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### **Nothing Succeeds Like Moderation: A Social Self-Regulation Perspective on Cultural Dissimilarity and Performance**

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**ABSTRACT**

Addressing inconsistencies in relational demography research, we examine the relationship between cultural dissimilarity and individual performance through the lens of social self-regulation theory, which extends the social identity perspective in relational demography with the analysis of social self-regulation. We propose that social self-regulation in culturally diverse teams manifests itself as performance monitoring (i.e., individuals' actions to meet team performance standards and peer expectations). Contingent on the status associated with individuals' cultural background, performance monitoring is proposed to have a curvilinear relationship with individual performance and to mediate between cultural dissimilarity and performance. Multilevel moderated mediation analyses of time-lagged data from 316 members of 69 teams confirmed these hypotheses. Cultural dissimilarity had a negative relationship with performance monitoring for high cultural status members, and a positive relationship for low cultural status members. Performance monitoring had a curvilinear relationship with individual performance that became decreasingly positive. Cultural dissimilarity thus was increasingly negatively associated with performance for high cultural status members, and decreasingly positively for low cultural status members. These findings suggest that cultural dissimilarity to the team is not unconditionally negative for the individual but in moderation may in fact have positive motivational effects.

*Key Words:* relational demography, status, individual performance, self-regulation

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on Cultural Dissimilarity and Performance

Cross-cultural teams in which people with different cultural backgrounds work together towards a common goal (Kirkman & Shapiro, 2005) have become an integral part of organizational life across the globe (Earley & Gibson, 2002). Despite their potential benefits to an organization's ability to innovate and compete in international markets, culturally diverse teams pose a major challenge to the performance of the culturally dissimilar people who work in them (van Knippenberg & Schippers, 2007; Williams & O'Reilly, 1998). Effective team member performance depends on more than just paying attention to the task at hand (Hackman, 1987); receiving help and support from peers (van der Vegt, Bunderson, & Oosterhof, 2006), and being able to harness their unique task-relevant information and expertise (Brodbeck, Kerschreiter, Mojzisch, & Schulz-Hardt, 2007) are critical too. What is difficult even under the most favorable of circumstances becomes even more challenging when a team member is culturally different from peers (e.g., Chatman, Polzer, Barsade, & Neale, 1998; Chattopadhyay, 1999). One may therefore expect that culturally dissimilar people in teams show poorer individual performance (e.g., Brodbeck, Guillaume, & Lee, 2011; Chatman & Flynn, 2001; Joshi, Liao, & Jackson, 2006).

To understand the influence of cultural dissimilarity (i.e., individual level differences between team members in terms of their cultural background; Tsui, Egan, & O'Reilly, 1992) on individual performance, research in relational demography (i.e., demographic dissimilarity to coworkers) has predominantly relied on the perspective provided by social identity and self-categorization theory (Tajfel & Turner, 1986; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). While social identity and self-categorization theory could be taken to suggest that cultural dissimilarity undermines team member social integration and leads to greater uncertainty about how to behave and what to expect from peers (Hogg & Terry,

2000), the relational demography literature has focused on social integration as the only mechanism for predicting a negative effect of cultural dissimilarity on individual performance (for reviews, see Chattopadhyay, Tluchowska, & George, 2004b; Joshi, Liao, & Roh, 2011; Riordan, 2000). Yet, the evidence does not support this social integration account of cultural dissimilarity and performance. A recent meta-analysis found that there is substantial unexplained variation in the effects of cultural dissimilarity on performance, and that social integration does not mediate these effects (Guillaume, Brodbeck, & Riketta, 2012).

Among the possible reasons for the inconsistent findings for the cultural dissimilarity-performance relationship is that minority and majority cultural backgrounds are associated with social status (Chattopadhyay et al., 2004b). Being culturally dissimilar to fellow team members may have different effects for individuals with a higher status cultural background (in Western countries a majority White background) than for individuals with lower status cultural backgrounds (in Western societies a minority cultural background; e.g., Brodbeck et al., 2011; Chattopadhyay, 1999; Joshi et al., 2006; Tsui et al., 1992). Building on social identity theory (Tajfel & Turner, 1986), the argument here is that because people are motivated to enhance their self-esteem and build a positive self-image, they are less likely to identify with a team that has a higher number of low status members. This implies that dissimilarity for low status members facilitates, and for high status members undermines, social integration and in turn individual performance (Chattopadhyay et al., 2004b). Although a focus on cultural status as a moderator helps to address inconsistencies in findings on social integration, it does not sufficiently capture the relationship between cultural dissimilarity and performance (cf. Brodbeck et al., 2011; Joshi et al., 2006). Moreover, a focus on status as a moderator in and of itself does not address the fact that the favored reading of social integration as the mediating process in the cultural dissimilarity – performance relationship is

not supported. The state of the science thus points to two major challenges: developing a model that more successfully predicts how cultural dissimilarity is related to individual performance, and better capturing the mediating process in this relationship.

The current study was designed to address these challenges. To do so, we shift the emphasis away from social integration as the key mediating process, and ground our analysis in the uncertainty reduction perspective in the social identity approach (Hogg & Terry, 2000), and its recent development in relational demography by Chattopadhyay, George, and Ng (2011). The uncertainty reduction perspective holds that cultural dissimilarity is associated with uncertainty about how to behave to meet team expectations and performance requirements. We propose that understanding how team members cope with this uncertainty is key to explaining how cultural dissimilarity affects performance. To address this issue, we extend the social identity perspective on relational demography with insights from social self-regulation theory (Abrams, 1994). Social self-regulation theory integrates the social identity approach with knowledge gleaned from research on self-regulation, and we propose that social self-regulation to cope with the uncertainty induced by cultural dissimilarity mediates the influence of cultural dissimilarity on individual performance.

Based on the literature on self-regulation (Bandura, 1991; Karoly, 1993), and self-regulation in teams (DeShon, Kozlowski, Schmidt, Milner, & Wiechmann, 2004; Marks, Mathieu, & Zaccaro, 2001), we propose that the form of social self-regulation that is of particular relevance here is *performance monitoring*. Performance monitoring is defined as an individual-level process by which an individual tracks progress towards goal attainment in reference to the standards and expectations of others in the team context. Because self-regulatory behavior becomes less effective when pursued excessively (Karoly, 1993), we propose that performance monitoring benefits performance but increasingly less so at higher levels of performance monitoring – a curvilinear relationship. Integrating this social self-

regulation analysis with relational demography analyses of the status associated with cultural background, we further propose that cultural status moderates the relationship between dissimilarity and performance monitoring because status affects the motivation to reduce team-related uncertainty through performance monitoring. As can be seen in Figure 1, our reconsideration of the mediating process thus results in an understanding of the relationship between cultural dissimilarity and performance as not only contingent on status, but also as curvilinear rather than linear, and mediated by performance monitoring.

This social self-regulation model of the cultural dissimilarity-performance relationship makes two notable contributions to the relational demography literature. First, by extending the social identity perspective with insights from social self-regulation theory, we are able to account for unresolved issues in the relationship between cultural dissimilarity and performance. The shift in emphasis to social self-regulation further answers calls to identify strategies by, and conditions under which, people cope successfully with their dissimilarity and the uncertainty that is associated with it (Chattopadhyay et al., 2011). Second, by establishing that the relationship between cultural dissimilarity and performance is curvilinear rather than linear (and contingent on cultural status), we make clear that dissimilarity to the team is not unconditionally negative, but in moderation may have positive motivational effects. These insights open new directions for theory and research to advance our understanding of cultural dissimilarity in the workplace.

Insert Figure 1 about here

## **THEORETICAL BACKGROUND AND HYPOTHESES**

### **Cultural Dissimilarity and Status**

The term cultural background reflects that members of the same ethnic group belong to a socioculturally distinct collectivity that has its roots in common ancestry and cultural heritage (Kenny & Briner, 2007), which may or may not coincide with country of origin,

nationality, and race (Kirkman & Shapiro, 2005). Thus, cultural dissimilarity is an individual level concept that captures the extent to which an individual is different from other team members in terms of their cultural background (Tsui et al., 1992). Cultural background is among the most salient social categories in organizations and people often distinguish themselves from others on the basis of cultural differences (e.g., Chatman et al., 1998; Chattopadhyay, 1999; Chattopadhyay, George, & Lawrence, 2004a; Tsui et al., 1992).

Relying on social identity and self-categorization theory (Tajfel & Turner, 1986; Turner et al., 1987), the tendency to differentiate people on the basis of salient social categories such as cultural background is an important starting point for research in relational demography to capture the effects of cultural dissimilarity on individuals' attitudes and behavior (cf. Riordan, 2000). In its most basic form, a social identity analysis is taken to suggest that people are biased in favor of their own cultural group and tend to hold stereotype-based beliefs that it is more pleasant and easier to interact and work with people that have the same cultural background (Kooij-de Bode, van Knippenberg, & van Ginkel, 2008). As a result, people tend to be more socially integrated into teams to which they are more culturally similar – both psychologically (e.g., commitment, identification) and behaviorally (e.g., citizenship behavior, absenteeism). By implication, individuals would presumably also be more motivated and able to perform well the more similar they are in terms of cultural background to their fellow team members.

Straightforward as this proposition may seem, it is not supported by the evidence (Guillaume et al., 2012; see also Riordan, 2000). A key complicating factor here is the status that cultural background is associated with (Chattopadhyay et al., 2004b). In the West, it is quite consistently the native White majority that is accorded higher status than other ethnic groups, including Non-White as well as immigrant White (e.g., Brodbeck et al., 2011; Chattopadhyay et al., 2004a; Joshi et al., 2006). Cultural dissimilarity is thus associated with

status differences for the comparison between the (high status) majority and (lower status) cultural minorities (Chattopadhyay et al., 2004b). Research in relational demography has recognized that such status differences associated with cultural background fulfill an important moderating role: cultural dissimilarity is negatively related to social integration for individuals with high status cultural background, but far less so for individuals with low status cultural background. Tsui et al. (1992) found that with greater cultural dissimilarity, Whites were more likely to withdraw psychologically from their work groups (as was evident in reduced commitment, more absences, and lower intention to stay), whereas no such effects were found for Non-Whites. Similarly, Chattopadhyay (1999) reported that White employees but not Non-White employees experienced lower organization-based self-esteem, had poorer peer relations, and were less likely to engage in organizational citizenship behaviors when they were more culturally dissimilar. Chattopadhyay et al. (2004a) observed comparable moderating effects in the prediction of self-prototypicality and prototype valence.

However, when it comes to the relationship between cultural dissimilarity and performance, the evidence for a moderating effect of status is equivocal. Brodbeck et al. (2011) found no interaction of status and cultural dissimilarity on performance. Joshi et al. (2006) distinguished two aspects of performance and found a status by cultural dissimilarity interaction for one performance aspect but not for the other. Part of the issue in explaining these equivocal findings may be that we should look for more complex, higher-order moderation (cf. Brodbeck et al., 2011; Joshi et al., 2006), but we propose that we should start by reconsidering the nature of the interactive influence of status and cultural dissimilarity.

Research in relational demography has understood the moderating role of status drawing from social identity theory's self-esteem hypothesis and the social integration processes implied by this hypothesis (Brodbeck et al., 2011; Chattopadhyay et al., 2004b; Joshi et al., 2006). The argument here is that because team members attribute the status of



members to the team as a whole; all other things being equal, a team with a higher percentage of members from high status cultural backgrounds will have higher status. Because the fulfillment of a desire for a positively evaluated (i.e., high status) social identity is seen as one of the key drivers of group identification (Tajfel & Turner, 1986), cultural dissimilarity may thus have markedly different effects on social integration for individuals with high status and low status cultural backgrounds. For individuals with a high status cultural background experiencing cultural dissimilarity, the perceived low status of the team may encourage disengagement from the team. In contrast, for individuals with a low status cultural background, cultural dissimilarity may motivate social integration because of the team's high status.

An important problem with the analysis of the cultural dissimilarity-performance relationship is that meta-analytic evidence speaks against the mediating role of social integration (Guillaume et al., 2012; see also Riordan, 2000). This is consistent with evidence that performance affects social integration more than the other way around, and that performance is a function of task commitment rather than interpersonal attraction or group pride (Hackman, 1987). There is also evidence that minority status and lack of belongingness to a work group can sometimes increase individual motivation to contribute to the effectiveness of the team, presumably in order to invest in their self-worth and work on a way to either get out of the team or to improve their personal standing in the team (e.g., Sleebos, Ellemers, & de Gilder, 2006). Moreover, Mullen (1987) showed that whereas numerical minority status may increase individual motivation to meet the performance standards of their work group, individuals in such positions often find it difficult to cope with the pressure on their performance and the behavior that results from their heightened visibility.

Thus, even though there is a clear case to predict that cultural dissimilarity has status-contingent effects on social integration, there is far less of a case that social integration

mediates the relationship between cultural dissimilarity and performance – and no clear case as to what the relationship between dissimilarity and performance would look like. This begs the question which process mediates the relationship between cultural dissimilarity and performance as well as what that relationship can be expected to be. We propose that the answer to this question is found in an analysis extending the social identity framework by integrating insights in uncertainty reduction (Hogg & Terry, 2000) and social self-regulation (Abrams, 1994).

### **Social Self-Regulation and Uncertainty-Reduction**

More recent developments in social identity research have documented how the desire to reduce uncertainty is a key motive in the psychology of group membership (Hogg & Terry, 2000). Feeling certain about oneself and other people renders interactions with others meaningful, and gives confidence about what to expect from them and how to behave; it allows people to understand, predict, and control their social environments. For this reason, people are typically sensitive to indications of group-normative expectations and requirements to reduce uncertainty in group interaction.

Introducing these insights into relational demography research, Chattopadhyay et al. (2011) outlined how cultural dissimilarity invites uncertainty. With increasing dissimilarity it is less clear how to behave to meet team expectations and performance requirements. Not only are such expectations and requirements less clear and consensually shared in culturally diverse teams (Chattopadhyay et al., 2011), for more culturally dissimilar individuals it is also harder to detect and interpret norms of culturally diverse groups (Chatman, 2010). Moreover, culturally dissimilar individuals often lack the experience and knowledge to act on such expectations and requirements (Vorauer, 2006), and may therefore experience more uncertainty about how to interact with peers and what to expect from them (Gudykunst & Nishida, 2001). This uncertainty is likely to be particularly salient in diverse teams, because

culturally dissimilar team members frequently encounter greater pressures to adjust their actions to task, social, and situational demands (Mullen, 1987), establish trust, earn others' respect, gain access to valuable information, and receive social support (Flynn, Chatman, & Spataro, 2001), as well as to present a favorable impression of themselves that matches peer values of social desirability and admired traits (Vohs, Baumeister, & Ciarocco, 2005). Chattopadhyay et al.'s (2011) analysis therefore suggests that an important issue in understanding the effects of cultural dissimilarity is how culturally dissimilar individuals deal with these uncertainties.

We propose that this issue gets to the core of the relationship between cultural dissimilarity and performance, and that an analysis in terms of social self-regulation is particularly suited to address this question. Social self-regulation refers to the ways in which individuals regulate their behavior to meet the demands of social situations (Abrams, 1994; Mullen, 1987; Sassenberg & Wolfin, 2008). According to social self-regulation theory (Abrams, 1994), self-regulatory processes modulate and direct action when individuals try to coordinate their behavior with people belonging to a different social category, or when they have difficulties discerning group norms. Social self-regulation aids people in clarifying group expectations and requirements, and in selecting courses of action that reflect these expectations and requirements. We propose that the key to explaining the effects of cultural dissimilarity on performance lies in identifying those social self-regulatory behaviors that capture how members regulate their behavior vis-à-vis team expectations and standards.

The self-regulation literature discusses various psychological sub-functions by which self-regulation is enacted, such as goal setting (Locke & Latham, 1990), goal orientations (Vandewalle, 1997), and feedback seeking (Ashford, 1986), but self-monitoring has been identified as one of the most fundamental ingredients of effective self-regulation in performance contexts (Bandura, 1991; Karoly, 1993). Individuals who monitor their

performance clarify goals, track differences between goals and performance, and determine how to respond (Bandura, 1991). Analyses of self-regulation in teams have similarly linked team members' performance to how much they track their progress towards goal accomplishment (Marks et al., 2001) and monitor the effectiveness of their actions (DeShon et al., 2004) in light of team standards and other members' expectations. Extending these insights to the field of relational demography, we propose that the uncertainty culturally dissimilar individuals face in teams may inspire performance monitoring to cope with uncertainty about their own functioning vis-à-vis team standards and expectations.

As we elaborate in the sections that follow, further development of this understanding in terms of social self-regulation points to two complexities in the relationship between cultural dissimilarity and performance. First, whereas uncertainty induced by cultural dissimilarity may inspire performance monitoring to determine and meet team expectations and requirements, it will only do so to the extent that individuals are motivated to meet such expectations and requirements. We propose that cultural status is therefore an important moderator of the dissimilarity – performance monitoring relationship, because individuals with a low status cultural background will be more motivated to meet these expectations and requirements than individuals with a high status cultural background. Second, because performance monitoring becomes increasingly less effective at higher levels, its influence on performance is curvilinear rather than linear. The former hypothesis is well-aligned with earlier analyses of the moderating role of cultural status even when it points to a different mediating variable. The latter hypothesis, however, is an important departure from these earlier analyses that extends and develops relational demography theory by painting a different picture of the relationship between cultural dissimilarity and performance.

### **Cultural Dissimilarity, Cultural Status, and Performance Monitoring**

Based on research in relational demography we suggest that high and low cultural status group members differ in their motivation to monitor their performance when their dissimilarity increases because they are likely to experience different types of uncertainty. In line with Chattopadhyay et al. (2011) we argue that when cultural dissimilarity increases low status individuals are likely to experience more *norm uncertainty* motivating them to monitor their performance whereas high status individuals are likely to experience more *instrumental uncertainty* demotivating them to monitor their performance. Norm uncertainty thereby refers to the extent to which individuals are unclear about how to behave in order to meet peer expectations and team performance standards. Instrumental uncertainty is defined as the degree to which individuals feel unsure about whether their team is able to achieve its goals and provide them with desirable outcomes linked to the achievement of these goals.

Arguments in relational demography grounded on status characteristics theory (Ridgeway, 2001) suggest that people in teams use status cues such as cultural background to judge others' competence and infer from the proportion of high status versus low status members to what extent the team is able to accomplish its tasks and provide them with desirable outcomes, such as rewards, recognition, and positive implications for self-image (Chattopadhyay et al., 2011). Because for high status individuals cultural dissimilarity implies a greater proportion of low status team members this will likely result in less favorable competence evaluations of their peers and the team as a whole and will thus lead to more instrumental uncertainty. We argue that this in combination with the lower likelihood of self-enhancement in lower status groups (Tajfel & Turner, 1986) will discourage high status individuals from monitoring their performance as their dissimilarity increases. These arguments are in line with (social) self-regulation theory which suggests that less favorable outcome expectations demotivate self-regulation (Karoly, 1993). Indeed, empirical research has shown that high cultural status members are likely to experience more instrumental

uncertainty but not more norm uncertainty (Chattopadhyay et al., 2004a); they are also more likely to withdraw from their team the more dissimilar they are (e.g., Chattopadhyay, 1999; Chattopadhyay et al., 2004a; Tsui et al., 1992). Because performance monitoring reflects self-regulation in achievement contexts to meet team performance expectations and requirements, the implication of these considerations is that cultural dissimilarity should discourage performance monitoring for individuals with a high status cultural background.

Low cultural status individuals on the other hand have been found to experience less instrumental uncertainty when their cultural dissimilarity increases (Chattopadhyay et al., 2004a). The higher proportion of high status members in such teams likely leads them to evaluate the competence of their peers and their team more favorably. As a result they can be expected to feel less uncertain about whether their team would be able to achieve its goals and provide them with the desired outcomes linked to the achievement of these goals. In addition to the greater opportunities for self-enhancement in higher status groups, this should motivate low status individuals to contribute to the effectiveness of their work group when their cultural dissimilarity increases (Chattopadhyay et al., 2004b). This motivation is likely to manifest itself in more performance monitoring because low status individuals are likely to be less sure about whether their predominantly high status peers will accept them, and what they have to do in order to gain their acceptance (Vorauer, 2006). This is likely to result in greater concerns for peer expectations and team performance standards, and hence should be reflected in greater performance monitoring. Empirical evidence supports the idea that for low cultural status individuals cultural dissimilarity engenders norm uncertainty and motivates them to conform to team expectations and requirements (e.g., Chattopadhyay et al., 2004a), even though this may not necessarily result in deeper social integration (e.g., Chattopadhyay, 1999; Tsui et al., 1992). Taken together these arguments suggest that with

greater dissimilarity low status individuals should become more motivated to meet team performance expectations and requirements and thus monitor their performance more.

*Hypothesis 1: Cultural status moderates the relationship between cultural dissimilarity and performance monitoring: with greater cultural dissimilarity, high cultural status team members monitor their performance less, whereas low cultural status team members monitor their performance more.*

### **The Curvilinear Effect of Performance Monitoring on Individual Performance**

Up to a point, performance monitoring will facilitate individual performance in teams. Performance monitoring yields information about the self and (culturally dissimilar) others that renders one's interactions with them more predictable (Vorauer, 2006), increases the flexibility and adaptability of team members' behaviors, and mobilizes effort (Karoly, 1993), enhances planning and problem solving (Schmeichel, Vohs, & Baumeister, 2003), and enables adjustments to social and interpersonal demands (Baumeister, 1982). At first blush, one may thus expect that the relationship between performance monitoring and individual performance is positive and linear. However, self-regulation theory outlines that giving too much priority to self-regulation leads to self-regulation failure. Self-regulation depletes cognitive resources and when pursued excessively may backfire by taking away too many resources from goal-directed activities (Karoly, 1993).

Research shows for instance that overly monitoring one's behavior in the hope of maximizing performance impairs speed and accuracy on simple tasks (Baumeister, 1984), information processing on complex tasks (Beilock, Kulp, Holt, & Carr, 2004), and the ability to present oneself favorably in social situations (Pontari & Schlenker, 2000). Self-regulation is also found to be a limited resource that becomes increasingly depleted the more individuals engage in multiple self-regulatory activities, such as engaging simultaneously in impression management and problem solving (Vohs et al., 2005), or monitoring another person's behavior while working on an intellectual task (Schmeichel et al., 2003). Whereas high levels of self-regulation may thus not only have diminishing returns but even be detrimental to

performance, such detrimental effects may be less likely for performance monitoring in teams. In teams people who show high levels of concern for performance standards and other team members' expectations are likely to suffer less from social exclusion and feel more accountable to others (Marques, Abrams, Paez, & Martinez-Taboada, 1998), both of which have been found to eliminate decrements in self-regulation (Baumeister, DeWall, Ciarocco, & Twenge, 2005). We therefore predict that performance monitoring has diminishing returns at higher levels where its positive influence on performance will taper off.

*Hypothesis 2: Performance monitoring has a decreasingly positive curvilinear relationship with individual performance.*

### **The Moderated Mediating Role of Performance Monitoring**

With Hypothesis 1 and 2 in place, we can advance our moderated mediation model of cultural dissimilarity and individual performance. Cultural dissimilarity lowers performance monitoring for high cultural status individuals and increases performance monitoring for low cultural status individuals. These influences on performance monitoring subsequently affect individual performance with stronger influences in the range from low to moderate performance monitoring than for higher levels of performance monitoring. The result is a curvilinear relationship between cultural dissimilarity and individual performance, moderated by cultural status, and mediated by performance monitoring.

Cultural dissimilarity has an increasingly negative indirect effect on performance for high cultural status individuals through a negative effect of cultural dissimilarity on performance monitoring and a decreasingly positive effect of performance monitoring on performance. For high cultural status individuals, performance monitoring will be highest for low cultural dissimilarity. For these relatively high levels of performance monitoring, differences in performance monitoring as a function of cultural dissimilarity are less impactful. As performance monitoring becomes lower with increasing cultural dissimilarity, however, the negative influence on performance of lower performance monitoring becomes



increasingly visible. Thus, with increasing cultural dissimilarity, individuals with a high status cultural background are increasingly unconcerned with meeting the performance standards and expectations of their team, and their performance suffers increasingly.

In contrast, cultural dissimilarity has a decreasingly positive indirect effect on individual performance for low cultural status individuals through a positive effect of cultural dissimilarity on performance monitoring and a decreasingly positive effect of performance monitoring on individual performance. For low cultural status individuals, greater cultural dissimilarity invites more performance monitoring. Up to a moderate level of performance monitoring the benefits of this self-regulation invited by dissimilarity will be quite marked. At higher levels of dissimilarity, however, when performance monitoring reaches high levels, the benefits of performance monitoring gradually taper off. Thus, with increasing cultural dissimilarity, individuals with a low status cultural background are increasingly concerned with meeting the performance standards and expectations of their team, and their performance benefits accordingly but increasingly less so as the downsides of high levels of self-regulation increasingly cancel out the positive influence of performance monitoring.

*Hypothesis 3: For high cultural status individuals performance monitoring mediates an increasingly negative curvilinear relation between cultural dissimilarity and performance, whereas for low cultural status individuals performance monitoring mediates a decreasingly positive curvilinear relation between cultural dissimilarity and performance.*

## METHODS

### Sample

Participants were 316 upper-level undergraduates studying business administration or related degrees (e.g., Marketing, Finance) at a renowned international business school based in the UK. They worked as part of a two semester long business simulation course, in one of 69 four to five member teams. Average age was 20 years, 47% were female, and 27% were born outside the UK. Fifty-seven percent had cultural backgrounds other than White-British, including 29% Indian and Pakistani, 19% Chinese, and 9% others (i.e., Albanian, Australian,

Canadian, Danish, Dutch, French, German, Italian, Japanese, Kazakhstani, Kuwaiti, Nigerian, Portuguese, Russian, South African, Southern Korean, Thai, Zimbabwean).

### **Procedure**

EUROCAR<sup>®</sup> (Orange, 2005), a realistic and complex computer simulation of the European car industry, was used. Students form a company's board for their decision making and compete against other teams. In the current setting, teams attended ten weekly one-hour lectures and, with up to six other teams, another ten one-hour tutorials, in which they learned and practiced how to write a business plan and run the simulation. There was one lecturer, and 21 tutorials that were run by 11 different tutors. After 10 weeks the teams had to orally present and submit their business plans. As of week 12, teams participated in the simulation and competed in six biweekly one-hour sessions with the other teams in their respective tutorial groups. Every other week teams attended a one-hour tutorial where they received a standardized report about their company's performance in the previous simulation session. The report had to be analyzed under their tutor's supervision, and a plan developed and agreed upon to be implemented in the next simulation session. To complete these various tasks, teams were also required to meet outside of formal teaching hours. Student assessment consisted of two team tasks (week 10: business plan and business plan presentation – 40% of the final mark; week 24: team report and net profit in the simulation – 25% of the final mark), and one individual task (week 24: a business report – 35% of the final mark). There was also a prize of £250 (approx. US\$ 400) for the team with the highest net profit in the simulation.

The university's office assigned participants on a random basis to their team with two conditions in mind: at least one high-scoring student was assigned to each team, and teams were composed to be as gender-balanced as possible. Because we did not find any significant differences between teams in members' prior performance,  $F(1, 68) = 1.19, ns.$ , and gender  $F(1, 68) = 0.47, ns.$ , we concluded team composition with regards to these two variables was

systematic, and we therefore did not control for average team member prior performance or gender dissimilarity in any of our analyses. Questionnaires to measure performance monitoring were distributed in week 12 and week 22. These dates were chosen to assure that the teams had already completed one full team development cycle (presentations and business plans were due during week 10), and to allow us to make stronger claims regarding the directionality of our results. Overall, 82% of those approached returned their questionnaire, resulting in a final sample of 261 individuals and 68 teams. To assess whether this subsample was representative, we compared respondents' and non-respondents' prior performance, their individual performance, their cultural status dissimilarity scores, and the distribution of White British versus Non-White British. No differences were found for prior performance,  $t(314) = 1.65$ , *ns.*, individual performance,  $t(314) = 1.04$ , *ns.*, cultural dissimilarity,  $t(316) = -0.88$ , *ns.*, and the distribution of White British versus Non-White British,  $\chi^2[316] = 1.51$ , *ns.* These results suggest that the subsample was representative.

These teams provided a highly suited sample to test our hypotheses, because the sample covered the entire range of possible dissimilarity scores for both high cultural status and low cultural status individuals. This can rarely be attained in organizational settings where high cultural status employees typically find themselves in the numerical majority and low cultural status employees in the numerical minority (Tonidandel, Avery, Bucholtz, & McKay, 2008). Moreover, the sample allowed us to obtain a relatively "color blind" objective performance measure of individual performance, and to control for individual members' competence and performance capabilities, which is very difficult, if not impossible, to do in an organizational setting. These teams also worked like many cross-cultural teams in organizations on a common task for a fixed duration, and were embedded in a wider context in which they had to interact with other teams and with various other people outside of their team (such as tutors, clerical staff, and lecturers). We would therefore expect, just like previous research in

relational demography and team diversity using student samples and business simulations (Chatman et al., 1998; Chattopadhyay et al., 2004a; Flynn et al., 2001; van der Vegt et al., 2006), that the interpersonal dynamics that occurred in these culturally diverse student teams are comparable to those that occur in cross-cultural teams in organizations.

## Measures

***Cultural background, cultural status, and cultural status dissimilarity.*** Cultural background data for all team members ( $n = 316$  including both respondents and non-respondents) and data on group size were retrieved from university files. The university registers the cultural background of each student who enrolls using a classification system (see earlier sample section for details on categorization). To triangulate these data, we included a question on cultural background with the same instructions as used by the university in the questionnaire that was distributed in week 10. In all of the cases included in our sample, responses given to the university matched the ones we received.

Research on relational demography suggests that people frequently differentiate self from others on the basis of a dichotomous higher-order category rather than multiple subcategories, likely so because membership in different subcategories is often perceived to be associated with the same high or low status (Brodbeck et al., 2011: White-British and Non-White British; Chattopadhyay, Finn, & Ashkanasy, 2010: nurses and doctors; Chattopadhyay et al., 2004a: Australians and Non-Australians; Joshi et al., 2006: White Americans and Non-White Americans). Moreover, research in contexts similar to the one here (Brodbeck et al., 2011; Callan & Gallois, 1987; Chattopadhyay et al., 2004a) shows that White British, referred to as *Anglo*, and Non-White British, referred to as *Non-Anglo*, distinguish each other often on the basis of communication pattern, values, appearance, and behaviors as well as status that historically coincide with an Anglo or Non-Anglo cultural background rather than race (Caucasian versus Non-Caucasian), nationality (British versus

Non-British) or country of birth (UK versus Non-UK). We argue, therefore, that the distinction between Anglo (including White Australian and White Canadian) and Non-Anglo cultural background constitutes the most salient social categorization in the current context. Testing our hypotheses with alternative forms of categorization, specifically on the basis of race (Caucasian versus Non-Caucasian), country of birth (UK versus Non-UK), and finer categorizations in terms of cultural background (e.g., Anglo, Indian and Pakistani, Chinese, and others), corroborated this; none of these alternative categorizations had any predictive validity. Moreover, as we outline below, we only found that the Anglo versus Non-Anglo categorization was associated with status differences but not any of the other categorizations.

Accordingly, we calculated *cultural dissimilarity* for Anglo as the number of Non-Anglo members divided by the team size, and for Non-Anglo as the number of Anglo members divided by the team size (cf. Bacharach, Bamberger, & Vashdi, 2005; Chattopadhyay et al., 2010; Chattopadhyay, George, & Shulman, 2008; Joshi et al., 2006). This measure correlated  $r = .95$  with the commonly-used Euclidean distance measure (cf. Tsui et al., 1992). The higher the cultural dissimilarity score, the more different the member is from his or her peers in terms of the status associated with his or her cultural background. Because we could retrieve non-responding members' cultural background from university files, none of the cultural dissimilarity scores of the 261 remaining participants were affected by missing data. Cultural dissimilarity ranged from 0 to 0.8 covering the whole range of theoretically possible values for both Anglo and Non-Anglo. We represented *cultural status* with a dummy variable that assigned high cultural status to Anglo and low cultural status to Non-Anglo. This is in line with work that shows that in achievement settings in which Anglo represent the dominant culture, Anglo and Non-Anglo alike ascribe higher status to Anglo on the basis of shared expectations about task competence (Callan, Gallois, & Forbes, 1983).

To check whether cultural background was indeed associated with status differences in

the current context, we calculated a status score on the basis of team members' ratings of each other's perceived task-relevant competence, and tested whether the ratees' cultural background predicted it. We chose this indirect approach over more direct measures of status to avoid social desirable responses. The literatures on status characteristics theory (Ridgeway, 2001) and relational demography (Chattopadhyay et al., 2011) support the ideas that individuals assess status in task-oriented contexts implicitly on the basis of cultural expectations for competence, and that perceptions of status and competence are highly correlated with each other. Based on the manual of the EUROCAR<sup>®</sup> business simulation (Orange, 2005) we identified four areas of competencies (i.e., marketing, accounting, production, and human resource management) considered to be relevant for teams to succeed in the simulation. We gave each team member a short description for each of these areas of competence and then asked them to rate each of their peers' performance capabilities in any of these four areas on a one-item scale (ranging from 0 = poor to 100 = excellent). These ratings were collected confidentially during week 12 and 22 in the group's bi-weekly tutorial. We calculated the status scores for each individual by first averaging across peer ratings within each area of competence, and then averaging these scores across each area of competence. This was conducted separately for time 1 and time 2. To assess whether missing data were a problem, we used Dawson's (2003) selection rate ( $[N-n]/Nn$ ; whereby  $n$  = number of available ratings for a respective ratee and  $N$  = number of possible ratings for a respective ratee). We did not have to exclude any of the ratings because all had values of .32 or lower at both time 1 and time 2 suggesting that each of the ratings correlated with the true score at .95 or higher. Reliabilities for the overall status scores (time 1/2: Cronbach's  $\alpha$  = .89/.89) and average interraterreliability (time 1/2:  $r_{wg}$  = .99/.99) were also adequate. Finally, we set up a multilevel regression model for longitudinal data in MLWiN (Rasbash, Charlton, Browne, Healy, & Cameron, 2009) and tested whether cultural background predicted the

status scores at time 1 and time 2 when controlling for team members' prior performance, the other control variables included in our main analysis, and team and tutorial membership (for details on measurement see next section). Our findings corroborated the idea that in the current context cultural background was associated with status differences, as Anglo received significantly higher ratings than Non-Anglo ( $\gamma = 4.16, t = 3.25, p < .01$ ). These perceptions were at odds with team members' actual prior performance, for which we did not find any differences between Anglo ( $\bar{x} = 61.65$ ) and Non-Anglo ( $\bar{x} = 60.27; t = 1.23, ns.$ ). Moreover, the time covariate did not indicate any changes between time 1 and time 2 ( $\gamma = 1.49, t = 0.81, ns.$ ), suggesting that the differences in status perceptions remained stable for the duration of the business simulation.

***Performance monitoring.*** Four items were developed based on our definition of performance monitoring and the extant literature on team level monitoring (cf. DeShon et al., 2004; Marks et al., 2001). Participants were instructed to report to what extent they engaged in one of the following behaviors in their team: "I monitor my actions regularly", "I check on how satisfied others are with my performance", "I check how well I perform", and "I check whether my activities produce the expected results". Items were answered on a 7-point Likert-type scale ranging from 1 = "strongly disagree" to 7 = "strongly agree". Cronbach's alpha was .76 in week 12 and .78 in week 22. To assess whether performance monitoring changed over time, we ran a multilevel regression model for longitudinal data that controlled for team and tutorial membership. The time varying covariate did not indicate any changes between time 1 and time 2,  $\gamma = 0.04, t = 0.66, ns.$  Therefore, we averaged performance monitoring across time 1 and time 2 to test our hypotheses. To assess whether performance monitoring should be treated as an individual or team level variable we computed ICC(1) and ICC(2). Results indicated that performance monitoring should be treated as an individual level variable,  $ICC(1) = .04, F(68, 195) = 1.14, ns.; ICC(2) = .12.$

To validate the performance monitoring scale we conducted another study, in which we administered the scale along with Scheier and Carver's (1985) public and private self-consciousness questionnaires, and four weeks later an individual team member effectiveness measure. Items for individual team member effectiveness, defined as the extent to which a team member is able to establish an effective working relationship with his or her peers that contributes positively to his or her learning and well-being (Hackman, 1987), were adapted from Gladstein (1984), Edmondson (1999), and van Dick et al. (2008). Respondents were 240 MBA and Master Degree in business (e.g., Marketing, Accounting, HRM, etc.) students at the above mentioned university who worked in forty culturally diverse teams as part of a ten-week organizational behavior course (56% female; 13% White British, 28% Indian and Pakistani, 15% Chinese, 44% European or other backgrounds; 20% British nationals; average age was 28 years). We expected performance monitoring as a form of social self-regulation to be positively associated with public but not private self-consciousness. This is because self-consciousness is often seen as a key indicator of increased self-regulation (Karoly, 1993), and because people high in public but not private self-focus have been found to become attentive to public standards and to display socially desirable behaviors towards members of a salient out-group (Abrams, 1994). In line with our second hypothesis, we further expected performance monitoring to have a decreasingly positive curvilinear relationship with individual effectiveness.

All responses were assessed on 5-point scales and demonstrated adequate reliabilities with Cronbach's  $\alpha$  .76 for performance monitoring, .75 for private self-consciousness, .83 for public self-consciousness, and .80 for individual effectiveness. Corroborating the scales' discriminant and convergent validity, a confirmatory factor analysis showed that a model in which performance monitoring, public self-consciousness, private self-consciousness, and individual effectiveness items loaded on four different factors ( $\chi^2 = 255.36 [146], p < .01$ ,



CFI = .93, SRMR = .06, RMSEA = .06) had a better fit than one in which these items loaded on only one factor ( $\chi^2 = 1106.01$  [152],  $p < .01$ , CFI = .38, SRMR = .14, RMSEA = .16).

Moreover, performance monitoring was, as expected, positively and significantly correlated with public self-consciousness ( $r = .36$ ,  $p < .01$ ), but not with private self-consciousness ( $r = .08$ , *ns.*). Speaking to the predictive validity of the performance monitoring scale and in line with Hypothesis 2, performance monitoring had a curvilinear relationship with individual effectiveness ( $\gamma = -.05$ ,  $t = -2.2$ ,  $p < .05$ ,  $\Delta R^2 = .04$ ), in a hierarchical linear model set up in MLWiN (Rasbash et al., 2009) that controlled for team membership and the linear main effect of performance monitoring.

***Individual performance.*** Individual performance was assessed on the basis of a business report individuals had to submit two weeks after the end of their course (i.e., in week 24), and in which they had to analyze the operations, functioning, and performance of their company during the business game and include recommendations. To get access to relevant data and validate their analysis and recommendations, individuals had to attend tutorials and team meetings regularly, and interact with their peers frequently. Such a measure has been employed in previous studies on relational demography and individual performance (e.g., Flynn et al., 2001), and we believe it captures an important performance aspect of what managers do (cf. Mintzberg, 1973). Course tutors assessed the report following a blind-marking model (i.e., they were unaware of the students' identities) on a cumulative grade point average scale ranging from 0% to 100% (> 70% = A, 60%-69% = B, 50%-59% = C, 40%-49% = D, < 40% = fail). All assessments had been approved by an exam board before we retrieved students' marks with their consent from the university's database.

***Control variables.*** To control for individuals' prior performance, we used students' year 1 Grade Point Average (GPA). GPA was measured on a scale ranging from 0% to 100%. Because performance monitoring and individual performance can vary as a function of

team size due to its effects on social loafing and social facilitation (Mullen, 1987), team size was also included as a control variable. To account for a person's experience with the host country's dominant culture, we controlled for country of birth (0 = Non-UK, 1 = UK). We also controlled for potential cross-level effects of team cultural diversity on individual performance using Blau's Index (cf. Brodbeck et al., 2011; Harrison & Klein, 2007), because an index like Blau's is most suited for a categorical variable like culture (i.e., alternative measures that could also qualify on conceptual grounds require that the diversity attribute is an interval variable; Harrison & Klein, 2007). Furthermore, we accounted for potential gender effects (0 = female, 1 = male), and controlled for differences in tutor support using dummy coding. Finally, we included the two team performance measures (i.e., business plan and presentation, and team report and net-profit in the simulation) as control variables because we were interested in individual and not team performance.

## RESULTS

Insert Table 1 about here

Descriptive statistics and scale reliabilities are displayed in Table 1.

### **Analytic Approach**

Our theoretical model (see Figure 1) implies a moderated non-linear mediation model (Hayes & Preacher, 2010; see also Preacher, Rucker, & Hayes, 2007) in which the relationship between cultural dissimilarity and performance monitoring is moderated by cultural status (i.e., the first stage of the indirect effect is moderated), and performance monitoring has a curvilinear relationship with individual performance (i.e., the second stage of the indirect effect is curvilinear). Because such a curvilinear relationship is represented by a quadratic term (i.e., performance monitoring squared; performance monitoring  $\times$  performance monitoring; Cohen, Cohen, West, & Aiken, 2003), in terms of statistical testing, the model is equivalent to a moderated mediation model in which both stages of the indirect

effect are moderated (i.e., model 5 in Preacher et al., 2007): the first stage (i.e., cultural status dissimilarity on performance monitoring) by cultural status (i.e., cultural dissimilarity  $\times$  cultural status), and the second stage (i.e., performance monitoring on individual performance) by performance monitoring (i.e., performance monitoring  $\times$  performance monitoring: the quadratic term). That is, while conceptually the aim is to capture a curvilinear relationship and not a moderated relationship, the statistical testing of our model essentially amounts to the two-stage moderated mediation model advanced by Preacher et al. (2007).

Because the data structure in the sample violated the assumption of independence (15% of the variance in our dependent variable individual performance was accounted for by team and tutorial membership;  $ICC = 0.15, \chi^2[2] = 13.73, p < .01$ ), we used the multilevel moderated mediation approach by Bauer, Preacher, and Gil (2006). We tested Hypotheses 1 and 2 by using a multivariate three-level model with the mediator performance monitoring (M) and the criterion individual performance (Y) as outcome variables (see Table 2). Control variables, the independent variable of cultural dissimilarity (X), and the moderator variable of cultural status (Z) were included as fixed effects in each of the two equations predicting M and Y. Both equations further included a separate intercept which was allowed to vary within each equation across individuals, groups, and tutorials, as well as between each equation. The equation predicting M further included the interaction term between cultural dissimilarity and cultural status ( $X \times Z$ ) in order to test Hypothesis 1 (i.e., the interactive effect of  $X \times Z$  on M). In Table 2, a significant interaction effect of cultural dissimilarity and cultural status ( $X \times Z$ ) on performance monitoring (M) indicates support for Hypothesis 1. The equation predicting Y included in addition the linear (M) and the quadratic term ( $M \times M$ ) of performance monitoring. A significant quadratic effect of performance monitoring ( $M \times M$ ) on individual performance (Y) in Table 2 indicates support for Hypothesis 2. Older approaches to mediation testing suggest that this equation should control for the mediated

direct effect too, and if applicable, its related lower order effects (cf. Hayes, 2009). This equation therefore also included the interaction between the curvilinear effect of cultural dissimilarity and cultural status ( $X \times X \times Z$ ), the quadratic term of cultural dissimilarity ( $X \times X$ ), and the interaction between cultural dissimilarity and cultural status ( $X \times Z$ ).

Insert Table 2 about here

To test our third hypothesis, we first assessed whether performance monitoring mediated the non-linear effect of cultural dissimilarity on individual performance that was moderated by cultural status by multiplying the moderated first stage effect ( $X \times Z \rightarrow M$ ) with the curvilinear second stage effect ( $M \times M \rightarrow Y$ ) and calculating 95% Monte Carlo confidence intervals by means of bootstrapping with 20,000 repetitions (Bauer et al., 2006). Mediation can be inferred if the confidence interval does not include 0. Because of the moderated first stage effect and the curvilinear second stage effect in our model, there are not one but multiple single indirect effects operating (Hayes & Preacher, 2010), which are contingent on the level of the independent variable cultural dissimilarity ( $X$ ) and the moderator variable cultural status ( $Z$ ). To estimate these so called conditional instantaneous indirect effects, we employed the strategy proposed by Hayes and Preacher (2010; A. F. Hayes, personal communication, August, 17, 2011). Accordingly, indirect effects were estimated by multiplying the first stage and second stage effects for high status and low status team members at low, medium, and high levels of cultural dissimilarity. To test the significance of these effects, we once more calculated 95% Monte Carlo confidence intervals by using bootstrapping with 20,000 repetitions as suggested by Bauer et al. (2006).

All hypotheses were tested in MLWiN (Rasbash et al., 2009). To assess the incremental amount of variance explained in the two outcome variables  $Y$  and  $M$ , we calculated the proportional reduction in the sum of all (i.e., residual, group, and tutorial) variance parameters within each equation (Snijders & Bosker, 1999). To generate deviance statistics,

we compared the log-likelihood statistics of the models in Table 2 with the respective saturated models. In all our analysis continuous variables were grand-mean centered in order to reduce multicollinearity (Cohen et al., 2003). Moreover, the slopes of all our variables were fixed because they did not vary across groups and tutorials or improve model fit in any of the models presented in Table 2.

### **Hypotheses Tests**

Hypothesis 1 proposed that the relationship between cultural dissimilarity and performance monitoring is moderated by cultural status. Specifically, we suggested a negative effect of cultural dissimilarity on performance monitoring for high cultural status team members and a positive effect for low cultural status team members. As can be seen in Table 2, the interactive effect of cultural dissimilarity and cultural status on performance monitoring ( $X \times Z \rightarrow M$ ) is significant,  $\gamma = -2.86$ ,  $t = -3.49$ ,  $p < .01$ ,  $\Delta R^2 = 0.11$ . To facilitate interpretation, we plotted and probed the simple slopes for the two values of cultural status (0 = low cultural status, 1 = high cultural status) as recommended by Bauer et al. (2006). In line with our hypothesis, Figure 2 shows a positive slope for low cultural status members,  $\gamma = 0.81$ ,  $t = 1.98$ ,  $p < .05$ , and a negative slope for high cultural status members,  $\gamma = -2.06$ ,  $t = -3.61$ ,  $p < .01$ . Thus, Hypothesis 1 was supported.

Insert Figure 2 about here

Hypothesis 2 posits a decreasingly positive curvilinear relationship of performance monitoring with performance. Supporting Hypothesis 2, the quadratic effect of performance monitoring on performance ( $M \times M \rightarrow Y$ ) in Table 2 is significant,  $\gamma = -1.41$ ,  $t = -2.10$ ,  $p < .05$ ,  $\Delta R^2 = 0.02$ , and as can be seen in Figure 3, performance monitoring has a decreasingly positive curvilinear relationship with performance. This was further substantiated when we probed the curve at low (-1 s.d.), medium ( $x, \bar{\phantom{x}}$ ), and high levels (+1 s.d.) of performance monitoring as recommended by Bauer et al. (2006), which showed that the curve was indeed

more positive at low,  $\gamma = 4.20, t = 3.77, p < .01$ , than at medium levels of performance monitoring,  $\gamma = 2.01, t = 2.95, p < .01$ , and eventually leveled off at high levels of performance monitoring,  $\gamma = -0.18, t = -0.13, ns$ .

Insert Figure 3 about here

Hypothesis 3 proposed that for high cultural status members, performance monitoring mediates an increasingly negative curvilinear relationship between cultural dissimilarity and individual performance, and for low cultural status members a decreasingly positive curvilinear relationship. In line with Hypothesis 3, performance monitoring mediated the status-contingent curvilinear relationship between cultural dissimilarity and individual performance ( $\gamma = 4.04$ , 95% confidence interval: LL = 0.21, UL = 9.12). Moreover, as shown in Figure 4, the conditional indirect effects of cultural dissimilarity on individual performance via performance monitoring become increasingly negative for high cultural status members and decreasingly positive for low cultural status members. Probing of these conditional indirect effects with the strategy advanced by Hayes and Preacher (2010) further confirmed these findings. As can be seen in Table 3, the indirect effect for high cultural status members is not significant at low levels of cultural dissimilarity (-1 s.d.), and becomes increasingly negative at medium (x, -) and high levels (+1 s.d.) of cultural dissimilarity. In contrast, the indirect effect for low cultural status members becomes decreasingly positive and eventually non-significant when cultural dissimilarity increases. Thus, Hypothesis 3 was fully supported.

Insert Table 3 and Figure 4 about here

## DISCUSSION

Performing effectively in teams is particularly challenging when members are culturally dissimilar (Brodbeck et al., 2011; Chatman & Flynn, 2001; Joshi et al., 2006). Our goal in this study was to develop theory to capture how and when culturally dissimilar people in teams may perform effectively. Addressing prominent inconsistencies in previous research

findings (cf. Chattopadhyay et al., 2011; Chattopadhyay et al., 2004b), we developed a social self-regulation model that integrates the uncertainty reduction perspective and social self-regulation theory within an extended social identity framework. The model explains the effects of cultural dissimilarity on individual performance through individuals' motivation to reduce uncertainty in the team context by means of social self-regulation (i.e., performance monitoring), which we proposed is a function of the interaction of cultural dissimilarity and cultural status; high cultural status members monitor their performance less whereas low cultural status members monitor their performance more with greater cultural dissimilarity. This self-regulation perspective suggests that performance monitoring has a decreasingly positive curvilinear relationship with performance, and thus implies a curvilinear relationship between cultural dissimilarity and performance, which becomes increasingly negative for high cultural status individuals and decreasingly positive for low cultural status individuals.

### **Theoretical Implications**

The support for our social self-regulation model makes a number of contributions to the literature on relational demography. Research in relational demography has been guided by social identity theory's self-esteem hypothesis, which emphasizes social integration-related variables as key outcomes and mediating variables of demographic dissimilarity and the self-enhancement motive as their main driver (Chattopadhyay et al., 2004b). This approach has yielded important insights, but it has proven unable to account for the inconsistent findings in research on relational demography and individual performance (Guillaume et al., 2012; see also Riordan, 2000). Because individuals have been found to be willing (but not always able) to contribute to the effectiveness of their work group even when their social integration is low (Mullen, 1987; Sleebos et al., 2006), we took an alternative approach and explained the effects of cultural dissimilarity on performance in terms of social self-regulation processes and the motivation to reduce uncertainty in addition to the desire for a positive self-image.

This integration of social self-regulation theory (Abrams, 1994) and the uncertainty reduction perspective (Hogg & Terry, 2000) in an extended social identity framework suggests a conceptual shift in focus from social integration to behavioral self-regulation, and supports the idea that uncertainty reduction is an equally important motive in explaining relational demography effects (Chattopadhyay et al., 2011). Our development of the social self-regulation and uncertainty reduction perspective in relational demography suggests a more complex but also a better supported account of the interplay of cultural dissimilarity and cultural status in performance dynamics within teams.

Our findings indicate that there is almost no relationship between cultural dissimilarity and individual performance at low levels of cultural dissimilarity for high cultural status members, and at high levels of cultural dissimilarity for low cultural status members. This however, is exactly the most likely data range encountered in relational demography research due to the strong correlation in practice between social status and numerical representation; in the contexts where most relational demography research is conducted (i.e., Northern America, Western Europe, and Australia) the high status culture group (i.e., native Whites) typically are also the majority group in the research population (cf. Guillaume et al., 2012). One implication of our findings thus is that one should take the composition of the sampled population into account when predicting and explaining the influence of relational demography. Moreover, research needs to gather (more) samples which cover the whole range of theoretically possible values of cultural dissimilarity for both high and low status cultural groups, or else it will be difficult, if not impossible, to fully uncover the effects of relational demography (cf. Harrison & Klein, 2007).

A directly related, and equally important, implication is that with current trends in the changing demographic composition of societies and the workforce, the observed relationships between relational demography and performance may also change. Whereas it may be true



that to date the high status culture group is also typically the majority group, this picture may be markedly different in years to come. There is a growing number of geographic regions in which the high status culture group is no longer the majority group in an absolute sense but rather the largest of many cultural groups. Increasingly, contexts will emerge in which high cultural status members find themselves in culturally more dissimilar positions whereas low cultural status members find themselves in culturally more similar positions (cf. Toossi, 2009; Wrench, 2007). Our research suggests that through status-contingent influences on individual performance monitoring this may also express itself in changing relationships between cultural dissimilarity and individual performance. Our model, and the curvilinear relationships it identifies, may thus be particularly valuable in predicting and understanding the influence of these changes in demographics and workforce composition in years to come.

The proposition that status is a factor in the influence of relational demography is not unique to our study (e.g., Tsui et al., 1992), but studies mapping the status-contingent nature of the influence of demographic dissimilarity are in the minority in relational demography research. Our study thus arguably provides valuable further evidence that not all demographic (cultural) dissimilarity is created equal. Moreover, our findings point out that a fuller explanation of the nature of these influences can be obtained by building models in relational demography that complement the self-esteem hypothesis with the uncertainty reduction perspective (cf. Chattopadhyay et al., 2011) alongside the social self-regulation perspective within an extended social identity framework. In doing so, the current study does not only add to the case in favor of taking status into account in relational demography research, but also extends this earlier work by shifting the emphasis from self-enhancement to uncertainty reduction, and from social integration to social self-regulation. On the basis of the support for our analysis, we would therefore argue that the current findings not only place a premium on studying relational demography as a status-contingent influence, but also on adopting a social

self-regulation perspective on uncertainty reduction in exploring this influence.

Our findings speak to cultural dissimilarity only, but it may be valuable to extend our model to other demographic attributes. The nature of our research sample precluded the test of these relationships, but gender, and age too have status connotations. Status characteristics theory (Ridgeway, 2001) and research in relational demography (Chattopadhyay et al., 2011; Chattopadhyay et al., 2004b) suggests that the underlying processes of how people accord status and how accorded status affects behavior in teams are similar across these different bases for of status. Even when cultural background may be a particularly salient status dimension, there is nothing in our analysis that would uniquely apply to cultural background, and an implication of our analysis is that it may similarly account for the influence of gender dissimilarity and age dissimilarity on individual performance. This is a matter for future research, however, because we should also recognize that cultural background, age, and gender each have their unique historical and context-dependent connotations that may imply differential effects (Joshi et al., 2011).

Moreover, whereas status characteristics theory (Ridgeway, 2001) would suggest that our findings should generalize to achieved status characteristics such as background variables reflecting attainments (e.g., position, education, and occupation) as well, other research (Phillips, Rothbard, & Dumas, 2009) would suggest that ascribed status characteristics like demographic attributes engender a stronger influence on status perceptions and thus behavior in work groups, likely so because ascribed status characteristics are more salient and often serve as a backdrop against which one's achieved status is interpreted. That said, we should not forget that the starting point of our analysis was not status but relational demography and cultural dissimilarity. Our study thus does not arbitrarily limit itself to cultural status, but rather brings in insights about status to understand responses to cultural dissimilarity.

Likewise, we may raise the question of whether the current model extends to the study

of behavioral outcomes other than performance, such as citizenship, counterproductive, and ethical behavior. We would argue that our model in principle should extend to behavioral self-regulation targeted at any behavior for which teams would be perceived to have standards and expectations (i.e., as may be the case for such outcomes as citizenship, counterproductive, and ethical behavior). Even so, generalizability of the current findings to other outcomes cannot be taken for granted but should be subject of future empirical testing. The present model provides a useful framework to guide such research efforts.

Our findings also contribute to the literature on (social) self-regulation. Laboratory research consistently shows that excessive self-regulation may be ineffective or even hamper performance (Karoly, 1993). We provide a rare field test of this idea, and are the first to show a decreasingly positive curvilinear relationship between (social) self-regulation and performance. This speaks to the generalizability of these earlier findings and their practical relevance. It also points to differences between earlier findings where individuals worked on short individual tasks, and the current findings concerning individuals working for a prolonged period of time in a team context, in that we did not observe negative effects of extensive self-regulation; a finding we anticipated and attribute to differences between working individually and in a team context where social self-regulation may invite buffers against depletion of cognitive resources. Moreover, past research answered the question of when the social self is regulated, but left unanswered the question concerning how the social self is regulated (Sassenberg & Woltin, 2008). According to our findings, one important mode by which individuals regulate their behavior in teams is by monitoring their performance – conscious efforts to meet performance standards and team expectations.

### **Implications for Practice**

Our research suggests that cultural dissimilarity may be a growing challenge for managerial practice. The current findings imply that culturally diverse teams that are

numerically dominated by high cultural status members are more conducive to both low cultural status and high cultural status individuals' performance. In such teams the dissimilarity of low status members is high, while it is low for high status members. Under such conditions, as we have shown, low status and high status members perform better than when cultural dissimilarity is higher for high status members or lower for low status members. Yet, although such team compositions may in fact be the more probable scenario today, major demographical shifts are under way in the US and elsewhere in the world (cf. Toossi, 2009; Wrench, 2007) that make it ever more likely that high status members will find themselves in more culturally dissimilar positions whereas low status members find themselves in more culturally similar positions. We should be open to the possibility that such demographic shifts are accompanied by a shift in status differentials (e.g., as it loses its majority status, the high status culture group may also partly lose its higher status), but we should not close our eyes to the implications of the current findings that such demographic shifts may demotivate individual performance in culturally diverse teams.

In this respect, our findings point to several possible remedies that may help prevent these negative effects from occurring. Because performance monitoring can be identified as an important process through which cultural dissimilarity affects individual performance, interventions that render performance standards salient and increase team members' expectations regarding each other's performance may be particularly valuable. Promising candidates for such interventions may include managerial practices that clarify goals, provide regular feedback, raise awareness of social expectations, and link performance to valued outcomes, akin to management by objectives (Locke & Latham, 1990) or performance enhancement systems, such as ProMES (Pritchard, 1990). However, as much as these interventions may encourage performance monitoring, they are likely to undermine the effective performance of team members when they overemphasize the importance and

relevance of meeting standards and expectations. As our research shows, paying too much attention to standards and expectations undermines individual performance because of the decreasing performance benefits of performance monitoring at higher levels. The challenge thus is to design interventions that optimize rather than maximize performance monitoring.

Our findings suggest interventions that aid in reducing inequality and status distance to address individuals' concerns for high self-esteem and instrumental outcomes, and interventions that help reduce uncertainty. Leadership, norms, as well as policies, procedures, and practices that clarify acceptable modes of interactions may aid in reducing uncertainty (Chatman, 2010; Chattopadhyay et al., 2011; Guillaume et al., 2013). Creating a culture of respect (Phillips et al., 2009), diversity mindsets (van Knippenberg, van Ginkel, & Homan, 2013), or a climate for inclusion (Guillaume et al., 2013) may help reduce perceptions of status distance by ensuring that all employees feel equally respected and valued. Factors that may facilitate the development of such a culture or climate, and such mindsets include structural changes to the status hierarchy, diversity management practices, leadership, and legislation (Guillaume et al., 2013; Phillips et al., 2009; van Knippenberg et al., 2013); hindrance factors may include unequal access of minorities to training, formal and informal career development, social networks, as well as their underrepresentation at higher levels of the organization, and unfavorable socio-economic conditions (Guillaume et al., 2013; Joshi et al., 2011). We should not, however, forget that changing the status hierarchy is neither easy nor will it necessarily lead to better individual performance. It is not easy because the status associated with demographic categories is often societally endorsed and considered legitimate by most employees regardless of their status (Ridgeway, 2001). It may not lead to better performance because changing the status hierarchy is likely to result in more uncertainty about standards and peer expectations (Chattopadhyay et al., 2011).

### **Limitations and Directions for Future Research**

The current research has some notable strengths, such as a complete set of data for cultural dissimilarity, equal numbers of high cultural status and low cultural status team members, and cultural dissimilarity covering the full range theoretically possible for both high status and low status members. Moreover, unlike prior research on relational demography, we demonstrated (rather than assumed) that cultural background was in fact associated with perceived status differences. Importantly, we also showed that cultural background was, in contrast to these perceived status differences, unrelated to individuals' objective competence and performance capabilities. The current study thus allows for stronger conclusions to be drawn in some respects compared to many other studies in this area (cf. Allen, Stanley, Williams, & Ross, 2007; Bunderson, 2003; Tonidandel et al., 2008). Furthermore, task characteristics, team development stage, and individuals' objective performance capabilities were all controlled for, an objective "color-blind" measure was used to assess performance, and several safeguards against common source and common method bias (e.g., three-wave design, different methods used to operationalize key variables) were in place, all of which speak to the internal validity of our results.

We should note, however, that as usual such benefits come at a price, in this case the reliance on student teams in a business simulation. Although the use of student teams is not uncommon in research in relational demography and diversity (e.g., Chatman et al., 1998; Chattopadhyay et al., 2004a; Flynn et al., 2001; van der Vegt et al., 2006), we should recognize that such samples do not provide evidence regarding causality nor regarding the relationships in organizational practice. It would therefore be valuable if future research would replicate and extend the current findings using experimental designs and data from organizational samples. As always, the proof of the pudding is in the eating, but we would argue that there is ground to expect that the current findings are likely to be corroborated by

both organizational and experimental evidence in that both narrative reviews suggest (van Knippenberg & Schippers, 2007; Williams & O'Reilly, 1998), and a meta-analysis (van Dijk, van Engen, & van Knippenberg, 2012) of the diversity-performance relationship shows, that findings are not affected by whether data are derived from student teams, laboratory experiments, or organizational samples. Further corroborating evidence comes from research where the dissimilarity-performance relationship was examined simultaneously with student teams and teams in an organizational context; these studies showed that there are no differences between the two types of teams (Chatman & Flynn, 2001; Flynn et al., 2001).

Presumably, our results are generalizable to project teams in organizations, which, like the teams studied here, work for a specified amount of time together to accomplish a common task and then disband (Ellis et al., 2003). The findings may also apply to many other team settings, such as committees, think tanks, expert boards, and advice teams, whose main purpose often is to facilitate the exchange of critical information, knowledge, and expertise allowing the participating individuals to subsequently make better informed decisions and accomplish their daily work more effectively (Brodbeck et al., 2007). It is less clear, however, whether our results can be generalized to longer-tenured teams. Some findings suggest that the effects of cultural dissimilarity on performance may become weaker over time because team members are more likely to learn about each other's true performance capabilities, and are therefore less likely to attribute status on the basis of cultural background (Bunderson, 2003). Other research, which is more in line with our finding that individuals attributed status on the basis of cultural background even after 22 weeks on working together, suggests that initial status expectations formed on the basis of demographic attributes reinforce, in a self-fulfilling fashion, behaviors that are consistent with initial status expectations and therefore create an enduring status hierarchy (Ridgeway, 2001). In this regard, it is also worth noting that the first time we measured status was in week 12, at which

point the groups had already completed one full team performance cycle. Thus, it may well be the case that during the first weeks the effects of cultural background on status perceptions were even stronger. That we still do find effects speaks to the idea that ascribed status often serves as a strong backdrop against which achieved status is interpreted (Phillips et al., 2009).

We conceptualized cultural dissimilarity as an individual level concept and built individual level theory to address the inconsistencies found in the cultural dissimilarity – individual performance relationship. This is in line with the relational demography perspective that conceptualizes demographic dissimilarity at the individual level as an influence on individual work outcomes via individual level processes (cf. Guillaume et al., 2012). This is also corroborated by our findings that identified performance monitoring as an individual level process, and show that the joint effects of cultural dissimilarity and cultural status on performance monitoring and performance only accounted for individual level variance. To rule out alternative cross-level influences we fitted a multilevel model that controlled for a variety of context variables including team cultural diversity. Even so, responding to calls to build multilevel theory that bridges the macro-micro divide, future research may want to examine further boundary conditions of our model at the team, organizational, industry, and even societal level of analysis (Joshi et al., 2011). Our discussion of the measures organizations can take in terms of leadership, climate, culture, and practices to optimize performance monitoring and reduce inequality, status distance, and uncertainty, as well as the factors that may undermine such efforts, may serve as a starting point for identifying these conditions.

It is also instructive to consider the plausibility of an alternative reading of our findings in terms of cultural values rather than status associated with cultural background. Low status individuals in our sample are more likely to come from collectivistic and tight cultures and high status people are more likely to come from individualistic and loose cultures. This has



been linked to the extent to which people conform to norms (Gelfand, Nishii, & Raver, 2006) and are attentive to and affected by other's perceptions (Kim, Cohen, & Au, 2010), and we may raise the question whether this may account for differences in performance monitoring in our study. However, our findings are more difficult to align with such a cultural values perspective, than with our analysis which is grounded in a relational demography framework. There was neither a negative correlation between cultural status and performance monitoring nor a negative main effect of cultural status on performance monitoring in the regression analysis which would have supported the idea that people from collectivistic and tight cultures (i.e., low cultural status individuals) monitored their performance more than those from individualistic and loose cultures (i.e., high cultural status individuals). Moreover, the relational demography perspective we adopted presumes that a dichotomous approach to capturing cultural dissimilarity between individuals (i.e., similar versus different) yields a reasonable proxy for the psychological experience of dissimilarity in cultural diverse teams (i.e., the self-categorization logic here is that the experience of dissimilarity is not linear, but that the categorization as similar versus different is more impactful than the perception of more versus less dissimilarity of others seen as dissimilar based on for instance cultural values). Empirical evidence supports these ideas. In a study on nationality dissimilarity (a specific instantiation of cultural dissimilarity) Tröster and van Knippenberg (2012) demonstrated that the effects of cultural dissimilarity were not contingent on culture. Taken together, we believe that there is substantial evidence supporting our interpretation of the results through the lens of the relational demography framework that has traditionally employed a dichotomous approach. This is of course not to say that we dismiss the validity of the cultural values approach. We would see our work as a starting point for the further in-depth study of how cultural differences affect work outcomes in teams that uses more fine-grained measures of cultural dissimilarity and cultural status as well as seeks contexts in

which the influence of cultural values can be either controlled for or modeled as yet another variable accounting for the effects of cultural dissimilarity on work outcomes.

Finally, it is important to consider the specific context in which we conducted our study; an international business school in the UK in which the White British students are ascribed higher status and other ethnic groups lower status. White British will typically find themselves in the higher status group and Non-White British in the lower status group due to the dominance of the Anglo-Saxon culture across the World (e.g., a White British in an Indian organizational context), and our study context may in that sense be quite representative of a lot of situations, and presumably also generalize with relative ease to similar settings for Caucasians in Northern America, Australia, and elsewhere in Western Europe. By the same token, however, higher status is in a sense “confounded” with White British cultural background, and our study cannot prove that if another cultural group would assume the higher status position (e.g., Japanese in a Japanese organizational context) the same processes would hold, even when this is the implication of our conceptual analysis. Clearly, this is not a caveat unique to our study, but one that by and large holds for all studies of relational demography in which one and the same demographic attribute would be associated with higher status across the board (e.g., Tröster & van Knippenberg, 2012; Tsui et al., 1992). Even so, we believe it would be worthwhile to seek out opportunities to replicate and extend the current findings in contexts where another group other than Caucasians may assume the higher status position.

In a related vein, it is also important to acknowledge that the fact that our analysis of status perceptions corroborates our reliance on a dichotomous distinction between Anglo and Non-Anglo is consistent with an understanding of this dichotomy as a salient categorization, we did not actually assess category salience. Salience is only implied by the consistency between findings and a salience perspective and it would be valuable when future research

would incorporate measures of salience to more firmly establish this reading.

### **Conclusions**

People around the globe find themselves working increasingly in teams in which they are culturally dissimilar from their peers. Our findings suggest that such situations pose different challenges to the effective performance of high cultural status and low cultural status team members. When they become culturally more dissimilar to their peers, high cultural status team members become ever less concerned, whereas low cultural status team members become ever more concerned, with meeting work group performance standards and peer expectations. Because neither having too many, nor too few such concerns, promotes effective individual performance, our results suggest that facilitating moderate levels of performance monitoring holds the key for organizations to unlock the full performance potential of all culturally dissimilar people in teams.

**REFERENCES**

- Abrams, D. 1994. Social self-regulation. *Personality and Social Psychology Bulletin*, 20: 473-483.
- Allen, N. J., Stanley, D. J., Williams, H., & Ross, S. J. 2007. Assessing dissimilarity relations under missing data conditions: Evidence from computer simulations. *Journal of Applied Psychology*, 92: 1414-1426.
- Ashford, S. J. 1986. Feedback-seeking in individual adaptation: A resource perspective. *Academy of Management Journal*: 465-487.
- Bacharach, S. B., Bamberger, P. A., & Vashdi, D. 2005. Diversity and homophily at work: Supportive relations among White and African-American peers. *Academy of Management Journal*, 48: 619-644.
- Bandura, A. 1991. Social cognitive theory of self-regulation. *Organizational Behavior and Human Decision Processes*, 50: 248-287.
- Bauer, D. J., Preacher, K. J., & Gil, K. M. 2006. Conceptualizing and testing random indirect effects and moderated mediation in multilevel models: New procedures and recommendations. *Psychological Methods*, 11: 142-163.
- Baumeister, R. F. 1982. A self-presentational view of social phenomena. *Psychological Bulletin*, 91: 3-26.
- Baumeister, R. F. 1984. Choking under pressure: Self-consciousness and paradoxical effects of incentives on skillful performance. *Journal of Personality and Social Psychology*, 46: 610-620.
- Baumeister, R. F., DeWall, C. N., Ciarocco, N. J., & Twenge, J. M. 2005. Social exclusion impairs self-regulation. *Journal of Personality and Social Psychology*, 88: 589-604.

- Beilock, S. L., Kulp, C. A., Holt, L. E., & Carr, T. H. 2004. More on the fragility of performance: Choking under pressure in mathematical problem solving. *Journal of Experimental Psychology: General*, 133: 584-600.
- Brodbeck, F. C., Kerschreiter, R., Mojzisch, A., & Schulz-Hardt, S. 2007. Group decision making under conditions of distributed knowledge: The information asymmetries model. *Academy of Management Review*, 32: 459-479.
- Brodbeck, F. C., Guillaume, Y. R. F., & Lee, N. L. 2011. Ethnic diversity as a multilevel construct: The combined effects of dissimilarity, group diversity, and societal status on learning performance in work groups. *Journal of Cross-Cultural Psychology*, 42: 1198-1218.
- Bunderson, J. S. 2003. Recognizing and utilizing expertise in work groups: A status characteristics perspective. *Administrative Science Quarterly*, 48: 557-591.
- Callan, V. J., Gallois, C., & Forbes, P. A. 1983. Evaluative reactions to accented English. *Journal of Cross-Cultural Psychology*, 14: 407-426.
- Callan, V. J. & Gallois, C. 1987. Anglo-Australians' and immigrants' attitudes toward language and accent: A review of experimental and survey research. *International Migration Review*: 48-69.
- 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: 749-780.
- Chatman, J. A. & Flynn, F. J. 2001. The influence of demographic heterogeneity on the emergence and consequences of cooperative norms in work teams. *Academy of Management Journal*, 44: 956-974.
- Chatman, J. A. 2010. Norms in mixed sex and mixed race work groups. In J. P. Walsh & A. P. Brief (Eds.), *Academy of management annals*, Vol. 4: 447 - 484. London: Routledge.

- 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., George, E., & Lawrence, S. A. 2004a. 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. 2004b. Identifying the ingroup: A closer look at the influence of demographic dissimilarity on employee social identity. *Academy of Management Review*, 29: 180-202.
- Chattopadhyay, P., George, E., & Shulman, A. D. 2008. The asymmetrical influence of sex dissimilarity in distributive vs. colocated work groups. *Organization Science*, 19: 581-593.
- Chattopadhyay, P., Finn, C., & Ashkanasy, N. M. 2010. Affective responses to professional dissimilarity: A matter of status. *Academy of Management Journal*, 53: 808-826.
- Chattopadhyay, P., George, E., & Ng, C. K. 2011. An uncertainty reduction model of relational demography. In A. Joshi & H. Liao & J. J. Martocchio (Eds.), *Research in personnel and human resource management*, Vol. 30: 219-251. Bingley, UK: Emerald.
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. 2003. *Applied multiple regression/correlation analysis for the behavioral sciences* (3 ed.). Mahwah, NJ: Lawrence Erlbaum.
- Dawson, J. F. 2003. Do we have enough? The accuracy of incomplete data from small groups. *Academy of Management Best Paper Proceedings*.
- DeShon, R. P., Kozlowski, S. W. J., Schmidt, A. M., Milner, K. R., & Wiechmann, D. 2004. A multiple-goal, multilevel model of feedback effects on the regulation of individual and team performance. *Journal of Applied Psychology*, 89: 1035-1056.

- Earley, P. C. & Gibson, C. B. 2002. *Multinational work teams: A new perspective*. Mahwah, NJ: Lawrence Erlbaum.
- Edmondson, A. 1999. Psychological safety and learning behavior in work teams. *Administrative Science Quarterly*, 44: 350-383.
- Ellis, A. P. J., Hollenbeck, J. R., Ilgen, D. R., Porter, C. O. L. H., West, B. J., & Moon, H. 2003. Team learning: Collectively connecting the dots. *Journal of Applied Psychology*, 88: 821-835.
- Flynn, F. J., Chatman, J. A., & Spataro, S. E. 2001. Getting to know you: The influence of personality on impressions and performance of demographically different people in organizations. *Administrative Science Quarterly*, 46: 414-442.
- Gelfand, M. J., Nishii, L. H., & Raver, J. L. 2006. On the nature and importance of cultural tightness-looseness. *Journal of Applied Psychology*, 91: 1225-1244.
- Gladstein, D. L. 1984. Groups in context: A model of task group effectiveness. *Administrative Science Quarterly*, 29: 499-517.
- Gudykunst, W. B. & Nishida, T. 2001. Anxiety, uncertainty, and perceived effectiveness of communication across relationships and cultures. *International Journal of Intercultural Relations*, 25: 55-71.
- Guillaume, Y. R. F., Brodbeck, F. C., & Riketta, M. 2012. Surface- and deep-level dissimilarity effects on social integration and individual effectiveness related outcomes in work groups: A meta-analytic integration. *Journal of Occupational and Organizational Psychology*, 85: 80-115.
- Guillaume, Y. R. F., Dawson, J. F., Priola, V., Sacramento, C. A., Woods, S. A., Higson, H. E., Budhwar, P. S., & West, M. A. 2013. Managing diversity in organizations: An integrative model and agenda for future research. *European Journal of Work & Organizational Psychology*.

- Hackman, J. R. 1987. The design of work teams. In J. W. Lorsch (Ed.), *Handbook of organizational behavior*: 315-342. Englewood Cliffs, NJ: Prentice-Hall.
- Harrison, D. A. & Klein, K. J. 2007. What's the difference? Diversity constructs as separation, variety, or disparity in organizations. *Academy of Management Review*, 32: 1199-1228.
- Hayes, A. F. 2009. Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication Monographs*, 76: 408-420.
- Hayes, A. F. & Preacher, K. J. 2010. Quantifying and testing indirect effects in simple mediation models when the constituent paths are nonlinear. *Multivariate Behavioral Research*, 45: 627-660.
- Hogg, M. A. & Terry, D. I. 2000. Social identity and self-categorization processes in organizational contexts. *Academy of Management Review*, 25: 121-140.
- Joshi, A., Liao, H., & Jackson, S. E. 2006. Cross-level effects of workplace diversity on sales performance and pay. *Academy of Management Journal*, 49: 459-481.
- Joshi, A., Liao, H., & Roh, H. 2011. Bridging domains in workplace demography research: A review and reconceptualization. *Journal of Management*, 37: 521-552.
- Karoly, P. 1993. Mechanisms of self-regulation: A systems view. In L. W. Porter & M. R. Rosenzweig (Eds.), *Annual review of psychology*, Vol. 44: 23-52. Palo Alto, CA: Annual Reviews.
- Kenny, E. J. & Briner, R. B. 2007. Ethnicity and behavior in organizations: A review of British research. *Journal of Occupational and Organizational Psychology*, 80: 437-457.
- Kim, Y.-H., Cohen, D., & Au, W.-T. 2010. The jury and abjurer of my peers: The self in face and dignity cultures. *Journal of Personality and Social Psychology*, 98: 904-916.
- Kirkman, B. L. & Shapiro, D. L. 2005. The impact of cultural value diversity on multicultural team performance. In D. L. Shapiro & M. A. Von Glinow & J. L. Cheng (Eds.),



- Advances in international management: Managing multinational teams*, Vol. 18: 33-67. London: Elsevier.
- Kooij-de Bode, H. J. M., van Knippenberg, D., & van Ginkel, W. P. 2008. Ethnic diversity and distributed information in group decision making: The importance of information elaboration. *Group Dynamics: Theory, Research, and Practice*, 12: 307-320.
- Locke, E. A. & Latham, G. P. 1990. *A theory of goal setting and task performance*. Englewood Cliffs, NJ: Prentice-Hall.
- Marks, M. A., Mathieu, J. E., & Zaccaro, S. J. 2001. A temporally based framework and taxonomy of team processes. *Academy of Management Review*, 26: 356-376.
- Marques, J., Abrams, D., Paez, D., & Martinez-Taboada, C. 1998. The role of categorization and in-group norms in judgments of groups and their members. *Journal of Personality and Social Psychology*, 75: 976-988.
- Mintzberg, H. 1973. *The nature of managerial work*. New York: Harper & Row.
- Mullen, B. 1987. Self-attention theory: The effects of group composition on the individual. In B. Mullen & G. R. Goethals (Eds.), *Theories of group behavior*: 125-146. NY: Springer.
- Orange. 2005. *Eurocar© software and manual*. Upper Heyford, UK: Orange Learning Ltd.
- Phillips, K. W., Rothbard, N. P., & Dumas, T. L. 2009. To disclose or not to disclose? Status distance and self-disclosure in diverse environments. *Academy of Management Review*, 34: 710-732.
- Pontari, B. A. & Schlenker, B. R. 2000. The influence of cognitive load on self-presentation: Can cognitive busyness help as well as harm social performance? *Journal of Personality and Social Psychology*, 78: 1092-1108.
- Preacher, K. J., Rucker, D. D., & Hayes, A. F. 2007. Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate Behavioral Research*, 42: 185-227.

- Pritchard, R. D. 1990. *Measuring and improving organizational productivity: A practical guide*. New York: Praeger.
- Rasbash, J., Charlton, C., Browne, W. J., Healy, M., & Cameron, B. 2009. *MLwiN version 2.1*. Bristol, UK: Centre for Multilevel Modelling University of Bristol.
- Ridgeway, C. L. 2001. Social status and group structure. In M. A. Hogg & S. Tindale (Eds.), *Handbook of social psychology: Group processes*: 352-375. Malden, MA: Blackwell.
- Riordan, C. M. 2000. Relational demography within groups: Past developments, contradictions, and new directions. In K. M. Rowland & G. R. Ferris (Eds.), *Research in personnel and human resources management*, Vol. 19: 131-173. Greenwich, CT: JAI.
- Sassenberg, K. & Woltin, K.-A. 2008. Group-based self-regulation: The effects of regulatory focus. *European Review of Social psychology*, 19: 126 -164.
- Scheier, M. F. & Carver, C. S. 1985. The self consciousness scale: A revised version for use with general populations. *Journal of Applied Social Psychology*, 15: 687-699.
- Schmeichel, B. J., Vohs, K. D., & Baumeister, R. F. 2003. Intellectual performance and ego depletion: Role of the self in logical reasoning and other information processing. *Journal of Personality and Social Psychology*, 85: 33-46.
- Sleebos, E., Ellemers, N., & de Gilder, D. 2006. The paradox of the disrespected: Disrespected group members' engagement in group-serving efforts. *Journal of Experimental Social Psychology*, 42: 413-427.
- Snijders, T. A. B. & Bosker, R. J. 1999. *Multilevel analysis: An introduction to basic and advanced multilevel modeling*. London: Sage.
- Tajfel, H. & Turner, J. C. 1986. The social identity theory of intergroup behavior. In S. Worchel & W. G. Austin (Eds.), *The psychology of intergroup relations*, 2 ed.: 7-24. Chicago: Nelson-Hall.

- Tonidandel, S., Avery, D., Bucholtz, B., & McKay, P. 2008. An alternative explanation for the asymmetrical effects in relational demography research. *Personnel Psychology*, 61: 617-633.
- Toossi, M. 2009. Labor force projections to 2018: Older workers staying more active. *Monthly Labor Review*, 132: 30-51.
- Tröster, C. & van Knippenberg, D. 2012. Leader openness, nationality dissimilarity, and voice in multinational management teams. *Journal of International Business Studies*, 43: 591-613.
- 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., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. 1987. *Rediscovering the social group: A self-categorization theory*. Oxford, UK: Blackwell.
- van der Vegt, G. S., Bunderson, J. S., & Oosterhof, A. 2006. Expertness diversity and interpersonal helping in teams: Why those who need the most help end up getting the least. *Academy of Management Journal*, 49: 877-893.
- van Dick, R., van Knippenberg, D., Hägele, S., Guillaume, Y. R. F., & Brodbeck, F. C. 2008. Group diversity and group identification: The moderating role of diversity beliefs. *Human Relations*, 61: 1463-1492.
- van Dijk, H., van Engen, M. L., & van Knippenberg, D. 2012. Defying conventional wisdom: A meta-analytical examination of the differences between demographic and job-related diversity relationships with performance. *Organizational Behavior and Human Decision Processes*, 119: 38-53.
- van Knippenberg, D. & Schippers, M. C. 2007. Work group diversity. In S. T. Fiske & A. E. Kazdin & D. L. Schacter (Eds.), *Annual review of psychology*, Vol. 58: 515-541. Palo Alto, CA: Annual Reviews.

- van Knippenberg, D., van Ginkel, W. P., & Homan, A. C. 2013. Diversity mindsets and the performance of diverse teams. *Organizational Behavior and Human Decision Processes*, 121: 183-193.
- Vandewalle, D. 1997. Development and validation of a work domain goal orientation instrument. *Educational and Psychological Measurement*, 57: 995-1015.
- Vohs, K. D., Baumeister, R. F., & Ciarocco, N. J. 2005. Self-regulation and self-presentation: Regulatory resource depletion impairs impression management and effortful self-presentation depletes regulatory resources. *Journal of Personality and Social Psychology*, 88: 632-657.
- Vorauer, J. D. 2006. An information search model of evaluative concerns in intergroup interaction. *Psychological Review*, 113: 862-886.
- Williams, K. Y. & O'Reilly, C. A. 1998. Demography and diversity in organizations: A review of 40 years of research. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior*, Vol. 20: 77-140. Greenwich, CT: JAI.
- Wrench, J. 2007. *Diversity management and discrimination: Immigrants and ethnic minorities in the EU*. London: Ashgate.

**TABLE 1**  
**Descriptive Statistics, Inter-Item Reliabilities, and Inter-Correlations<sup>ab</sup>**

Variable	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11
1 Individual Performance	63.76	10.04	-										
2 Performance Monitoring	5.21	0.78	.21**	(.72)									
3 Cultural Dissimilarity	0.41	0.19	.10	-.05	-								
4 Cultural Status <sup>c</sup>	44%		.16*	-.02	.28**	-							
5 Gender <sup>d</sup>	52%		-.14*	-.01	.10	.03	-						
6 UK Birth <sup>e</sup>	73%		.20**	.04	.24**	.54**	.07	-					
7 Prior Individual Performance	60.88	9.03	.26**	-.01	.05	.08	-.01	.08	-				
8 Group Size	4.66	0.47	.13*	-.03	-.04	-.01	-.03	-.09	.03	-			
9 Group Diversity	0.63	0.12	-.14*	.05	.04	-.29**	-.05	-.21**	-.14**	.06	-		
10 Group Performance T1	63.85	8.31	.20**	.01	-.04	-.01	.03	-.07	.14**	.13	-.06	-	
11 Group Performance T2	66.97	8.19	.21**	.01	.09	.09	.02	.01	.23**	.14	-.06	.29*	-

<sup>a</sup>Individual  $n = 261$ ; team  $n = 68$  teams. Correlations between individual and team variables based on biased  $n = 261$ .

<sup>b</sup>Figures in parentheses indicate inter-item reliabilities.

<sup>c</sup>1 = High, 0 = Low.

<sup>d</sup>1 = Male, 0 = Female.

<sup>e</sup>1 = UK, 0 = Non-UK.

\*  $p < .05$ .

\*\*  $p < .01$ .

**TABLE 2**  
**Multilevel Analysis: Joint Effect of Cultural Dissimilarity (X) and Cultural Status (Z) on Performance Monitoring (M), and Curvilinear Effect of Performance Monitoring (M × M) on Individual Performance (Y)<sup>a</sup>**

	Moderated Curvilinear Mediation Model							
	Performance Monitoring (M)				Individual Performance (Y)			
	Hypothesis 1: X × Z → M				Hypothesis 2: M × M → Y			
	Coefficient <sup>b</sup>	s.e.	t	ΔR <sup>2</sup>	Coefficient <sup>b</sup>	s.e.	t	ΔR <sup>2</sup>
Intercept	5.16	0.15	34.40**		62.30	1.97	31.58**	
Controls								
Tutor 1 <sup>c</sup>	-0.08	0.16	-0.50		6.49	1.80	3.60**	
Tutor 2 <sup>c</sup>	-0.05	0.37	-0.14		6.29	4.22	1.49	
Tutor 3 <sup>c</sup>	-0.20	0.17	-1.18		-4.00	1.89	-2.12*	
Tutor 4 <sup>c</sup>	-0.19	0.25	-0.76		0.84	2.66	0.32	
Tutor 5 <sup>c</sup>	0.07	0.16	0.44		-1.61	1.80	-0.89	
Tutor 6 <sup>c</sup>	-0.31	0.21	-1.48		-2.89	2.34	-1.23	
Tutor 7 <sup>c</sup>	0.27	0.23	1.17		4.48	2.61	1.72	
Tutor 8 <sup>c</sup>	0.15	0.28	0.54		2.84	3.20	0.89	
Tutor 9 <sup>c</sup>	0.21	0.27	0.78		-0.58	2.86	-0.20	
Tutor 10 <sup>c</sup>	-0.04	0.23	-0.17		-0.59	2.51	-0.24	
Group Performance (Time 1)	0.00	0.01	0.00		0.13	0.07	1.83†	
Group Performance (Time 2)	0.00	0.01	0.00**		0.08	0.07	1.07	
Group Diversity	2.02	0.64	3.16		-4.32	8.63	-0.50	
Group Size	0.02	0.10	0.20		1.66	1.13	1.47	
Prior Performance	0.00	0.01	0.00		0.19	0.06	3.21**	
UK Birth <sup>d</sup>	0.14	0.13	1.08		3.76	1.37	2.74**	
Gender <sup>e</sup>	-0.02	0.09	-0.22		-2.84	1.02	-2.77**	
<b>X</b>								
Cultural Dissimilarity	0.81	0.41	1.98*		6.79	5.38	1.26	
<b>Z</b>								
Cultural Status <sup>f</sup>	-0.16	0.13	-1.23	.02	2.54	1.76	1.44	

<b>X × Z</b>								
Cultural Dissimilarity × Cultural Status	-2.86	0.82	-3.49**	.11 <sup>h</sup>	-4.74	13.08	-0.36	
<b>X × X</b>								
Cultural Dissimilarity × Cultural Dissimilarity					3.32	19.23	0.17	
<b>X × X × Z</b>								
Cultural Dissimilarity × Cultural Dissimilarity × Cultural Status					-39.06	28.13	-1.39	.32
<b>M</b>								
Performance Monitoring					2.01	0.68	2.95**	.07 <sup>h</sup>
<b>M × M</b>								
Performance Monitoring × Performance Monitoring					-1.41	0.67	-2.10*	.02 <sup>h</sup>
Deviance <sup>g</sup>			2406.61					
Incremental Deviance for X × Z				11.84**				
Incremental Deviance for M × M							4.37*	

<sup>a</sup>Individual  $n = 261$ ; team  $n = 68$ ; tutorial  $n = 21$ .

<sup>b</sup>Unstandardized path coefficients are reported.

<sup>c</sup>1 = Respective tutor, 0 = All other tutors.

<sup>d</sup>1 = UK, 0 = Non-UK.

<sup>e</sup>1 = Male, 0 = Female.

<sup>f</sup>1 = High, 0 = Low.

<sup>g</sup>2 Log Likelihood values reported.

<sup>h</sup>All accounted for by individual level variance.

\*  $p < .05$ .

\*\*  $p < .01$ .

**TABLE 3**  
**Conditional Instantaneous Indirect Effects of Cultural Dissimilarity on Individual Performance via Performance Monitoring for High Cultural Status and Low Cultural Status at High (+1 s.d.), Medium (x,  $\bar{x}$ ), and Low (-1 s.d.) Levels of Cultural Dissimilarity<sup>a</sup>**

	Coefficient <sup>b</sup>	95% Confidence Interval <sup>c</sup>
High Cultural Status		
Cultural Dissimilarity		
High (+1 s.d.)	-5.73	-10.55 to -2.04
Medium (x, $\bar{x}$ )	-3.46	-7.55 to -0.42
Low (-1 s.d.)	-1.20	-6.13 to 3.16
Low Cultural Status		
Cultural Dissimilarity		
High (+1 s.d.)	1.38	-0.08 to 3.66
Medium (x, $\bar{x}$ )	1.72	-0.01 to 4.12
Low (-1 s.d.)	2.06	0.01 to 4.73

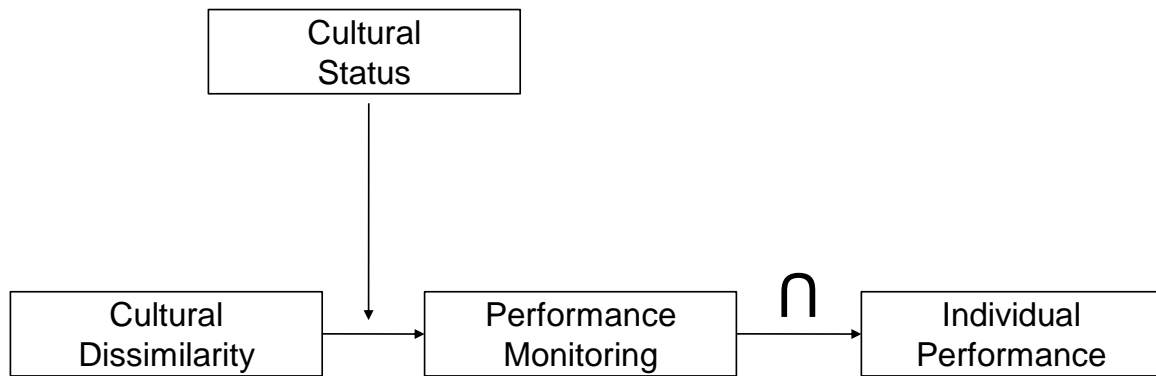
<sup>a</sup>Individual  $n = 261$ ; team  $n = 68$ ; tutorial  $n = 21$ .

<sup>b</sup>Unstandardized path coefficients are reported.

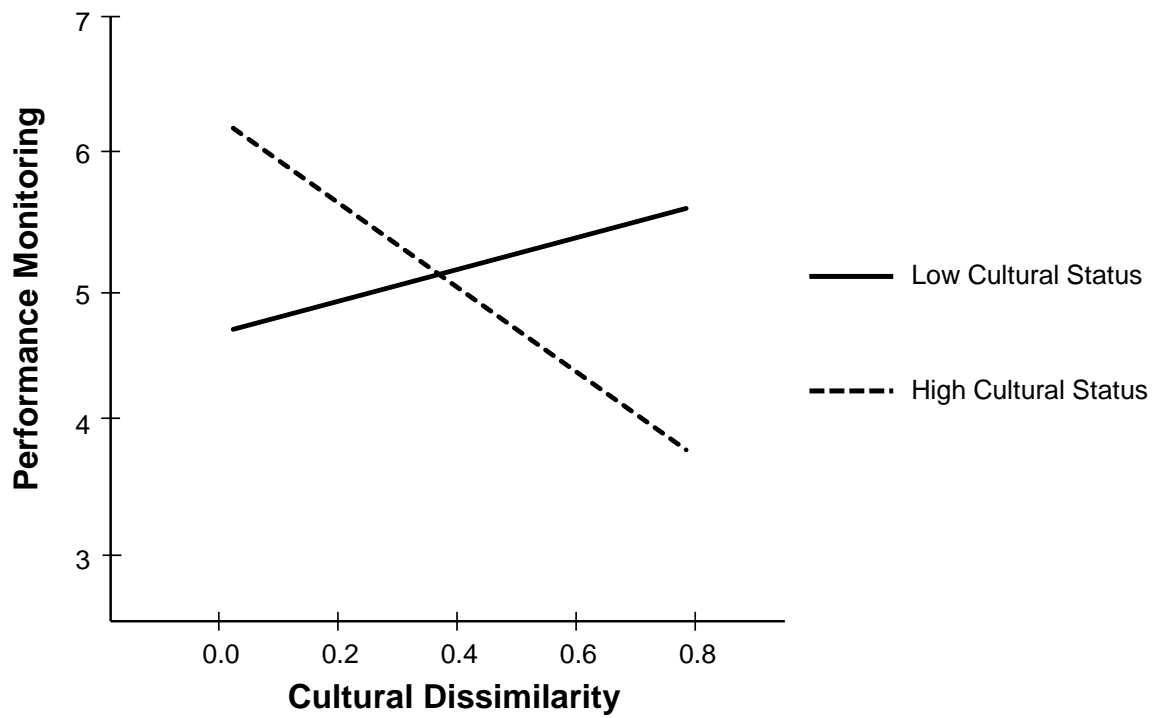
<sup>c</sup>Confidence intervals are based on 20000 Monte Carlo bootstrap estimates.



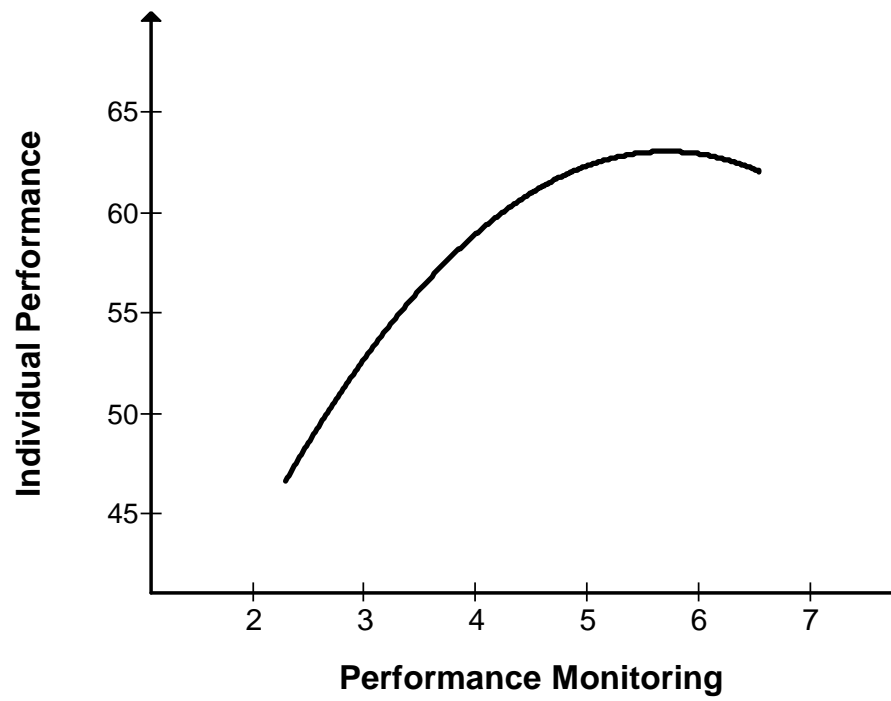
**FIGURE 1**  
**A Social Self-Regulation Model of Cultural Dissimilarity and Performance**



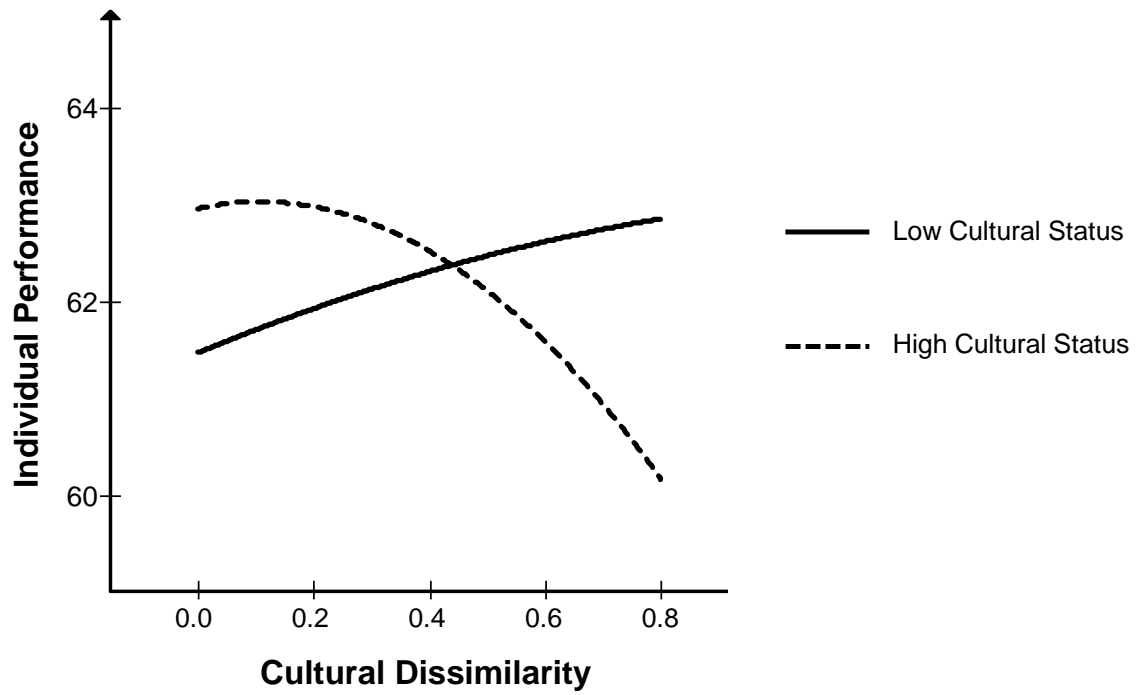
**FIGURE 2**  
**Moderating Effect of Cultural Status on the Relationship between Cultural Dissimilarity and Performance Monitoring**



**FIGURE 3**  
**Curvilinear Relationship between Performance Monitoring and Individual Performance**



**FIGURE 4**  
**Conditional Instantaneous Indirect Effects of Cultural Dissimilarity on Individual Performance via Performance Monitoring for High Cultural Status and Low Cultural Status**



### **BIOGRAPHICAL SKETCHES**

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