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An Extended Intervening Process Model: Diversity, Group Processes, and Performance

John Qin[1], Kosmas X. Smyrnios[2], and Ling Deng[2]

Abstract

The rapid on-going demographic shifts in workplaces present challenges to Human Resource Development (HRD) scholars and practitioners, creating a significant demand for diversity initiatives that help organizations harvest diversity. To address inconsistencies in diversity research results and limitations of current diversity intervening process theories, the authors propose an extended intervening process model (EIPM) from the perspective of how group processes underlie the linkage between diversity and performance. The model predicts both positive and negative effects of diversity depending on the intervening roles of group processes and moderation effects of research contextual factors. While extending the knowledge by incorporating three group processes simultaneously, this conceptualization can be regarded as the first theoretical framework that explains both positive and negative effects of diversity found in one study. Implications of the present framework for future research are discussed.

In workplaces across the world, employee diversity has become widespread and continues to increase. The rapid ongoing demographic shifts in workforce create a significant demand for human resource development (HRD) practitioners to undertake

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diversity initiatives (Ali, Kulik, & Metz, 2011; Gevers & Peeters, 2009; Jehn & Bezrukova, 2004; Joshi, Liao, & Roh, 2011; Karma & Vedina, 2009). Despite intensive efforts to measure and predict the effects of diversity on performance, understanding the effects of diversity is far from being clear and presents both coexisting and conflicting research results (Choi & Rainey, 2010; Fieldhouse & Cutts, 2010; Jackson, Joshi, & Erhardt, 2003; Joshi et al., 2011; Mannix & Neale, 2005; Milliken & Martins, 1996; Williams & O'Reilly, 1998). For example, Milliken and Martins (p. 402) noted, "Diversity appears to be a double-edged sword, increasing the opportunity for creativity as well as the likelihood that group members will be dissatisfied and fail to identify with the group."

Despite the research inconsistencies, diversity continues to be a practical reality in organizations regardless of beliefs about the nature of diversity (Fieldhouse & Cutts, 2010; Kochan et al., 2003; Triana & García, 2009), suggesting that managing diversity is likely to remain one of the main challenges for HRD managers, diversity management in particular. For these reasons, researchers (Joshi et al., 2011; Mannix & Neale, 2005; Milliken & Martins, 1996; Williams & O'Reilly, 1998) have attempted to improve our understanding of diversity from various perspectives. For example, researchers have called for integrated theories by focusing on limitations associated with current diversity theories such as similarity-attraction theory (SAT), social categorization theory (SCT), and the information/decision-making approach (Qin, 2009; Williams & O'Reilly, 1998). Others have explained the mixed findings in diversity by examining how diversity was conceptualized and measured (Biemann & Kearney, 2010; Harrison & Klein, 2007; Jehn & Bezrukova, 2004; Martinez, Ferris, Segrest, & Buckley, 2011) and by reviewing the moderating roles of research contextual factors such as task characteristics and group climate (Haas, 2010; Joshi & Roh, 2009; Kaplan, Wiley, & Maertz, 2011; Qin, 2007). While explanations from these perspectives provide meaningful insights into the effects of diversity, of particular help are intervening process theories that explain the effects of diversity from the perspective of group processes that underlie linkages between diversity and performance.

In 1996, Pelled developed an intervening process theory[1] explaining the effects of group diversity on performance. Specifically, Pelled's (1996) theory shows how diversity influences group processes, which in turn influence group performance. Elaborating on the intervening role of group processes, this theory improved previous conceptualizations by successfully articulating linkages between diversity and performance, which have been referred to as a "black box" by Lawrence (1997). Despite these contributions, Pelled's theory, however, focused only on conflict, one of a number of group processes.

Indeed, groups seldom rely on one group process to function (Brown, 2000; Mason, 2006). In order to understand how various group processes are related to each other developmentally, researchers have incorporated both cohesion[2] and conflict into their research models, particularly in the group literature (Ensley, Pearson, & Amason, 2002; Tekleab, Quigley, & Tesluk, 2009). For example, in Ensley et al.'s (2002) model, cohesion was the antecedent whereas conflict was the intervening variable between

cohesion and performance; in contrast, Tekleab et al., (2009) treated conflict as the antecedent and cohesion as the outcome variable.

Apart from group conflict, other group processes, including communication (Hua, 2004) and cohesion (Sargent & Sue-Chan, 2001), have been examined in the diversity literature to open the "black box" between diversity and performance. Although group diversity can have impact on a number of group processes (Ancona & Caldwell, 1992), group processes have been examined in isolation in diversity literature (Keller, 2001; Pelled, Xin, & Eisenhardt, 1999), particularly from the perspective of how group processes explain relationships between diversity and performance. Therefore, the precise nature of how various group processes function concurrently and/or simultaneously between diversity and performance remains far from clear (Tyran & Gibson, 2008).

To further advance the existing knowledge, this conceptual article aims to extend the current intervening process theories that explain how various group processes work together to shape group performance. By doing so, the present conceptualization improves our understanding of the mechanisms of various group processes, linking diversity and performance, and provides an explanation of both negative and positive effects.

To fulfill this aim, the present article first discusses general intervening process models including both their theoretical underpinnings and limitations. Then, it presents an extended intervening process model (EIPM) that incorporates three group processes simultaneously based on the existing literature. Next, five propositions that comprise the EIPM from perspectives of diversity-communication-performance, diversity-cohesion-performance, and diversity-conflict-performance are articulated. Finally, implications of EIPM for future research are discussed.

For the purpose of this discussion, diversity is referred to as the distribution of any attribute that people use to tell themselves that another person is different (Williams & O'Reilly, 1998). Group processes are defined as the interactions that take place among members (Barrick, Stewart, Neubert, & Mount, 1998).

Intervening Process Theories: A Means to Open the "Black-Box"

Intervening variables are third variables that provide a clear interpretation of relationships between two variables (Baron & Kenny, 1986) and help to specify how and why a given effect occurs (Holmbeck, 1997). As shown in Table 1, the intervening role of group processes in the relationship between diversity and performance has been a long-standing concern of diversity researchers (e.g., Lawrence, 1997; Pfeffer, 1983). This role has received increasing attention from researchers, highlighted by a growing salient diversity paradox and suggesting a pattern of inconsistent, mixed, and often contradictory results (see Haas, 2010; Jackson et al., 2003; Milliken & Martins, 1996; Williams & O'Reilly, 1998).

In 1997, by presenting a so-called black box between diversity and performance, Lawrence challenged the congruence assumption, which assumes that visible diversity

Table 1. Theorization Advancement Concerning with Intervening Process Models

Years of publications	Contributions and proposals
1983	Proposing that diversity is an important, causal variable that affects a number of intervening variables and processes and, through them, a number of organizational outcomes (Pfeffer, 1983).
1996	Arguing that diversity influences performance entirely through a group process (i.e., conflict) and diversity has no direct effect on performance (Pelled, 1996).
1997	Suggesting that the intervening process "accounts for" the original relationship between the demographic predictor and the outcome by presenting a "black box" between diversity and performance (Lawrence, 1997).
1998	Suggesting that an intervening process theory has greater power in explaining the effects of diversity in comparison with other diversity theories (such as social categorization theory, or similarity-attraction theory), which predict either the positive or negative impact of diversity (Williams & O'Reilly, 1998).
2003	Specifically arguing that the effects of different forms of demographic diversity to organizational outcomes have been unclear, mostly because previous studies have not articulated the intervening group processes through which the relationship between forms of diversity and important outcomes operate (Bayazit & Mannix, 2003).
2004	Proposing that a diverse group can have advantages in certain types of tasks but not in others due to the different intervening roles of group conflict (Jehn & Bezrukova, 2004).
2007	Particularly suggesting that intervening theories are highly useful in explaining effects of diversity and the mixed research results (Kulik, Pepper, Roberson, & Parker, 2007).

characteristics are able to replace subjective concepts because the former are able to predict the latter. This assumption underpins the two-way relationship between diversity and performance. However, Lawrence found that demographic predictors are just as limited as their social-psychological counterparts (subjective concepts; Lawrence, 1997, p. 16) and suggested that visible diversity characteristics cannot completely replace subjective concepts although "many demographic variables [diversity characteristics] are related to subjective concepts" (Lawrence, 1997, p. 19).

In addition, Lawrence (1997) concluded, "When the intervening process is included in the relationship, the predictor [diversity] and outcome are no longer related. In other words, the intervening process 'accounts for' the original relationship between the
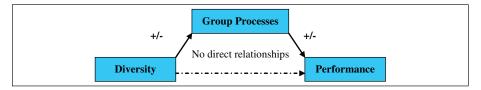
Figure 1. A typical intervening process model

demographic predictor and the outcome" (p. 4). This concern can be traced back to the work of Pfeffer (1983) who argued that diversity is an important, causal variable that affects a number of intervening variables and processes and, through them, a number of organizational outcomes. In relation to explaining the mixed results in diversity research, Bayazit and Mannix (2003) proposed:

> The effects of different forms of demographic diversity to organizational outcomes have been unclear [mixed], mostly because previous studies have not considered a theoretical framework and have not articulated the intervening group processes through which the relationship between forms of diversity and important outcomes operate. (p. 296)

In 1996, Pelled developed a theoretical model explaining the effects of diversity, in the context of mixed research results. Although there have been other theoretical contributions associated with her work (e.g., her theory first conceptualized a typology of various types of diversity with respect to their visibility and job-relatedness; see Pelled, 1996, for details.), Pelled's pioneering work has triggered a line of inquiry elaborating the intervening roles of group processes when explaining effects of diversity.

According to Pelled's (1996) intervening model, relationships between diversity and performance can be addressed as follows: Diversity influences performance entirely through a group process (i.e., conflict). Diversity has no direct effect on performance, but has either positive or negative effects on group processes, influencing performance either positively or negatively. A typical intervening process model is shown in Figure 1.

As illustrated in Figure 1, intervening process theories predict that diversity can have both negative and positive effects on group processes, which in turn can negatively and/or positively influence group outcomes. According to intervening theories, there is no significant relationship between group diversity and performance. In comparison with other diversity theories (such as SCT or SAT) that predict either the positive or negative impact of diversity (Williams & O'Reilly, 1998), an intervening process theory holds greater power when explaining the effects of diversity. In particular, intervening theories were suggested as being highly useful in explaining effects of diversity and the mixed research results in particular (Kulik, Pepper, Roberson, &

Parker, 2007). For instance, a diverse group can have advantages in certain types of tasks but not in others owing to the different intervening roles of group conflict (Jehn & Bezrukova, 2004).

Whereas Pelled (1996) and Jehn, Northcraft, and Neale (1999) focused on conflict, other researchers (Haslam, O'Brien, Jetten, Vormedal, & Penna, 2005; Joshi, 2006) have addressed a number of group processes that intervene on relationships between diversity and performance. These processes include communication (Balkundi, Kilduff, Barsness, & Michael, 2007; Cummings, 2004; Haslam et al., 2005; Joshi, 2006) and social integration or cohesion (Ayoko & Härtel, 2006; Tzafrir, Harel, Baruch, & Dolan, 2004). One commonality among these intervening theories is that effects of diversity on performance are dependent on the role of group processes.

Existing intervening theories are limited because only a relatively few have considered more than one group process at a time. In line with the literature on group dynamics, group processes are relevant to actions and behaviors of groups that contribute to group functions, including communication, social integration, and conflict (Corey, 2005). To further advance the theorization, this article proposes the EIPM to integrate three intervening process theories that have been debated in the literature, leading to the formulation of a model that we discuss in the following section.

An Extended Intervening Process Model (EIPM)

As illustrated in Figure 2, the EIPM explains how different types of diversity affect a number of group processes, which in turn influence group functionalities, as well as the ways in which research contextual factors can moderate these relationships, including diversity-communication-performance, diversity-social integration-performance, and diversity-conflict-performance. Specifically, the EIPM comprises four components: antecedents (i.e., diversity types), intervening variables (i.e., group processes), outcome variables (i.e., group functionalities), and moderators (i.e., research contextual factors). This model predicts both positive and negative effects of diversity depending on the role of intervening group processes. Predicted effects are also subject to moderation via research contextual factors.

EIPM integrates propositions associated with each of three intervening process theories that have received relatively intense attention (see Schippers, Den Hartog, Koopman, & Wienk, 2003). In the next sections, propositions are articulated based on the extant knowledge and empirical evidence.

The Relationship Between Diversity, Communication, and Performance

Defining Communication

Communication is a process that involves sending and receiving messages and has been described as the heart of group behaviors and the essence of social systems
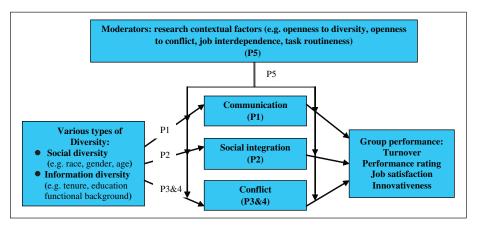
Figure 2. An extended intervening process model

(Goris, Vaught, & Pettit, 2000). Frequency and informality are two essential aspects of communication. The former refers to the amount of interaction among team members and the latter concerns the extent to which groups favor less formal communication channels such as spontaneous conversations and unstructured meetings, rather than formal channels, structured meetings, and written communication (Smith, Smith, Sims, O'Bannon, & Scully, 1994). Typical among the various types of communication is spontaneous communication, which is referred to as informal, unplanned interactions that occur among team members, having been found to mitigate conflict in distributed teams (Hinds & Mortensen, 2005).

In the literature about groups, communication has been regarded as a key group/team process as it clarifies "how" a team interpersonally orchestrates its work to get things done and perform effectively (Barrick, Bradley, Kristof-brown, & Colbert, 2007). The following subsections examine how communication functions from the perspective of a typical intervening process. The first subsection looks at relationships between diversity and communication, and the second examines relationships between communication and performance. On the basis of this examination, a proposition is formulated explaining the relationships between diversity, communication, and performance.

Links Between Diversity and Communication

Information sharing and communication should be considered within the context of diversity (Qin, 2007 & 2009). In practice, diversity in teams can lead to a range of language barriers, preventing effective communication. Theoretically, linkages between diversity and communication can be explained by SCT, which describes processes by which people classify others into groups in terms of social categories (Tajfel & Turner, 1986; van Knippenberg, De Dreu, & Homan, 2004; Williams & O'Reilly, 1998).

SCT starts with the basic assumption that people are motivated to view themselves as positively as they can (Tajfel & Turner, 1986) and that a primary means to achieve this is to identify with a group of people who are similar to themselves (Goldberg, 2003). In doing so, people sort each other into social categories (Brief et al., 2005; Gaertner & Dovidio, 2005). Following this process, people strive to develop their self-esteem by fostering positive opinions of their own category and negative opinions of others (Foley, Linnehan, Greenhaus, & Weer, 2006). Accordingly, people tend to treat the in-group members favorably and perceive out-group members as less attractive (Tajfel & Turner, 1986). This tendency facilitates communication in homogeneous groups (Gaertner & Dovidio, 2005; van Knippenberg et al., 2004) but develops a fertile breeding ground for misunderstanding and discord across heterogeneous groups, resulting in miscommunication (Swann, Polzer, Seyle, & Ko, 2004). Hence, it is predicted that heterogeneous groups will have less communication between members than would happen in homogeneous ones.

Hypothetical relationships between diversity and communication are supported from empirical studies in the area. For example, Keller (2001) examined relationships between diversity (i.e., functional diversity), communication, and outcomes in 93 groups, finding that diverse groups performed better (e.g., better technical quality) through the indirect effects of communication resulting from the members' diverse backgrounds, areas of expertise, and contacts with important external networks of information. Similarly, diversity has a positive effect on the frequency of communication within top management teams strategic business (Williams & O'Reilly, 1998).

Links Between Communication and Performance

As espoused by the organizational behavior literature, communication underpins knowledge sharing in organizations (Qin, 2007). The effects of communication on performance were the focus of extensive attention during the 1970s to 1980s (Ebadi & Utterback, 1984; Roberts & O'Reilly, 1979). This body of knowledge suggests that communication fosters idea generation and creativity and can result in improved problem solving (Ebadi & Utterback, 1984). In contrast, miscommunication and the lack of a common language make it difficult to engage in an exchange of ideas and questions, processes regarded as essential for effective teamwork (Williams & O'Reilly, 1998).

Unfortunately, the understanding about the effects of communication on performance remain inconclusive. Nevertheless, data from 117 research projects show that the frequency of communication is related positively to technological innovation (Ebadi & Utterback, 1984). However, from the perspective of conflict, Jehn (2001) noted that communication can also lead to increased levels of conflict as team members bring more of their differences to the surface.

Accordingly, it is proposed that

Proposition 1: Diversity negatively affects communication within a group, which in turn influences group performance positively.

Relationships Between Diversity, Social integration, and Performance

Defining Social Integration

Social integration is an essential component of group integration (Smith et al., 1994) and is referred to as the degree to which group members are attracted to a group, feel satisfied with other members, interact socially with them, and feel linked psychologically to one another (Polzer, Milton, & Swann, 2002). Not surprisingly, experimental social psychology of small groups regard this process as the essence of "groupness" (Hambrick, Cho, & Chen, 1996; Hogg, Hardie, & Reynolds, 1995; Thornton et al., 2010) and a strong predictor of group behavior and social relationships in groups (Ensley et al., 2002).

Social integration has also been used interchangeably with the dimension of cohesion, which can be defined as the degree to which members of a group are attracted to another (Ensley et al., 2002). Despite their interchangeable use, we note differences between them. For example, whereas the strength of cohesion and social integration depend on the levels of attraction emerging in groups (Nibler & Harris, 2003), attraction can originate from different sources. Cohesion emerges from interpersonal attraction and is closely related to the extent to which group members are similar or dissimilar with respect to, for example, their demographics (Molleman, 2005). However, the level of social integration relies on the extent of social attraction or, in other words, the extent to which members are liked not as unique individuals but as embodiments of a group (Li & Hambrick, 2005). This dimension is distinguishable from interpersonal attraction, which is based on idiosyncratic preferences grounded in personal relationships (Williams & O'Reilly, 1998). Given our focus on group processes and outcomes, this article concentrates only on the dimension of social integration.

The following two subsections explore how social integration relates to diversity, with relationships between social integration and performance culminating in a proposition explaining relationships between diversity, social integration, and performance.

Links Between Diversity and Social Integration

As attraction is a major source of social integration, diversity researchers have often drawn upon the SAT to explain the effects of diversity on social integration (Tsui, Egan, & O'Reilly, 1992). SAT was developed by Byrne (1971) to explain relationships between similarity in attitudes and interpersonal attraction. This theory assumes that when interacting with others, an individual has a strong tendency (in a free-choice situation) to select persons who are similar (Christian, Porter, & Moffitt, 2006; Williams & O'Reilly, 1998). The main reason why people are attracted to and prefer to be with similar others is that they anticipate reinforcement or upholding of their own values, attitudes, and beliefs (Riordan, 2000) and prefer others to see them as they see themselves (Swann, Rentfrow, & Guinn, 2003).

With respect to social integration, it has been suggested that homogeneous groups will have higher levels of attraction compared to heterogeneous ones (Pfeffer, 1983; van Knippenberg et al., 2004). This hypothesis has empirical support. For instance, study of 147 student project teams revealed that perceived diversity had a significant negative impact on social integration (i.e., cohesiveness), but objective diversity was a nonsignificant predictor (Harrison, Price, Gavin, & Florey, 2002). However, Molleman (2005) reported that diversity (i.e., the demographic faultlines) reduced cohesion because subgroups became more visible in diverse groups.

Links Between Social Integration and Performance

Social integration is an important indicator of relationships between team members, which critically influences the execution of subsequent teamwork processes and outcomes (Barrick et al., 2007). Positive effects of cohesion are suggested in the literature. For example, highly cohesive groups are able to coordinate group members' efforts and to integrate their perspective effectively and efficiently than those that are categorized as less cohesive (Polzer et al., 2002).

Cohesion in groups can have a strong effect on members who strive to keep the group intact and remain members of the group, conform to norms and demands, and emphasize group interests above their own (Molleman, 2005). From the perspective of interpersonal relationships, research suggests that cohesive groups are likely to have a stable and solid foundation of interpersonal relationships, allowing group members to interact in a flexible and efficient manner (Ensley et al., 2002). Furthermore, Reagans and Zuckerman (2001) argued that cohesion has a positive effect on group outcomes, such as knowledge transfer.

In general, empirical evidence supports the hypothesis that cohesive groups outperform noncohesive groups. For instance, studying 147 student project teams, Harrison et al. (2002) concluded that social integration (i.e., cohesiveness) had a significant positive impact on group task performance. Moreover, from the perspective of group effectiveness, Forrester and Tashchian (2006) noted that social integration is a significant predictor of team effectiveness. More specifically, using 79 experimental groups of 3 to 5 students, Moore (1997) found that groups with high levels of social integration developed more creative answers than did those with low social integration. From the perspective of conflict, within 70 top management teams, Ensley et al. (2002) reported that cohesion is related negatively to affective conflict (which was negatively related to performance) and related positively to cognitive conflict (which is positively related to performance) and new venture growth.

Although the positive effects of social integration are supported empirically, the extant literature suggests a lack of consensus (Barrick et al., 1998), and theoretical controversy, suggesting that cohesiveness does not necessarily ensure good performance. Specifically, cohesiveness has been proposed to be of no benefit to groups, given that consensus in decision making can suppress performance (Watson, Stewart, & BarNir, 2003). In addition, research demonstrates that social integration is not a

significant predictor of team effort or team work satisfaction (Forrester & Tashchian, 2006).

Research has also thrown doubt on the direction of influence between social integration and performance. A meta-analysis of 66 tests of links between cohesiveness and performance over a 30-year period demonstrated that the most direct effect might be from performance to cohesiveness rather than from cohesiveness to performance (Mullen & Copper, 1994). However, the groupthink literature indicates that social integration might be related negatively to performance because groups with high levels of social integration might experience higher levels of conformity and, thus, be less creative (Bernthal & Insko, 1993).

Accordingly, it is proposed that

Proposition 2: Diversity negatively affects social integration within groups, which in turn influences group performance positively.

Relationships Between Diversity, Conflict, and Performance

Defining Conflict

Conceptualization of conflict differs, depending on the perspectives of interest taken, and two main themes emerge. One theme emphasizes dissimilarity between people, views conflict as a process that begins when an individual or group perceives differences or opposition between themselves and others in terms of interests, beliefs, or values of significance (De Dreu & Beersma, 2005; De Dreu & Weingart, 2003). The second theme focuses on causes of conflict. Researchers (e.g., Lan, 1997) regard the overt hostility between two or more parties as conflict and argue that conflict exists when there is a manifest purpose in the struggle for resources, such that the more one party receives, the less is available to others.

Researchers (De Dreu & Weingart, 2003; Hjerto & Kuvaas, 2005; Parayitam, Olson, & Bao, 2010; Pinkley, 1990) distinguish between different types of conflict. For instance, it has been argued that conflict has four dimensions—cognitive task conflict, emotional task, emotional person conflict, and cognitive person conflict—emphasizing the detrimental effects of emotional conflict on performance. Distinctions between affective/relationship-related and cognitive/task-related aspects of conflict (Cosier & Rose, 1977; Schwenk & Cosier, 1980) are critical to understanding the circumstances in which conflict can be beneficial or detrimental to performance (Passos & Caetano, 2005). On the basis of this distinction, Jehn's two-dimensional conflict model has been considered as a well-accepted and established conflict typology by a number of investigators.

According to Jehn (1994, 1995), conflict includes task conflict and relationship conflict, the sum of which has been regarded as an indicator of overall conflict (Nibler & Harris, 2003). Jehn (1994, 1995) defined "relationship conflict" as a perception of

interpersonal incompatibility and typical tension, irritation, and hostility among group members. She referred to "task conflict" as a perception of disagreement among group members about the content of their decisions and involving differences of opinions, ideas, and viewpoints.

Although a typology based on two-dimensional conflict has been well accepted, it may be helpful to note a third form of task conflict, labeled "process conflict" (Jehn & Bendersky, 2003). Process conflict is disagreement about how the work gets done centering on disagreements about task strategy and delegation of duties and resources (Jehn & Chatman, 2000; Jehn et al., 1999; Jehn & Shah, 1997). However, unlike the distinction between task conflict and relationship conflict, which is based on a theoretical reflection, it is suggested that distinctions between task conflict and process emerge from an empirical data analysis (Passos & Caetano, 2005).

How conflict functions in the relationship between diversity and performance is the focus of discussion in the following two subsections. Specifically, relationships with respect to the two types of conflict are examined along with an outline of propositions regarding relationships between diversity, conflict, and performance.

Links Between Diversity and Conflict

SCT is the theoretical basis for predicting relationships between diversity and relationship conflict (Mannix & Neale, 2005; Williams & O'Reilly, 1998). People strive for self-esteem by developing positive opinions about their own categories and negative opinions about other classes (Foley et al., 2006). Accordingly, people tend to treat in-group members favorably and perceive out-group members as less attractive (Tajfel & Turner, 1986), resulting in cooperation with in-group members and competition with out-group participants (Richard, Ford, & Ismail, 2006).

Consequently, people tend to like and trust in-group members more than out-group members (Leonard, Levine, & Joshi, 2004) and to develop a high level of social attraction in homogeneous groups. In contrast, heterogeneous groups can become a fertile breeding ground for misunderstanding and discord because of potential miscommunication associated with individual differences (Swann et al., 2004). Heterogeneous groups, in turn, are viewed as having a higher level of relationship conflict compared to homogeneous ones. The information/decision-making approach has been employed to explain relationships between diversity and task conflict. This theory explains how information and decision making can be affected by group diversity (Williams & O'Reilly, 1998) and assumes that individuals with different demographics are characterized by different qualities such as knowledge, skills, abilities, experiences, and other characteristics (KSAOs; Jayne & Dipboye, 2004).

According to the information/decision approach, demographic diversity provides different groups with a large pool of KSAOs (Certo, Lester, Dalton, & Dalton, 2006) offering, accordingly, diverse groups a variety of perspectives and approaches to problems at hand and providing them with different sources of information and expertise

(van Knippenberg et al., 2004). Due to the respective belief structures, group members with different demographic backgrounds may have different preferences and may interpret tasks differently and these differences usually manifest themselves as intragroup task conflict (Henley & Price, 2004; Pelled et al., 1999; Simons & Peterson, 2000). Accordingly, diverse groups are predicted to have a higher level of task conflict compared to homogeneous ones.

Such hypothetical predictions have empirical support. In research involving 190 workers conducted in a Mexican context, Pelled and Xin (1997) noted that age dissimilarity is related positively to relationship conflict and diversity in tenure is associated positively with task conflict. Using 88 teams, Trimmer and her colleagues (Trimmer, Domino, & Blanton, 2002) reported associations between conflict and personality diversity. Similarly, Thatcher, Jehn, and Zanutto (2003) found that diverse groups with low faultline scores experienced high levels of conflict. Research involving 27 student project teams showed that value dissimilarity was positively associated with conflict (Hobman & Bordia, 2006).

Having said that, relationships between diversity and conflict are far from conclusive. For example, Pelled and Xin (1997) reported significant relationships between age and tenure diversity, yet they also observed nonsignificant relationships between gender and tenure diversity and relationship conflict. In 2005, Yeh and Chou examined the relationship between diversity (i.e., functional and positional diversity), conflict, and performance in enterprise resource planning (ERP) teams; their findings suggested that diversity (i.e., functional) is not the main source of task or relationship conflicts. More recently, Mohammed and Angell (2004) noted a nonsignificant main effect of diversity on relationship conflict.

Links Between Conflict and Performance

Historically, conflict has been generally viewed as a destructive variable between situational and individual antecedents and performance (Jehn & Bendersky, 2003; Pearson, Ensley, & Amason, 2002; Sportsman, 2005; Tidd & Friedman, 2002). However, recent reports suggested that conflict might be a doubled-edged sword, with both beneficial (e.g., improving decision quality) and detrimental effects (e.g., difficulties in achieving commitment; Amason & Mooney, 1999; Chen, Liu, & Tjosvold, 2005; De Dreu & Beersma, 2005; Guerra, MartAnez, Munduate, & Medina, 2005), depending on the type of conflict generated.

Relationship conflict can fuel prejudice, intergroup competition, and negative outgroup attitudes, causing poor interpersonal relationships in the workplace (Brief et al., 2005). As a result, communication can become difficult among diverse members, affecting adversely both personal and professional relationships (Medina, Munduate, Dorado, Martinez, & Guerra, 2005). According to De Dreu and Weingart (2003), concomitant to a rise in the levels of relationship conflict, cognitive systems shut down and information processing becomes difficult.

Negative effects of relationship conflict on performance have been demonstrated empirically (De Dreu & Beersma, 2005; De Dreu & Weingart, 2003; Lau & Cobb, 2010; Rau, 2005). Not surprisingly, relationship conflict decreases performance by lowering job satisfaction, causing group processes to become dysfunctional, and reducing group effectiveness (Buchholtz, Amason, & Rutherford, 2005; Guerra et al., 2005; Medina et al., 2005).

With regard to positive effects of task conflict on performance, growing evidence suggests that when complacency is abandoned individuals seek new ways of dealing with old problems particularly when there is disagreement about the old ways of doing things (task conflict; Hopen, 2004), leading to innovation (Bacal, 2004) and creativity (Medina et al., 2005). In addition, research intimates that constructive debate associated with task conflict can enhance the quality of decisions (De Dreu & Weingart, 2003) and communication between group members (Richter, Scully, & West, 2005).

However, debate prevails concerning the duality of the impact of conflict. Yeh and Chou (2005) revealed negative effects of relationship conflict on projects' effectiveness. Within the context of 88 enterprise resource planning (ERP) teams, relationships between group task conflict and performance are not strictly linear (Jehn, 1995). Specifically, as task-related arguments increase, group members are sometimes better able to critically assess information related to their job. High levels of conflict, however, can interfere with group performance (Jehn, 1997). Members can become overwhelmed with the amount of conflicting information and end up continuously sidetracking and losing sight of the main or original goal of discussion. In the opinion of Jehn and her colleagues, low and high levels of task conflict are detrimental, but medium levels of task conflict are beneficial (Jehn & Mannix, 2001).

Accordingly, it is proposed that

Proposition 3: Socially related diversity (e.g., race, age, and gender) has a positive influence on relationship conflict, which in turn influences group performance negatively.

Proposition 4: Information-related diversity (e.g., tenure, education, functional background) has a positive influence on task conflict, which in turn influences group performance positively.

Moderation Effects of Research Contextual Factors

As the present discussion shows, inconsistent and mixed results are evident in the literature on intervening theories. The effects of diversity are context dependent, and different processes can influence the impact of diversity (Haas, 2010; McKay, Avery, Liao, & Morris, 2011; Randel, 2002). Despite a number of researchers (e.g., Boone & Hendriks, 2009) suggesting that the effects of diversity might be moderated by other types of team-based diversity (e.g., locus-of-control diversity), our proposed model focuses on the moderation effects of research contextual factors in explaining the effects of diversity.

Moderators concern situations whereby the effect of one variable on another is dependent on the level of a third variable (Frazier, Tix, & Barron, 2004). Moderators are particularly important when there are unexpectedly weak or inconsistent relationships between two variables (Kim, Kaye, & Wright, 2001). Specifically, it has been suggested that moderators such as contextual factors, "social worlds" that an individual belongs to (Riordan, 2000), can affect whether diversity differences are noticed and how people react to them (Mannix & Neale, 2005; Milliken & Martins, 1996; Spataro, 2005). Indeed, there is evidence supporting the view that the same demographic characteristics might yield different work-related attitudes/behaviors in different contexts (Choi & Rainey, 2010).

Following this line of argument, it would seem highly pertinent to examine how contextual factors function in intervening process theories. Whereas trusting group openness to diversity and openness to conflict are important factors that can influence an individual's diversity- and conflict-related behaviors (Hobman, Bordia, & Gallois, 2004; Kaplan et al., 2011; McKay et al., 2011), we hold that group performance is associated highly with the characteristics of the tasks (e.g., task interdependence, job routineness) that group members perform (Sargent & Sue-Chan, 2001; Sawyer, Houlette, & Yeagley, 2006; Shore et al., 2011). Within this context, it is proposed that

> *Proposition 5*: Relationships between diversity, group processes, and group performance are moderated by contextual factors such as group openness to diversity, openness to conflict, task interdependence, and task routineness.

Although the EIPM does not suggest specific moderation effects of each contextual factor, these four contextual factors are of particular interests to future research. As outlined in the following, each construct is defined followed by a brief discussion of potential moderating effects.

With regards to diversity, it is not uncommon to confound organizational diversity climate with group openness to diversity. As one aspect of organizational culture (see McMillan-Capehart, 2005), organizational diversity climate generally refers to an individual's perceptions of an organization's attention to diversity issues, as reflected through human resource (HR) policies and procedures, and general attitudes toward the value of a diverse workforce for organizational effectiveness (Hobman et al., 2004; Kossek & Zonia, 1993). In our discussion, group openness to diversity is, however, defined as a propensity of a group to tolerate, encourage, and engage in open, frank expressions of views, indicating a higher level of willingness of group members to engage with those who are dissimilar (Amason, Thompson, Hochwarter, & Harrison, 1995; Hobman et al., 2004). In particular, we hold that group openness to diversity affects how people express themselves and manage tensions related to diversity (e.g., cultural identity) and whether minorities feel respected and valued in organizations (Qin, 2009). Thus, high levels of group openness to diversity can facilitate open communication and achieve a high level of integration within groups. In contrast, teams with low group openness to diversity can fail to regard and effectively utilize the

diversity available and express negative biases associated with social categorization (Hobman et al., 2004). Utilizing a similar construct called "diversity belief," one study explored (Homan, van Knippenberg, Van Kleef, & De Dreu, 2006) the direct, but not moderation, effects of this variable on group openness diversity, yielding inconclusive results. Thus, group openness to diversity might be an interesting moderator to be examined.

Openness to conflict is similar to the construct "group acceptability norms" referring to members' acceptance of conflict (Jehn & Bendersky, 2003). Openness to conflict has been shown to amplify or moderate relationships between conflict and performance because acceptability norms can encourage both task and relationship conflict (see Jehn & Bendersky, 2003). In particular, the higher a group's openness to conflict, the greater the conflict group members experience. However, research demonstrates that group openness amplifies only the positive effects of task conflict and not negative effects of relationship conflict (Jehn, 1995).

Task interdependence is defined as the extent to which group members rely on one another to perform and complete their individual jobs, indicating the intensity of interactions among group members (Horwitz, 2005; Jehn, 1995). Although the degree of interdependence in work groups can stem from several sources, including role differentiation, the distribution of skills and resources, and the manner in which goals are defined and pursued (Van der Vegt & Janssen, 2003), task interdependence can increase interpersonal communication, cooperation, and information sharing among members in socially diverse groups (Peltokorpi, 2006). Although task interdependence can have direct effects on group-related outcomes, this factor is generally regarded as a contingency variable, exacerbating or attenuating the effects of other factors on outcomes (Duffy, Shaw, & Stark, 2000).

Task routineness refers to the extent to which a task has information processing requirements, set procedures, and stability (Pelled et al., 1999). According to the dimensions of task routineness, tasks can be categorized into routine and nonroutine tasks. In general, routine tasks have a low level of task variability and are carried out in a similar, if not in an identical, way each time, with predictable results (Pelled et al., 1999). In contrast, nonroutine tasks require problem solving, have few set procedures, and are associated with a high degree of uncertainty (Schruijer & Vansina, 1997). In assessing the feasibility of seeking information for dealing with uncertainty in problem-solving, investigators (Sawyer et al., 2006) suggest that the amount of disagreement and group variability needs to match the level of task varieties in order for groups to be effective. Thus, task routineness is another interesting moderator on the effects of group diversity.

Implications for Research and Practice

Thus far, we have discussed limitations associated with existing intervening theories and propose an EIPM that integrates three intervening process theories: the theory of diversity-communication-performance, diversity-cohesion-performance, and

diversity-conflict-performance. Moreover, our critical examination of the literature reveals that the theorization of intervening theories remains at a formative level, which in some ways contributes to the inconclusive empirical evidence. Our model comprises four principal components: antecedents (i.e., various types of diversity), intervening variables (i.e., group processes), outcome variables (i.e., group performance), and moderators (i.e., research contextual factors).

Theoretically, our model explains how various types of diversity affect a number of group processes, which in turn influence group performance. Various research contextual factors moderate these relationships. In particular, the present model predicts both positive and negative effects of diversity, depending on the intervening roles of group processes although the predicted effects are also subject to moderating influence of contextual factors.

Although the EIPM extends extant knowledge by incorporating simultaneously three different group process theories, empirical testing across relevant areas, including population groups, is indeed required. It is anticipated that the EIPM might be particularly helpful to the theorization of intervening process theories that are still at the early stage of development and with inconclusive empirical evidence. Our model specifically points to the need for research on how group processes underlie linkages between diversity and performance as well as how the effects of diversity are moderated by contextual factors. HRD practitioners would also benefit from our discussions and the extended model. Implications for research and practice are implicitly addressed from the following three perspectives:

Two Types of Diversity

Research implications. The need to test our model in the context of HRD environment is particularly salient. In particular, future research should consider a wider range of diversity attributes. Although diversity can refer to numerous personal attributes, an increasing criticism in the literature is that different types of diversity have been included under the general term "diversity" in an attempt to understand their impact (Qin, 2009; Jehn et al., 1999; Mannix & Neale, 2005). In the 1990s, researchers began to categorize diversity attributes according to their similar and distinct properties (Bell et al., 2010; Jehn et al., 1999; Thatcher & Brown, 2010).

Researchers following this approach suggest that certain attributes might have similar meanings, expectations, and values associated with them (Spataro, 2005) and, therefore, diversity across or within these attributes might have a similar level of impact on organizations (Mannix & Neale, 2005). For example, although a number of studies demonstrate that diversity leads to a decrease in in-group integration and member commitment (Austin, 1997), it has been argued that the effects of diversity on cohesion can differ because of the type of diversity involved (Webber & Donahue, 2001). However, a common view is that categorization processes occurring in diverse groups can lead to the formation of subgroups and cause problematic inter-subgroup relationships (van Knippenberg et al., 2004).

Thus, future research could categorize different attributes into a series of diversity types, such as social diversity, information diversity, and value diversity (Jehn, Chadwick, & Thatcher, 1997; Jehn et al., 1999). It would be particularly meaningful to categorize diversity with regard to two properties that have been well addressed: visibility and job-relatedness. Visibility refers to the extent to which diversity attributes are easily observed by group members whereas job-relatedness is defined as the extent to which diversity attributes directly shape perspectives and skills related to tasks (Pelled, 1996; Simons & Pelled, 1999). Particularly interesting is research that adopts diversity typology and deals with multiple attributes simultaneously rather than a single attribute that is isolated from others (Allen, Dawson, Wheatley, & White, 2008). For example, diversity can be conceptualized as a two-dimensional construct and can be classified into two types in future research: social diversity and information diversity. These two types of diversity can be based on the following six attributes (i.e., race, age, gender, education, functional background, tenure) that have been most studied in the literature (Mannix & Neale, 2005). In particular, social diversity is related to race, age, and gender, reflecting social dissimilarity among people in relation to visibility. Information diversity is relevant to tenure, education, and functional background, reflecting information dissimilarity among people with regards to job-relatedness.

Implications for practice. Managers may benefit significantly from one of the key messages embraced in our model that different attributes of diversity might have unequal effects on organizations or groups or individuals (Mannix & Neale, 2005). As suggested by our model, the process of workplace diversification from the perspective of social diversity dimensions does present challenges. Strengthening organizations' capacity for using the potential of the diversity of employees, HRD managers should pay sufficient attention to the strategic diversity policies and diversity-related organizational norms and values given the negative effects of social diversity. For example, a successful diversity strategy should be drawn up to change organizational culture and create more inclusive work environments where people from diverse backgrounds feel respected and recognized (Pless & Maak, 2004).

Specifically, for developing strategic policies, HRD managers should ensure that employment decisions are made without regard to legally protected attributes such as race or gender and that proportions of disadvantaged social groups (e.g. women and colored people) within certain positions are targeted, creating in turn an environment of fairness. Moreover, organizational management policies should go beyond equal employment opportunity (EEO) and affirmative actions (AA) to the business case for diversity, effectively utilizing the diversity that already exists and creating just workplaces (O'Leary & Weathington, 2006). As predicted by our model, information diversity does offer positive effects. Thus, good diversity management should not be about seeking to minimize the negative effects of diversity and should encourage members to accept the reality of diversity and to make the most from such differences (Kirton, Greene, & Dean, 2007). For example, diversity management programs (e.g., training) may be developed to encourage the development of positive emotions toward members in outgroups (people in different social categories).

A Particular Group Process

Research implications. Although there is a need for future research to examine other group processes such as group networks (Reagans & Zuckerman, 2001; Reagans, Zuckerman, & McEvily, 2004), researchers might contribute substantially to the field when attempting to conclude the debate concerning existing intervening process theories. That said, future researchers could pay particular attention to a specific group process: conflict.

Although the EIPM incorporates three group processes, this conceptual examination highlights that conflict is a powerful group process in intervening process theories when compared with communication and cohesion/social integration (Jehn, 1999; Pelled, 1996; Pelled et al., 1999). There are a number of reasons for this. First, communication and cohesion/social integration may be less robust in explaining both the negative and positive effects of diversity. Communication and cohesion account only for the negative effects of diversity, but these two factors do not account for any favorable effects of diversity on performance (McMillan-Capehart, 2005, p. 491). In contrast, conflict has been found to be both negatively and positively related to performance depending on the subtypes of conflict (Jehn, 1995). Thus, conflict might be particularly useful in explaining the diversity paradox.

Second, conflict can serve as an indicator of communication and social integration. In proposing an intervening process theory, Pelled (1996) noted that communication and cohesion/social integration might be related strongly to conflict even though these two variables are not identical and that problems in communication and cohesion/social integration are found when conflict is present and not vice versa.

Third, diversity has a high potential to promote conflict. As discussed earlier, according to both SAT and SCT (Williams & O'Reilly, 1998), people strive for self-esteem by developing positive opinions toward similar others (in-group) and negative opinions toward dissimilar others (out-group), creating conflict and tension between dissimilar people in diverse contexts.

Implications for practice. Our model fills the gap in the knowledge about how group processes function between diversity and performance. According to our model, HRD managers should understand that diverse groups may be a fertile breeding ground for misunderstanding and discord if certain group processes are left unmanaged. Specifically, diversity training programs should be designed to change employees' attitudes about diversity, particularly social diversity, and develop skills needed to work with a diverse workforce (De Cieri & Kramar, 2005). For example, training may cover how to perceive and appreciate different sources of information and expertise, rather than appearance and cultural difference, associated with other employees from different demographic backgrounds. As a result, employees are likely to manifest themselves, for example as in intragroup task conflict, rather than, relationship conflict, when they interpret tasks in hand differently (De Dreu & Weingart, 2003; Parayitam et al., 2010; Yang & Mossholder, 2004).

Moderators

Research implications. Our proposed model improves the understanding of the moderating roles of contextual factors on the relationships between diversity, group processes, and performance. Other areas needing future research include using rigorous research designs, involving moderators, moderators could be explored. Although the EIPM does not suggest specific moderation effects of each contextual factor, the four contextual factors should be studied in future research with respect to how they function in intervening process theories. Specifically, future research could assess the direction and strengths of the presumed moderation effects of specific contextual factors on the relationships. By doing so, the knowledge about how contextual factors moderate the effects of diversity may be significantly improved.

Implications for practice. Our model has clear research implications for practitioners, particularly with respect to moderation effects of research contextual factors and the effects of diversity. Implicit in the EIPM model is the view that understanding the effects of diversity in the context of HRD is essential, particularly when HRD practitioners take contextual factors into account in the face of diversity. It has been suggested that HRD professionals play important roles in creating group environments to maximize the efficacy of teams (Awbrey, 2007; Young, Cady, & Foxon, 2006). For example, HRD practitioners can positively influence teamwork by providing specific training aimed at improving, group members' openness to diversity and conflict to help individual members facilitate communication, increase social integration, and reduce conflict (Horwitz, 2005).

Conclusion

In order to address inconsistencies in diversity research results and limitations of current diversity intervening process theories, the present manuscript proposes an EIPM from the perspective of how group processes underlie linkages between diversity and performance. Five evidence-based testable propositions predicting the positive and negative effects of diversity, depending on the intervening roles of group processes, are articulated. It is argued that the effects of diversity are subject to moderation by contextual factors. Although the EIPM extends extant knowledge by incorporating three group processes simultaneously, an empirical testing of the model is required to gain an understanding of how various group processes function between diversity and performance applying the EIPM in order to open the so-called "blac wankerk box" first identified by Lawrence (1997).

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Notes

1. Whereas others may regard Pelled's model as a description of the relationship between variables, the present authors accepted the term "theory" as her model makes clear causal predictions between variables.
2. In this article, the term *social integration* will be used interchangeably with *cohesion*.

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