The Role of Team Identification in the Dissimilarity-Conflict Relationship

Hobman, Elizabeth V.; Bordia, Prashant

gesis
Leibniz-Institut
für Sozialwissenschaften

Mitglied der
Leibniz-Gemeinschaft

The Role of Team Identification in the Dissimilarity–Conflict Relationship

Elizabeth V. Hobman
University of Queensland

Prashant Bordia
University of South Australia

This study examined the role of team identification in the dissimilarity and conflict relationship. We tested competing predictions that team identification would either mediate or moderate the positive associations between visible (age, gender and ethnic background), professional (background) and value dissimilarity and task and relationship conflict. Data was collected from 27 MBA student teams twice during a semester. Multilevel modelling and a longitudinal design were used. Results showed that value dissimilarity was positively associated with task and relationship conflict at Time 2. Its effects on relationship conflict at Time 1 were moderated by team identification. Team identification also moderated the effects of gender, age and ethnic dissimilarity on task conflict at Time 2, and the effects of gender and professional dissimilarity on relationship conflict at Time 2. No support was obtained for the mediating role of team identification on the associations between dissimilarity and conflict, or for changes in the effects of dissimilarity over time.

KEYWORDS   conflict, dissimilarity, identification

OVER the last decade, there have been numerous studies examining the impact of diversity upon conflict within work teams (Hobman, Bordia, & Gallois, 2003, 2004; Jehn, 1995; Jehn, Chadwick, & Thatcher, 1997; Jehn, Northcraft, & Neale, 1999; Mohammed & Angell, 2004; Pelled, 1996a; Pelled, Eisenhardt & Xin, 1999; Pelled, Xin, & Weiss, 2001; Randel, 2002; Thatcher, Jehn, & Zanutto, 2003). Interest in this area has been spurred by the changing demographic composition of the work force, and the introduction of team-based work as an alternative to traditional top-down management organizational structures (Guzzo & Shea, 1992).

The examination of conflict as an important outcome of diversity and dissimilarity stems from conflict's theorised role as an intervening

Author's note
Address correspondence to Elizabeth Hobman, School of Psychology, University of Queensland, St Lucia QLD 4072, Australia [email: liz@psy.uq.edu.au]

variable between diversity and performance (Pelled, 1996b). Research has examined different types of *diversity characteristics* (e.g. visible, informational, value and personality differences; Barsade, Ward, Turner, & Sonnenfeld, 2000; Jehn, 1994; Jehn et al., 1997, 1999; Mohammed & Angell, 2004; Pelled, 1996a; Pelled et al., 1999) and the *role of the context* (e.g. task characteristics, and supervisor facilitation; Jehn et al., 1999, Pelled et al., 1999, 2001). However, there is a dearth of research on the processes of social identification and categorization, which is often used to explain the effects of diversity (cf. Chattopadhyay, George, & Lawrence, 2004). Williams and O'Reilly (1998) suggested that because social categorization increases the salience of demographic categories and is the force behind the negative effects of diversity, we need to examine strategies which reduce social categorization based on demographic categories, and encourage the development of a shared team identity (Gaertner, Dovidio, Anastasio, Bachman, & Rust, 1993). Team identification may encourage dissimilar individuals to behave according to team norms and conventions, in order to gain acceptance in the team (Branscombe, Ellemers, Spears, & Doosje, 1999) and to mitigate the negative effects of diversity.

The main aim of this study was to extend previous research examining the impact of individual dissimilarity on conflict by investigating the role of team identification, using the Common In-group Identity Model (Gaertner et al., 1993) framework. The limited research on identification processes has typically examined team identification as an outcome or mediator of the effects of diversity (for an exception, see Van der Vegt & Bunderson, 2005). Yet, given that team processes evolve over time, it is likely that dissimilarity and identity have a dynamic relationship. To examine this question, we employed a longitudinal design to explore the causal nature of associations. Based on a review of theory and empirical research, we test the competing prediction that team identification may play a moderating role.

Dissimilarity and conflict

In the work group context, diversity can be analyzed at the group or individual level of analysis. At the group level, 'diversity' refers to the amount of variance in demographic (e.g. age, gender, professional background) characteristics or values. At the individual level, 'dissimilarity' refers to an individual's difference on the same variables compared to other group members. Research into dissimilarity provides insight into an individual's experience of being different from other team members, and how these differences affect their individual behaviors and attitudes (Chattopadhyay, 1999; Jackson et al., 1991; O'Reilly, Caldwell, & Barnett, 1989; Tsui, Egan, & O'Reilly, 1992). In the current study, we examined dissimilarity on the dimensions of visible characteristics, professional background and work values. Visible dissimilarity refers to differences in characteristics that are easily observed, such as age, sex and ethnicity (Jackson, 1996) whereas professional dissimilarity is a type of informational difference reflecting task-related knowledge and skills of individuals from different professions (other informational differences include education and organizational tenure: Jehn et al., 1997). Value dissimilarity refers to differences in an individual's personal interests, attitudes and preferred ways of behaving at work (e.g. innovative, detail-oriented: Jehn, 1994; Jehn et al., 1997, 1999; O'Reilly, Chatman, & Caldwell, 1991; Rokeach, 1973). The current study examined the associations between *visible* (age, gender, ethnicity), *professional* and *value dissimilarity* and perceptions of involvement in conflict. By investigating the spectrum of characteristics, our knowledge about which individual differences affect the experiences of individuals within a team is significantly improved.

The role of conflict
Conflict has been conceptualized along two dimensions—task conflict (perceived incompatibilities based on task goals and procedures) and relationship conflict (perceived incompatibilities based on interpersonal relationships;

Amason & Schweiger, 1994; Jehn, 1995). Relationship conflict can have detrimental effects on group performance and individual satisfaction because members focus on inter-personal rather than task issues, and become irritable and suspicious of each other (Jehn, 1994; Jehn et al., 1997, 1999; Pelled, 1996a). In contrast, task conflict has the potential to improve decision-making outcomes and group productivity by increasing decision quality through incorporating devil's advocacy roles and constructive criticism (Amason, 1996; Pelled et al., 1999; Schweiger, Sandberg, & Rechner, 1989). A proviso to this positive association between task conflict and performance is that task-related differences between individuals are elaborated and made explicit (e.g. open group discussion of diverse viewpoints: Van Knippenberg, De Dreu, & Homan, 2004).

Theoretical background

The primary conceptual frameworks for research into diversity have been Social Identity Theory (Tajfel, 1978; Tajfel & Turner, 1979), Self-Categorization Theory (Turner, 1982, 1984; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) and the similarity-attraction paradigm (Byrne, 1971). Using the social identity framework, Hogg and colleagues (Hogg, 1992, 1993; Hogg & Hardie, 1991), have drawn a distinction between *personal* and *social* attraction. Similarity of personal interests, attitudes and values is the primary basis for personal attraction. In contrast, social attraction is based on the preferential liking for in-group over out-group members. Thus, social attraction can be distinguished from personal attraction in that personal attraction is dependent on the unique features of individuals and social attraction is highly dependent on proto-typical features of group membership.

Prototypes are defining attributes that characterize the features of a group and distinguish them from other groups (Hogg & Terry, 2000). In the case of team composition, team members who share similar characteristics (and thereby exemplify the prototypical characteristics of the group) may be more socially attracted, attached and committed to the team

(Chattopadhyay, 1999; Meglino, Ravlin, & Adkins, 1989; Riordan & Shore, 1997; Tsui et al., 1992). These propositions are consistent with the similarity-attraction paradigm contentions that people are attracted to and prefer similar others because they anticipate similarity in values and attitudes. Individuals may use visible and informational characteristics (such as professional background) and underlying characteristics (such as work values) to classify themselves into social categories (Harrison, Price, & Bell, 1998; Hogg & Terry, 2000; Riordan & Shore, 1997). Individuals who display prototypical characteristics of the social category perceive themselves as forming the in-group, and individuals who do not display prototypical characteristics perceive themselves as forming the out-group.

Categorization processes are associated with perceptual and attitudinal biases that favour the in-group, and consequently derogate out-group members (Kramer, 1991). In-group social attraction and favoritism (Hogg & Hardie, 1991) may be associated with perceptions that out-group members are less trustworthy, honest, attractive and cooperative than in-group members (Brewer, 1979). Beyond negative evaluation biases, categorization processes are also associated with the reinforcement of stereotypes (Anastasio, Bachman, Gaertner, & Dovidio, 1997). This biased perception and stereotyping could have negative effects upon individuals who are visibly dissimilar, or who have different work values (Chattopadhyay, 1999; Hogg & Williams, 2000). Thus, individuals who have a different demographic profile or different work values will be less socially attractive to other members, and they may experience negative social interaction (Chattopadhyay, 1999; Chattopadhyay & George, 2001; Hogg & Williams, 2000).

Visible dissimilarity

Due to negative biases and stereotyping associated with social categorization, visibly dissimilar individuals are likely to feel anxiety and discomfort, and may engage in heightened levels of relationship conflict. The association between visible dissimilarity and relationship conflict has

been noted in the literature (Jehn et al., 1997; Pelled, 1996b; Pelled et al., 2001). For example, Jehn and colleagues (1997), in a study with MBA students, found that dissimilarity in gender was significantly positively associated with an individual's perception of relationship conflict in the team. Other researchers have also observed the negative consequences of ethnic diversity for relationship conflict (Pelled et al., 1999), ratings of team experience (Baugh & Graen, 1997) and team empowerment experiences (Kirkman, Tesluk, & Rosen, 2004).

> Hypothesis 1: Individuals who are visibly dissimilar (measured by age, gender, ethnic background) will perceive more involvement in relationship conflict with his or her team members than those individuals who are visibly similar.

Informational (professional) dissimilarity

Previous studies have shown that differences in informational characteristics (e.g. professional, educational and functional background) are associated with increased task conflict and co-ordination difficulties (Jehn et al., 1997, 1999; Olson, Walker, Ruekert, & Bonner, 2001; Pelled et al., 1999). Informationally dissimilar individuals have different skills, knowledge bases, abilities, perspectives and interests (Bantel & Jackson, 1989) and it is these differences that are the key source of task conflict (Pelled et al., 1999). The typical framework for explaining the consequences of informational dissimilarity is the information/decision-making perspective which highlights the benefits of diversity for processing task-related information. However, it is also likely that social categorization processes are at work. For example, categorizing people based on informational attributes draws attention to features of an individual that may be *relevant* to the task. When these differences are salient and allow for categorization, it is likely that any conflict manifested parallels their work-related opinion. Note that task conflict can lead to more innovative outcomes when it is managed via elaborative processes (Van Knippenberg et al., 2004). In the current study, we examined one specific form of informational dissimilarity—professional (background) dissimilarity,

which reflects differences among team members in relation to their profession.

> Hypothesis 2: Individuals who are professionally dissimilar will perceive more involvement in task conflict with his or her team members than those individuals who are professionally similar.

Recently, Van Knippenberg and colleagues (2004) proposed an integrative model for diversity, which proposes that social categorization and information/decision-making processes interact. They discuss that certain moderating factors (e.g. task type, intergroup comparisons) influence whether diversity will engender social categorization or the elaboration of task-relevant perspectives. Thus, the distinction between visible differences and informational differences may not be as clear cut as first supposed, and all dimensions of diversity may elicit social categorization, as well as the elaboration of task-relevant information and perspectives. Some visible categories can coincide with task-relevant differences and informational categories can, in fact, be recognized via visibly salient means (e.g. dress)—thereby providing a direct basis for categorization. Given these new propositions, the current study also examined the associations between visible dissimilarity and task conflict; and between professional dissimilarity and relationship conflict.

> Hypothesis 3: Individuals who are visibly dissimilar (measured by age, gender, ethnic background) will perceive more involvement in task conflict with his or her team members than those individuals who are visibly similar.

> Hypothesis 4: Individuals who are professionally dissimilar will perceive more involvement in relationship conflict with his or her team members than those individuals who are professionally similar.

Value dissimilarity

In comparison to the predominance of empirical work on visible and informational diversity, few studies have examined the effects of underlying types of diversity, such as work values, personality or attitude differences (Harrison et al., 1998; Harrison, Price, Gavin, & Florey, 2002; Jehn et al., 1999; Mohammed & Angell, 2004;

Van der Vegt, 2002). Social categorization processes can also be used to explain the outcomes of value and attitudinal diversity (Harrison et al., 1998; Thomas, 1999). When individuals have different work values to other team members, they may be perceived as being less prototypical of the team, especially if the type of value is a defining characteristic of the team. Consequently, they are less socially attractive as group members (Schneider, 1983), and may be categorized as outgroup members. When there are differences in values, fundamental differences in goals and understanding of tasks can arise (Nemeth & Staw, 1989) due to different cognitive interpretations (Gelfand, Kuhn, & Radhakrishnan, 1996; Meglino et al., 1989). Such goal conflict can lead to increased interpersonal friction (Schneider, 1983). By contrast, people with similar values have improved communication comprehension, and certainty in predicting each others' behavior (Gelfand et al., 1996), and are therefore assumed to experience less role ambiguity and conflict (Meglino et al., 1989).

Harrison et al. (1998, 2002) and Van der Vegt (2002) have observed a negative association between attitudinal (e.g. job satisfaction; outcome interdependence) dissimilarity and social integration. Heightened task and relationship conflict has also been positively associated with value diversity (Jehn, 1994; Jehn et al., 1997, 1999). For example, Mohammed and Angell (2004) observed that diversity in time urgency had deleterious effects on relationship conflict for groups that had less frequent effective team processes. As previous research has observed links between (group) value diversity and perceptions of group conflict, the current study predicts that these relationships should also hold at the individual level. That is, value dissimilarity should be positively associated with an individual's perceptions of involvement in task and relationship conflict.

> Hypothesis 5: Individuals who are dissimilar in values will perceive more involvement in task and relationship conflict with his or her team members than those individuals who are similar in values.

The role of team identity: Mediation versus moderation

Mediating role of identification

Team identification may have a crucial role in the management of diversity. The previous theoretical discussion on the effects of dissimilarity on conflict implies that categorization processes can diminish the extent to which dissimilar individuals identify with other team members. This line of reasoning suggests that there is a direct association between dissimilarity and team identification, and that team identification may mediate the negative effects of dissimilarity. The relationships between dissimilarity and team identification have been discussed and empirically examined by Chattopadhyay and colleagues (Chattopadhyay, George et al., 2004; Chattopadhyay, Tluchowska, & George, 2004). These researchers found support for the negative association between sex and racial differences, and various components of team identification (e.g. prototype valence) (Chattopadhyay, Tluchowska et al., 2004). In previous studies, they also observed negative associations between sex and race dissimilarity, and work status dissimilarity, and variables that are closely tied to team identification (albeit moderated by individual difference characteristics: Chattopadhyay, 2003; the demographic composition of the group: Chattopadhyay, 1999; or by the work status of the individual: Chattopadhyay & George, 2001). Additionally, Van der Vegt, Van De Vliert, and Oosterhof (2003) found partial support for the mediating role of team identification on the association between educational dissimilarity and organizational citizenship behavior. Van der Vegt (2002) also observed in a longitudinal panel study, that attitudinal (satisfaction) dissimilarity decreased social integration (which included a measurement of the affective dimension of identification with the work group, in addition to the behavioral dimension of collaborative behavior).

> Hypothesis 6a: Team identification will mediate the effects of dissimilarity on conflict.

Moderating role of identification

While researchers assume that individuals who are dissimilar will experience difficulty in identifying with the team, and prior research has shown some support for the negative associations between dissimilarity and identification-related variables, the results have not been conclusive. Most studies have observed interactive rather than main effects, which signify that other variables may contribute to the development of identification (e.g. norms promoting cooperation; Williams & O'Reilly, 1998). Considering that group identification is not solely contingent on dissimilarity and that individuals can have multiple forms of identities (Brickson, 2000), there is some validity in investigating its interactive effect with dissimilarity. Also, the research examining goal and task interdependence as moderators of the effects of dissimilarity and diversity has explained its role in promoting group identification and diminishing stereotyping and categorization processes (Schippers, Den Hartog, Koopman, & Wienk, 2003; Van der Vegt et al., 2003; Van der Vegt & Van de Vliert, 2005), so it seems logical to directly test the moderating role of group identification. To our knowledge, only one study has systematically examined the moderating role of team identification on the associations between diversity and outcomes (Van der Vegt & Bunderson, 2005).

Theoretical background

Group identity may be salient when individuals feel that their membership in the team is more self-defining than other group memberships or personal characteristics (Ashforth & Mael, 1989). Focusing on the common group identity concept, Williams and O'Reilly (1998) asserted that the negative effects of diversity can be minimized by deliberately promoting identification with a larger group. They mention common group identity as a possible moderator of the relationship between diversity and outcome variables such as group attraction and commitment. By encouraging team identification, an individual's cognitive representation of in-groups and out-groups is altered, such that separate demographic groups become subsumed underneath a common in-group identity (Gaertner, Dovidio, & Bachman, 1996).

Briefly, the Common In-group Identity Model (CIIM; Gaertner, et al., 1993) asserts that when individuals recategorize their perceptions of group boundaries to perceive themselves as sharing a common superordinate identity, subgroup categorization, identification and associated negative biases will be minimized (Anastasio et al., 1997). Chatman, Polzer, Barsade, and Neale's (1998) study provides support for the applicability of the CIIM to diversity. These researchers found that the negative effects of diversity were mitigated when the organizational culture made organizational membership more salient than individual differences. Furthermore, members of diverse groups with individualistic cultures were more likely to perceive differences among each other and to receive the negative effects of categorization. More recently, Jehn and Bezrukova (2004) have observed similar results. They found that the presence of people-oriented cultures (which emphasize group-based values) enhanced the performance of functionally diverse groups. The positive effects of a collective culture are thought to occur through the effects it has on common fate, shared values and a sense of in-group membership (Jehn & Bezrukova, 2004).

Using the CIIM's premise, when individuals identify more with their team (i.e. a common in-group) the negative consequences of dissimilarity should weaken. We hypothesize that as an individual's identification with his/her team increases, the strength of association between an individual's dissimilarity and perception of involvement in conflict will decrease. However, identification may not only weaken the positive effects between dissimilarity and conflict, but may reverse the association to a negative relationship. This prediction is derived from the literature examining social identity threats (for a review see Branscombe et al., 1999).

There are various social identity threats that individuals can experience, including acceptance threats, which relate to an unwillingness of the group to accept the individual as a group

member (Branscombe et al., 1999). This perceived threat to group acceptance has implications for demographically dissimilar individuals who may be classified as 'marginal' members because they are physically or psychologically non-prototypical. Marginal members of social groups are most susceptible to the acceptance threat because they may feel uncertain about the extent to which they will be accepted in the group (Branscombe et al., 1999; Tajfel, 1978). A marginal member's reaction to an acceptance threat depends upon his or her identification with the team. High identifiers who are non-prototypical perceive they are at risk of rejection by the group, and consequently conform to in-group norms (Branscombe et al., 1999). For example, Schmitt and Branscombe (2001) found that high identifiers who were non-prototypical, favored a prototypical ingroup individual and devalued a non-prototypical ingroup individual. In the case of (marginal) dissimilar individuals who identify strongly with the team, such individuals may try to present favorable and prototypical attitudes and behaviors toward the ingroup so as to reflect their loyalty to the team (Branscombe et al., 1999). Reduced conflict could be a symptom of this hyperconformity.

Recent studies into diversity have examined the moderating influence of team identification and the individual difference variable of team orientation (i.e. an individual's preference for functioning as part of a team) and have produced results consistent with acceptance threat processes. For example, Mohammed and Angell (2004) observed a significant positive association between gender diversity and relationship conflict for groups with a lower team orientation, and a significant negative association for groups with a higher team orientation. Direct support for the moderating influence of identification is also obtained from Van der Vegt and Bunderson (2005). Providing a similar rationale to the current study, these researchers examined the associations between expertise diversity (similar to professional background) and team outcomes (learning, performance), and proposed that the effects of diversity would be different in

high versus low identification teams. Consistent with our reasoning of acceptance threat processes, they observed a negative association between expertise diversity and team outcomes for teams with low identification, and a positive association between the variables for teams with high identification. The researchers also conducted follow-up tests and observed similar relationships for a combined diversity index of visible characteristics (age, gender and nationality). On this basis, we propose the following hypothesis:

Hypothesis 6b: Team identification will moderate the positive association between dissimilarity and conflict such that the association will be weakened or reversed. Low team identifiers will exhibit a positive association between dissimilarity and conflict, whereas high team identifiers will exhibit either a weak association, or a negative association between dissimilarity and conflict.

Changes over time

Research into the moderating influence of time on the relationship between diversity and outcomes such as social integration and group conflict has produced inconsistent findings. Some researchers have observed that the associations between visible differences and outcomes diminish with time or collaboration (Pelled et al., 1999; Harrison et al., 1998, 2002), whereas the associations with value differences strengthens (Harrison et al., 1998, 2002). One explanation can be taken from Allport's (1954) social contact hypothesis: as members spend more time and have more frequent meaningful interactions with other members, the salient ingroup category becomes the work group, rather than demographic subgroups within the group (Pelled et al., 1999), and individuals who were once considered out-group members become in-group members (Kramer, 1991). Furthermore, the researchers concluded that value differences have an enduring impact on group processes because with increased social interaction, individuals learn about deeper-level value differences between themselves and other members (Harrison et al., 1998). More recently, however, Mohammed and Angell (2004) found

no support for the moderating influence of time on the associations between demographic and deep-level diversity, and relationship conflict. Van der Vegt (2002) also revealed that attitudinal dissimilarity had a consistently strong negative effect on social integration regardless of group tenure.

The current study

The current study employed a longitudinal design to examine whether the effects of visible and professional dissimilarity on conflict would diminish, and the effects of value dissimilarity would strengthen across time.

> Hypothesis 7: The effects of visible and professional dissimilarity on conflict will diminish across time, and the effects of value dissimilarity will strengthen across time.

The longitudinal design also afforded the opportunity to thoroughly investigate the mediating versus moderating role of identification on the associations between dissimilarity and conflict over time. The main aim of the current study was to examine the consequences of individual dissimilarity on perceptions of involvement in conflict, on to explore the role of team identification in these associations.

Method

Participants and procedure
A total of 165 MBA students (52 females and 113 males) participated in the study. The participant sample had an average age of 33.06 years (ranging from 20 to 55 years) and an average of 11 years of work experience. A variety of professions were represented, including accountants, consultants, engineers, hospitality industry workers, health professionals and public sector bureaucrats. Participants were from various ethnic backgrounds, including 83 Caucasians, 55 Asians, 1 Hispanic, 14 African and 10 Other (2 missing). There were 27 teams with an average of 6.1 members per group (range from 3 to 8). The students were completing an introductory MBA subject on team effectiveness and individuals worked in these

teams on all tasks in class. The type of tasks that the teams worked on were learning activities aimed at improving team functioning as well as class assignments. Team members engaged in interdependent activities with each other, such as presenting class seminars.

The first survey was administered after the student's second lecture. By this stage, participants were in teams and had been involved in several team-building activities and experiential learning tasks. This survey collected demographic information, and measured their involvement in conflict and level of team identification. Twelve weeks later, the second survey was administered at the student's last lecture. This survey measured their involvement in conflict, and level of team identification. Of the 165 students who participated at Time 1, 134 students participated at Time 2. Some students did not wish to participate at Time 2 and others did not attend class on the day of the testing. Thus, the attrition rate was 19%.

Full Information Maximum Likelihood (FIML) estimation of missing values was conducted. Arbuckle (1996) and Enders and Bandalos (2001) propose that FIML is the best method of treating missing data because it produces the least bias in the missing value. Newman (2003) has conducted a Monte Carlo analysis which demonstrates the efficacy of FIML over the traditional approaches of listwise or pairwise deletion.

Measures
Individual visible and professional dissimilarity
Three dissimilarity scores were computed for each individual on the following characteristics: age, sex, ethnic background, professional background and work values. The visible characteristics of age, gender (male/female) and ethnic background were measured in categories. Age was measured in the following categories: < 20, 21–25, 26–30 and 31–35, up to the category of 51–55. Ethnic background included the following categories: Caucasian, Asian, Hispanic, African and Other. An open-ended statement was used to measure professional background, where participants indicated their professional background. These included the professional

fields of science (e.g. scientists, biochemists, food production); business, economics and law (e.g. sales representatives, lawyers, accountants); engineering and architecture (e.g. civil engineers, architects); health sciences (e.g. doctors, nurses, pharmacists); social and behavioral sciences (e.g. educational psychologists); information technology (e.g. computer technician); and public service and defence forces (e.g. police officers, civil service).

Individual value dissimilarity   We measured values using an adaptation of the Organizational Culture Profile (O'Reilly et al., 1991). Due to survey length constraints, we provided participants with the eight orthogonal factors that O'Reilly et al. (1991) observed: innovation and creativity; organization and attention to detail; achievement and high expectations; opportunities and competitiveness; sharing information and being supportive; academic (as opposed to professional) growth; collaboration and teamwork; and decisiveness. Individuals ranked these values from 1 (*the highest guiding value*) to 8 (*the lowest guiding value*), according to how important the work values were when they approached an assignment or project at university. The computation of value dissimilarity was conducted by selecting the highest guiding value for each individual. Then, for each individual, that highest guiding value was compared against other team member's ranking on this value, and substituted in the dissimilarity formula.

The dissimilarity scores for visible characteristics, professional background and work values were all calculated using Tsui et al.'s (1992) difference score formula. This formula is the square root of the summed squared differences between an individual's value on a characteristic and another group member's value on the same characteristic, divided by the number of people in the group. As nominal coding was used, when calculating age dissimilarity for an individual, any age difference (e.g. a 24-year-old compared to a 30-year-old; and a 24-year-old compared to a 46-year-old) resulted in a difference score of 1, regardless of the category that individuals fell into.

Conflict   We developed items to measure task and relationship conflict, based on the Intragroup Conflict Scale (Jehn, 1995). Four items measured involvement in task conflict ('I have been involved in task disagreements with other group members'; 'My task ideas conflict with those of other group members'; 'I have been involved in disagreements over how to do tasks with other group members'; and 'My ideas over task procedure conflict with those of other group members'), and two items measured involvement in relationship conflict ('I have been involved in interpersonal disagreements with other group members' and 'My personality conflicts with those of other group members'). The statements were anchored on a response scale of 1 (*never*) and 5 (*a lot of the time*). A confirmatory factor analysis was conducted on the conflict scale. The proposed two-factor model had a moderate fit at Time 1 (χ^2/df = 3.85, normative fit index (NFI) = 0.93, comparative fit index (CFI) = 0.94) and at Time 2 (χ^2/df = 4.07, NFI = 0.94, CFI = 0.95). Items 1 and 3 of the task conflict scale had correlated error terms, so item 3 was removed from the task conflict scale. When this item was removed, the fit of the two-factor model showed a good fit at Time 1 (χ^2/df = 2.49, NFI = 0.96, CFI = 0.98), and at Time 2 (χ^2/df = 1.69, NFI = 0.98, CFI = 0.99). Cronbach alphas for task conflict were .82 at Time 1 and .80 at Time 2, and Cronbach alphas for relationship conflict were .57 at Time 1 and .70 at Time 2.

Team identification   Five items were used to measure identification with their group, all anchored on a response scale of 1 (*not at all*) to 5 (*very much*). Three of these items were based on Brown, Condor, Mathews, Wade, and William's (1986) group identification scale ('How much do you identify with this group?'; 'I feel strong ties between myself and other group members'; and 'I see myself as a member of this group'), one item was based on Riordan and Weatherly's (1999) work group identification measure ('It is important to me that I am a member of this group') and one item was adapted from Ellemers, Kortekaas, and Ouwerkerk (1999) measure of commitment to

the group, which is one aspect of social identity ('How much do you want to remain in the group?'). Cronbach alphas were .92 and .87 at Times 1 and 2, respectively.

Analyses

To test our hypotheses, we used multilevel modelling procedures. Multilevel modelling is a more appropriate modelling technique than ordinary least squares (OLS) regression because the data are from different levels of analysis—individuals within groups (Bryk & Raudenbush, 1992). Furthermore, because individuals from a particular group share the same context, treating individual data as independent observations violates the OLS assumption of independence. Multilevel modelling affords the examination of nested models, in which sample size varies across variables. For example, in the current study, group ($n = 27$) and individual ($n = 165$). Even though our hypotheses were related to the individual level of analysis (Level 1), the results from multilevel modelling identifies the true source of explained variance.

Consistent with procedures set out by Rasbash, Steele, Browne, and Prosser (2004), all the explanatory variables (dissimilarity variables, identification) were grand mean-centered by subtracting the mean score for the sample from each respondent's individual scores. This centering procedure also aids in the interpretation of interaction effects (Aiken & West, 1991). Examination of the covariance–variance matrix in each of the models revealed that multicollinearity was not evident (i.e. all of the variance components were below 0.50; Tabachnick & Fidell, 1996).

In the current study, the procedure of model testing involved running a variance components and then an unconditional model. The variance components model is an empty model that examines the amount of variance in the response variable, distributed at the individual and group level. Note that the proportion of variance at the group level provides the intra-class correlation coefficient (ICC(1)). The variance components model is used as a baseline for the estimation of 'explained' versus 'unexplained' variances in comparison to the unconditional model. The unconditional model includes the explanatory variables at the individual level. Fixed effect coefficients were used to examine the significance of main effects and the interaction effects at the individual level. To identify the amount of variance explained by the addition of explanatory variables, the variance values at the individual and group level are compared with the values obtained from the variance components model. Additionally, to provide an indication of the improvement in model fit, a deviance test is conducted. This test involves evaluating the difference between model deviances against a chi-square distribution (Kreft & De Leeuw, 1998).

Results

Table 1 shows the means, standard deviations and correlations between the variables. The levels of conflict were below the midpoint of the scale, while levels of identification were above the midpoint. Most of the correlations were in the predicted direction. Value dissimilarity was positively correlated with relationship conflict at Time 2. Professional dissimilarity was negatively correlated with identification at Time 1. Identification was negatively correlated with task and relationship conflict at both times.

The association between identification and conflict

Using the software package MLwiN, we first conducted a series of models to identify the causal associations between identification and conflict. A simple cross-lagged regression analysis was conducted. The results showed that identification at Time 1 did not explain a significant amount of variance in relationship conflict at Time 2, after controlling for relationship conflict at Time 1. Another regression was conducted to identify whether identification at Time 1 could explain task conflict at Time 2 after controlling for task conflict at Time 1. The results revealed that identification at Time 1 explained an additional 2% of the variance of task conflict at Time 2 ($\beta = -0.12$, $p < .05$). The final analysis examined whether task and

Table 1. Means, standard deviations, and correlations among the study variables

	M	SD	1	2	3	4	5	6	7	8	9	10	11
1 Age dissimilarity	0.81	0.11											
2 Gender dissimilarity	0.61	0.18	0.19*										
3 Ethnic dissimilarity	0.61	0.23	−0.24**	−0.06									
4 Professional dissimilarity	0.73	0.20	−0.004	0.06	0.04								
5 Value dissimilarity	0.80	0.13	−0.04	0.14†	0.01	0.02							
6 Identification Time 1	3.47	0.78	−0.08	0.04	0.04	−0.16*	0.04	(0.87)					
7 Identification Time 2	3.56	0.86	−0.10	0.03	0.10	−0.08	0.08	0.49***	(0.92)				
8 Relationship Conflict Time 1	1.70	0.73	0.09	0.06	−0.14†	0.03	0.10	−0.23**	−0.21*	(0.57)			
9 Relationship Conflict Time 2	1.90	0.81	0.01	0.14	−0.001	0.09	0.23*	−0.14†	−0.25**	0.34***	(0.70)		
10 Task Conflict Time 1	2.18	0.77	0.05	0.09	−0.11	0.09	0.04	−0.17*	−0.23**	0.49***	0.32***	(0.82)	
11 Task Conflict Time 2	2.54	0.80	−0.02	0.08	−0.08	0.09	0.17†	−0.19*	−0.22**	0.24**	0.61***	0.43***	(0.80)

†$p < .10$, two-tailed; *$p < .05$, two-tailed; **$p < .01$, two-tailed; ***$p < .001$, two-tailed.

relationship conflict at Time 1 were related to identification at Time 2, after controlling for identification at Time 1. The results revealed that the associations did not reach significance. Overall, the results supported the causal association between identification and task conflict, rather than the other way around. However, the causal association between identification and relationship conflict was not fully established. All of the multilevel analyses at Time 2 were conducted with the Time 1 response variable controlled for (Bateman & Strasser, 1984).

Analyses for interactions between dissimilarity and identification on conflict

Tables 2 and 3 show the results of the multilevel models for relationship conflict and task conflict, which examined Hypotheses 1–5 (the positive associations between visible, professional and value dissimilarity, with task and relationship conflict) and 6b (the moderating role of team identification). The first models (Model A) fitted were variance components models, without any predictors at any level. Such models represent the unexplained variance in the response variable at the individual and group levels. In the second set of models (Model B), the main effect variables were added as explanatory variables of relationship conflict and task conflict at each time. The final set of models (Model C) involved the addition of interaction terms to examine the moderating influence of team identification.

Relationship conflict For relationship conflict at Time 1, 0.75% of the variance was distributed at the group level and 99.25% of the variance was accounted for at the individual level (Model A). The main effects of the dissimilarity variables and identification were added (Model B). The fit of the model was significantly improved ($\Delta\chi^2 = 15.49$, $df = 6$, $p < 0.05$) and the variables accounted for 8.3% of the total variance. Identification was a significant explanatory variable ($t(164) = 3.14$, $p < 0.001$). The interaction terms were added in Model C. Although the fit of the model was not improved significantly ($\Delta\chi^2 = 5.46$, $df = 5$, ns), there was a significant interaction between value dissimilarity and

Table 2. Results of the multilevel modelling analysis for interaction effects between dissimilarity and identification on relationship conflict

	Relationship conflict					
	Time 1			Time 2		
	Parameter estimate (SE)			Parameter estimate (SE)		
	Model A	Model B	Model C	Model A	Model B	Model C
Fixed effects						
Intercept	1.70 (.06)	1.70 (.05)	1.70 (.05)	1.93 (.07)	1.36 (.14)	1.35 (.13)
Age dissimilarity (AD)		.24 (.53)	.17 (.54)		−.25 (.51)	.12 (.50)
Gender dissimilarity (GD)		.16 (.32)	.22 (.31)		.51 (.30)	.45 (.29)
Ethnic dissimilarity (ED)		−.39 (.25)	−.41 (.25)		.13 (.24)	.28 (.23)
Professional dissimilarity (PD)		−.02 (.28)	−.03 (.31)		.19 (.27)	−.13 (.29)
Value dissimilarity (VD)		.70 (.45)	.56 (.45)		1.13 (.44)	1.30 (.42)‡
Identification (ID) T1		−.22 (.07)‡	−.24 (.07)‡		−.10 (.07)	−.09 (.07)
Relationship conflict T1					.34 (.08)‡	.36 (.07)‡
AD × ID T1			.27 (.76)			−.34 (.70)
GD × ID T1			.39 (.42)			−1.09 (.39)†
ED × ID T1			−.04 (.31)			.04 (.28)
PD × ID T1			−.13 (.33)			.89 (.31)†
VD × ID T1			−1.33 (.63)*			−.01 (.59)
Random effects						
Group level variance	.004 (.03)	.00 (.00)	0.00	.03 (.03)	.001 (.02)	0.00 (0.00)
Individual level variance	.53 (.06)	.49 (.05)	.47 (.05)	.54 (.06)	.45 (.05)	.40 (.04)
Model deviance						
Log likelihood (χ^2)	364.27	348.78	343.32	372.35	335.01	317.70

*$p < .05$; †$p < .01$; ‡$p < .001$.

identification ($t(164) = 2.10$, $p < 0.05$). The additional amount of variance explained was 3.04%. The interaction between value dissimilarity and identification is plotted in Figure 1. Tests of the simple slopes revealed that there was a significant positive relationship between value dissimilarity and relationship conflict for individuals with low identification ($\beta = 1.58$) ($t(164) = 2.52$, $p < 0.01$); however, there was no significant association for individuals with high identification ($\beta = −0.46$) ($t(164) = 0.67$, ns).

At Time 2, 4.8% of the variance was observed at the group level and 95.2% of the variance was accounted for at the individual level (Model A). The control variable of relationship conflict at Time 1 was entered before the main effects. It improved the fit over the variance components model ($\Delta\chi^2 = 24.37$, $df = 1$, $p <$

0.001), explained 14.21% of the total variance, and revealed a significant positive association ($t(164) = 5.14$, $p < 0.001$). The main effects of the dissimilarity variables and identification at Time 1 were added in Model B. The fit of the model improved ($\Delta\chi^2 = 12.96$, $df = 6$, $p < 0.05$) and explained an additional 6.57% of the total variance. In addition to relationship conflict at Time 1, value dissimilarity was a significant positive explanatory variable ($t(164) = 2.60$, $p < 0.01$). In Model C, the interaction terms were added and a significant improvement in model fit was obtained ($\Delta\chi^2 = 17.31$, $df = 5$, $p < 0.01$). An additional 3.02% of total variance was accounted for.

There was a significant interaction between gender dissimilarity and identification ($t(164) = 2.81$, $p < 0.01$) (see Figure 2), and between

Table 3. Results of the multilevel modelling analysis for interaction effects between dissimilarity and identification on task conflict

	Task conflict					
	Time 1			Time 2		
	Parameter estimate (SE)			Parameter estimate (SE)		
	Model A	Model B	Model C	Model A	Model B	Model C
Fixed effects						
Intercept	2.18 (.09)	2.18 (.08)	2.20 (.08)	2.57 (.07)	1.65 (.16)	1.64 (.15)
Age dissimilarity (AD)		−.50 (.62)	−.49 (.63)		−.56 (.51)	−.45 (.49)
Gender dissimilarity (GD)		−.03 (.36)	−.02 (.36)		.16 (.30)	.18 (.28)
Ethnic dissimilarity (ED)		−.42 (.30)	−.36 (.30)		−.14 (.24)	−.16 (.23)
Professional dissimilarity (PD)		.25 (.34)	.19 (.35)		.006 (.27)	−.19 (.28)
Value dissimilarity (VD)		.55 (.53)	.52 (.53)		.84 (.43)*	1.01 (.41)†
Identification (ID) T1		−.10 (.08)	−.10 (.08)		−.14 (.07)*	−.12 (.06)*
Task conflict T1					.42 (.07)‡	−.43 (.06)‡
AD × ID T1			.83 (.76)			−1.29 (.65)*
GD × ID T1			−.04 (.44)			−.76 (.36)*
ED × ID T1			.05 (.32)			−.79 (.26)*
PD × ID T1			.37 (.36)			.42 (.29)
VD × ID T1			−.40 (.65)			.91 (.55)
Random effects						
Group level variance	.11 (.05)	.11 (.05)	.10 (.05)	.07 (.04)	.03 (.03)	.02 (.02)
Individual level variance	.48 (.06)	.47 (.06)	.46 (.06)	.49 (.06)	.39 (.05)	.34 (.04)
Model deviance						
Log likelihood (χ^2)	371.28	365.59	362.88	368.24	319.65	298.59

*$p < .05$; †$p < .01$; ‡$p < .001$.

professional dissimilarity and identification ($t(164) = 2.93$, $p < 0.01$) (see Figure 3). The interaction between gender dissimilarity and identification showed that there was a significant positive association between gender dissimilarity and relationship conflict for individuals with low identification ($\beta = 1.28$) ($t(164) = 3.17$, $p < 0.001$), but there was no significant association for individuals with high identification ($\beta = −0.39$) ($t(164) = 0.92$, *ns*). The interaction between professional dissimilarity and identification revealed a significant positive association between professional dissimilarity and relationship conflict for individuals with high identification ($\beta = 0.56$) ($t(164) = 1.98$, $p < 0.05$), but a nonsignificant negative trend for individuals with low identification ($\beta = −0.81$) ($t(164) = 1.89$, *ns*).

Task conflict For task conflict at Time 1, 19% of the variance was distributed at the group level and 81% of the variance was accounted for at the individual level (Model A). In Model B, the main effects of the dissimilarity variables and identification were added. The improvement in model fit was not significant ($\Delta\chi^2 = 5.70$, $df = 6$, *ns*) and there were no significant explanatory variables. The amount of total variance accounted for was 3.7%. When the interaction terms were entered in Model C, there was no significant improvement in the model fit ($\Delta\chi^2 = 2.71$, $df = 5$, *ns*) and no significant interaction terms. An additional 2.02% of the total variance was explained.

At Time 2, 11.9% of the variance was observed at the group level and 88.1% of the variance was at the individual level. Task conflict
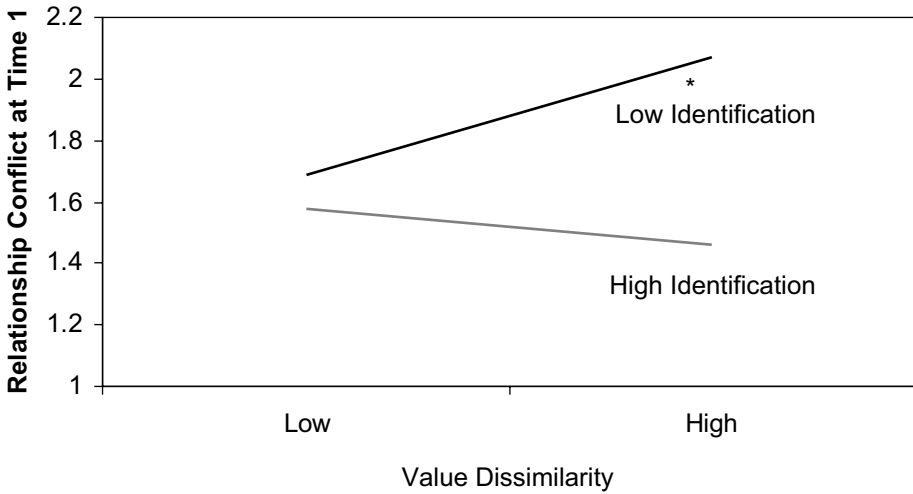
Figure 1. The interaction between value dissimilarity and identification on relationship conflict at Time 1.

at Time 1 was added as a control variable before the addition of the main effects of dissimilarity and identification. It improved the fit of the model ($\Delta\chi^2 = 39.75$, $df = 1$, $p < 0.001$), explained 22.28% of the total variance and was a significant positive predictor ($t(164) = 6.72$, $p < 0.001$). The dissimilarity variables and identification were added in Model B. The improvement in model fit was not significant ($\Delta\chi^2 = 8.83$, $df = 6$, *ns*), with 4.6% of the total variance explained. Identification was a significant positive explanatory variable ($t(164) = 2.01$, $p < 0.05$), and value dissimilarity was also positively associated with task conflict ($t(164) = 1.96$, $p = 0.05$). The addition of the interaction terms in Model C led to a significant improvement in model fit ($\Delta\chi^2 = 21.06$, $df = 5$, $p < 0.001$), and an additional 8.75% of the total variance was accounted for.
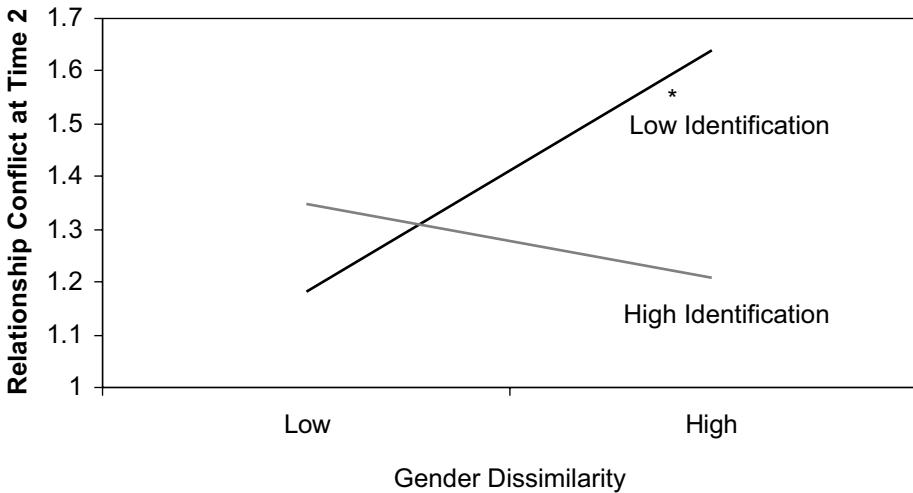

Figure 2. The interaction between gender dissimilarity and identification on relationship conflict at Time 2.
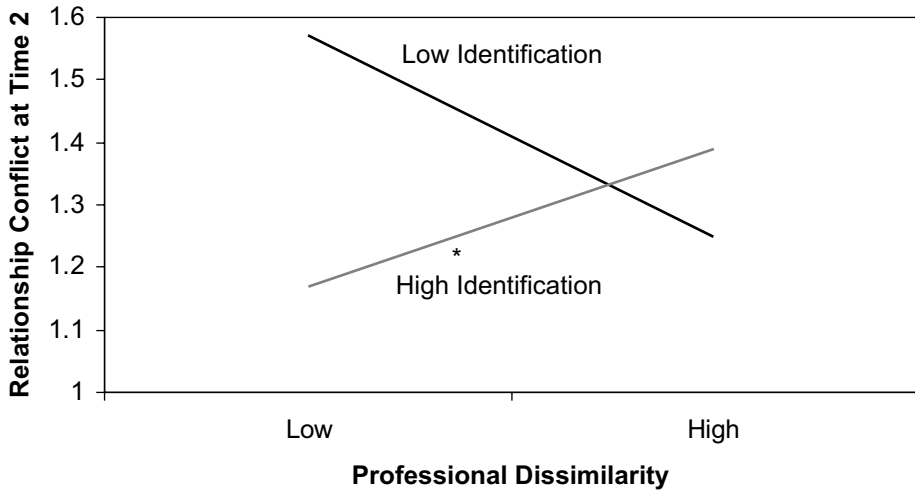
Figure 3. The interaction between professional dissimilarity and identification on relationship conflict at Time 2.

Gender dissimilarity ($t(164) = 2.10$, $p < 0.05$) (see Figure 4), age dissimilarity ($t(164) = 1.98$, $p < 0.05$) (see Figure 5) and ethnic dissimilarity ($t(164) = 2.98$, $p < 0.01$) (see Figure 6), interacted with identification. The gender dissimilarity with identification interaction revealed a significant positive association between gender dissimilarity and task conflict for individuals with low identification ($\beta = 0.77$) ($t(164) = 1.96$,

$p = 0.05$), but no significant association for individuals with high identification ($\beta = -0.40$) ($t(164) = 1.01$, *ns*). The age dissimilarity and identification interaction showed that for individuals with high identification, there was a significant negative association between age dissimilarity and task conflict ($\beta = -1.44$) ($t(164) = 2.20$, $p < 0.05$), but there was no significant association for individuals with low
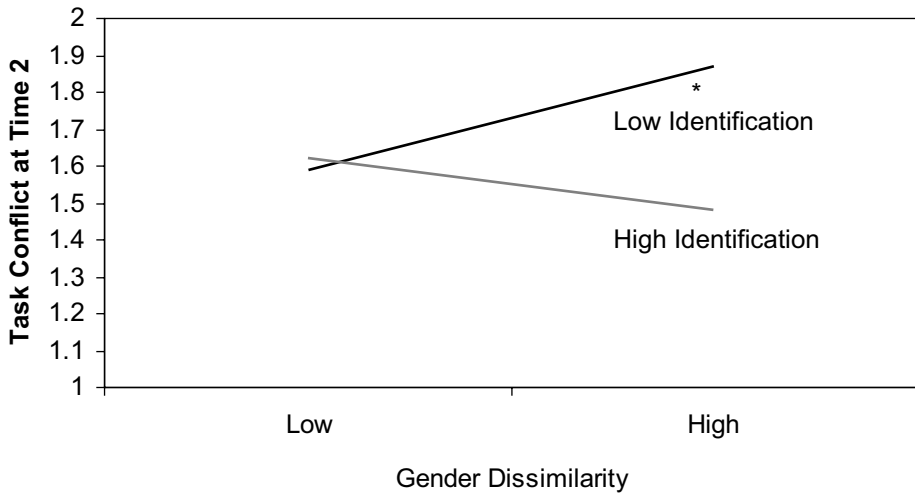

Figure 4. The interaction between gender dissimilarity and identification task conflict at Time 2.
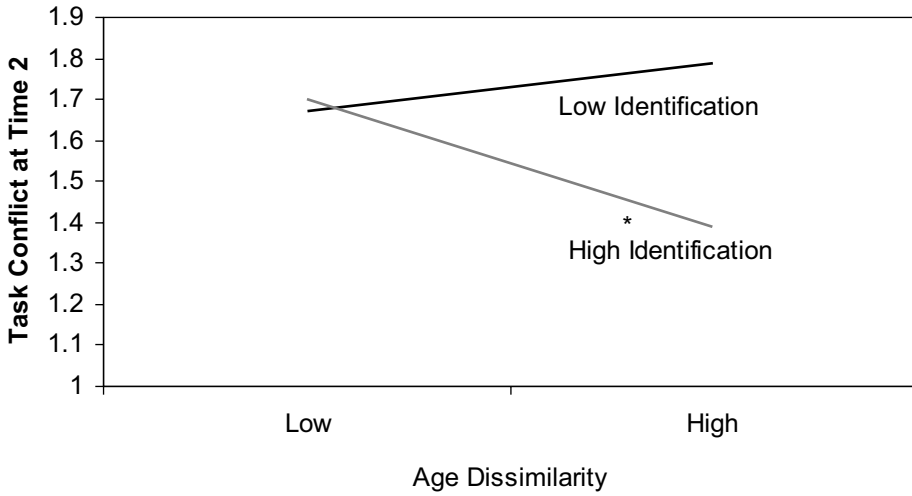
Figure 5. The interaction between age dissimilarity and identification on task conflict at Time 2.

identification (β = 0.55) (*t*(164) = 0.73, *ns*). A similar pattern of associations was observed for ethnic dissimilarity. Individuals with high identification exhibited a significant negative association between ethnic dissimilarity and task conflict (β = −0.77) (*t*(164) = 2.36, *p* < 0.01). However, there was no significant association for individuals with low identification (β = 0.45) (*t*(164) = 1.55, *ns*).

The mediating influence of identification

Another set of models was run to test for the mediating role of identification (Hypothesis 6a). This involved testing; (a) the models examining the effects of dissimilarity on conflict; (b) a model examining the effects of dissimilarity on identification; and (c) the models examining the simultaneous effects of dissimilarity and identification on conflict. In order to satisfy
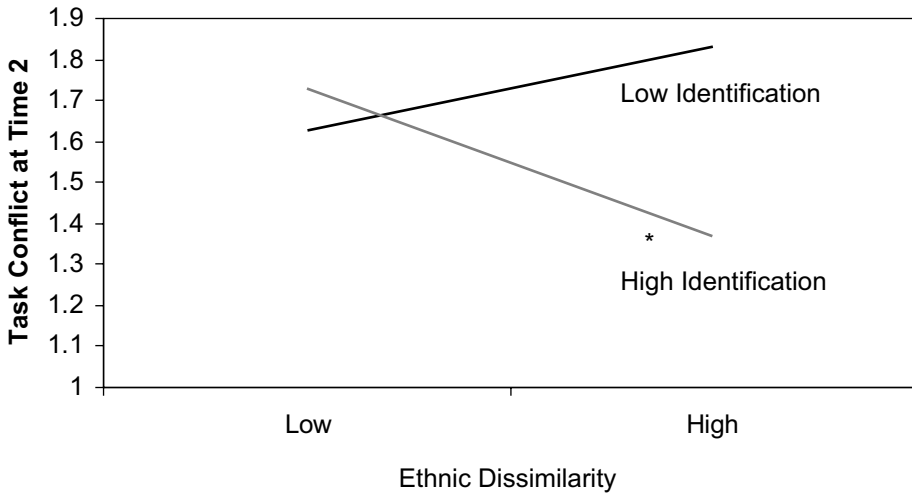

Figure 6. The interaction between ethnic dissimilarity and identification on task conflict at Time 2.

mediation, the effects of dissimilarity on conflict should reduce in significance or become nonsignificant, once identification is entered into the model.

To conduct an examination of the effects of dissimilarity on conflict, we ran main effects models with the five dissimilarity variables on each type of conflict, at each time. We compared these models against the variance components models (Model A) reported in Tables 2 and 3. For relationship conflict at Time 1, the change in model fit was not significant ($\Delta\chi^2 = 6.05$, $df = 5$, ns) and there were no significant explanatory variables. At Time 2, there was a significant improvement in model fit ($\Delta\chi^2 = 12.55$, $df = 5$, $p < 0.05$), and value dissimilarity was positively associated with conflict ($t(164) = 2.87$, $p < 0.01$). For task conflict at Time 1, the improvement in model fit was not significant ($\Delta\chi^2 = 4.14$, $df = 5$, ns). Similarly, at Time 2, there was no significant improvement in model fit ($\Delta\chi^2 = 6.71$, $df = 5$, ns), although value dissimilarity did have a significant positive association with conflict ($t(164) = 2.03$, $p < 0.05$).

To investigate the associations between dissimilarity and identification, the first set of models conducted was the variance components models. The next set of models was the main effects models, which included the five dissimilarity variables. For identification at Time 1, 12.73% of the variance was distributed at the group level and 87.27% of the variance was accounted for at the individual level. The addition of the dissimilarity variables to the variance components model did not improve the fit of the model ($\Delta\chi^2 = 3.90$, $df = 5$, ns). For identification at Time 2, 24.88% of the variance was distributed at the group level and 75.12% of the variance was accounted for at the individual level. When the dissimilarity variables were added to the variance components model, there was no improvement in model fit ($\Delta\chi^2 = 2.95$, $df = 5$, ns). Because there were no associations between dissimilarity and identification, the conditions for mediation were not satisfied.

Changes over time

We conducted another set of multilevel models to examine changes over time in the associations between dissimilarity and conflict (Hypothesis 7). In this analysis, the Level 1 variable was the within-person effect of Time, and the Level 2 variables were the between-person effects of dissimilarity. Level 1 variables can be specified as random at Level 2 and if the associated variance components are significant, it indicates that the within-person effects (in our case, Time) vary significantly between people. Additionally, we also examined the overall improvement in model fit over the fixed effects model (Kreft & De Leeuw, 1999). With these preconditions, it is appropriate to examine whether the Level 2 variables (dissimilarity) can explain some of the variance in the Level 1 effect (Time).

The first model tested included Time as an explanatory variable of relationship conflict. Time was allowed to vary randomly at the between-person level (Level 2). The associated variance component indicated that there was significant variability at the between-person level ($z = 9.03$, $p < 0.001$). Unfortunately, the change in model fit over the fixed effects model was not significant ($\Delta\chi^2 = 0.11$, $df = 2$, ns). The same process was applied for task conflict. The associated variance component for Time indicated that there was significant variability at the between-person level ($z = 9.10$, $p < 0.001$), however, the change in model fit was not significant ($\Delta\chi^2 = 0.14$, $df = 2$, ns). Overall, the results indicate that the better fitting model was a fixed effects rather than a random effects model. Adding a random part to the coefficient for Time produced a more complex and less stable model. It appears that while there is variability between people in the amount of conflict they report over time, the reliability of this effect is not strong (Arnold, 1992). Additional model testing was conducted to see whether the dissimilarity variables could explain the significant variability in Time, but results revealed no significant improvement in model fit and negligible increments in explained variance. In sum, the results did not support Hypothesis 7, that the effects of dissimilarity would change over time.

Discussion

This study extends the research on the effects of group diversity upon conflict, by investigating the impact of different types of individual dissimilarity (age, gender, ethnicity, professional and value) and the role of team identification on conflict (task and relationship) over time. Overall, we found some support for the moderating influence of identification on the associations between dissimilarity and conflict, but we did not find support for its mediating role. Also, we did not find support for the prediction that the effects of dissimilarity on conflict would change over time.

Direct associations between dissimilarity and conflict

Support for the positive associations between dissimilarity and conflict was only observed for value dissimilarity, at Time 2 (Hypothesis 5). In contrast to predictions (Hypothesis 1, 2, 3 or 4), no significant direct associations were observed for visible or professional dissimilarity on task and relationship conflict. These results support previous findings that value differences have a stronger influence upon conflict than other types of difference (Jehn et al., 1997, 1999). For example, Jehn and colleagues (1999) found that value diversity had a consistent and pervasive positive relationship with conflict, whereas visible and informational diversity effects were weaker and limited to relationship and task conflict, respectively. These researchers emphasized that for a team to be effective, members should have low value diversity. The results from the current study suggest that individuals with different guiding values for how they approach tasks will experience more task and relationship conflict than individuals who have similar values to other team members. These heightened levels of conflict may be as a result of individuals asserting their different value orientations without respecting the values of other group members, or from miscommunications and uncertainty in predicting the behavior of other group members (Gelfand et al., 1996; Meglino et al., 1989).

Although we did not find support for the hypothesis that the effects of dissimilarity on conflict would change over time (Hypothesis 7), the general pattern of results from the moderation analysis does provide some indication that value differences had a direct effect at Time 2, but not at Time 1. This result is somewhat consistent with previous findings (Harrison et al., 1998, 2002), and suggests that the impact of values emerges as individuals spend time getting to know each other. Future research should collect data after individuals have first met each other, and/or ask about the longevity or frequency of collaboration in the team (Harrison et al., 1998, 2002) to create a more valid and informative assessment of the effects of time and interaction.

Moderating versus mediating role of identification on conflict

Overall, the pattern of results provided support for the moderating role of identification, as opposed to its mediating role. Previous research examining the links between dissimilarity and identification have shown that increasing gender, ethnic (Chattopadhyay, George et al., 2004) and educational level dissimilarity (Van der Vegt et al., 2003) is associated with identification-related constructs. The lack of direct association between dissimilarity and identification in the current study suggests that the simple presence of dissimilarity is not sufficient to initiate social categorization and that other factors contribute to the development of identification.

Some support was obtained for the hypothesized moderating role of identification on the association between value dissimilarity and relationship conflict at Time 1 (Hypothesis 6b). This result is interpreted with caution, however, as the overall improvement in model fit was not significant. Value dissimilarity was positively associated with relationship conflict, for individuals with low identification but not for individuals with high identification. In other words, when individuals perceived themselves as belonging to the group, the negative consequences of individual differences in work values reduced. This pattern of results supports the CIIM's propositions that identification with a

common in-group may overcome subgroup categorization and negative stereotyping. However, for value dissimilarity, these moderating effects may be short-lived, as we did not observe the same interaction on conflict at Time 2. Indeed, there were significant, direct positive associations between value dissimilarity and both types of conflict at Time 2. It may be that over time and with more group-based assignment work, individuals' differences in values became more salient and team identification lost its efficacy as a cohesive, conflict-reducing force.

The lack of direct effects of visible and professional dissimilarity upon conflict may be explained by the fact that team identification moderated the associations. Consistent with predictions (Hypothesis 6b), we found that gender dissimilarity interacted with identification to predict relationship conflict and task conflict at Time 2. Results showed that there was a significant positive association between visible dissimilarity and relationship and task conflict for individuals with low identification, but not for individuals with high identification. In other words, individuals with low identification tended to report more involvement in task and relationship conflict if they were more dissimilar in gender than if they were more similar. On the other hand, individuals who identified strongly with the group reported similar levels of conflict regardless of how different they were in gender to other group members.

We observed a similar pattern of associations for the interactions between age dissimilarity, and between ethnic dissimilarity and identification in the prediction of task conflict at Time 2. These interactions showed that individuals with low identification reported similar levels of task conflict, regardless of their dissimilarity in age and ethnic background. However, individuals with high identification reported less involvement in task conflict if they were more dissimilar in age or ethnicity, than if they were similar on these attributes. These patterns of results are somewhat consistent with Mohammed and Angell's (2004) and Van Der Vegt and Bunderson's (2005) findings of the moderating role of team orientation and

identification, respectively. From a theoretical standpoint, acceptance threat processes may explain these negative associations. High identifiers who were different in age and/or ethnic background to other team members may have felt threatened by a potential lack of ingroup acceptance and engaged in less disagreement than low identifiers who do not feel an acceptance threat. By disagreeing less often, these visibly dissimilar high identifiers were displaying conformity to group norms in order to secure greater acceptance in the team. In contrast, for visibly dissimilar low identifiers, it was not important that the team accepted them and therefore did not behave in ways to minimize their rejection (Branscombe et al., 1999).

Professional dissimilarity interacted with identification to predict relationship conflict at Time 2. There was a negative trend of association between professional dissimilarity and relationship conflict for low team identifiers, and a significant positive association for high team identifiers. The finding that professional similarity was more likely to trigger relationship conflict (for low team identifiers) than professional dissimilarity may be explained via social comparison processes and has been explained by Pelled and colleagues (1999). These researchers hypothesized a negative relationship between functional background and tenure diversity and relationship conflict, and observed significance for tenure diversity. Basing their predictions on Festinger's (1954) social comparison theory, they explained that people prefer to compare themselves with others similar to themselves so that they can strive to improve their abilities and that those attributes that are more career-related are apt to be used in the social comparison process (Pelled et al., 1999). In the current study of MBA students, professional background may have been perceived as a salient career-related attribute and low team identifiers may have retained their professional identification. Therefore, individuals could have been comparing their own career progress by observing other individuals from a similar professional background. The social comparison process is

associated with feelings of rivalry, jealousy and heightened conflict (Pelled et al., 1999). Perhaps social comparison processes, as a result of professional similarity, are only apparent for low team identifiers. Results showed that for high team identifiers there was a positive association between professional dissimilarity and relationship conflict, yet the overall level of conflict was still lower compared to low team identifiers. It may be that when individuals have a strong team identity, any personal differences are dealt with more openly, and therefore, perceived to be more frequent. In order to test these hypothetical propositions, future research should conduct a focused analysis of subgroup identification (to gauge whether low team identifiers hold a strong professional identification) and measure the degree of social comparison across groups, as well as the prevalence of different conflict management techniques.

Practical implications and future research

The results of the current study underscore the role of team identification in the management of dissimilarity. To help improve individual functioning in diverse teams, it is important for managers to take steps to foster team identification. Some strategies may include: seating individuals next to dissimilar members (Gaertner, Mann, Murrell, & Dovidio, 1989), encouraging discussion (Gaertner, Mann, Dovidio, Murrell, & Pomare, 1990) and by using goals and tasks that are interdependent (e.g. Mohammed & Angell, 2004; Schippers et al., 2003; Van der Vegt & Van der Vliert, 2005; Van der Vegt et al., 2003).

The current study has also highlighted the importance of value differences, which reaffirms the persistent call for more research to be conducted into these underlying individual difference dimensions (Van Knippenberg et al., 2004). Future research should build on the existing base of empirical work on the effects of personality, attitude and value differences (e.g. Harrison et al., 1998, 2002; Jehn et al., 1997, 1999; Mohammed & Angell, 2004; Van der Vegt, 2002) to investigate whether these variables elicit social categorization and how they can be effectively managed. Value differences

could also be prevented in the first instance (Jehn et al., 1999) by selecting team members based on their degree of 'value fit' with the team. The importance of shared values is noted in the literature on performance—organizational fit (e.g. O'Reilly et al., 1991). Stimulating value similarity should refer to core team values related to the achievement of goals.

It should be noted that in the current study's participant sample, the student groups had more male members, such that those individuals with high gender dissimilar scores would most likely be female. That is, there were a large number of women in men-dominated groups. Chattopadhyay (1999) has examined the asymmetrical impact of demographic dissimilarity based on the extent to which people of different gender expect to work with demographically dissimilar individuals. He found that sex dissimilarity was negatively associated with self-esteem, peer relations and altruism for women-dominated groups (where men are the minority), but not for men-dominated (where women are the minority) groups. In our study, we could not undertake a similar test, as we did not have a comparative group of men in women-dominated groups. However, future research may wish to explore the asymmetrical effect of dissimilarity on conflict.

The data in this study was from newly formed business student groups with a limited tenure. This may limit the degree to which we can generalize our findings to the workplace, as student groups may operate differently from organizational teams. For example, as their university studies progress, students demonstrate more social, racial and political awareness and tolerance, and support for individual rights (Edison, Nora, Hagedorn, & Terenzini, 1996). However, research has demonstrated that outcomes with business students do replicate with practicing managers (Schweiger, Sandberg, & Ragan, 1986; Schweiger et al., 1989). In this study, the students had considerable work experience, and therefore may be more representative of workers than student samples in general. Future research could extend the generalizability of our results by examining ongoing organizational work groups.

While the analysis was conducted at the individual level ($n = 165$), the sample size at the highest level (i.e. group level $N = 27$) is the most restrictive element in a multilevel design (Snijders & Bosker, 2000). Therefore, the sample of groups was relatively small and it may be that the study was underpowered at the group level, particularly for the models that included both main and interaction effects. Future research might examine the relationships among the variables using a larger sample of groups and individuals.

In conclusion, the current study has contributed to the literature by drawing on social identity perspectives to examine the influence of team identification on the dissimilarity–conflict relationship. The results showed that the impact of diversity goes beyond simple main effects (Jehn et al., 1999; Mohammed & Angell, 2004; Pelled et al., 1999; Schippers et al., 2003), signaling the importance of continuing the examination of the impact of moderators in order to uncover the processes that underlie the effects of diversity. Specifically, the results suggest that a shared team identity can contribute to the effective management of diversity and provides support for the continued examination of identity-related processes to further our understanding of diversity.

Acknowledgments

References

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions.* London: Sage.

Allport, G. W. (1954). *The nature of prejudice.* Cambridge, MA: Addison-Wesley.

Amason, A. C. (1996). Distinguishing the effects of functional and dysfunctional conflict on strategic decision making: Resolving a paradox for top management teams. *Academy of Management Journal, 39*, 123–148.

Amason, A. C., & Schweiger, D. M. (1994). Resolving the paradox of conflict, strategic decision making, and organizational performance. *International Journal of Conflict Management, 5*, 239–253.

Anastasio, P. A., Bachman, B. A., Gaertner, S. L., & Dovidio, J. F. (1997). Categorization, recategorization, and common ingroup identity. In R. Spears, P. J. Oakes, N. Ellemers, & S. A. Haslam (Eds.), *The social psychology of stereotyping and group life* (pp. 236–256). Oxford, UK: Blackwell.

Arbuckle, J. L. (1996). Full information estimation in the presence of incomplete data. In G. A. Marcoulides & R. E. Schumacker (Eds.), *Advanced structural equation modeling: Issues and techniques.* Mahwah, NJ: Erlbaum.

Arnold, C. L. (1992). Methods, plainly speaking. An introduction to hierarchical linear models. *Measurement and Evaluation in Counseling and Development, 25*, 58–90.

Ashforth, B. E., & Mael, F. (1989). Social identity theory and the organization. *Academy of Management Review, 14*, 20–39.

Bantel, K. A., & Jackson, S. E. (1989). Top management and innovation in banking: Does the composition of the top team make a difference? *Strategic Management Journal, 10*, 107–124.

Barsade, S. G., Ward, A. J., Turner, J. D. F., & Sonnenfeld, J. A. (2000). To your heart's content: A model of affective diversity in top management teams. *Administrative Science Quarterly, 45*, 802–836.

Bateman, T. S., & Strasser, S. (1984). A longitudinal analysis of the antecedents of organizational commitment. *Academy of Management Journal, 27*, 95–112.

Baugh, S. G., & Graen, G. B. (1997). Effects of team gender and racial composition on perceptions of team performance in cross-functional teams. *Group & Organization Management, 22*, 366–383.

Branscombe, N. R., Ellemers, N., Spears, R., & Doosje, B. (1999). The context and content of social identity threat. In N. Ellemers, R. Spears, & B. Doosje (Eds.), *Social identity: Context, commitment, content* (pp. 35–58). Oxford, UK: Blackwell Science.

Brewer, M. B. (1979). In-group bias in the minimal group situation: A cognitive motivational analysis. *Psychological Bulletin, 86*, 307–324.

Brickson, S. (2000). The impact of identity orientation on individual and organizational

outcomes in demographically diverse settings. *Academy of Management Review, 25*, 82–101.

Brown, R., Condor, S., Mathews, A., Wade, G., & Williams, J. (1986). Explaining intergroup differentiation in an industrial organization. *Journal of Occupational Psychology, 59*, 273–286.

Bryk, A. S., & Raudenbush, S. W. (1992). *Hierarchical linear models.* Thousand Oaks, CA: Sage.

Byrne, D. (1971). *The attraction paradigm.* New York: Academic Press.

Chatman, J. A., Polzer, J. T., Barsade, S. G., & Neale, M. A. (1998). Being different yet feeling similar: The influence of demographic composition and organizational culture on work processes and outcomes. *Administrative Science Quarterly, 43*, 749.

Chattopadhyay, P. (1999). Beyond direct and symmetrical effects: The influence of demographic dissimilarity on organizational citizenship behavior. *Academy of Management Journal, 42*, 273–287.

Chattopadhyay, P. (2003). Can dissimilarity lead to positive outcomes? The influence of open versus closed minds. *Journal of Organizational Behavior, 24*, 295–312.

Chattopadhyay, P., & George, E. (2001). Examining the effects of work externalization through the lens of social identity theory. *Journal of Applied Psychology, 86*, 781–788.

Chattopadhyay, P., George, E., & Lawrence, S. A. (2004). Why does dissimilarity matter? Exploring self-categorization, self-enhancement, and uncertainty reduction. *Journal of Applied Psychology, 89*, 892–900.

Chattopadhyay, P., Tluchowska, M., & George, E. (2004). Identifying the ingroup: A closer look at the influence of demographic dissimilarity on employee social identity. *Academy of Management Review, 29*, 180–202.

Edison, M., Nora, A., Hagedorn, L. S., & Terenzini, P. T. (1996). Influences on students' openness to diversity and challenge in the first year of college. *Journal of Higher Education, 67*, 174–195.

Ellemers, N., Kortekaas, P., & Ouwerkerk, J. W. (1999). Self-categorisation, commitment to the group and group self-esteem as related but distinct aspects of social identity. *European Journal of Social Psychology, 29*, 371–389.

Enders, C. K., & Bandalos, D. L. (2001). The relative performance of full information maximum estimation for missing data in structural equation models. *Structural Equation Modeling, 8*, 430–457.

Festinger, L. (1954). A theory of social comparison processes. *Human Relations, 7*, 117–140.

Gaertner, S. L., Dovidio, J. F., Anastasio, P. A.,

Bachman, B. A., & Rust, M. C. (1993). Reducing intergroup bias: The common ingroup identity model. *European Review of Social Psychology, 4*, 1–26.

Gaertner, S. L., Dovidio, J. F., & Bachman, B. A. (1996). Revisiting the contact hypothesis: The induction of a common ingroup identity. *International Journal of Intercultural Relations, 20*, 271–290.

Gaertner, S. L., Mann, J., Murrell, A., & Dovidio, J. F. (1989). Reducing intergroup bias: The benefits of recategorization. *Journal of Personality and Social Psychology, 57*, 239–249.

Gaertner, S., Mann, J., Dovidio, J., Murrell, A., & Pomare, M. (1990). How does cooperation reduce intergroup bias? *Journal of Personality and Social Psychology, 59*, 692–704.

Gelfand, M. J., Kuhn, K. M., & Radhakrishnan, P. (1996). The effect of value differences on social interaction processes and job outcomes: Implications for managing diversity. In M. N. Ruderman, M. W. Hughes-James, & S. E. Jackson (Eds.), *Selected research on work team diversity* (pp. 53–71). Washington D.C.: American Psychological Association.

Guzzo, R. A., & Shea, G. P. (1992). Group performance and intergroup relations in organizations. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology* (Vol. 3, pp. 269–313). Palo Alto, CA: Consulting Psychology Press.

Harrison, D. A., Price, K. H., & Bell, M. P. (1998). Beyond relational demography: Time and the effects of surface- and deep-level diversity on work group cohesion. *Academy of Management Journal, 41*, 96–107.

Harrison, D. A., Price, K. H., Gavin, J. H., & Florey, A. T. (2002). Time, teams and task performance: A longitudinal study of the changing effects of diversity on group functioning. *Academy of Management Journal, 45*, 1029–1045.

Hobman, E. V., Bordia, P., & Gallois, C. (2003). Consequences of feeling dissimilar from others in a work team. *Journal of Business and Psychology, 17*, 301–325.

Hobman, E. V., Bordia, P., & Gallois, C. (2004). Perceived dissimilarity and work group involvement. *Group and Organization Management, 29*, 560–587.

Hogg, M. A. (1992). *The social psychology of group cohesiveness: From attraction to social identity.* London: Harvester Wheatsheaf.

Hogg, M. A. (1993). Group cohesiveness: A critical review and some new directions. *European Review of Social Psychology, 4*, 85–111.

Hogg, M. A., & Hardie, E. A. (1991). Social attraction, personal attraction, and self-categorization: A field study. *Personality and Social Psychology Bulletin, 17,* 175–180.

Hogg, M. A., & Terry, D. J. (2000). Social identity and self-categorization processes in organizational contexts. *Academy of Management Review, 25,* 121–140.

Hogg, M. A., & Williams, K. D. (2000). From I to We: Social identity and the collective self. *Group Dynamics: Theory, Research, and Practice, 4,* 81–97.

Jackson, S., Brett, J. F., Sessa, V. I., Cooper, D. M., Julin, J. A., & Peyronnin, K. (1991). Some differences make a difference: Individual dissimilarity and group heterogeneity as correlates of recruitment, promotions, and turnover. *Journal of Applied Psychology, 76,* 675–689.

Jackson, S. E. (1996). The consequences of diversity in multidisciplinary work teams. In M. A. West (Ed.), *Handbook of work group psychology.* Chichester, UK: Wiley.

Jehn, K. A. (1994). Enhancing effectiveness: An investigation of advantage and disadvantages of value-based intragroup conflict. *International Journal of Conflict Management, 5,* 223–238.

Jehn, K. A. (1995). A multimethod examination of the benefits and detriments of intragroup conflict. *Administrative Science Quarterly, 40,* 256–282.

Jehn, K. A., & Bezrukova, K. (2004). A field study of group diversity, workgroup context, and performance. *Journal of Organizational Behaviour, 25,* 703–729.

Jehn, K. A., Chadwick, C., & Thatcher, S. M. B. (1997). To agree or not to agree: The effects of value congruence, individual demographic dissimilarity, and conflict on workgroup outcomes. *International Journal of Conflict Management, 8,* 287–305.

Jehn, K. A., Northcraft, G., & Neale, M. (1999). Why differences make a difference: A field study of diversity, conflict, and performance in workgroups. *Administrative Science Quarterly, 44,* 741–763.

Kirkman, B. L., Tesluk, P. E., & Rosen, B. (2004). The impact of demographic heterogeneity and team leader-team member demographic fit on team empowerment and effectiveness. *Group & Organization Management, 29,* 334–368.

Kramer, R. M. (1991). Intergroup relations and organizational dilemmas: The role of categorization processes. In L. L. Cummings & B. M. Staw (Eds.), *Research in organizational behavior* (Vol. 13, pp. 191–228). Greenwich, CT: JAI Press.

Kreft, I., & De Leeuw, J. (1998). *Introducing multilevel modeling.* London: Sage.

Meglino, B. M., Ravlin, E. C., & Adkins, C. L. (1989). A work values approach to corporate culture: A field test of the value congruence process and its relationship to individual outcomes. *Journal of Applied Psychology, 74,* 424–432.

Mohammed, S., & Angell, L. C. (2004). Surface- and deep-level diversity in workgroups: Examining the moderating effects of team orientation and team process on relationship conflict. *Journal of Organizational Behavior, 25,* 1015–1039.

Nemeth, C. J., & Staw, B. M. (1989). The tradeoffs of social control in groups and organizations. *Advances in Experimental Social Psychology, 22,* 175–210.

Newman, D. A. (2003). Longitudinal modeling with randomly and systematically missing data: A simulation of ad hoc, maximum likelihood, and multiple imputation techniques. *Organizational Research Methods, 6,* 328–362.

Olson, E. M., Walker, O. C., Ruekert, R. W., & Bonner, J. M. (2001). Patterns of cooperation during new product development among marketing, operations and R&D: Implications for project performance. *Journal of Product Innovation Management, 18,* 259–271.

O'Reilly, C. A., Caldwell, D. F., & Barnett, W. P. (1989). Work group demography, social integration, and turnover. *Administrative Science Quarterly, 34,* 21–37.

O'Reilly, C. A., Chatman, J., & Caldwell, D. F. (1991). People and organizational culture: A profile comparison approach to assessing person-organization fit. *Academy of Management Journal, 34,* 487–516.

Pelled, L. H. (1996a). Relational demography and perceptions of group conflict and performance: A field investigation. *International Journal of Conflict Management, 7,* 230–246.

Pelled, L. H. (1996b). Demographic diversity, conflict, and work group outcomes: An intervening process theory. *Organization Science, 7,* 615–631.

Pelled, L. H., Eisenhardt, K. M., & Xin, K. R. (1999). Exploring the black box: An analysis of work group diversity, conflict, and performance. *Administrative Science Quarterly, 44,* 1–28.

Pelled, L. H., Xin, K. R., & Weiss, A. M. (2001). No es como mi: Relational demography and conflict in a Mexican production facility. *Journal of Occupational and Organizational Psychology, 74,* 63–84.

Randel, A. E. (2002). Identity salience: A moderator of the relationship between group gender

composition and work group conflict. *Journal of Organizational Behavior, 23*, 749–766.

Rasbash, J., Steele, F., Browne, W., & Prosser, B. (2004). *A user's guide to MLwiN (version 2.1f)*. London: Institute of Education, University of London.

Riordan, C. M., & Shore, L. M. (1997). Demographic diversity and employee attitudes: An empirical examination of relational demography within work units. *Journal of Applied Psychology, 82*, 342–358.

Riordan, C. M., & Weatherly, E. W. (1999). Defining and measuring employees' identification with their work groups. *Educational and Psychological Measurement, 59*, 310–324.

Rokeach, M. (1973). *The nature of human values*. New York: Free Press.

Schippers, M. C., Den Hartog, D. N., Koopman, P. L., & Wienk, J. A. (2003). Diversity and team outcomes: The moderating effects of outcome interdependence and group longevity and the mediating effect of reflexivity. *Journal of Organizational Behavior, 24*, 779–802.

Schmitt, M. T., & Branscombe, N. R. (2001). The good, the bad, and the manly: Threats to one's prototypicality and evaluations of fellow in-group members. *Journal of Experimental Social Psychology, 37*, 510–517.

Schneider, B. (1983). An interactionist perspective on organizational effectiveness. In L. L. Cummings & B. M. Staw (Eds.), *Research in organizational behavior* (pp. 1–31). Greenwich, CT: JAI Press.

Schweiger, D. M., Sandberg, W. R., & Ragan, J. W. (1986). Group approaches for improving strategic decision making: A comparative analysis of dialectical inquiry, devil's advocacy, and consensus. *Academy of Management Journal, 29*, 51–71.

Schweiger, D. M., Sandberg, W. R., & Rechner, P. L. (1989). Experiential effects of dialectical inquiry, devil's advocacy, and consensus approaches to strategic decision making. *Academy of Management Journal, 32*, 745–772.

Snijders, T., & Bosker, R. (2000). *Multilevel analysis: An introduction to basic and advanced multilevel modeling*. London: Sage.

Tabachnick, B. G., & Fidell, L. S. (1996). *Using multivariate statistics*. New York: HarperCollins Publishers.

Tajfel, H. (1978). The achievement of group differentiation. In H. Tajfel (Ed.), *Differentiation between social groups: Studies in the social psychology of intergroup relations* (pp. 77–98). London: Academic Press.

Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33–47). Monterey, CA: Brooks/Cole.

Thatcher, S. M. B., Jehn, K. A., & Zanutto, E. (2003). Cracks in diversity research: The effects of diversity faultlines on conflict and performance. *Group Decision and Negotiation, 12*, 217–241.

Thomas, D. C. (1999). Cultural diversity and work group effectiveness. An experimental study. *Journal of Cross-Cultural Psychology, 30*, 242–263.

Tsui, A. S., Egan, T. D., & O'Reilly, C. A. (1992). Being different: Relational demography and organizational attachment. *Administrative Science Quarterly, 37*, 549–579.

Turner, J. C. (1982). Towards a cognitive redefinition of the social group. In H. Tajfel (Ed.), *Social identity and intergroup relations* (pp. 15–40). Cambridge, UK: Cambridge University Press.

Turner, J. C. (1984). Social identification and psychological group formation. In H. Tafjel (Ed.), *The social dimension: European developments in social psychology* (Vol. 2, pp. 518–538). Cambridge, UK: Cambridge University Press.

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory*. Oxford, UK: Basil Blackwell.

Van der Vegt, G. S. (2002). Effects of attitude dissimilarity and time on social integration: A longitudinal panel study. *Journal of Occupational and Organizational Psychology, 75*, 439–452.

Van der Vegt, G. S., & Bunderson, J. S. (2005). Learning and performance in multidisciplinary teams: The importance of collective team identification. *Academy of Management Journal, 48*, 532–547.

Van der Vegt, G. S., & Van der Vliert, E. (2005). Effects of perceived skill dissimilarity and task interdependence on helping in work teams. *Journal of Management, 31*, 73–89.

Van der Vegt, G. S., Van de Vliert, E., & Oosterhof, A. (2003). Informational dissimilarity and organizational citizenship behavior: The role of intrateam interdependence and team identification. *Academy of Management Journal, 46*, 715–727.

Van Knippenberg, D., De Dreu, C. K. W., & Homan, A. C. (2004). Work group diversity and group performance: An integrative model and research agenda. *Journal of Applied Psychology, 89*, 1008–1022.

Williams, K. Y., & O'Reilly, C. A. (1998).

Demography and diversity in organizations: A review of 40 years of research. *Research in Organizational Behavior, 20,* 77–140.

Biographical notes

ELIZABETH V. HOBMAN (PhD, University of Queensland) is a postdoctoral research fellow in the school of psychology at the University of Queensland. Her research interests include work team diversity, leadership, social identification and group processes, computer-mediated communication and career certainty.

PRASHANT BORDIA (PhD, Temple University) is an associate professor in the school of management at the University of South Australia. His research interests include team development, computer-mediated communication, and rumors in organizations.