and 1994 yielded 34 studies that addressed the topic of diversity in organizational settings. In a more comprehensive search, Williams and O’Reilly (1998) reviewed over 80
studies published over the course of 40 years. Building from these previous reviews, Van Knippenberg and Schippers (2007) focused on those articles that were published between 1997 and 2005. Given the strength of these previous reviews, and consistent with the goal of the current issue, this article takes a somewhat different approach than previous reviews by focusing on the processes of conflict and cooperation. That is, this article provides a unique, selective overview of studies that have examined the effects of workgroup diversity on the specific outcomes of conflict and cooperation. By providing a narrow review of influential empirical papers on group diversity and the processes of conflict and cooperation, we are able to make stronger conclusions regarding the conditions that give rise to positive and negative effects of group diversity. Moreover, by carefully articulating the theoretical rationale that is used to account for associations between these central components of group dynamics (Lewin, 1947) and workgroup diversity, we discover weaknesses in extant theory.

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

Overview of Theoretical Rationale

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

These models have dominated team diversity research until more recent, “hybrid” perspectives have emerged. An example of such a perspective would be to consider the effects of diversity on group processes as curvilinear, with optimal levels dependent on particular aspects of the context. Such “hybrid” models specify that efforts to understand the direct effects of diversity on team process
and outcomes are likely fruitless, and that instead, team member heterogeneity likely operates differently as a function of situational and contextual variables (Van Knippenberg & Schippers, 2007). In other words, it is argued that such integrative models are necessary to understand the conditions under which diversity has positive and negative effects on teams (e.g., Van Knippenberg et al., 2004). Thus, the effects of team diversity are beginning to be examined with regard to interactions rather than main effects.

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

Researchers began to consider the effects of workgroup diversity on cooperative processes as early as the 1920s (Manheim, 1960), when Mayo and colleagues examined the interpersonal dynamics of women working together in relay assembly tasks (Mayo, 1933). The processes of social categorization in diverse groups were explored in Sherif and colleagues’ classic work on intergroup conflict and cooperation among boys at a summer camp (Sherif, Harvey, White, Hood, & Sherif, 1954), which demonstrated that minimal distinctions between groups could create conflict and that conflict can be reduced through cooperative goals, was influential immediately after its publication (and continues to be so in the 21st century). It was during this era that Campbell and Levine (1961) conducted in-depth interviews and observations with individuals across dozens of cultures, and formulated ideas about the accuracy and falseness of stereotypes (1967). These ideas drove empirical work such as Wilson and Kayatani’s (1968) study of the extent to which Caucasian and Japanese individuals would exhibit cooperative behaviors toward in-group and out-group members in a modified prisoners’ dilemma game. Results suggested that racially diverse dyads were equally cooperative as racially homogenous dyads, but that cooperation was more likely to occur toward in-group members overall. Soon thereafter, Quey (1972) fueled interest in such research
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by publishing a paper, “Functions and Dynamics of Work Groups” in the American Psychologist that emphasized the prevalence and importance of small groups and lamented the lack of empirical research on these units. McGrath’s (1984) subsequent emphasis on process models drew attention to social interactions as a determinant of team outcomes. These early contributions to workgroup diversity scholarship helped to shape what has become a voluminous literature on social identity and self-categorization processes in diverse groups.

In the late 1980s and early 1990s, organizational psychologists began to direct a great deal of attention, much of which drew on social category explanations, to the implications of workgroup diversity for interpersonal interactions. For example, O’Reilly, Caldwell, and Barnett (1989) considered patterns of interrelations between group diversity and “social integration,” a construct closely related to conflict (or the lack thereof) in that it encompasses attraction to the group, satisfaction with the group, and social interaction among group members. Heterogeneity in group members’ age and tenure were negatively associated with social integration. This early group-level study provided empirical evidence, consistent with the predictions of social categorization rationale, that heterogeneous groups may be less likely than homogenous groups to engage in cohesive or cooperative behaviors.

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

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

A study of top management teams in the technology sector (Smith et al., 1994) tested comparative models relating heterogeneity and social integration processes to team performance. Their results showed that functional heterogeneity (i.e., diversity in expertise or functional area) and heterogeneity of experience were negatively correlated with social integration processes, which in turn was a meaningful predictor of organizational performance. Finding that both social integration and performance were negatively related to functional diversity
supports the social categorization model and refutes the information/decision-making perspective.

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

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

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

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

In a thorough and direct analysis of the relationship between demographic heterogeneity and cooperation, Chatman and Flynn (2001) examined the interpersonal interactions and performance of student teams and teams in a financial
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services company. Drawing from social categorization theory, it was argued that the negative effects of demographic diversity would be strongest for team newcomers and for newly developed teams, whereas the effect of diversity on cooperation later in the course of team development would actually be positive. The results of their study provided some support for their hypotheses and suggested that the effect of demographic heterogeneity led to group norms emphasizing lower cooperation, but these effects weakened over time.

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

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

As a final example of contemporary research on the implications of workgroup diversity for conflict and cooperation, Sawyer, Houlette, and Yeagley (2006) recently conducted an experimental test of the group faultline model by assigning undergraduate participants to groups in which race and job functions were varied. The results of their study suggested that the structure of diversity (rather than the demographic characteristics alone) influenced information sharing and social integration such that groups structured with members who represented crosscutting of race and functional lines had more positive social interactions than those in which clear-cut group boundaries existed. These findings confirm that faultlines (which emerge from social categories) can negatively impact team processes, and that overlapping group boundaries can weaken faultlines and their consequences.
Information/decision-making and group diversity. Whereas the social categorization model predicts uniformly grim consequences of team diversity with regard to conflict and cooperation, the information/decision-making perspective implies that productive forms of conflict may actually be more likely to emerge when individuals from a variety of backgrounds, functions, and perspectives work together (Van Knippenberg et al., 2004; Williams & O’Reilly, 1998). From this perspective, diversity reflects greater resources for creative problem solving, decision making, and idea generation as well as fuel for task-related conflict (Jehn, Chadwick, & Thatcher, 1997; Pelled et al., 1999). That is, group diversity is a proxy for members’ unique sources of knowledge or information that can be brought to bear on group tasks. The information/decision-making model suggests that, compared to homogenous teams, heterogeneous teams may debate key questions longer, discuss unique information or dissenting opinions more frequently, and avoid reaching consensus prematurely.

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

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

The themes of the information/decision-making perspective are also evident in Gruenfeld, Mannix, Williams, and Neale’s (1996) work on information sharing in groups in which they argued that diversity might enhance problem solving through cognitive conflict. This type of conflict, characterized by the existence of a devil’s advocate, the discussion of faulty assumptions, proposing unusual solutions, and generating multiple arguments, was expected to account for the effects of diversity on team outcomes. However, contrary to the initial expectations and the information/decision-making model, groups that comprised members who were familiar to each other (i.e., low with regard to attribute diversity) engaged in more effective discussion processes regarding unshared information than did those that comprised strangers (i.e., high with regard to diversity). An extension of these findings implies that diversity can reduce productive forms of conflict.
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Conflict was a focus of Chatman and colleagues’ (1998) study of MBA students in a simulated organizational setting in which results opposite to Gruenfeld and colleagues’ findings emerged. In this study, the effects of demographic diversity on conflict depended on whether individual or collective outcomes were made salient. Emphasis on the organization as an entity rather than particular individual goals was positively associated with social interactions. Moreover, as dissimilarity increased, so did perceptions of beneficial forms of conflict.

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

To understand the potential influence of organizational factors on group process, Ely and Thomas (2001) conducted a qualitative study of three organizations in which three different organizational perspectives of workforce diversity were examined: integration and learning, access and legitimacy, and discrimination and fairness. The results of their analysis suggested that the organization’s framework for diversity influenced feelings of respect, management of tensions, and interpersonal processes within teams. In particular, the most positive outcomes for intergroup relations seemed to be associated with the integration and learning perspective, which directly emphasizes diversity as a resource for learning and change that should be integrated throughout the organization. These results suggest that, at the organizational level, focusing on the unique information and perspectives that each team member brings may facilitate positive interpersonal processes.

A recent example of the way in which information/decision-making perspectives can be applied to group processes is a study conducted by Phillips and Loyd (2006) in which the authors suggested that incongruity between surface- and deep-level characteristics could create unique interpersonal processes. Specifically, the authors were interested in situations in which members of the social majority (i.e., those who are similar with regard to surface-level diversity) might offer dissenting opinions (i.e., be in a deep-level minority). The results of two laboratory studies with three-person student groups revealed that dissenting social majority members enabled groups to engage in longer discussions in which
divergent opinions were shared (i.e., task-related conflict). Consonant with the information/decision-making rationale, the authors concluded that, “the presence of surface-level diversity can facilitate the sharing of unique task perspectives” (p. 157).

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

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

As another example, in a field study of employees in a household goods moving company, different types of diversity were found to exacerbate different forms
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of conflict (Jehn et al., 1999). Specifically, informational diversity (heterogeneity with regard to education and functional area) was related to task conflict, and social category diversity (heterogeneity with regard to gender and race) was related to relational conflict. In addition, diversity in values was related to greater task, process, and relational conflict.

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

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

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

Limitations of Current Theory

There are several noteworthy limitations to the aforementioned major theories driving research on workgroup diversity and their application to empirical research on conflict and cooperation. With regard to cooperation, neither
information/decision-making perspectives nor hybrid models address the possible
effect of heterogeneity on interactional patterns of cooperative effort as evidenced
by several characteristics of each approach. First, the primary task context to
which these models apply seems to be decision making or cognitively laden tasks.
Though the CEM includes affective responses (such as relational conflict), elabor-
oration is a cognitively loaded construct. For example, why might elaboration be
necessary in a team whose objective is to build an automobile? Obviously, cog-
nition is an important element in group functioning, but we feel that an emphasis
on cognition at the expense of cooperation (e.g., “cooperation” does not appear
in Knippenberg’s 2004 theoretical paper) provides an incomplete picture of group
process.

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

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

Some evidence, however, suggests that the distinction between task and rela-
tional conflict that has permeated much of the literature in the area of workgroup
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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
of diversity adequately,” and that, “it seems time to declare the bankruptcy of the main effects approach” (2007; p. 518) in favor of a new way of understanding diversity’s effects on group functioning. We agree that consideration of diversity as a sole and direct predictor of group outcomes is likely fruitless. However, we believe that the articles reviewed here provide evidence that researchers have been working toward understanding mediating and moderating processes affecting the relationship between group heterogeneity and outcomes for decades. Of particular interest to this article, several themes have emerged with regard the patterns of relations between diversity, conflict, and cooperation that are evident in this selective review of the literature.

Conflict

Much of the work in the area of conflict has contrasted task (i.e., productive, cognitive conflict) and relational manifestations (i.e., emotional, interpersonal conflict; Pelled, 1996). On the one hand, dissimilarity has been linked with productive forms of conflict (demographic diversity, Chatman et al., 1998; educational and functional diversity, Jehn et al., 1999; functional diversity, Pelled et al., 1999; functional, education, tenure diversity, Simons et al., 1999). On the other hand, dissimilarity also has been linked with destructive forms of conflict (social category diversity, Jehn et al., 1999; gender diversity and time urgency diversity, Mohammed & Angell, 2004; ethnic and tenure diversity, Pelled et al., 1999). Thus, despite a few examples that diversity and conflict may be inversely or not at all related, the research evidence reviewed here suggests that heterogeneous teams are more likely to experience conflict (whether productive or destructive in nature) than homogenous teams (see also Grossman, 1997).

Cooperation

In general, it has been surmised that cooperative behavior is most likely to be directed toward similar others (e.g., Tajfel, 1978). Consonant with this expectation, some evidence suggests that dissimilarity among group members (i.e., team diversity) can have negative outcomes on cooperative behaviors in groups (age and tenure diversity, O’Reilly et al., 1989; functional heterogeneity, Smith et al., 1994; racial diversity, Watson et al., 1993). However, there is also evidence that diverse groups are often equally or more cooperatively (or “socially integrated”) than homogeneous groups (personality heterogeneity, Barrick et al., 1998; diversity in abilities and experience, Campion et al., 1993; racial diversity, Cox et al., 1993; affective similarity, George, 1990; Wilson & Kayatani, 1968). 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.
(Roberts, 2005). It may be that salient social category distinctions actually increase the likelihood of concerns over how one is perceived by others (see Frey & Tropp, 2006), resulting in cooperative actions as a strategy through which to manage impressions of teammates and supervisors. Thus, even in conditions in which differences are highlighted, heterogeneity might actually create seemingly cooperative interactions.

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

**Conclusion**

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