
Perceived Dissimilarity and Perspective Taking Within Work Teams

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The authors investigate the relationship between employee perceptions of surface- and deep-level dissimilarity and within-team perspective taking. Results suggest that the more dissimilar employees perceive themselves to be from their fellow team members in terms of their work style, the less their perspective taking (i.e., lower positive attributions and empathy). In addition, the authors found that perceived work-style dissimilarity interacted with a contextually salient surface-level attribute (perceived age dissimilarity) such that when perceived work-style dissimilarity was low, perceived age dissimilarity had a stronger negative effect on within-team perspective taking. This study demonstrates the importance of considering perspective taking in their understanding of the effects of dissimilarity within teams and furthers theoretical understanding of the effects of relational demography by testing competing theories undergirding relational demography research.

Keywords: *diversity; relational demography; dissimilarity; perspective taking; teamworking*

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Demographic diversity is a fact of modern organizational life, and the challenge of managing a diverse workforce is widely recognized as a key issue facing today's managers (Harrison, Price, Gavin, & Florey, 2002; Tsui, Egan, & O'Reilly, 1992). Understanding diversity is particularly important given the rise of teamworking in organizations (Cohen & Bailey, 1997; Mohrman, Cohen, & Mohrman, 1995). In teams, employees are expected to work collaboratively and interdependently, even though team members often have diverse backgrounds and work styles. Recent reviews conclude that there is substantial evidence to suggest that diversity can have a detrimental effect on team functioning (e.g., Jackson, Joshi, & Erhardt, 2003; Riordan, 2000; Williams & O'Reilly, 1998). Furthermore, we have little understanding of why diversity effects occur because research has tended to overlook the possible mechanisms that might underlie such effects (Lawrence, 1997).

In the current study, we adopted an individual-level focus to understanding the effects of diversity on teamwork. Most research into the effects of increased workforce diversity has tended to be conducted at the group (e.g., Harrison, Price, & Bell, 1998; Jehn, Northcraft, & Neale, 1999) and organizational (e.g., Hoffman, 1985; Kanter, 1977) levels. However, there has been an increased focus on the impact that demographic differences have at the individual level (e.g., Chattopadhyay, 1999; Pelled, Ledford, & Mohrman, 1999). Such a focus, referred to as relational demography, investigates how an individual's dissimilarity (or relative similarity) to a salient social unit (e.g., dyad, work group, department) in terms of demographic attributes affects that individual's attitudes and behavior (Tsui & O'Reilly, 1989). This approach is therefore appropriate for understanding individual outcomes within the context of work teams, which is our goal with the current study.

In this article, we focus on the impact that an individual's perceived dissimilarity from his or her fellow team members has on his or her attitudes and behavior. In particular, we consider the effects of two types of dissimilarity—age dissimilarity and work-style dissimilarity—on the extent to which team members are able to take the perspective of other team members. As we elaborate later, being able to see others' viewpoints is a fundamental requirement for collaborative working. As such, a lack of perspective taking may underlie the negative effect that diversity can have on team functioning.

Although past research has looked at multiple types of dissimilarity, such studies tend to focus on assessing the relative strength of the main effects of these types of dissimilarity. Yet it has been suggested that a better understanding of the effect of dissimilarity can be gained by investigating how types of dissimilarity interrelate (e.g., Lau & Murnighan, 1998). In this article, we

argue that the impact of perceived age dissimilarity on within-team perspective taking will depend on the degree to which the individual can also be differentiated from his or her team colleagues in terms of his or her perceived work styles. In addition, we tested competing theoretical predictions regarding how age and work-style dissimilarity interact, thereby contributing to the broader conceptual debate about the effects of dissimilarity, and research on the role of dissimilarity in team settings. We first elaborate on the concept of *perspective taking* and its importance for teamwork.

Perspective Taking and Its Importance Within Teams

The ability to take another perspective, or to adopt a non-egocentric view and see the world from another's view point, is a fundamental aspect of human cognitive and moral development (Piaget, 1932). As such, perspective taking has been linked to a range of prosocial behaviors and developmental outcomes that are likely to enhance teamworking. Considerable research evidence from social and developmental psychology suggests that perspective taking leads individuals to help others (see Batson, 1991; Eisenberg & Miller, 1987, for a review). Evidence in organizations, although limited because of the small number of perspective taking studies in this context, also supports the proposition that perspective taking enhances helping. For example, Facticeau, Allen, Facticeau, Bordas, and Tears (2000) and Parker and Axtell (2001) found significant positive relationships between perspective taking and third-party (e.g., coworker, supervisor) ratings of citizenship performance. Evidence also supports other ways in which perspective taking is important within groups. Perspective taking has been shown to lower interpersonal aggression (Richardson, Green, & Lago, 1998); promote "task-focused conflict" rather than the more damaging "person-focused conflict" (Sessa, 1996); promote collaborative conflict resolution styles, rather than dominating or self-focused styles (Corcoran-O'Connell & Mallinckrodt, 2000); and lead to better joint negotiation outcomes (Neale & Bazerman, 1983).

Within the team context, therefore, taking the perspective of team members is likely to lead to greater displays of team citizenship, such as greater workload sharing and reduced conflict, and the outcomes can in turn influence team effectiveness. For example, the helping component of citizenship behavior has been associated with objective indicators of effectiveness (see Podsakoff, MacKenzie, Paine, & Bachrach, 2000). Similarly, demonstration of care and concern for one another, such as by helping, constitutes the basis for affect-based trust, which can lead to better work performance (McAllister, 1995).

In sum, there is considerable evidence to suggest that perspective taking will enhance team functioning. We theorize next that dissimilarity may inhibit team members' perspective taking.

Dissimilarity

Conceptual work on dissimilarity (e.g., Jackson, May, & Whitney, 1995; Milliken & Martins, 1996) has distinguished between surface-level attributes (i.e., visible and/or easily identifiable demographic characteristics such as gender, race and/or ethnicity, and age) and deep-level attributes (i.e., underlying attributes such as attitudes, values, and beliefs). The few studies that have investigated both types of dissimilarity support this distinction (Harrison et al., 1998; Jehn et al., 1999; Riordan & Weatherly, 1999b). Guided by this research, we investigate surface- and deep-level dissimilarity in this article.

Surface-level dissimilarity: Importance of age dissimilarity. As discussed above, *surface-level dissimilarity* refers to dissimilarity in terms of visible and/or easily identifiable demographic characteristics such as gender, race/ethnicity, and age. In this article, we focus specifically on perceived age dissimilarity. The reasons for this choice are threefold. First, an employee's age relative to other members of the team (i.e., age dissimilarity) has been found to have an impact on several important outcomes, and this impact occurs over and above the effect of age per se. Age dissimilarity has been found to be associated with less communication (Zenger & Lawrence, 1989), more negative affect (Judge & Ferris, 1993), poorer work group fit (Kirchmeyer, 1995), less innovation (Zajac, Golden, & Shortell, 1991), higher turnover (Wagner, Pfeffer, & O'Reilly, 1984; Wiersema & Bird, 1993), greater absence (Cummings, Zhou, & Oldham, 1993), and less group citizenship behavior (Chattopadhyay, 1999; Riordan & Weatherly, 1999b). Although some research detects no effects of age dissimilarity on focal outcomes (e.g., Bantel & Jackson, 1989; Wiersema & Bantel, 1992), only one study (Pelled, 1997) found age dissimilarity to have a positive effect. In general, therefore, past research suggests that age dissimilarity has a detrimental effect on important outcomes. Consequently, it is important for researchers to gain a greater understanding of age dissimilarity so such negative effects can be either avoided or minimized.

Second, the age composition of the workforce is predicted to change considerably in the near future (Barham, 2002; Henretta, 2000). To date, low participation in the labor force among older workers, because of the increased

popularity of early retirement and a changing workplace, has tended to result in age-segregated workforces (Henretta, 2000). However, the increasing proportion of older people in the population, changes in government regulations, the changing nature of employment, and changes in the types of pensions are predicted to lead to greater numbers of older workers continuing to participate in the labor force, which will consequently result in greater age diversity in the workplace (Henretta, 2000). Employees will, therefore, increasingly find themselves working with people of a greater range of ages, hence it is pertinent that we further our understanding of the impact that age dissimilarity has on employees' attitudes and behavior.

The third reason for focusing on age dissimilarity is that, in the current context, age was the only visible demographic characteristic distinguishing between employees. This homogeneity on other characteristics such as gender and ethnicity gives the current study an important theoretical advantage. There is theory (e.g., Lau & Murnighan, 1998) and empirical evidence (e.g., Alexander, Nuchols, Bloom, & Lee, 1995) to suggest that different types of demographic dissimilarity will interact. For example, someone who is much younger than the rest of the team, but is the same gender as those team members, is in a different team context than someone who is much younger than the rest of the team, but is also different in terms of gender or ethnicity. To ensure that our investigation of the interaction between age and work-style dissimilarity (see details below) was not confounded by the existence of multiple types of surface-level dissimilarity, we conducted the current study in a context in which age was the only visible demographic characteristic that substantially differentiated team members.

Deep-level dissimilarity: Work style. In contrast to the range of studies that have examined age dissimilarity, we are aware of only four studies that investigate deep-level characteristics, all of which found detrimental effects on focal outcomes. Most of these studies have been conducted at the team level. Harrison et al. (1998) and Van der Veegt (2002) investigated the effects of attitudinal diversity, specifically diversity in job satisfaction. Harrison et al. (1998) found that, in teams that had been together for more than a year, attitudinal diversity had a negative effect on cohesion. Similarly, Van der Veegt (2002) found attitudinal diversity to affect social integration negatively. Finally, Jehn et al. (1999) found value diversity (a similar construct to work-style dissimilarity) to be associated with increased conflict and decreased performance and efficiency.

To our knowledge, only one study focused on the individual level of analysis in investigating deep-level dissimilarity. Riordan and Weatherly

(1999b) found perceived work-style dissimilarity (or, as they refer to it, outlook dissimilarity) to be negatively related to group identification, liking, job satisfaction, group citizenship, and performance. Consistent with this, we focus on perceived work-style dissimilarity, or the degree to which individual team members perceive themselves to be dissimilar to their team in terms of their approach to problems and their outlook on work issues (Riordan & Weatherly, 1999b). We focus on this type of dissimilarity because in situations in which individuals work cooperatively (e.g., team-working) differences among individuals' approaches to tasks are likely to be particularly important.

Dissimilarity and Perspective Taking

Derived from the complementary theories of social identity (e.g., Hogg & Abrams, 1988; Tajfel & Turner, 1979) and social categorization (e.g., Turner, 1985; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987), intergroup relations theory suggests that interactions between members of different social groups are motivated by an inherent need to maintain high self-esteem and reduce uncertainty. To achieve these needs, individuals categorize people in terms of whether they are in their in-group (i.e., in the same social category) or their out-group (i.e., in a different social category), and this formation of in- and out-groups can be made based on any social categorization. The theory proposes that, to achieve high self-esteem, individuals engage in in-group bias/out-group discrimination involving perceptual biases such as between-group distinctiveness, out-group homogeneity, and in-group favoritism. For example, out-group members are seen as less trustworthy, honest, and cooperative (e.g., Brewer, 1979; Tajfel, 1982), and there is more cohesion and cooperation between members of the in-group (e.g., Hogg & Terry, 2000). Individuals' perceptions regarding in- and out-group behavior are also affected by these categorizations (Geddes & Konrad, 2003), with out-group members being evaluated less positively and less favorable attributions being made about their behavior. In- and out-group biases include positive behavior being attributed to more external causes and negative behavior being attributed to more internal causes (e.g., Brewer & Brown, 1998).

This theory suggests that individuals take the perspective of in-group members to a greater extent than they take the perspective of out-group members. In the context of a work team, individuals who perceive themselves to be similar to other team members on a salient characteristic are likely to identify those fellow team members as part of their in-group (Chattopadhyay, 1999; Tsui et al., 1992), whereas individuals who perceive

themselves to be dissimilar to other members of their team will categorize those dissimilar team members into their out-group. We therefore propose that the more dissimilar individuals perceive themselves to be from others in their team, the less likely they are to take the perspective of those team members.

Intergroup relations theory suggests that we tend to categorize others and ourselves in terms of characteristics that are “visible and culturally meaningful” (Fiske & Taylor, 1991, p. 121). The theoretical positions outlined above are, therefore, most likely to be relevant to our investigation of perceived age dissimilarity; that is, team members are likely to categorize their fellow team members into those who are of similar age to themselves (their in-group) and those who are dissimilar to them in terms of age (their out-group). We argue that the more dissimilar in age individuals perceive themselves to be from other team members, the less likely they are to be able to take the perspective of those team members. Such a suggestion is in line with past research that shows that an individual’s attitudes toward and evaluations of coworkers is affected by the age of those coworkers (e.g., Cleveland, Shore, & Murphy, 1997; Ferris, Judge, Chachere, & Liden, 1991).

The similarity attraction paradigm (e.g., Byrne, 1971), the other theory predominantly used within relational demography research, also supports a prediction that perceived dissimilarity will be associated with less perspective taking. Although more recently extended to incorporate similarity in terms of demographics (Riordan, 2000), the original formulations of this paradigm focused on similarity in attitudes. This paradigm is therefore highly relevant to our consideration of work-style dissimilarity. Essentially, the similarity attraction paradigm proposes that people are attracted to those who are similar to themselves, and, as a result of this, people interact more frequently and have more positive evaluations of people they perceive to be similar to themselves. According to this paradigm, similar others are therefore more likely than dissimilar others to support and validate one’s perceptions, values, and beliefs (Geddes & Konrad, 2003). Based on this, we suggest that the more dissimilar in work style individuals perceive themselves to be from other team members, the less likely they are to be willing and able to take the perspective of those team members.

Based on the two dominant theories used within relational demography research, we would therefore expect perceived dissimilarity on age and work style to be associated with lower perspective taking. Although to our knowledge no research has directly investigated the link between dissimilarity and perspective taking within teams, empirical evidence seems to support the proposition that dissimilarity will reduce perspective taking

more generally. For example, research into prosocial behavior in children has shown that the more similar a child perceives himself or herself to be to a target person, the more likely that child is to take the target's perspective (Eisenberg & Mussen, 1989). However, there is also indirect evidence of the link between dissimilarity and perspective taking. Many of the antecedents of perspective taking have been linked to similarity. For example, although research shows that interaction between a person and the target leads to greater perspective taking (Hinds, 2000; Parker & Axtell, 2001), other organizational research shows that people interact more with those similar to themselves (e.g., Ibarra, 1992; Mehra, Kildroff, & Brass, 1998). Furthermore, research into perspective taking shows that liking enhances perspective taking (McPherson Frantz & Janoff-Bulman, 2000), and dissimilarity research shows that we feel greater liking for those who are similar to ourselves (e.g., Berscheid, 1985; Sears, Freedman, & Peplau, 1985). In summary, it seems likely that perspective taking is greater when the target is similar, and although we believe this will be true for all types of dissimilarity salient in a given context in the current study, we focus specifically on dissimilarity in terms of age and work style. In particular, we predict that:

Hypothesis 1: Perceived age dissimilarity will be negatively related to an individual's within-team perspective taking.

Hypothesis 2: Perceived work-style dissimilarity will be negatively related to an individual's within-team perspective taking.

However, it is also important to consider the alternative ways in which different types of dissimilarity might interact. We turn to this question next.

Interaction Between Age Dissimilarity and Work-Style Dissimilarity

As we discussed above, although there is evidence that supports the contention that dissimilarity will have a direct effect on perspective taking, it has also been suggested (e.g., Lau & Murnighan, 1998; Williams & O'Reilly, 1998) that research should incorporate more complex conceptualizations of relational demography. As Lau and Murnighan (1998) stated, "analysts must go beyond the consideration of individuals' single characteristics to investigate the effects of multiple characteristics and their interrelationships" (pp. 325-326). Furthermore, as Jehn et al. (1999) highlighted, although surface-level dissimilarity sometimes may be aligned with (i.e., represent) other

types of dissimilarity (e.g., informational or value dissimilarity), this is not necessarily the case.

Although existing research has generally focused on simple main effects of dissimilarity, some research has investigated and supported the contention that different types of diversity interact. For example, Alexander et al. (1995) found that different types of demographic diversity interact in predicting turnover, and Jehn et al. (1999) found that value and demographic diversity moderated the effect of informational diversity on group efficiency and performance. It is likely, therefore, that the effects of different types of individual-level dissimilarity will also interact. However, and perhaps more intriguing, although all the dominant theories drawn on within relational demography research suggest that the effects of different types of dissimilarity will interact, they make opposing predictions about the nature of the interaction (Williams & O'Reilly, 1998).

As we mentioned above, intergroup relations theory suggests characteristics that are "visible and culturally meaningful" (Fiske & Taylor, 1991, p. 121) and are more often used as the basis for social categorization (Fiske & Taylor, 1991; Rothbart & John, 1993; Stagnor, Lynch, Duan, & Glass, 1992). In particular, it has been noted that such categorizations are particularly likely to be based on age, sex, and race (Brewer, 1988; Brewer & Lui, 1989; Tsui et al., 1992). Therefore, because age is a visible characteristic, and the only key visible characteristic distinguishing team members within the current study's context (see Method section), employees are likely to categorize their fellow team members in terms of this salient characteristic.

Furthermore, a key motivation behind such social identification is a need for differentiation. According to an optimal distinctiveness perspective (Brewer, 1991), we have opposing needs of assimilation (which we can attain through in-group inclusion) and differentiation (which we attain through group distinctiveness). Any perceived threat to the distinctiveness of the category will lead to individuals acting in ways that will restore group distinctiveness (Jetten, Spears, & Manstead, 1998; Pickett, Bonner, & Coleman, 2002). A primary way to do this is through increasing the bias toward in-group members and the discrimination toward out-group members, as this will enhance in-group status in comparison to the out-group. In support of this contention, there is ample evidence, from laboratory and field settings, which suggests that similarity between an in-group and an out-group is perceived as a threat to in-group identity, which in turn leads in-group members to attempt to differentiate themselves from the out-group through mechanisms such as in-group bias (e.g., Diehl, 1988; Jetten et al., 1998; Moghaddam & Stringer, 1988; Roccas & Schwartz, 1993).

If team members who were different in terms of age were alike in terms of their approach to problems and their outlook on work issues (i.e., work styles), then the distinction between age categories would be less than if team members who were different in age had different work styles. Perceived similarity in terms of work style across team members with different ages would, therefore, threaten the distinctiveness of individuals' age-related social identifications. Consequently, individuals will try to increase the distinctiveness between the in- and out-group, and in-group bias/out-group discrimination will increase. Given that such intergroup rivalry is likely to lead to less perspective taking between in- and out-group members, we would expect, based on the intergroup relations theory, perceived work-style similarity (i.e., low levels of perceived work-style dissimilarity) to increase the negative effect of perceived age dissimilarity on within-team perspective taking. We therefore hypothesize that:

Hypothesis 3a: Perceived age dissimilarity will have a *more* negative effect on an individual's within-team perspective taking if dissimilarity in work style is perceived to be low.

In contrast, other approaches suggest that perceived work-style similarity (i.e., low levels of perceived work-style dissimilarity) will decrease the negative effect of perceived age dissimilarity on outcomes. The similarity attraction paradigm (e.g., Byrne, 1971) suggests that any increased similarity (regardless of the attribute) between a focal and target person will increase liking for the target. This perspective therefore suggests that types of similarity (or dissimilarity) will have a cumulative effect; that is, perceiving oneself to be similar in age and similar in work style will lead to greater liking and/or attraction than perceiving oneself to be similar in one attribute but dissimilar in another; this, in turn, will also lead to more liking and/or attraction than perceiving oneself to be dissimilar in age and work style.

A similar effect is predicted by Lau and Murnighan's (1998) concept of "faultlines," or divides between group members based on one or more attributes. Lau and Murnighan argued that faultlines are stronger and lead to more subgroup conflict when attributes align themselves in the same way. For example, a team of four in which there are two Asian women and two White men will experience more subgroup conflict than a team in which there is one White and one Asian woman and one White and one Asian man, or when all team members are male and White (which, according to faultline theory, will experience no subgroup conflict). To reflect on

these arguments in terms of our focus on age and work-style dissimilarity, consider Team A, which has two older people with a similar work style and two younger people who are similar to each other in work style but different in style from the older people. Now consider Team B. Team B has an older and younger person with one type of work style, and they differ in their style from another older and another younger person who work in a similar way. One would expect higher subgroup conflict in Team A than in Team B because there is a clearer faultline between the subgroups that is created by dissimilarity on two dimensions rather than one.

Consequently, based on the similarity attraction paradigm and Lau and Murnighan's (1998) faultline theory, we would expect perceived work-style similarity (i.e., low levels of perceived work-style dissimilarity) to decrease the negative effect of age dissimilarity on within-team perspective taking. We, therefore, propose an alternative, competing, hypothesis regarding the nature of the interaction between perceived age and work-style dissimilarity:

Hypothesis 3b: Perceived age dissimilarity will have a *less* negative effect on an individual's within-team perspective taking if dissimilarity in work style is perceived to be low.

In sum, although we expect the effects of perceived age and work-style dissimilarity to interact, the nature of this interaction is unclear. In this article, we therefore propose two competing hypotheses that support different theoretical perspectives.

Method

Research Site and Population

The current study was conducted in a petrochemical plant located in northeast England. The participants worked in shift teams, which carried out day-to-day plant operations, and at the time of the current study were in the process of moving from traditionally managed to self-managing teams. An important feature of this sample with respect to studying dissimilarity was the homogeneity of the workforce on two demographic attributes. The population contained almost all men (96%) and contained almost no visible minorities (the only non-White employees were office staff, who as an occupational group did not participate in the survey). Age was, therefore, the only visible demographic characteristic that had substantial variance (see below).

Sample and Procedure

Researchers administered questionnaires during work time to all process operators in the plant. Confidentiality was emphasized, and the purpose of the study was explained as an independent evaluation of teamworking. The response rate was 66% ($N = 208$). The age of team members ranged from 19 to 54 years, with an average age of 39 years ($SD = 8.96$). Job tenure ranged from less than a year to 26 years, and the average tenure was 6 years ($SD = 6.02$). Members' tenure within their teams ranged from less than 1 year to 10 years, and the average tenure was 1 year ($SD = 1.74$). Eighteen percent of respondents were team leaders, each responsible for a shift team with an average size of 4.78 ($SD = 2.39$) team members.

Measures

Perceived dissimilarity. We measured dissimilarity in terms of age and work style by gaining participants' perceptions of how dissimilar they were from other team members in terms of these attributes. We had several reasons for adopting a perceptual operationalization of dissimilarity. First, theoretically perceived dissimilarity is a particularly important issue to investigate. Lawrence (1988, 1996) asserted that it is important to understand people's social construction of age. People of the same age can vary in their subjective perceptions of their age (Barak, 1987; Baum & Boxley, 1983) and, consequently, how old or young an individual perceives himself or herself to be is more important than his or her chronological age in this regard (Cleveland & Shore, 1992). This argument can be extended to a consideration of relational demography; that is, the actual difference in a person's age from others in the team is less important than how different they perceive their age to be from those other team members. Furthermore, relational demography theory predominantly focuses on individual's perceptions (Riordan, 2000; Riordan & Weatherly, 1999b). As Harrison et al. (2002) pointed out, "if differences are to be meaningful, they must be perceived" (p. 1032). The perceptual approach to measuring dissimilarity explicitly measures these perceptions whereas measures of actual dissimilarity infer individual's perceptions from demographic data (Riordan & Weatherly, 1999b). The use of perceptual measures of dissimilarity is consistent with prior research into relational demography effects within supervisor-subordinate dyads (e.g., Liden, Wayne, & Stilwell, 1993) and relational demography in work groups (e.g., Cleveland & Shore, 1992; Kirchmeyer, 1995; Maurer, Weiss, & Barbeite, 2003; Riordan & Weatherly, 1999b).

An individual's dissimilarity in age to other team members (perceived age dissimilarity) was assessed using the item: "Think of your teammates on your shift. How similar are you to them in terms of age?" The response scale ranged from 0 (*very similar*) to 4 (*very dissimilar*). Similarity in terms of other characteristics (e.g., experience, gender, and race) was also collected for two reasons. First, collecting these additional items disguised our focal hypotheses. Second, these other items provided a validity check. As we knew that the occurrence of other types of visible dissimilarity were extremely low, we were able to check that this was reflected in responses. Indeed, the mean level of perceived race and gender dissimilarity ($M = .10$; $M = .20$, respectively) was almost at the zero end of the scale, indicating that such dissimilarity was not perceived; in contrast, the mean level of perceived age dissimilarity was much higher ($M = 1.81$). Following Guilford and Fruchter (1978), we tested the differences in the variances of each item using a t statistic. As expected, the variation in responses to the age dissimilarity item was significantly greater than to the race dissimilarity ($t = 13.30, p < .001$) and gender dissimilarity ($t = 6.83, p < .001$) items. The variance for age dissimilarity, race dissimilarity, and gender dissimilarity was 1.02, .19, and .41, respectively. These findings are consistent with information provided by the organization regarding the age, race, and gender profiles of this occupational group.

To assess the degree to which individuals felt dissimilar in work style to their team colleagues (perceived work-style dissimilarity), we adapted a six-item measure from Liden et al. (1993; for a list of items, see the appendix). The response scale ranged from 1 (*strongly disagree*) to 7 (*strongly agree*). All items were reverse scored. Cronbach's alpha was .92.

Although Liden et al. (1993) demonstrated that their measure had satisfactory test-retest reliability, the validity of the measure has not been established to our knowledge. As expected, perceived work-style dissimilarity was related to individuals' feelings toward their group but not their feelings toward the organization. In particular, perceived work-style dissimilarity was significantly related to Riordan and Weatherly's (1999a) measure of identification with the group ($r = -.34, p < .001$), but not to Meyer and Allen's (1997) measure of affective commitment to the organization ($r = .06, ns$). We also examined how perceived work-style dissimilarity was related to the single-item dissimilarity questions: "Think of your teammates on your shift. How similar are you to them in terms of . . . ?" As expected, perceived work-style dissimilarity was significantly related to the single-item questions relating to dissimilarity in terms of the deep-level attributes of personality ($r = .47, p < .001$) and experience ($r = .25, p < .001$), but unrelated to the single-item

questions regarding the surface-level attributes of gender ($r = .05, ns$) and race ($r = .08, ns$) dissimilarity.

Perspective taking. Consistent with Parker and Axtell (2001), we used positive team member attributions and team member empathy as indicators of within-team perspective taking. Self-report measures of perspective-taking propensity or ability have been criticized as being susceptible to various biases (e.g., social desirability; Duan, 2000), and evidence suggests that people's perceptions of their ability to understand others do not relate well to their actual ability to do so (Marangoni, Garcia, Ickes, & Teng, 1995). For these reasons, researchers have used relatively immediate manifestations of perspective taking to assess the construct in which it is less "obvious" what the socially desirable response is. Previous research shows that perspective taking results in cognitive and affective responses in the observer. The first, empathy, is an affective response, which involves reacting to the experiences of another with compassion and concern (e.g., Davis, 1983). The second is a cognitive response in which individuals make more positive attributions about one another's behavior or, more specifically, attributions about another's behavior that are more like the attributions they would make about their own behavior. For example, the self-serving bias (Berstein, Stephan, & Davis, 1979) suggests that we tend to explain our own success as due to disposition (e.g., ability) and our failure to the situation (e.g., task difficulty) yet tend to give situational explanations for others' successes and dispositional explanations for their failures. It is important to note that evidence suggests that this attributional bias is reduced when individuals take the perspective of the other (e.g., Regan & Totten, 1975; Storms, 1973).

To assess positive attributions and empathy with regard to team members, we adapted Parker and Axtell's (2001) measures of these dimensions. Respondents' attributions about other members of their team (positive team member attributions) were measured using three items adapted from Parker and Axtell (2001; for a list of items, see the appendix). The response scale ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach's alpha for the scale was .70. Respondents' empathy for their fellow team members (team member empathy) was measured using three items adapted from Parker and Axtell (2001; for a list of items, see the appendix) and, as part of scale development, we also added a fourth item, "I can relate to my teammates when things go wrong." The response scale ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach's alpha for the scale was .77, and deletion of the new (fourth) item reduced the coefficient alpha (alpha if item deleted = .73).

Parker and Axtell (2001) demonstrated the validity of these measures by showing that positive attributions and empathy are “related but distinct” (p. 1091) dimensions of perspective taking. They also demonstrated that, as predicted, both dimensions of supplier perspective taking were positively related to cooperation with suppliers but were unrelated to cooperation with other organizational members. This demonstrates differential validity because supplier perspective taking is associated specifically with the employee–supplier relationship, and not working relationships more generally. These differential associations with measures of contextual performance therefore further demonstrate the validity of the measure. Our data further supports the validity of the measures. First, factor analyses demonstrate the distinctness of empathy and attributions (see the appendix) and zero-order correlations suggest that they are related but not so strongly as to be considered the same construct ($r = .31, p < .001$). Second, team member empathy and positive team member attributions are related to identification with the team ($r = .38, p < .001$; $r = .15, p < .05$, respectively) but are not related to affective commitment to the organization ($r = .14, ns$; $r = .07, ns$, respectively).

Control variables. We used five variables that could potentially confound main study variables, but which were not the focus of the current study. First, we controlled for age (measured in years) because it is necessary to ascertain that perceived dissimilarity in age has an effect above and beyond the effect of simple demographics (e.g., Tsui et al., 1992). Second, tenure within the team (measured in months) was controlled because the effects of demographic dissimilarity have been found to reduce with increasing team tenure (e.g., Harrison et al., 1998). Third, team size was controlled for because perceptions of dissimilarity are more likely in larger teams (Jackson et al., 1991). Finally, job tenure (in months) and job status (either team leader or team member) were controlled for because interviews with a sample of team leaders and members suggested that job experience and job status were important to perceptions of teamworking.

Exploratory factor analysis. Factor analysis of the scale items, using principal axis extraction method and oblimin rotation, was conducted to assess the factorial validity of each of the scales. The items all loaded as expected: All factor loadings of the items to their respective factors were greater than .60 and less than .16 on any other factor (see the appendix), each of the factors had an eigenvalue greater than 1.0, and taken together the factors explained 66.3% of the variance. This suggests that the measures are sufficiently distinct from one another to be considered separately.

Table 1
Descriptive Statistics and Correlations Among Study Variables

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9
1. Age	39.46	8.96	—								
2. Job tenure ^a	74.96	72.24	.33**	—							
3. Tenure in team ^a	15.26	20.85	.08	.16*	—						
4. Team size	4.78	2.39	.11	-.18*	-.16*	—					
5. Team leader ^b	.17	.38	.06	-.19**	.05	-.17*	—				
6. Age dissimilarity	1.81	1.02	-.35**	-.02	-.03	-.03	-.07	—			
7. Work-style dissimilarity	2.96	1.05	.06	-.02	.01	.11	.01	.12	—		
8. Empathy	4.10	.52	.09	-.06	.10	-.05	.10	-.16*	-.24**	—	
9. Positive attributions	3.79	.56	-.18*	-.13	-.02	-.06	-.05	-.03	-.30**	.32**	—

Note: *N* = 166 – 199 depending on missing values.

a. In months.

b. 1 = team leader, 0 = not team leader.

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

Analyses

We tested the hypotheses¹ using hierarchical regression analyses predicting positive attributions and empathy, respectively. For each analysis, control variables were entered as Step 1, age dissimilarity and work-style dissimilarity were entered as Step 2, and the interaction term (age dissimilarity x work-style dissimilarity) was entered as Step 3. The predictor variables were standardized before calculating the interaction term (Baron & Kenny, 1986).

Results

Table 1 shows the descriptive statistics and zero-order correlations among the study variables and the results of the hierarchical regression analyses are shown in Table 2. The two predictor variables, perceived age dissimilarity and perceived work-style dissimilarity, had a weak and nonsignificant association with each other ($r = .12, ns$), suggesting these variables represent distinct constructs. Thus, the current sample is well suited to testing the interaction.

Table 2
Summary of Results for Hierarchical Regression Analyses
Testing the Interaction Between Age Dissimilarity and
Work-style Dissimilarity in Predicting Positive
Attributions and Empathy ($n = 153$)

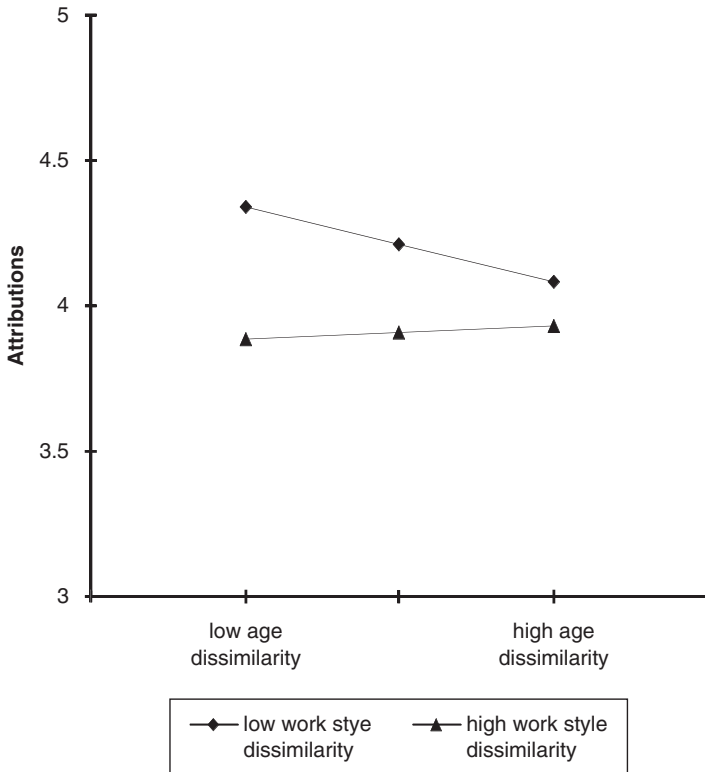
Step and variables used	Perspective Taking					
	Positive Attributions			Empathy		
	1	2	3	1	2	3
1. Age	-.04	-.07	-.07	.17	.15	.15
Tenure in team	.02	.03	.05	.11	.12	.14*
Job tenure	-.13	-.11	-.13	-.21**	-.20**	-.22**
Team size	-.11	-.06	-.05	-.07	-.03	-.2
Team leader	-.09	-.07	-.07	.01	.03	.03
2. Age dissimilarity		-.10	-.10		-.06	-.06
Work-style dissimilarity		-.28***	-.28**		-.22***	-.22***
3. Age dissimilarity \times			.15**			.16**
Work-style dissimilarity						
<i>F</i>	.91	2.94***	3.11***	1.73	2.54**	2.78***
<i>R</i> ²	.03	.12***	.15***	.06	.11**	.13***
ΔR^2		.09***	.03**		.05***	.02**

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

Table 2 shows the results of the hierarchical regression analyses predicting positive attributions and empathy. For both dependent variables, Step 1, which tested the control variables, did not account for a significant amount of variance in positive attributions and empathy ($R^2 = .03$, ns ; $R^2 = .06$, ns respectively). Step 2, which tested the main effects, did however account for a significant increase in the variance explained ($\Delta R^2 = .09$, $p < .01$; $\Delta R^2 = .05$, $p < .01$; respectively). Examining the beta weights in the second step shows that, contrary to Hypothesis 1, there were no main effects of age dissimilarity for either positive attributions ($\beta = -.10$, ns) or empathy ($\beta = -.06$, ns). However, supporting Hypothesis 2, perceived work-style dissimilarity was found to have a significant negative effect on both indicators of perspective taking: positive attributions ($\beta = -.28$, $p < .01$) and empathy ($\beta = -.22$, $p < .01$).

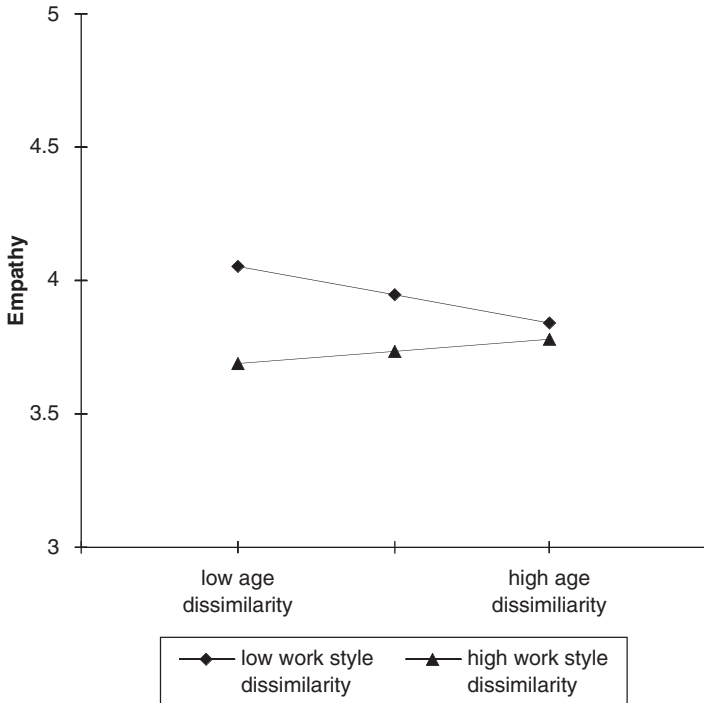
In relation to Hypotheses 3a and 3b, we found that perceived work-style dissimilarity moderated the relation between perceived age dissimilarity and positive attributions ($\Delta R^2 = .09$, $p < .01$; $\beta = .15$, $p < .05$) and empathy

Figure 1
Plot of the Interaction Between Perceived Age Dissimilarity
and Work-style Dissimilarity in Predicting Positive
Team Member Attributions



($\Delta R^2 = .05, p < .01; \beta = .16, p < .05$). To explore the nature of these interaction effects, and distinguish between the two competing hypotheses, we split the sample into three approximately equal-sized groups representing low ($M = 1.86$), medium ($M = 2.91$), and high ($M = 4.36$) work-style dissimilarity. We then used the low and high work-style dissimilarity groups to create plots of the interactions (see Figures 1 and 2), using the method recommended by Jaccard, Turrisi, and Wan (1990). Hierarchical regression analyses showed

Figure 2
Plot of the Interaction Between Perceived Age Dissimilarity and Work-style Dissimilarity in Predicting Team Member Empathy



that, within the high work-style dissimilarity group, there was no effect of perceived age dissimilarity on either positive attributions ($\beta = .03, ns$) or empathy ($\beta = .16, ns$), whereas within the low work-style dissimilarity group, there was a significant negative relationship between perceived age dissimilarity and positive attributions ($\beta = -.34, p < .05$) and empathy ($\beta = -.41, p < .05$). This finding supports Hypothesis 3a because perceived work-style dissimilarity moderated the effect of perceived age dissimilarity on perspective taking such that there was a stronger negative effect of perceived age dissimilarity on positive attributions and empathy when perceived work-style dissimilarity was low. Consequently, the findings do not support Hypothesis 3b.

Discussion

The findings of the current study make a significant contribution to the literature on dissimilarity within teams. First, they show that perceived dissimilarity affects a fundamental aspect of social interaction, namely perspective taking. Furthermore, because a great deal of research has shown that perspective taking enhances citizenship behaviors (e.g., Fecteau et al., 2000) and more collaborative and task-focused approaches to conflict (e.g., Corcoran-O'Connell & Mallinckrodt, 2000; Sessa, 1996), the negative effect we found between perceived dissimilarity and perspective taking might explain why dissimilarity can reduce citizenship behaviors (Chattopadhyay, 1999; Kizilos, Pelled, & Cummings, 1996; Riordan & Weatherly, 1999b) and enhance conflict (e.g., Pelled, 1997; Pelled, Eisenhardt, & Xin, 1999); that is, our results suggest that lack of perspective taking might underlie the negative effect that dissimilarity has on team functioning. This is important because research so far has not tended to investigate the possible mechanisms by which diversity negatively affects teamworking (Lawrence, 1997). In addition, by identifying lower perspective taking as an important outcome of dissimilarity, the current study suggests a way by which dissimilarity effects on team functioning might be mitigated. As we elaborate shortly, efforts can be made to enhance team member perspective taking.

Second, our findings demonstrate that consideration of dissimilarity effects should go beyond simple surface-level effects and consider the effect of such dissimilarity under varying levels of deep-level dissimilarity. Our findings thus support those of others (e.g., Harrison et al., 1998; Jehn et al., 1999; Riordan & Weatherly, 1999b) in suggesting that too much emphasis to date might have been placed on observable differences, rather than more latent differences. However, our findings go further than this and suggest that our theorizing needs to be more sophisticated than at present if we are to understand how dissimilarity works in teams. More specifically, the results of the current study support the contention that types of dissimilarity do not work in isolation but rather interact in their prediction of outcomes (e.g., Lau & Murnighan, 1998).

Third, our results allow us to distinguish between the theories that predominantly drive relational demography research. Although intergroup and similarity attraction theories are typically represented as predicting the same effects of dissimilarity (Riordan, 2000; Vecchio & Bullis, 2001), we have focused in this article on where a distinction can be made between their predictions on individual outcomes. We found that perceived workstyle dissimilarity moderated the effect of perceived age dissimilarity on

perspective taking such that there was a stronger negative association of perceived age dissimilarity on perspective taking when perceived work-style dissimilarity was low. This is in accordance with intergroup relations theory, which suggests that threats to the distinctiveness of a social identification category will increase the degree of in-group bias–out-group discrimination that occurs between in- and out-groups. Our results therefore suggest that low perceived work-style dissimilarity (i.e., perceived similarity in terms of work style) threatens team members' social identification in terms of age, thereby leading to less perspective taking between in- and out-group members. In supporting intergroup relations theory, our findings do not find support for the alternative suggestion based on the similarity attraction paradigm that types of similarity (or dissimilarity) will have a cumulative effect, as in Lau and Murnighan's (1998) faultlines view. Consequently, our findings suggest that intergroup relations theory is better able to explain the effects of dissimilarity than similarity attraction theory, and in doing so help us better understand why dissimilarity might affect teamworking.

Our findings also contribute to the existing literature on perspective taking by showing that an important antecedent of team member perspective taking is similarity. To date, the focus of most research on the antecedents of perspective taking has been on dispositional variables (e.g., Davis, 1983). Of the little attention given to situational factors within the work context, perspective-taking studies have mostly focused on practices that enhance the degree of interaction between parties (Hinds, 2000; Parker & Axtell, 2001). The current study suggests that interaction alone might not be enough in the context of diverse teams, or that special efforts might be needed to facilitate the type of interaction required in these contexts.

The results of the current study also have important implications for managers, particularly with regard to assumptions behind some forms of diversity training. One approach to diversity training is to demonstrate that although people are demographically different, there is still a lot of "common ground" between people. The results of the current study, however, suggest that there might be limiting factors and conditions under which these tactics do not work. Although the direct effects that we found between perceived work-style dissimilarity and perspective taking would suggest, as Riordan and Weatherly (1999b) do, that organizations should try to increase the degree to which individuals perceive themselves to be similar in work style to other team members, the interaction effects suggest that if there is also surface-level diversity, such an action can have no beneficial effect and in some instances might create an opportunity for this dissimilarity to have detrimental effects on team interaction. Future research would, therefore, do

well to investigate the conditions under which different approaches to diversity management are effective.

Another implication relates to perspective-taking training. Studies have shown that it is possible to increase levels of empathy through training (e.g., Crabb, Moracco, & Bender, 1983; Goldstein & Michaels, 1985). For example, Eisenberg and Miller (1987) reported on several studies that demonstrated it was possible to train young children to enhance their perspective taking, using techniques such as role reversal and role-taking. Marangoni et al. (1995) also found that providing individuals with feedback about their empathic accuracy enhanced their ability to accurately assess other's perspectives, and some preliminary evidence indicated that the effect of the feedback training generalized to other targets. Therefore, the negative effects of dissimilarity might be managed effectively by providing perspective taking training for team members.

As far as we are aware, the current study is the first to link dissimilarity and perspective taking within teams. Nonetheless, the findings we report should be interpreted in light of the limitations of the study. First, the current study is cross-sectional and so cannot rule out the possibility that perspective taking leads to perceived work-style similarity. Longitudinal tests of our hypotheses would therefore be an important next step for future research in this area. Second, all of our measures were self-report, so percept-percept bias is a possibility. In terms of the main effect of work-style dissimilarity on perspective taking, this is an issue that needs to be addressed in future research. Nevertheless, we are confident that this is not a major threat to our results regarding perceived age dissimilarity because there was no main effect for this variable. Rather, the results pertain to a moderated effect, and although percept-percept bias increases the chances of detecting main effects, it decreases the chances of detecting interaction effects (Wall, Jackson, Mullarkey, & Parker, 1996). Third, perceived age dissimilarity was measured using a single-item. Although this is usual in measures of dissimilarity (e.g., Cleveland & Shore, 1992; Kirchmeyer, 1995; Maurer et al., 2003; Riordan & Weatherly, 1999b), single-item measures are generally thought of as less reliable. It would therefore be beneficial for future research to explore ways of constructing multiple-item age dissimilarity scales.

Fourth, although we deliberately investigated perceived dissimilarity because of its theoretical importance, it would be interesting for future research to establish whether the same relationships exist for actual dissimilarity. For example, one problem with using perceived dissimilarity is that it is possible that there were unmeasured confounding variables, such as particular personality traits (e.g., agreeableness) that affect one's perceptions of

dissimilarity and the outcome variable of perspective taking. Finally, in the current study, we focused specifically on perceived age and work-style dissimilarity. In doing so we set the current study within a context in which age was the only visible demographic characteristic that substantially differentiated team members. We felt that this was important, as it enabled us to ensure that our investigation of the interaction between age- and work style-level dissimilarity was not confounded by the existence of multiple types of surface-level dissimilarity. However, it would be interesting for future research to investigate other types of dissimilarity, in terms of other types of demographic dissimilarity (e.g., gender and ethnicity) and less task-related aspects of deep-level dissimilarity.

In conclusion, the current study suggests that perceived dissimilarity is associated with lower within-team perspective taking and, in accordance with intergroup relations theory, shows that perceived work-style dissimilarity moderates the effect of perceived age dissimilarity on perspective taking; that is, there was a significant negative effect of perceived age dissimilarity on positive attributions and empathy when work-style dissimilarity was perceived to be low. Although there are a number of important directions for future research that would improve on and extend the current study, the importance of our findings are twofold. First, they demonstrate the importance of considering perspective taking within relational demography research. Second, by focusing on where a distinction can be made between the predictions of the theories that predominantly drive relational demography research, we further theoretical understanding of the effects of relational demography.

Appendix

Results from Principal Components Analysis (Pattern Matrix) for Each of the Scales

Item	F1	F2	F3
Work-style dissimilarity			
Are similar in terms of outlook and values	.84		
See things in much the same way	.87		
Are alike in a number of areas	.77		
Handle problems in a similar way	.83		
Think alike in terms of coming up with a similar solution	.91		
Analyze problems in a similar way	.89		
Positive team member attributions			
My teammates are doing the best they can, given the circumstances			.70

(continued)

Appendix (continued)

Item	F1	F2	F3
If my teammates make mistakes, it's usually not their fault			.63
My teammates work just as hard as I do			.79
Team member empathy			
I feel concerned for my teammates if they are under pressure		.72	
It pleases me to see my teammates doing well		.82	
I understand the problems my teammates experience		.81	
I can relate to my teammates when things go wrong		.79	

Note: Loadings that were lower than .16 are not shown.

Note

1. Past research has investigated and found asymmetrical age effects. For example, Chattopadhyay (1999) found that age dissimilarity had a greater negative effect on citizenship behavior among older workers. However, because perspective taking is not a visible behavior, but rather an unseen affective and cognitive response, we did not expect such asymmetrical effects to occur in the current study. Hierarchical regression analyses conducted to test for asymmetrical age effects supported our contention. Age did not interact with perceived age dissimilarity in predicting positive attributions and empathy ($\beta = -.003$, *ns*; $\beta = -.001$, *ns*; respectively).

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