RELATIONAL DIVERSITY, SOCIAL INTEGRATION AND INDIVIDUAL EFFECTIVENESS:

A Social Self-Regulation Perspective

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of surface-level relational diversity on individual effectiveness (lower task and contextual performance, higher turnover) but suppressed the overall positive effects of deep-level relational diversity on individual effectiveness.

Delving further into the counterintuitive findings that relational diversity might elicit both positive and negative effects in work groups that act under high levels of interdependence; the second study builds on a social self-regulation framework (Abrams, 1994) and suggests that under high levels of interdependence relational diversity is not one but two things: visibility and separation. Using ethnicity as a prominent example it was proposed that separation has a negative effect on group members' effectiveness leading for those high in visibility and low in separation to overall positive additive effects, while to overall negative additive effects for those low in visibility and high in separation. These propositions were sustained in a sample of 621 business students working in 135 ethnically diverse work groups in a business simulation course over a period of 24 weeks.

Relying on the social self-regulation framework developed in study 2 and conceptualizing relational diversity as visibility and separation, the third study suggests that visibility has a positive effect on group members' self-monitoring, while separation has a negative effect. The study proposed that high levels of visibility and low levels of separation lead to overall positive additive effects on self-monitoring but overall negative additive effects for those low in visibility and high in separation. Furthermore, it was suggested that the negative effects of separation on self-monitoring are buffered for group members with diversity experience, while becoming more accentuated for those without such experiences. Self-monitoring in return was proposed to simultaneously transmit the positive and negative effects of visibility and separation on individual effectiveness both directly and indirectly via

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impression formation. Results from four waves of data on 261 business students working in 69 ethnically diverse work groups in a business simulation course held over a period of 24 weeks; support these propositions and the strong relevance of social self-regulation to research on relational demography.

Building on the newly developed social self-regulation framework, findings of study 1, 2 and 3 will be then integrated, and limitations, avenues for future research, theoretical and managerial implications will be discussed.

Keywords: Relational diversity, work group diversity, social integration, individual effectiveness, social self-regulation.

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CHAPTER 1
Thesis Overview

1.1. Introduction

For a variety of reasons – social, legal, competitive, or strategic – employers in organizations have and further will diversify their workforce functionally and demographically (Ely & Thomas, 2001; van Knippenberg, De Dreu, & Homan, 2004). While diversity might give an organization a competitive advantage, individuals have a tendency to prefer homogenous group settings (Pfeffer, 1983; R. R. Thomas, 1990). The tension between organizational diversification and psychological preference for homogeneity can negatively affect dissimilar employees' social integration and effectiveness in work groups (Tsui, Egan, & O'Reilly, 1992).

These negative effects form a key topic of research on relational diversity[1] (Riordan, 2000; Tsui & Gutek, 1999). Relying on the social identity approach (Tajfel, 1978; Tajfel & Turner, 1986; Tajfel & Turner, 1979; Turner, 1982) and the similarity attraction paradigm (Byrne, 1971), a common proposition of this research is that the more dissimilar an individual is to a work group in demographic or psychological attributes, the lower his/her social integration and individual effectiveness (Tsui & Gutek, 1999). In a similar vein, research on homophily (cf. Marsden, 1988; Rogers & Kincaid, 1981) suggests that group members prefer to

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[1] The term diversity is used instead of the more common term 'demography' to highlight that diversity characteristics do not exclusively refer to surface-level characteristics (i.e. demographics) but may also refer to deep-level diversity characteristics (i.e. underlying psychological attributes).

work with similar others, and are more likely to socially exclude dissimilar others, which in return might undermine dissimilar group members' effectiveness.

However, qualitative reviews suggest that empirical findings tend to be weak and inconsistent (Chattopadhyay, Tluchowska et al., 2004; Riordan, 2000; Tsui & Gutek, 1999), and it remains unclear when, how and to what extent relational diversity affects social integration and individual effectiveness in work groups (Riordan, 2000). Moreover, relational diversity researchers have paid little attention to empirical findings and reasoning put forward by self-attention theory (Mullen, 1983, 1987). This theory suggests a direct link between relational diversity and individual effectiveness, and derives the counterintuitive hypothesis that relational diversity may actually enhance group members' effectiveness.

In light of these contradictory theoretical positions, and the weak and inconsistent empirical results found in previous work, this thesis develops an integrative theoretical framework informed by social self-regulation theory (Abrams, 1994) based on which it tries to clarify and test 1) to what extent, 2) when, and 3) how relational diversity affects social integration and individual effectiveness within diverse work groups. In so doing it contributes to the literature on work group diversity by determining the practical relevance of relational diversity effects, and explaining when and how relational diversity affects social integration and individual effectiveness.

1.2. Methodology

Relying on Edmondson and McManus's (2007) framework of methodological fit in management research, a quantitative, positivist approach was chosen to investigate the research questions at hand. Edmondson and McManus suggest that such an approach should be chosen if a strand of research presents well developed constructs

and models which are supported by extensive research on a set of related questions in varied settings. As the construct of relational diversity is clearly defined and operationalised (cf., Riordan, 2000; Tsui & Gutek, 1999) and elaborate models to explain these effects exist (cf., Chattopadhyay, Tluchowska et al., 2004; Riordan, 2000), the field of relational diversity research can be characterized as mature.

Consequently, quantitative methods are used throughout. In particular for purposes of research synthesis (review of prior work in the field) and exploratory theory testing and development, study 1 employs meta-analytic and structural equation modeling techniques (cf., Arthur, Winston, & Huffcut, 2001; Viswesvaran & Ones, 1995). Based on insights gained from the meta-analysis, study 2 and 3 develop and test ever more comprehensive models of how relational diversity affects work-related outcomes. In order to make causal inferences from these findings more plausible and to rule out alternative explanations, study 2 and 3 employ a quasi-experimental longitudinal approach (cf. Cook & Campbell, 1979; Zapf, Dormann, & Frese, 1996), in which (1) the causal variables (i.e. predictor and mediator variables) are measured before the effect variables (outcome variables) and (2) other plausible explanations are controlled for (i.e. confounding variables are held constant). Following Zapf et al.'s (1996) recommendations the results are then analyzed using OLS regression and structural equation modeling and analysis techniques.

As such the choice of methodology matches the requirements of the phenomenon and was not guided by the author's preferences for quantitative methodology per se. Instead the author recognizes the value of qualitative research in particular in fields where a newly encountered phenomenon needs to be qualified or in intermediate stages of research when new constructs and measures have to be

designed (cf., Edmondson & McManus, 2007). Yet, the maturity of this particular research field necessitated employing a positivist and quantitative approach.

1.3. Ethics

Research presented in this dissertation has been undertaken in accordance to Aston University's research code of conduct (Hooley, 2004). This code is in line with the ethical principles of the American Psychological Association ("Ethical principles of psychologists and code of conduct," 1992). Following the regulations and principles laid down therein, the current research seeks to satisfy the principles of (1) beneficence and non-malfeasance, (2) informed consent and (3) confidentiality/anonymity. Beneficence and non-malfeasance imply that this research sought to do positive good and no harm. Informed consent meant that each person who participated in this research was informed about the aims, methods and anticipated benefits, risk and discomfort, that their participation was voluntary and that they could withdraw consent at any time. Confidentiality and anonymity implied that this research conforms to legislation concerning data protection and that no details that would allow individuals to be identified have or will be disclosed. To assure that the current work followed these principles, it was evaluated and monitored by Aston Business School's Research Ethnics committee and the PhD supervisory team.

1.4. Structure

The remainder of this dissertation is structured in the following way. In Chapter 2 the literature on relational diversity will be reviewed. Informed by the literature on social self-regulation (Abrams, 1994), it is argued that existing theoretical frameworks might fall short of predictive and explanatory power, because they do not incorporate group members' capacity to socially self-regulate their behavior. In

response a more comprehensive theoretical framework is developed, which incorporates insights gained from existing relational demography theory and the social self-regulation framework. The newly developed theoretical framework is then tested in Chapters 3 to 5.

In Chapter 3 meta-analytic and structural equation modeling techniques are used to demonstrate that existing theorizing in relational demography falls short of predictive validity and explanatory power. This theorizing will be contrasted with the newly developed theoretical framework. Finally, some interventions for management and leadership on how to best manage relational diversity in work groups are derived. In Chapters 4 and 5 the new theoretical framework is tested directly. This will ultimately lead to recommendations for leadership and management about how and in what ways individual effectiveness in diverse work groups should be managed.

In Chapter 6 the results are discussed in light of the newly developed theoretical framework, showing how it can be reconciled with existing prior theorizing. In Chapter 7 limitations of the studies reported in this dissertation are discussed, practical implications are summarized and presented, and contributions to the management literature are highlighted.

CHAPTER 2

Theoretical Framework

The following chapter is divided into three parts. In part one, the relational diversity construct is introduced, key outcome variables are defined, and relational diversity is distinguished from other concepts like work group diversity and person-organization fit. The second part presents a critical review of theories used by researchers to explain relational diversity effects, which are then discussed in light of empirical findings in the relational diversity literature. Based on this critical review, inconsistencies and gaps in the relational diversity literature are identified. In order to fill these gaps, next a new integrative theoretical framework aimed at explaining inconsistencies encountered in previous relational diversity research is developed. The final part outlines how this new integrative theoretical framework is used to answer the research questions posed in this thesis.

2.1. Relational Diversity

2.1.1. Definition of Key Terms

Relational diversity refers here to the extent to which a focal group member is different or dissimilar from all other group members in regard to a certain diversity characteristic (Riordan, 2000; Tsui & Gutek, 1999). *Diversity characteristics* refer to any attribute people can differ on, including age, gender, ethnicity, religious and functional background, personality, skills, abilities, beliefs, and attitudes (cf. Harrison & Klein, 2007; Mannix & Neale, 2005; van Knippenberg et al., 2004; van Knippenberg & Schippers, 2007; K. Y. Williams & O'Reilly, 1998).

A *work group* is defined as a set of three or more people that exists to perform organizationally relevant tasks, interacts socially, maintains and manages boundaries, and is embedded in a wider organizational context (cf., Bell & Kozlowski 2003). A *real work group* is defined as an intact, bounded social systems, with interdependent members and differentiated member roles that pursue shared, measurable goals (Hackman, 1987), while a *pseudo work group* is a collection of individuals for whom there is no common work product or task that calls for collective skills and mutual accountability (Katzenbach & Smith, 1993).

Relational diversity is an individual level concept that refers to the relative degree of dissimilarity of an individual within a diverse work group (Riordan, 2000; Tsui & Gutek, 1999). The main focus of relational diversity research has been on connecting individual group member's dissimilarity to individual group member's social integration and effectiveness (cf. Harrison, Price, & Bell, 1998; Harrison, Price, Gavin, & Florey, 2002).

Social integration refers to "the degree to which an individual is psychologically linked to others in a group"(Hambrick, 1994:189) and is conceptualized here in terms of group members' job attitudes and their quality of social relations. *Quality of social relations* refers to a member's perceptions of the status of his or her social relations with other members of a social unit (Asendorpf & Wilpers, 1998). The construct thereby subsumes an individual's perceptions of relationship conflict experienced when interacting with others in the social unit, the amount of social support received from other members of the social unit, and the extent to which the individual perceives him or herself included in a social unit by his or her coworkers. *Job attitudes* are conceptualized in terms of group members' attachment to their work unit and satisfaction with their job (Harrison, Newman, &

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Roth, 2006). *Attachment* refers to the overlap of an individual's self image with his or her image of the social unit (Riketta & Van Dick, 2005), which comprises the two closely related constructs of commitment and identification (Riketta, 2005; Riketta & Van Dick, 2005). And *job satisfaction* refers to a cognitive and/or affective evaluation of one's work as more or less positive or negative (Brief & Weiss, 2002).

Individual effectiveness refers here to desirable inputs to one's work role (Harrison et al., 2006). The authors distinguish three broad categories of inputs: task performance, contextual performance and withdrawal behaviors. *Task performance* thereby refers to an individual's proficiency with which he or she performs activities that contribute to a work groups' technical core either directly, by implementing part of its technological process, or indirectly, by providing needed materials or services (Borman & Motowildo, 1993). *Contextual performance* refers to discretionary behavior that is not part of a group member's formal job requirements, not enforceable by supervisors, and may not be recognized by formal reward systems (Borman & Motowildo, 1993; Organ, 1988). *Withdrawal behavior* refer to action by which an individual disengages temporarily or continuously from his or her work role, and manifests itself in behaviors such as lateness, absenteeism and turnover (Harrison et al., 2006).

2.1.2. Relational Diversity versus Work Group Diversity

Relational diversity is different from work group diversity (cf. van Knippenberg & Schippers, 2007), which refers to "the *distribution of differences* among the members of a unit with respect to a common attribute [italics added by the author]" (Harrison & Klein, 2007, p. 1200). As such, diversity is a group level compositional construct, and refers to how a certain diversity characteristic is distributed within a group

(Harrison & Klein, 2007) and how this affects group level outcomes – such as group cohesion and work group performance.

To illustrate these differences Brodbeck, Guillaume, and Lee (2007) looked at how ethnic work group diversity and ethnic relational diversity are related to each other. Investigating 88 ethnically diverse student project teams, they calculated each work group's ethnic diversity score, and each individual group members' relational diversity score. Then they plotted the work group diversity score against each individual group member's dissimilarity score. Figure 1 depicts the relationship between the work group diversity and dissimilarity scores.

The group diversity scores are depicted on the x-axis, while the relational diversity scores are depicted on the y-axis. Both scores run from 0 (no group diversity/dissimilarity) to 1.0 (high diversity/dissimilarity). Each square represents an ethnic subgroup fraction within a particular work group, and the respective members' dissimilarity and work group diversity score. The ratios of the fractions' size are displayed below each square as frequency counts per ethnic category (e.g., 1:5, 1:4, 2:3, 1:1:3, 1:1:4 in the main body of Figure 1, and e.g., 1:1:1:2, 1:1:2:3, or 1:1:1:1:2 in the blown up square). Bold numbers indicate the size of the respective ethnic subgroup fraction within a given group for which the individual dissimilarity scores are given on the y-axis. This ethnic subgroups are further qualified by categorizing them as either constituting a majority or minority within a given work group. This is indicated by the dashed diagonal line in the figure. Squares above the line indicate numerical ethnic minorities within a given group, while squares below the dashed line represent numerical ethnic majorities within a given work group. For instance, consider Group Z, highlighted on the diagram. This group consists of two

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Figure 1. The relationship between group diversity and relational diversity (from Brodbeck et al., 2007)

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ethnic subgroups represented by the upper and lower square in the grey rectangle. This group has two fractions: 1:5 (i.e. a minority of one member representing one ethnic category and a majority of five members representing another ethnic category). In the lower square, the bold "**5**" indicates the positioning of the five individual dissimilarity scores for the members of the majority in that group (0.42 for each majority member on the y-axis). In the upper square, the bold "**1**" indicates the positioning of the one individual dissimilarity score of the relative minority in the same group (0.91 "high" on the y-axis). The respective group diversity score associated with each of these two fractions is 0.27 ("low" on the x-axis).

In Figure 1, it can be seen that a distinction between higher and lower dissimilarity scores is evident within each work group and at each level of group diversity. Members of ethnic minorities within a group (above the diagonal dashed line) and ethnic majorities within a group (below the line) are discernible for nearly all groups – with the exception of ethnically homogeneous groups and groups with equally sized ethnic factions. Thus, for each level of group diversity, the individual dissimilarity measure differentiates quite well between minorities and majorities. It also makes apparent that independent of the level of work group diversity, there might be group members that are more dissimilar to their peers than other group members. Most importantly, even in work group with low levels of work group diversity, as is the case in Work Group Z, there might be group members who are highly dissimilar when compared to their peers.

This has consequences with regard to the questions each area of diversity research can answer. Work group diversity research can only respond to questions on how distributions of work group diversity affects variations in work-related group outcomes or in aggregated individual level outcomes, such as the aggregated level of

group members' social integration (e.g. Harrison et al., 1998) or the aggregated level of group members' effectiveness (e.g. Harrison et al., 2002). Thus, work group diversity researchers have to assume that work group diversity affects the work-related outcomes of all members in a given group equally. Consequently, recommendations for practitioners about how to manage work group diversity focus solely on group level interventions (Brickson, 2000).

As relational diversity research looks at group members dissimilarity in regard to a certain diversity attribute, it can address questions about how dissimilarity influences between-individual differences on outcomes like focal group member's level of social integration and/or effectiveness (cf. Riordan, 2000; Tsui & Gutek, 1999). For instance, previous research looked at whether group members that are more dissimilar on ethnic diversity attributes display lower levels of social integration (e.g. Chatman & Flynn, 2001) or lower levels of effectiveness (e.g. Flynn, Chatman, & Spataro, 2001). Thus, relational diversity researchers are able to detect asymmetrical effects, such as whether a person that is more dissimilar is also less socially integrated and displays lower levels of effectiveness compared to a group member who is more similar to his or her peers. In light of such potential asymmetrical effects, interventions tailored to manage work group diversity alone might not suffice. Instead, the effects elicited by relational diversity might call for additional interventions tailored specifically to respond to dissimilar group members' needs (Brickson, 2000).

2.1.3. Horizontal versus Vertical Relational Diversity

Relational diversity as defined above refers to horizontal relational diversity (Tsui, Porter, & Egan, 2002), as it concerns the relationships of a focal individual's diversity characteristics to others in his or her social unit. The concept is different

from that of vertical relational diversity, which concerns the relationship of a leader with his or her followers (Tsui et al., 2002). Vertical relational diversity constitutes a between group model, and focuses on between leader differences with regard to leadership effectiveness. Vertical relational diversity is therefore conceptually different from horizontal relational diversity, and focuses also on different outcomes. Because of these differences, and the interest of the current work in the effects of horizontal relational diversity, the literature on vertical relational diversity is excluded from the remainder of this work. Thus the term relational diversity refers exclusively to horizontal relational diversity throughout.

2.1.4. Relational Diversity versus Person-Group Fit

The concept of person-group fit is closely related to research on deep-level relational diversity, which focuses on the interpersonal compatibility between individuals and their work groups (Kristof-Brown, Zimmerman, & Johnson, 2005). As such, the concept appears to be interchangeable with the definition of deep-level relational diversity used here. Therefore the literature on person-group fit is considered if the researcher conceptualized and operationalized differences between a focal individual and his or her work group as a frog pond model. Research on organization-fit, on the other hand, looks at the compatibility between individuals and an entire organization (cf. Kristof-Brown et al., 2005). Because this line of research usually compares a focal individual to a whole organization rather than to other members of the organization, it is conceptually different from the definition of deep-level relational diversity used here. Therefore the literature on person-organization fit is also not considered.

2.1.5. Surface versus Deep Level Relational Diversity

The sheer number of diversity attributes led researchers to systematize the manifold appearances of diversity, with most research using the following taxonomies; (1) surface-level versus deep-level diversity, (2) task-relevant versus task-irrelevant diversity, and (3) actual versus perceived diversity (cf. Fay & Guillaume, 2007).

The first approach refers to the role of diversity attributes for team performance and therefore differentiates *task-relevant* from *task-irrelevant diversity* (cf. Jackson, May, & Whitney, 1995). The former refers to attributes such as functional, occupational, and industry background, or educational level and educational content. They reflect differences in knowledge, skills, and ability (KSA), in information, opinion, or experience; these are attributes that are relevant to the task. Similarly, tenure in industry and in the company could also entail diversity in task-relevant issues. The second category, *task-irrelevant* diversity, comprises demographic characteristics (i.e., age, gender, ethnicity, cultural background) or personality variables. What might appear at first glance as a straightforward way of classifying is on closer inspection a more complex matter. The specific attributes do not fall exclusively into one or the other category. For example, depending on the task, age and gender can be task-relevant, and likewise, the functional background and the associated expertise may not be relevant to a given task. Even though a rationale linking these two different kinds of diversity to different underlying explanatory mechanisms and outcomes has been presented, a recent meta-analysis found no evidence supporting these claims (Webber & Donahue, 2001).

A second approach to classifying diversity takes into consideration that *actual* differences between team members may not be *perceived* as such (Harrison et al., 2002; Riordan, 2000). Hence, it distinguishes between objective assessments of

attributes (e.g., gender, age) and the extent to which group members perceive how similar they are on these attributes. The former is referred to as actual diversity, the later as perceived diversity. While this approach has some empirical support (e.g.Harrison et al., 2002), the correlations between actual diversity and perceived diversity measures appear to be rather weak. Moreover, as researchers frequently measure perceived diversity using the same measures and the same source as the various work-related outcomes (e.g., Graves & Elsass, 2005; Hobman, Bordia, & Gallois, 2004; Kirchmeyer, 1995), results are likely to be or become inflated due to common source and common method variance (cf. Doty & Glick, 1998; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Finally, perceived diversity may actually be just a proxy for the real underlying processes (e.g. social categorization processes), and as such its value for theory building may be questioned (cf. van Knippenberg & Schippers, 2007).

The third taxonomy (cf. Harrison et al., 1998; Harrison et al., 2002; Riordan, 2000), which is adopted in this work, distinguishes attributes that are at the *surface-level* of a person from attributes that are at the *deep-level* of the person. Surface-level diversity refers to characteristics such as age, gender, ethnicity; they can be readily detected when first meeting a person and refer predominantly to demographic attributes. In contrast, *deep-level* diversity refers to attributes that are detected only when people interact over a certain time with each other (e.g., values, personality or beliefs). The distinction has been empirically supported, and is frequently used by relational diversity researchers (e.g. Cunningham & Sagas, 2004; Harrison et al., 1998; Harrison et al., 2002; Liao, Chuang, & Joshi, 2006; Riordan, 2000; Schaubroeck & Lam, 2002). Moreover, distinguishing between surface- and deep-level diversity attributes seems reasonable in light of different underlying processes

(see section 2.2. for details) associated with these characteristics (cf. Harrison et al., 1998; Harrison et al., 2002).

2.1.6. Tokenism and Numerical Minority Status

Two further concepts have received surprisingly little attention in the relational diversity arena – tokenism (Kanter, 1977a, 1977b) and numerical minority status (Mullen, 1983, 1987) – even though both concepts appear to be similar to the concept of relational diversity. This is unfortunate as both approaches are concerned with how group members' dissimilarity on a given diversity related attribute (such as demographics and status) affects work-related outcomes in group settings. Moreover, these approaches could be particular fruitful in explaining how group members' dissimilarity affects their effectiveness (such as task and contextual performance, and turnover) because, unlike relational diversity research that focuses mainly at social integration-related outcomes (e.g., Chatman & Flynn, 2001; Chattopadhyay, George, & Lawrence, 2004; Tsui et al., 1992), research on tokenism and numerical minority status are mainly concerned with effectiveness-related outcomes (e.g., Lord & Saenz, 1985; Mullen, Johnson, & Drake, 1987; Vohs, Baumeister, & Ciarocco, 2005).

2.2 Relational Diversity Effects

Relying on the social identity approach (Tajfel & Turner, 1979; Turner, 1982; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987), surface-level relational diversity researchers suggest that group members who are dissimilar in terms of surface-level diversity attributes are less socially integrated (cf. Tsui et al., 1992). In a similar vein, based on the similarity-attraction paradigm (Byrne, 1971), deep-level relational diversity researchers suggest that group members who are dissimilar in terms of deep-level diversity attributes are less socially integrated (cf. Schaubroeck & Lam,

2002). Taking a similar stance, researchers on homophily (Marsden, 1988; Rogers & Kincaid, 1981) suggest that group members prefer to work with similar others and socially exclude dissimilar others, in return dissimilar group members experience lower social integration.

While these researchers cannot establish a direct link between relational diversity and individual effectiveness based on the homophily, similarity-attraction and social identity perspective, they argue that relational diversity undermines group members' effectiveness via lower levels of social integration (cf., Riordan, 2000). Focusing on a variety of surface level diversity characteristics such as age, tenure, gender and race (e.g., O'Reilly, Caldwell, & Barnett, 1989; Tsui et al., 1992), and deep level characteristics such as values, personality and attitudes (e.g., Jehn, Chadwick, & Thatcher, 1997; Liao et al., 2006; Van der Vegt, 2002), empirical findings, albeit weak and inconsistent (Riordan, 2000), support these claims to some extent showing that relational diversity tends to be negatively related to social integration related outcomes such as commitment and satisfaction with peers (e.g., Liao, Joshi, & Chuang, 2004; Tsui et al., 1992), conflict and work group involvement (e.g., Hobman et al., 2004), and quality of work group relationships (e.g., Chattopadhyay, 1999; Chattopadhyay, George et al., 2004), and to individual effectiveness-related outcomes such as absenteeism and intention to leave (e.g., Liao et al., 2004; Tsui et al., 1992), turnover (e.g., Jackson et al., 1991; O'Reilly et al., 1989), innovation and performance (e.g., Chatman, Polzer, Barsade, & Neale, 1998; Flynn et al., 2001), and citizenship behaviours (e.g., Chattopadhyay, 1999).

While relational diversity researchers have paid little attention to empirical findings and reasoning put forward by self-attention theory (Mullen, 1983, 1987), this theory suggests a direct link between relational diversity and individual

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effectiveness, and derives the counterintuitive hypothesis that relational diversity may actually enhance group members' effectiveness. According to Mullen (1983), group members that are in the numerical minority position are more likely than peers in the numerical majority to match their behavior to their work group' standards, and consequently should be more effective. Meta-analytic evidence of results from 42 previous empirical studies in 4 areas (conformity, prosocial behaviour, social loafing, and antisocial behaviour) supports the idea that numerical minority status increases self-attention and increases concerns with matching to standards of appropriate behaviour (Mullen, 1983).

What remains unclear then is whether there is a direct and substantial effect of surface- and deep-level relational diversity on social integration and individual effectiveness, how these effects are brought about, and most importantly under which conditions they are negative, neutral or even positive (cf., Riordan, 2000). To that end, the next section reviews theory on the social identity approach (Tajfel & Turner, 1979; Turner, 1982; Turner et al., 1987), the similarity-attraction paradigm (Byrne, 1971), and self-attention theory (Mullen, 1983, 1987) in light of theorizing and empirical findings put forward by relational diversity researchers. As will become apparent, research on tokenism (Kanter, 1977a, 1977b), homophily (Ibarra, 1993) and self-regulation (Lord & Saenz, 1985; Vohs et al., 2005) has also been included in the following review, as the approaches will help to clarify some unresolved issues in this arena. Based on this review and informed by theorizing on social self-regulation (Abrams, 1994), it is suggested that the similarity-attraction paradigm may be less suited to explaining relational diversity effects, and that the social identity approach (Tajfel & Turner, 1979; Turner, 1982; Turner et al., 1987) and self-attention theory (Mullen, 1983, 1987) alone may be sufficient to explain the

inconsistent effects encountered by previous research on relational diversity. Based on this discussion, a more comprehensive theoretical framework is developed to explain the effects of relational diversity on social integration and individual effectiveness.

2.2.1. Surface Level Relational Diversity Effects on Social Integration

The social identity approach (Tajfel & Turner, 1979; Turner, 1982; Turner et al., 1987) is frequently used by relational demographers to explain how and when *surface-level* relational diversity affects group members' social integration. The social identity approach refers to arguments put forward by two complementary theories: social identity theory (SIT, Tajfel, 1978; Tajfel & Turner, 1979) and self-categorization theory (SCT, Turner, 1982). The application of these two theories varies widely among relational demographers. For instance Chatman and colleagues (e.g., Chatman & Flynn, 2001; Chatman & O'Reilly, 2004; Chatman et al., 1998; Chatman & Spataro, 2005) rely solely on SCT, while Chattopadhyay and colleagues (e.g., Chattopadhyay, 1999, 2003; Chattopadhyay, Tluchowska et al., 2004) rely mainly on SIT, while still others rely on a mix of both SCT and SIT (e.g., Tsui et al., 1992). Accordingly, in the following SCT and SIT are contrasted, and in light of empirical findings it will be discussed how the effects of relational demography on social integration might be best explained within the social identity approach.

The basic premise of SCT (cf. Ellemers, de Gilder, & Haslam, 2004) is that the social situation (e.g. a work group context) determines whether people think of themselves as independent individuals based on their idiosyncratic characteristics (such as their preferences or personal characteristics) or whether they think of themselves and others in terms of a particular group membership (such as their ethnicity, gender, or their work group) when interacting with others. The former has

been referred to as personal identity, and the later as social identity (Turner et al., 1987). The underlying process has been referred to as self-categorization and depends on situational cues (Turner et al., 1987; cf. van Knippenberg et al., 2004).

Relying on empirical evidence and theorizing put forward by distinctiveness theory (McGuire & McGuire, 1981) relational demographers employing a SCT perspective suggest that demographically dissimilar individuals in diverse groups are more likely to become aware of the diversity attribute they differ on than demographically more similar group members are (e.g., Chatman & Flynn, 2001; Chatman & O'Reilly, 2004; Chatman et al., 1998; Chatman & Spataro, 2005). In return these relational demographic researchers argue, demographically dissimilar group members are more likely to categorize self in terms of their demographic group membership than in terms of their work group membership or their idiosyncratic attributes.

In a similar vein, empirical evidence regarding the relative homogeneity effect suggests that members in the numerical minority identify themselves more strongly with the social category they differ on, than the members of the numerical majority (e.g., Simon & Brown, 1987). This line of argument is also evidenced in research on relational demography. In a series of field studies, Chatman and colleagues could demonstrate that people who were demographically more different from their coworkers viewed demographic attributes as more salient than people who were more similar to one another (Chatman et al., 1998), and were less likely to identify with their work group, i.e. categorize self in terms of their work group (Chatman & Flynn, 2001; Chatman & O'Reilly, 2004; Chatman & Spataro, 2005).

When individuals think of themselves in terms of a given group membership (e.g. ethnicity, age, gender or work group), they adopt the group's norms and values

as a guideline for their behavior (Turner et al., 1987). This process is often referred to as social identification (cf. Ellemers et al., 2004). It follows from this that group members categorizing self on the basis of their work group membership adopt their work group's norms and values as a guideline for behavior, while group members categorizing self on the basis of their demographic group membership adopt their demographic group's norms and values as a guideline for behavior.

Some relational demographic researchers (e.g., Chatman & Flynn, 2001; Chatman & Spataro, 2005) implicitly contend that identification on the basis of a demographic group membership leads inevitably to intergroup bias. Intergroup bias (Brewer, 1979) refers to more favorable perceptions of and attitudes and behavior toward in-group (i.e. group members belonging to the same demographic group) than out-group (i.e. group members not belonging to the same demographic group). This in return leads to negative evaluations of the out-group and positive evaluations of the in-group, and may ultimately result in lower interpersonal liking, more relational conflicts, and lower identification with and commitment to the work group as a whole (cf. van Knippenberg et al., 2004), and thus lower social integration.

Some relational demographic researchers (e.g. Chattopadhyay, Tluchowska et al., 2004; Tsui et al., 1992) on the other hand, argue that the extent to which these behaviors lead to intergroup bias is contingent on boundary conditions. These authors base their arguments on ideas derived from SIT (Tajfel, 1978; Tajfel & Turner, 1979) that individuals are motivated to derive a positive sense of self from group membership, and that the extent to which intergroup bias is evoked is contingent on status differences. Specifically they argue that demographically dissimilar group members belonging to a lower status group in an organizational context (e.g. being the only work group member belonging to an ethnic minority in

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the wider social context) are more likely to identify with a work group that is mainly composed of individuals belonging to a higher status group (e.g. three work group members belonging to the ethnic majority in the wider social context). In so doing they try to enhance their sense of self derived from work group membership. On the other hand, demographically dissimilar group members belonging to the higher status group (e.g. being the only work group member belonging to an ethnic majority in the wider social context) are less likely to identify with a work group that is mainly composed of individuals belonging to a lower status group (e.g. three work group members belonging to the same ethnic minority in the wider social context), because in such groups they hardly can derive a positive sense of self from work group membership. Consequently, intergroup bias should only occur for demographically dissimilar group members that also belong to a higher status group.

While empirical evidence supports this line of argument (e.g., Chattopadhyay, 1999; Tsui et al., 1992), the respective findings have been criticized on methodological grounds (Tonidandel, Avery, Bucholtz, & McKay, 2008). In a simulation study Tonidandel et al. demonstrated that the interactive effects elicited by status differences might actually be methodological artifacts. Because group members belonging to a social minority (e.g. an ethnic minority in the wider social context) are also more likely to find themselves in the numerical minority within a work group, sample size in the condition low relational demography and low status tend to be smaller than all other conditions. This in turn leads to lower power, and consequently increases the likelihood that the interaction between status and relational demography regressed on a given outcome becomes significant. Thus, these asymmetrical effects might be observed even when none exist.

Moreover, Chatman and colleagues' empirical findings (Chatman & Flynn, 2001; Chatman & Spataro, 2005) support a direct link between relational demography and intergroup bias related variables (such as commitment, quality of social relations and satisfaction with peers, cf. van Knippenberg et al., 2004). In a similar vein, meta-analytic evidence from 137 studies on the effects of proportional in-group size (which can be considered a proxy for relational demography) on intergroup bias (Mullen, Brown, & Smith, 1992) support a direct link between relational demography and intergroup bias. Mullen and colleagues found a small significant negative effect of proportional in-group size on intergroup bias for demographic attributes ($r = -.141, p < .01$).

In sum, the social identity approach seems to suggest that surface-level relational diversity is negatively related to social integration, because demographically dissimilar group members are less likely to categorize self in terms of their work group, and feel therefore less attached to their peers and work group and experience lower quality of social relations.

2.2.2. Deep Level Relational Diversity Effects on Social Integration

The similarity-attraction paradigm has been mainly used by relational diversity researchers to explain the effects of deep-level relational diversity on social integration (cf. Riordan, 2000). The similarity attraction paradigm (Byrne, 1971) proposes that an individual who is similar in attitudes or values to another person will like the other person, and a person who is dissimilar in attitudes or values to another person will dislike the other person. Having reviewed the literature, Byrne suggests that attraction or lack thereof leads to approach and avoidance responses, as well as evaluative responses. Approach and avoidance responses refer to individuals' physical, verbal or symbolic movements toward those they like and away from those

they dislike. Individuals that are liked have been found to be looked at more, seen as larger, are more recognizable, are communicated more with and are more likely to be included in social interactions. Evaluative responses include assessments of intelligence, knowledge, abilities and skills, affect and judgments, whereby empirical findings suggest that individuals that are disliked are evaluated less favorably and judged more harshly.

Based on these findings and arguments, relational diversity researchers (cf. Riordan, 2000) suggest that group members that are dissimilar to each other in terms of deep-level relational diversity attributes, feel less attracted to other group members who are dissimilar from them and find it more difficult and less reinforcing to interact with them. As group members who are dissimilar from their peers do encounter more relationships in which the two interaction partners are dissimilar, they should on average feel less attracted to their work group, and consequently should feel less attached to their work group, be less satisfied with their peers, and encounter more conflicted relationships. Accordingly, they should become less socially integrated within their work groups.

2.2.3. The Role of Team Interdependence

Up till now surface- and deep-level relational diversity has been assumed to elicit direct negative effects on group member's social integration. Specifically, it has been argued that surface-level relational diversity has a negative effect on social integration via self-categorization processes, and deep-level relational diversity has a negative effect on social integration via similarity-attraction dynamics. However, as highlighted previously, empirical results appear to be weak and inconsistent (cf. Riordan, 2000). To explain these inconsistent findings, prior research suggested that the salience of surface- and deep-level diversity characteristics may vary as a

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function of team interdependence (cf. Harrison et al., 1998; Harrison et al., 2002). *Team interdependence* (henceforward referred to as interdependence) is defined as the extent to which contextual features such as goal, reward, resource, role and task structures promote a relationship between members of a social unit in which each member is mutually responsible to and dependent on others (Wageman, 1995).

As to the effects of team interdependence on the relationship between surface-level relational diversity and social integration, Chatman and Spataro (2005) applied the principle of functional antagonism (Turner, 1987). The principle of functional antagonism suggests that as one social category becomes more salient, others become less salient. Accordingly Chatman and Spataro suggest that interdependence alters category salience. While under low interdependence dissimilar group members categorize self in terms of their demographic group membership, they re-categorize self in terms of their work group membership under high levels of interdependence, because group membership rather than demographic group membership is rendered salient under such conditions. Supporting these claims, two field studies by Chatman and colleagues (Chatman et al., 1998; Chatman & Spataro, 2005) demonstrated that under high levels of interdependence dissimlar group members were more likely to categorize themselves in terms of their work group membership, while under low levels of interdependence demographically dissimilar group members were less likely to categorize themselves in terms of their demographic group membership. In return, the undermining effects of surface-level relational diversity on social integration were overcome.

As to the effect of deep-level relational diversity on social integration, Harrison and colleagues (Harrison et al., 1998; Harrison et al., 2002) relied on the contact hypothesis (for overviews see Pettigrew, 1998; Pettigrew & Tropp, 2006).

According to the contact hypothesis, once people interact they get to know each other, and replace their initial depersonalized perceptions of dissimilar others with more idiosyncratic knowledge of others (Allport, 1954; Amir, 1969). In other words, their personal identity becomes salient. Specifically, Harrison and colleagues suggested that under low levels of interdependence individuals base their categorizations of other group members on surface-level diversity attributes, because surface-level attributes are visible and easily accessible, and thus require no frequent interactions between group members. Under high levels of interdependence, on the other hand, group members frequently interact with each other and are thus more likely to uncover each other's deep-level diversity attributes.

Harrison and colleagues (Harrison et al., 1998; Harrison et al., 2002) further suggest that surface-level diversity attributes, when rendered salient under low levels of interdependence elicit social categorization processes, and consequently undermine social integration. Deep-level attributes on the other hand, when rendered salient under high levels of interdependence, elicit similarity-attraction dynamics, leading to lower levels of social integration for the more dissimilar group members particularly due to reduced attraction, and more difficult and less reinforcing relationships .

Even though empirical findings are in line with Harrison and colleagues' arguments (Harrison et al., 1998; Harrison et al., 2002), they could not directly test whether the similarity-attraction dynamics account for the effects elicited by deep-level relational diversity under high levels of interdependence. A strong argument against similarity-attraction dynamics underlying these effects comes from SCT (Hogg & Hains, 1996; Hogg, Hardie, & Reynolds, 1995). Specifically, Hogg and colleagues demonstrated that under high levels of interdependence group members

categorize themselves and others in terms of a higher order identity (e.g. as group members), and they perceive themselves and others as depersonalized group members rather than unique individuals. Thus, different from the suggestions by Harrison and colleagues (Harrison et al., 1998; Harrison et al., 2002), Hogg and his colleagues (Hogg & Hains, 1996; Hogg et al., 1995) argue that it is people's social identity (i.e. as work group member) rather than their personal identity that becomes salient under high levels of interdependence.

Moreover, Hogg and colleagues suggest that group members who categorize themselves in terms of their work group membership do not perceive each other as unique individuals "but as embodiments of the work group – the more prototypical they are, the more they are liked" (Hogg et al., 1995, p. 161). They referred to this process as social attraction in contrast to interpersonal attraction. While interpersonal attraction as discussed within the similarity-attraction paradigm (Byrne, 1971) refers to liking other group members on the basis of their personal identity (thus as individuals), social attraction as discussed within SCT (Hogg et al., 1995) refers to liking other group members on the basis of their social identity (thus as group members). In line with their arguments are four experimental studies (Hogg & Hains, 1996; Hogg et al., 1995), which demonstrated that under high levels of interdependence deep-level differences decreased social attraction rather than interpersonal liking. Moreover group members that perceived self and were perceived by their peers as less prototypical felt less attached to their group, were liked less as group members, and were more likely to become socially excluded.

In sum then, it appears that the similarity-attraction paradigm is less suited to accounting for any relational diversity effects. Instead, based on the preceding discussion it is suggested here that SCT is sufficient to explain these effects.

Specifically, it is suggested here that under low levels of interdependence surface-level diversity attributes are salient and group members categorize themselves on the basis of their demographic group membership rather than their work group membership. Under such conditions *inter-group dynamics* prevail. *Inter-group dynamics* refer to individuals' social interactions based on their membership in a given diversity related social category. Thus, individuals think of themselves not as members of their work group or as distinct individuals, but in terms of their demographic group membership. This applies in particular to the demographically dissimilar group members, as their dissimilarity further increases the salience of their demographic group membership. Accordingly, under these conditions they behave neither as individuals nor as members of their work group, but in terms of their demographic group membership (i.e. their behavior is guided by demographic group norms, e.g. they behave as females or males), and consequently become less socially integrated within their work group.

Under high levels of interdependence intra-group dynamics prevail ahead of inter-personal dynamics, and deep-level relational diversity attributes become salient. *Intra-group dynamics* thereby refer to group members' social interactions based on their work group membership, while *inter-personal dynamics* refer to group members' social interactions based on their personal identity. Thus, the former individuals think of themselves and others as members of the same group and behave as group members (i.e. their behavior is guided by their work group's norms), while the later think of themselves and others as distinct individuals and behave as individuals (i.e. their behavior is guided by their personal attitudes, values and preferences). Because intra-group dynamics prevail under high levels of interdependence and they are deep-level attributes that become salient, dissimilar

group members perceive self and are perceived by other group members as less prototypical. As such they are liked less as group members and are more likely to become socially excluded, they feel less attached, and consequently should become less socially integrated.

2.2.4. The Role of Peer Reactions to Dissimilar Others

A related line of research in sociology is concerned with homophily. Homophily is defined as the degree to which pairs of individuals who interact are similar in group affiliations or identity (Marsden, 1988; Rogers & Kincaid, 1981). As in the similarity-attraction paradigm (Byrne, 1971), research on homophily is based on the assumption that individuals have a tendency toward demographic homophily. That is, individuals prefer to establish relationships with others that are similar in demographic attributes. In addition to the psychological explanation put forward by the similarity-attraction paradigm (Byrne, 1971), homophily researchers provide a structural explanation for this to occur (cf. Ibarra, 1993). Summarizing the literature, Ibarra suggests that the central thesis of this line of research is that the context in which interactions are embedded produce unique constraints for those who are more dissimilar from others. Structural limitations are thereby thought to directly undermine the development of supportive relationships, and also do so indirectly by limiting dissimilar group member's choice of strategies for establishing such relationships.

According to this perspective social relations occur within an opportunity context. Although individuals prefer to interact with similar others, this tendency is constrained by the availability of similar others within the work group that the dissimilar group member belongs to (Blau, 1977; McPherson & Smith-Lovin, 1987). Thus, a member belonging to the numerical minority in a work group is less likely to

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establish supportive relationships with others that are similar in demographic attributes to him or herself, because he or she will find fewer opportunities to do so.

Ibarra (1993) suggests that one strategy chosen by numerical minority members to avoid marginal status or social exclusion due to fewer expressive relationships is to develop such relationships with members of the numerical majority and not to engage in such relationships with similar others from the own numerical minority group to avoid appearing as an outsider to the social majority. However, this may come at a cost as those relationships tend to be weaker, less stable and more conflicted, and instrumental (i.e. constrained to the exchange of job-related resources) rather than expressive (i.e. providing social support and friendship).

In contrast to the social identity approach (Tajfel, 1978; Tajfel & Turner, 1979; Turner, 1982) and the similarity-attraction paradigm (Byrne, 1971), which do not explicitly acknowledge similar group members reactions towards the more dissimilar group members, homophily researchers acknowledge this more social interactive perspective. Specifically, Mehra, Kilduff and Brass (1998) argue that the structural marginality of dissimilar group members may be over determined, and may not only be due to dissimilar group members' choices to establish or not to establish relationships with the more similar group members, but might also be due to exclusionary pressures elicited by dissimilar group members' peers.

Empirical findings support Mehra et al.'s (1998) line of argument. They demonstrated that females and ethnic minorities that are underrepresented in an organization tend to be structurally marginal in expressive relationship networks. Thus, because they have fewer opportunities to form expressive relationships with others, they are more likely to be socially excluded. The authors also found empirical

support for the idea that social minority members that are socially included more in expressive relationship networks are less likely to form expressive relationships with members that are similar in demographic attributes to themselves. Finally, and most relevant to the argument presented here, Mehra et al.'s empirical findings also suggest that, when numerically underrepresented in an organization, females and social minorities built less expressive relationships with social majority members not so much because of their tendency to prefer expressive relationships with members from their own social minority group, but more because they are excluded from such relationships on the basis of their social minority membership.

While relational diversity research (cf. Chattopadhyay et al., 2004; Riordan, 2000; Tsui & Gutek, 1999) explains dissimilar group members' lack of social integration mainly as a function of dissimilar group members' reactions to their level of dissimilarity (e.g. via the before mentioned self-categorization or similarity-attraction processes), empirical evidence and arguments put forward by homophily researchers (e.g., Mehra et al., 1998) would suggest that in particular surface-level relational diversity effects on social integration might also be a function of others' psychological reactions towards the focal dissimilar group members. Moreover, this conceptual extension might be well aligned with the arguments regarding the effects of surface- and deep-level relational diversity attributes put forward in the two previous sections.

As to surface-level relational diversity, the social identity approach (Tajfel, 1978; Tajfel & Turner, 1979; Turner, 1982) would suggest that dissimilar group members not only categorize themselves in terms of their demographic group rather than their work group but also that they are categorized by others in this way. Further, these social categorization processes triggered within the more similar group

members might increase their tendency to discriminate against dissimilar others because they feel more attached to their work group and might thus see dissimilar group members as a threat to their identity as a work group member (Jetten, Postmes, & Spears, 2004). This type of threat to an individual's social identity may in return trigger inter-group bias, which may lead to discrimination; stereotyping and derogation of dissimilar group members (cf. van Knippenberg et al., 2004). Consequently dissimilar member's experience of lower levels of social integration might be further accentuated.

As for deep-level relational diversity, the similarity-attraction paradigm (Byrne, 1971) holds that similarity between group members engenders interpersonal processes of attraction and liking. People that are more similar to each other are more likely to interact and communicate with each other. Because of the fewer number of role partners available for the more dissimilar group members, they are more likely to feel socially excluded and ostracized. Relying on the social identity approach, it can also be argued that group members who are dissimilar on deep-level relational diversity attributes are perceived as being less prototypical (Hogg et al., 1995). According to Hogg et al., people that are perceived as being less prototypical are less liked by *all* group members, and consequently might experience lower quality of social relations compared to more prototypical group members.

2.2.5. Indirect Effects: Surface and Deep Level Relational Diversity, Social Integration, and Individual Effectiveness

The main focus so far has been on the effects of surface- and deep-level relational diversity on social integration. Specifically it has been argued that under low interdependence surface-level attributes become salient and surface-level relational diversity undermines social integration. Under high interdependence deep-level

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diversity attributes become salient and deep-level relational diversity undermines social integration. In both case dissimilar group members feel less attached to their work group, and as a consequence of this and their peers socially excluding them, experience lower quality of social relations. In return they become less socially integrated. In line with previous relational diversity researchers it is further argued here that lower levels of social integration undermine dissimilar group members' effectiveness (cf. Riordan, 2000).

While there is some evidence from research at the group-level that relational diversity undermines individual effectiveness via lower levels of social integration (Harrison et al., 1998; Harrison et al., 2002), these ideas remain untested at the individual level of analysis. Yet, meta-analytic evidence at the individual level would support the idea that people who are less attached to and satisfied with their social unit are less likely to engage and offer input into their work, and may progressively withdraw from their work (Harrison et al., 2006; Judge, Thoresen, Bono, & Patton, 2001; Meyer, Stanley, Herscovitch, & Topolnytsky, 2002; Riketta & Van Dick, 2005). Furthermore, because people with negative social relations may have fewer opportunities to meet the performance expectations of their peers (Seers, 1989) and may have less access to resources and information (Seers, 1989), it may be more difficult for them to engage at work and may make it more likely for them to withdraw from work. Thus, both deep- and surface-level relational diversity should undermine group members' effectiveness via lower levels of social integration.

2.2.5. Direct Effects: Relational Diversity and Individual Effectiveness

Relational diversity researchers hardly consider direct effects of relational diversity on individual effectiveness. However, as will become apparent in the following,

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theorizing on tokenism (Kanter, 1977a, 1977b), self-attention theory (Mullen, 1983, 1987), and the self-regulation failure literature (cf. Baumeister & Vohs, 2007; Schmeichel, Vohs, & Baumeister, 2003) might help to establish a direct link between relational diversity and individual effectiveness.

Tokenism hypothesis. The tokenism hypothesis (Kanter, 1977a, 1977b) suggests that individuals in the numerical minority in a social unit are less perceived as individuals than as tokens. Tokens are thereby defined as those numerical minorities that represent less than 15% of the total group. This token status is associated with three conditions which, in return, generate responses detrimental to the numerical minorities' social integration and performance: visibility, polarization and assimilation.

First, token persons are highly visible, because they represent a smaller numerical proportion of the social unit, and thus may capture a larger share of awareness from the other members in the unit. This heightens the token's self-awareness, which may narrow the token's attentions or may direct the token's attention inward toward themselves (Lord & Saenz, 1985). Narrowing the tokens attention may have diametric effects on his or her performance, in particular on complex tasks. Directing attention inward toward the self may also lead the token to pay more attention to impression management and less to the task at hand, which may impair his or her task performance and social interactions with others on any task.

Second, the presence of tokens leads to polarization within the social unit. Tokens bear a different set of diversity attributes, which makes members of the numerical majority more aware of their communalities and their differences from the token. This makes it easier for the communalities of the numerical majorities to be

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defined in contrast to the token. This may ultimately lead the token to become isolated from the other members in the social unit.

Third, assimilation involves the use of stereotypes or familiar generalizations about the tokens' diversity attributes. These attributes may become distorted or misperceived to fit the generalization. This leads to role entrapment of the tokens, because the numerical majority may only accept those behaviors of the token that conforms to these generalizations or stereotypes. Only when tokens continuously challenge these generalizations or stereotypes, can they break out of this role entrapment.

Empirical evidence from qualitative studies (e.g., Kanter, 1977a), field studies (e.g., Niemann & Dovidio, 1998; Spangler, Gordon, & Pipkin, 1978), and laboratory experiments (e.g., Lord & Saenz, 1985; Vohs et al., 2005) generally support the theory that tokens suffer from heightened visibility and performance pressure, and from stereotyping and social exclusion. However, some authors (Hewstone et al., 2006; Yoder, 1991, 1994) caution that findings may be confounded by various factors and demonstrate that token proportions in a work group alone will not produce the three tokenism processes. Instead these processes are a function of three things: token numbers (as suggested by the tokenism hypothesis), status and occupational appropriateness (cf. Yoder, 1991; for empirical evidence see: Yoder, 1994). Moreover, Yoder (1994) demonstrated that tokenism processes will be exaggerated for occupationally deviant women in high-prestige but not low-prestige occupations.

While relational diversity looks not only at tokens, but also at the degree to which group members are dissimilar from their peers (ranging from being similar to being in a token position), there are two things that can be learned from this strand of

the literature. First, dissimilarity may be a phenomenon that does not only affect the token or dissimilar individual, but has also effects on the numerical majority and how they interact with the dissimilar group member. The theory thus further corroborates proposition presented in the pervious section that switching the focus from dissimilar group members' reactions towards their dissimilarity to the reactions of the other group member's towards the dissimilar group member helps to increase predictive power in theoretical frameworks modeling relational diversity effects.

Secondly and more relevant here, relational diversity researchers (cf. Riordan, 2000) usually employ the predictions derived from the tokenism hypothesis (Kanter, 1977a, 1977b) in a similar way as those derived from the similarity attraction paradigm (Byrne, 1971) and the social identity approach (Tajfel, 1978; Tajfel & Turner, 1979; Turner, 1982), and suggest that dissimilarity leads (via polarization and stereotyping) to lower levels of social integration, i.e. lower attachment with their work group, less satisfied and more conflicted relationships with their peers. Unfortunately, relational diversity researchers have paid little attention to the third process, namely performance pressure. It is this mechanism, which might allow one to establish a direct link between dissimilarity and group members' effectiveness. While research on tokenism would suggest a negative relationship, the next section makes it clear that this link may actually be positive under certain conditions.

Self-attention theory. Self-attention refers to the process of taking oneself as the focus of one's own attention (Mullen, 1987). Relying on the gestalt figure-ground principle (cf. Koffka, 1935), Mullen argues that in a heterogeneous group context, individuals can be segregated into two (or) more homogenous subgroups on the basis of a salient perceived difference. As dissimilar group members are in the

numerical minority, they capture a disproportionate amount of attention from other members of the group, and are more likely to see themselves as the subject of others' appraisal. As such, they become more self-aware of a given salient standard, experience higher levels of evaluation apprehension in light of this standard, and accordingly experience higher levels of discomfort. In order to reduce this negative state, they attempt to match their behaviour to the standard and meet the expectations of their peers (Govern & Marsch, 2001; Mullen, 1983, 1987).

Standards thereby refer to salient norms, values or goals defining appropriate behaviour (Mullen, 1987). According to Mullen some might be purely idiosyncratic, while others might be generally accepted within a given group. In any case, salient behavioural standards in conjunction with self-attention leads people to match their behaviour to these standards (Mullen, 1987). In line with these arguments is meta-analytic evidence (Mullen, 1983) of results from 42 previous empirical studies in 4 areas (conformity, prosocial behaviour, social loafing, and antisocial behaviour) supporting the idea that numerical minority status increases self-attention and concern with matching to standards of appropriate behaviour.

More recent theorizing and empirical evidence suggests, however, that even when there are salient standards and self-attention is high, a third conditions needs to be in place in order for group members to match their behavior to these standards, namely positive outcome expectancy assessment (Mullen, 1983, 1987). This process refers to evaluations whether own resources are sufficient and social constraints can be overcome in order to adhere to salient standards (cf. Carver & Scheier, 1982). While a favorable assessment will lead to match-to-standard behavior, unfavorable assessments will lead to disengagement.

In line with these arguments, Mullen (1987) presents empirical evidence from college students participating in five-person discussion groups in which group composition varied in terms of gender and race, and performance standards were in place. Proportionate in-group size (i.e. the number of same sex and same race students in a given subgroup) predicted participation in the group discussion, in that those students being in the numerical minority (e.g. the two Hispanic females in an otherwise male and White discussion group) participated significantly more in the discussion than those in the numerical majority (e.g. other Hispanic female students). Assuming that males had particular good outcome expectancies and that females had low outcome expectancies, Mullen could further show that, in conjunction with high outcome expectancies, numerical minority status lead to significantly more participation in discussion, while there were no such effects in the low outcome expectancy condition. Thus, numerical minority status might lead given performance standards and favorable outcome expectancies to effectiveness gains on part of the more dissimilar group members. This strongly contradicts relational diversity researchers theorizing, which suggests that relational diversity undermines dissimilar group members' effectiveness.

While this line of research is mainly concerned with demographic attributes (i.e. surface-level), it seems reasonable to assume that any diversity related attribute (i.e. both surface- and deep-level) may serve as a basis for group members to segregate their peers into two (or) more homogenous subgroups, and that this segregation in return may increase self-attention in particular among group members in the smaller subgroup (cf. van Knippenberg et al., 2004). For instance, in a group composed of one or two group members upholding conservative values and beliefs, and four or five group members upholding liberal values and beliefs, the

conservative is more likely to become the focus of everybody else's attention if this deep-level diversity attribute is rendered salient.

While higher levels of self-attention lead to matching-to-standard behavior, standards specify and define appropriate behavior (Mullen, 1987). As discussed previously (cf. 2.2.3.), in a work group context, interdependence can be considered the most relevant situational cue informing group members about appropriate behaviour (Brickson, 2000). Under high levels of interdependence, group members become aware of their work group's norms and goals, and regulate their behaviour accordingly (Mullen, 1987) . Under low levels of interdependence, group members become aware of their demographic group's norms and goals, and regulate their behaviour accordingly (cf. Kanter, 1977a, 1977b). Because there are surface-level attributes (i.e. demographics) that become salient under low levels of interdependence, it follows that under low levels of interdependence demographically dissimilar group members are more likely to match their behaviour to their demographic group's standards. Because it is work group membership that becomes salient under high interdependence, it follows that dissimilar group members are more likely match their behaviour to their work group's standards under high interdependence.

Self-regulation failure. The tokenism hypothesis suggests that dissimilarity status diverts group members' attention from the task to self-presentational concerns (Lord & Saenz, 1985), whereas self-attention theory attributes the undermining effects of dissimilarity status to group members' unfavourable outcome-expectancies (Mullen, 1983, 1987). While both explanations might have their merit, more recent theorizing about self-regulation revealed that these effects may actually be a consequence of depleted self-regulatory resources (Vohs et al., 2005). Self-

regulation thereby refers to group members' capacity to adjust their behaviours to social, situational and task demands (cf. Baumeister & Vohs, 2007; Schmeichel et al., 2003). Because self-regulation consumes a global -- but limited -- resource, the depletion of this resource undermines or impairs consecutive acts of self-regulation. Depletion might be a consequence of unclear or conflicting self-regulatory goals (cf. Vohs et al., 2005), and prior or simultaneous acts of self-regulatory behavior, such as, for instance, regulating attention or emotion control (Schmeichel et al., 2003) and self-presentational acts (Vohs et al., 2005), and social exclusion (Baumeister, DeWall, Ciarocco, & Twenge, 2005).

Empirical evidence supports these claims. In an early experimental study Lord and Saenz (1985) demonstrated that students belonging to a numerical ethnic minority displayed limited recall for the contents of a roundtable discussion of everyday topics. The authors speculated that members of a numerical minority "may be overly concerned with the image that they project to others, and may shift attention toward self-presentation and away from the ongoing exchange of information" (p. 923). Further evidence for this idea is provided in experiment 4 conducted by Vohs et al. (2005). The authors could show that if an individual is in a numerical minority position, self-regulation failure occurs when the tokens ethnic self-concept is made salient (see experiment 4, Vohs et al., 2005). Thus, it might not so much be dissimilar group members' unfavorable outcome-expectancies undermining their self-regulation, but rather the depletion of their self-regulatory resources.

2.3.   Towards an Integrative Social Self-Regulation Framework

The social identity approach (Tajfel, 1978; Tajfel & Turner, 1979; Turner, 1982) as applied in 2.2.3. suggests that surface-level diversity undermines social integration

and individual effectiveness under low interdependence, and deep-level diversity undermines social integration and individual effectiveness under high interdependence. In contrast, self-attention theory (Mullen, 1983, 1987) as discussed in 2.2.5 suggests that surface-level relational diversity undermines individual effectiveness under low interdependence, and deep-level diversity facilitates individual effectiveness under high interdependence.

It appears at first glance that the prediction concerning relational diversity effects derived from self-attention theory (Mullen, 1983, 1987) are hardly reconcilable with those derived from the social identity approach (Tajfel, 1978; Tajfel & Turner, 1979; Turner, 1982). However, recent theorizing on social self-regulation (Abrams, 1994) – which integrates self-attention theory and the social identity approach into a single theoretical framework – might provide an avenue to reconcile these two approaches. Accordingly, this perspective will be discussed next, and it will be shown how it might aid to integrate theorizing on self-attention and SCT into a common theoretical framework. Based on this discussion, such an integrative theoretical framework is then developed.

2.3.1. Social Self Regulation Model

Integrating theorizing on self-attention and SCT, Abrams (1994) suggests in his social self-regulation model (SSR) that self-attention and social category salience refer to two different processes, which are evoked by two different sets of antecedents and which specify different behavioral responses. While social category salience specifies which self-categorization becomes salient (i.e. none, personal or social identity), self-attention increases group members' focus on these self-categorizations and determines to which degree automatic (in case of low self-

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attention) or conscious (in case of high self-attention) behavioral responses are elicited.

That self-attention and social category salience are evoked by two different sets of antecedents is reflected in the ways researchers manipulate and operationalise social identity salience and self-attention (Mullen, Migdal, & Rozell, 2003). Reviewing the literature, Mullen et al. report that self-awareness has mainly been manipulated by placing participants in front of a mirror or camera, while accessibility-based social identity manipulations (see also Haslam, 2004) include making participants wear group relevant uniforms (such as badges and teams dress) or decorating participants' response environment with group relevant regalia (such as family trees, posters or banners). Even though the proposition that self-attention and social category salience are two different factors, which are evoked by different set of stimuli and eliciting different behavioral responses (cf. Mullen et al., 2003), hasn't been tested directly, indirect empirical evidence brought forward by social psychologists in experimental settings is in line with these arguments. For instance, a study by Abrams (1985) demonstrated that group members high in private self-consciousness (which he used as an indicator of participants' work group identity) displayed more in-group pride, but only in the enhanced self-attention condition. And Kernis et al. (1988) report that the proportion of "we" responses in a sentence completion task was higher for groups placed in front of a mirror than those in a control condition without a mirror. Considering that participants' social identity was rendered salient in both groups, the manipulation seemed to have increased participants' awareness of their group identity, and rendered behavioral responses in terms of this identity more likely. While Abrams's (1994) SSR model accounts for

the possibility that group members first have to determine which social category is actually salient, the conditions themselves are not further specified.

When applied to the case of relational diversity in work groups, it is argued here, based on arguments presented in section 2.2.3, that inter-group dynamics prevail and dissimilar work group members become more aware of their demographic group membership under low interdependence, while intra-group dynamics prevail and dissimilar group members become more aware of their work group membership under high interdependence. It follows that dissimilar group members are not only more likely to become aware of their demographic (i.e. under low levels of interdependence) or work group membership (i.e. under high levels of interdependence), they are also more likely to self-regulate their behavior in terms of their demographic (i.e. under low levels of interdependence) norms or their work group's (i.e. under high levels of interdependence) norms. In contrast, the more similar group members are not only less aware of their demographic (i.e. under low levels of interdependence) or work group (i.e. under high levels of interdependence) membership; they are also less likely to self-regulate their behavior in terms of their demographic (i.e. under low levels of interdependence) or work group (i.e. under high levels of interdependence) membership. Accordingly, dissimilarity should undermine social integration and effectiveness in diverse work groups under low interdependence – because dissimilar group member regulate their behavior in relation to their demographic group standards, while it should be facilitated under high interdependence – because dissimilar group members regulate their behavior in relational to their work group standards.

Supporting this line of argument, Abrams (1985) reports empirical evidence that in-group bias, which he argues involves higher levels of regulation in terms of

one's salient social identity, was enhanced in a minimal group situation when a self-attention manipulation was present, while it was decreased in the absence of such manipulation. In a similar vein, an experiment by Hong and Harrod (1988) demonstrated that in-group bias increased when group members focused their attention on the in-group, while it decreased when they focused their attention on the out-group. Moreover, higher levels of in-group bias were associated with higher levels of conscious thought, i.e. with higher levels of self-regulation. Similarly, Mullen's (1992) meta-analytic findings provide corroborating evidence for the idea that in-group bias increase with smaller proportionate in-group size.

2.3.1. Dissimilarity Measures as Indicators of Self-Categorization and Self-Attention

If social category salience and self-attention reflect two different processes, which are evoked by two different sets of antecedents, then it becomes plausible that relational diversity may actually evoke both social category salience and increased levels of self-attention. This idea is consistent with differences in how tokenism (e.g. Kanter, 1977a, 1977b) and self-attention researchers (e.g. Mullen, 1983, 1987) as opposed to relational diversity researchers (e.g. Tsui et al., 1992) conceptualize and measure relational diversity.

Relational demography and dissimilarity measures. Relational diversity researchers relying on the social identity approach or similarity-attraction paradigm employ relational demography and dissimilarity measures, most commonly the difference score (D-score) approach (e.g. Tsui et al., 1992; Wagner, Pfeffer, &

O'Reilly, 1984)[2]. The difference score operationalises relational diversity as the Euclidian Distance between a group member's diversity characteristic and those of his or her peers. Relational diversity researchers thereby rely on Tsui, et al.'s (1992) relational diversity score (RDS) formula:

$$RDS = \sqrt{[1/n \sum_{i}^{j} (S_i - S_j)^2]}$$

Where S_i = a focal individual's value on a specific diversity related attribute, and S_j = the value on the same variable for every other individual in the work group, while n = group size. For categorical variables, the RDS is calculated by assigning a 1 to a focal group member for each other member in the group he or she differs from in terms of ethnical background, and a 0 for each member in the group he or she is similar to in terms of ethnical background. These values are then summed and divided by the total number of group members, and the square root of the result is taken. For example, in a work group composed of one Irish, two Dutch, and one Polish, work group size is $n = 4$. The Irish group member is allocated a 1 for each of the two Dutch group members, and a 1 for the Polish group member yielding the squared sum of $(1)^2 + (1)^2 + (1)^2 = 3$, divided by the group size $n = 4$ equaling 0.75, of which the square root is 0.87.

For continuous variables, such as age, the relational demography score is the square root of the summed differences between an individual S_i's age, and the age for every other individual Sj in the sample for the work group, divided by the total number n of respondents in the work group. For example, in a work group composed of one 60 year old, two 40 year olds, and one 30 year old , work group size is $n = 4$.

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[2] This measure has been criticized on methodological grounds (cf. H. M. Williams & Mean, 2004). However, as can be learnt from the discussion in Appendix A given the even shortcoming associated with other alternatives, the current work relies on the RDS measure.

The relational diversity score for the 60 year old employee is then $(60 - 45)^2 + (60 - 45)^2 + (60 - 30)^2 = 550$, of which the square root is taken, leading to approximately 23.45, which is then divided by group size, which gives about 5.86.

Tokenism and numerical minority status measures. Research on tokenism measure dissimilarity with the proportional dissimilarity measure (Kanter, 1977a, 1977b) and self-attention theory measures dissimilarity with the other-total ratio (Mullen, 1983, 1987). As with other relational diversity measures, the proportional dissimilarity measure and the other-total ratio conceptualize a group member's dissimilarity regarding a given social type (e.g. demographics, cultural background, status) as relational differences, i.e. as the extent to which a group member differs from all other group members regarding this social type.

Proportional dissimilarity measure. The proportional dissimilarity measure (PDM) has been developed by Kanter (1977a; 1977b) in her seminal work on tokenism. PDM operationalises the relative numbers of socially (e.g. in terms of demographics and status) or culturally different people in a group (Kanter, 1977a, 1977b) as the percentage of people of the same social type or culture in a given group, and can be expressed mathematically as following:

$$PDM = 100 - \left(\frac{A}{n} * 100 \right)$$

where n = group size and A = number of people belonging to a given social category. For instance applied to the above mentioned work group composed of one Irish, two Dutch, and one Polish, work group size is $n = 4$. Accordingly, PDM equals $100 - ((1/4)*100) = 100\% - 25\% = 75\%$ for the Irish and the Polish, while it equals $100 - ((2/4)*100) = 50\%$ for each of the two Dutch. Thus, for the Irish and Polish group member 75% of the members in their group are culturally different from themselves, while for the Dutch they are only 50% of the group members.

Other-total ratio. Inspired by Kanter's (1977a, 1977 b) work, Mullen (1983, 1987) defined the other-total ratio (OTR) as the proportion of the total group that is comprised of people that are dissimilar in terms of a given diversity related attribute from a focal group member. Thus:

$$\text{OTR} = \frac{O}{O + S}$$

where S = number of people in the work group sharing the same diversity related attribute as the individual, O = number of people that do not share this diversity related attribute. It appears that $S + O$ equals the group size, and O is the same variable as B in Kanter's formula. Thus, OTR is the same measure as PDM, when PDM is rescaled by dividing it by 100.

The additive other-total ratio (AOTR) is an extension of the OTR and takes into account that more than two subgroups can be formed for categorical attributes (such as ethnicity and cultural background) on the basis of the diversity-related attribute. For instance, two such subgroups can be formed in a group composed of one Polish and three English, while four such subgroups can be formed in a group composed of one Polish, two Dutch, and one Irish. Accordingly AOTR takes such differences into account and is calculated based on the following formula:

$$\text{AOTR} = \sum_{1}^{n-1} \frac{O_n}{O_n + S}$$

where n = number of ethnic groups in the work group, S = number of people in the work group with the same ethnic background as the individual, O_n = number of people from any other of the n ethnic groups in the work group. For example, in a work group composed of one Irish, two Dutch, and one Polish, the number of ethnic groups is $n = 3$. AOTR is then the sum of 2/(2+1) for the Irish in relation to the

Dutch subgroup and $1/(1+1)$ for the Irish in relation to the Polish "subgroup",

yielding $(2/3) + (1/2) \sim 1.17$.

Comparing relational demography and dissimilarity measures with the

tokenism and numerical minority status measure. When the PDM measure is

rescaled by dividing it by 100, it can be expressed as a function of the RDS measure

as long as both measures are confined to categorical variables. As

$$\frac{\text{PDM}}{100} = 1 - \frac{A}{n}$$

where A = number of people that are similar to a focal group member in terms of a

given diversity related social category and n = group size, and because

$$\text{RDS} = \sqrt{\frac{B}{n}}$$

where B = number of people that are dissimilar to a focal group member in terms of

a given diversity related social category, it follows when expressing B as a function

of A whereby $B = n - A$ that

$$\text{RDS}^2 = 1 - \frac{A}{n} = \text{PDM}$$

or

$$\text{RDS} = \sqrt{\text{PDM}}$$

Further, given an outcome y (e.g. social integration or individual effectiveness), and

conceptualizing the RDS measure as a function of PDM for a given set of x

individuals, it can bee shown that RDS and PDM explain different portions of the

variance in the outcome variably y. Specifically it follows that $y = a*\text{PDM}_x + b*$

$\sqrt{\text{PDM}_x}$. Leaving different group sizes aside, n can be treated as a constant.

Assuming that relational diversity researchers suggest a negative relationship (i.e., a

and b are negative) between a group member's dissimilarity and a given outcome (cf. Riordan, 2000), it follows that for PDM the negative effects on a given outcome increase with increasing levels of dissimilarity, while for increasing levels of RDS (which equals $\sqrt{PDM}$) the effects on a given outcome follow a L-shape (i.e. the decrease vanishes with increasing levels of dissimilarity).

Thus it appears that even though these two measures are conceptually similar (both measure a group member's level of dissimilarity and both measures can be expressed as a function of each other), they pertain to different aspects of a group member's dissimilarity. Specifically, the PDM measure suggests a linear effect, while the RDS measure suggests an inverted parabolic effect on outcome y. These different statistical properties reflect differences at the conceptual level. While researchers relying on the social identity approach suggest that the RDS measure captures social category salience (e.g., Chatman et al., 1998; Chattopadhyay, Tluchowska et al., 2004; Tsui et al., 1992), researchers relying on the tokenism hypothesis (e.g., Kanter, 1977a; Lord & Saenz, 1985; Vohs et al., 2005) and self-attention theory (e.g., Mullen, 1983), suggest that the PDM, OTR, and AOTR measures (or as they refer to it: proportionate in-group size) reflect visibility or the level of self-attention evoked by group members' dissimilarity. Accordingly, relational diversity can be defined as pertaining to two different things: *separation* – reflecting the degree of social category salience of a given diversity attribute (cf. Harrison & Klein, 2007), and *visibility* – reflecting the degree to which a dissimilar group members is visible or stands out, and becomes self-attentive.

In sum then it appears that relational diversity may actually reflect two things: *separation* and *visibility*. These two aspects are reflected in different ways of measuring relational diversity. While RDS captures relational diversity's social

category salience aspect, PDM, OTR and AOTR capture relational diversity's self-attention aspect. Moreover, according to the SSR model (Abrams, 1994), social category salience determines which self-categorization becomes salient (i.e. none, personal or social identity), whereas self-attention increases group members focus on these self-categorizations and determines to which degree automatic (in the case of low self-attention) or conscious (in the case of high self-attention) behavioral responses are elicited. As such, dissimilar group members might not only become more aware of their demographic (i.e. under low levels of interdependence) or work group (i.e. under high levels of interdependence) membership, they might also be more likely to self-regulate their behavior in terms of their demographic (i.e. under low levels of interdependence) or work group (i.e. under high levels of interdependence) membership.

2.3.2. Integrative Social Self Regulation Framework

It follows from the previous sections that the effects elicited by relational diversity specified by the SCT (cf. section 2.2.3) and those specified by self-attention theory (cf. section 2.2.8) can actually be reconciled and integrated within a social self-regulation framework. Consequently, SCT and self-attention theory are integrated in the following in a single social self-regulation framework.

Based on the SCT framework presented in section 2.2.3 it follows that under low levels of interdependence, inter-group dynamics prevail rendering surface-level diversity attributes salient. Under such conditions, group members categorize themselves in terms of their demographic group membership. Group members that categorize themselves in terms of their demographic group, regulate their behavior accordingly, and thus become less socially integrated within their work group – reflecting higher levels of separation from their work group. Based on the self-

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attention framework presented in section 2.2.8, it follows not only that demographically dissimilar group members are more likely to categorize self in terms of their demographic group membership under low levels of interdependence (as suggested by SCT framework), but also that they are more likely to become aware of their demographic group's standards – brought about by their heightened visibility. Consequently they are more likely to self-regulate their behavior in terms of their demographic group's standards. Unlike suggested by the SCT framework this appears to be a conscious process. This might explain the findings reviewed in section 2.2.1., that demographically dissimilar group members are more likely to display intergroup bias, which requires conscious self-regulation as shown in the pervious section. It follows from the homophile literature (see section 2.2.4) that not only are dissimilar group members more likely to self-regulate their behavior in terms of their demographic group membership, the more similar peers may also experience these behaviors as a threat towards their identity as work group members, and may accordingly discriminate and derogate the more dissimilar group members. It follows that demographically dissimilar group members are less likely to become socially integrated within their work group, and consequently display lower levels of effectiveness.

According to SCT (see section 2.2.3.), deep-level relational diversity attributes become salient and group members categorize self as a work group member under high levels of interdependence. Thus, there are intra-group dynamics that prevail under such conditions, and group members perceive themselves and others as more or less prototypical – reflected in higher or lower levels of separation. As they are deep-level diversity attributes that become salient under such conditions, group members who are more dissimilar in terms of deep-level attributes are

perceived as less prototypical, which in return leads to lower levels of social integration. According to the self-attention framework (see section 2.2.8) deep-level dissimilarity also increases dissimilar group members' awareness of their work group's standards -- brought about by their heightened visibility. In turn they are more likely to regulate their behavior according tor work group standards, thereby making them more effective. However, due to their lower prototypicality (i.e. higher separation), dissimilar group members are less liked by their peers and feel less attached to their work group. In return they may become socially excluded leading to the depletion of their self-regulatory resources, which in return may undermine their effectiveness. Depending on the level of separation and visibility, negative, nil, or even positive effects on individual group member effectiveness are possible. They are negative when the effects of separation are stronger than the visibility effects, they are nil when these effects cancel each other out, and they are positive when the visibility effects are stronger than the separation effects.

2.4.   Chapter Summary and Hypotheses

This chapter developed a new integrative social self-regulation framework which might be better suited to explain relational diversity effects on social integration and individual effectiveness. Based on this integrative theoretical framework, it was suggested that low levels of interdependence will render surface-level diversity attributes salient, leading to lower levels of social integration and ultimately to lower levels of individual effectiveness for more dissimilar group members. It was also suggested that deep-level diversity attributes are rendered salient under high levels of interdependence, and that deep-level relational diversity may elicit both positive and negative outcomes on dissimilar group members' effectiveness.

Hypothesis tested in chapter 3 (Study 1). In the next chapter, chapter 3, this framework is tested using meta-analytic and structural equation modeling techniques. Specifically, the study presented in chapter 3 estimates the sizes of the relational diversity effects on social integration and individual effectiveness encountered in previous research. And building on the newly developed social self-regulation framework it develops the following model (see Figure 2) and tests the following hypotheses:

> ***Hypothesis 1.1a****: The negative relationship between surface-level relational diversity and social integration becomes weaker under high levels of interdependence and stronger under low levels of interdependence.*

> ***Hypothesis 1.1b****: The negative relationship between deep-level relational diversity and social integration becomes stronger under high levels of interdependence and weaker under low levels of interdependence.*

> ***Hypothesis 1.2****: A model in which social integration is not only a function of dissimilar group members' psychological reactions to their level of dissimilarity but also a consequence of other group members psychological reactions towards a focal group members' level of dissimilarity accounts best for the effects of surface-level relational diversity on social integration and individual effectiveness. Social integration is thereby posited to fully mediate the negative relationship between surface-level relational diversity and individual effectiveness.*

> ***Hypothesis 1.3****: A model in which social integration is not only a function of dissimilar group members' psychological reactions to their level of dissimilarity but also a consequence of other group members psychological reactions towards a focal group members' level of dissimilarity accounts best for the effects of deep-level relational diversity on social integration and individual effectiveness. Social integration thereby suppresses the positive effects of deep-level relational diversity on individual effectiveness.*

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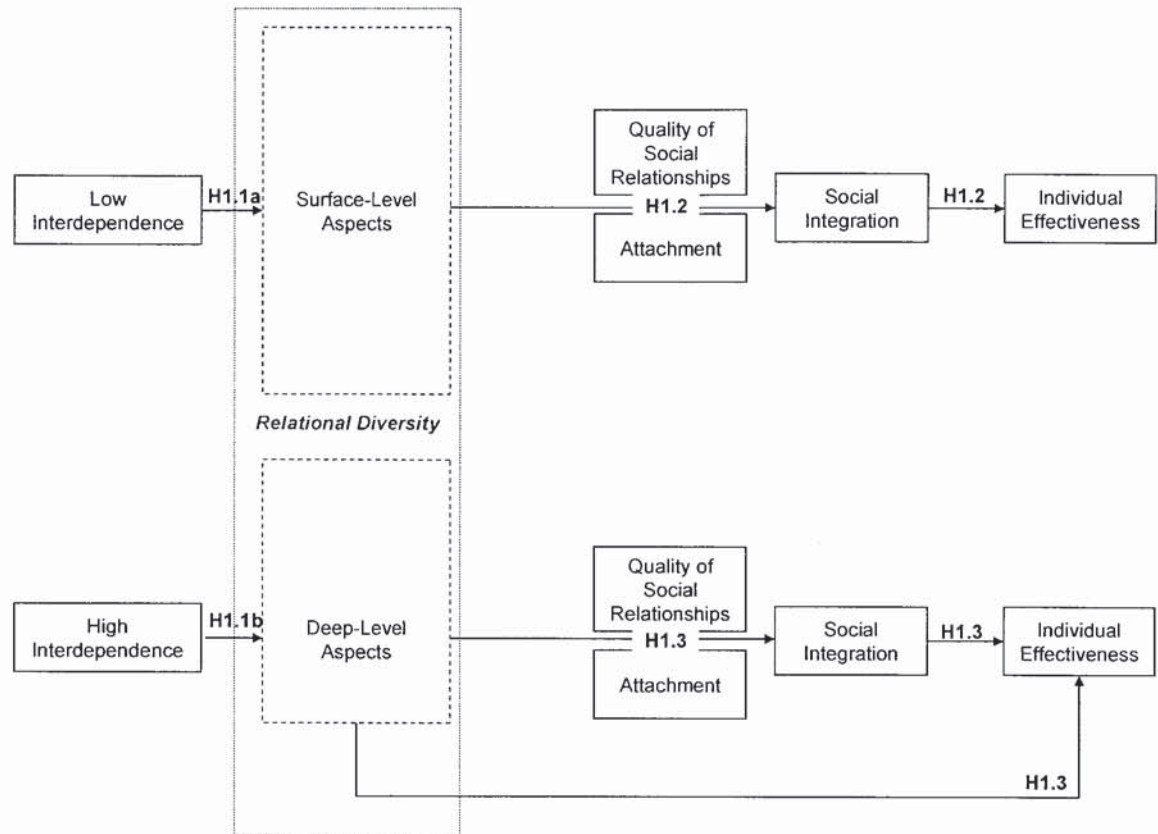
Figure 2. Model tested in Chapter 3 (Study 1).
H refers to Hypothesis.

Hypothesis tested in chapter 4 and 5 (Study 2 and 3). Chapter 4 and 5 delve

deeper into the underlying mechanisms that bring about the simultaneous positive

and negative effects on individual effectiveness. Given that these occur according the

social self-regulation framework only under high interdependence, the studies

presented in chapter 4 and 5 look at real work groups that operate under high levels

of interdependence. Building on the newly develop social self-regulation framework

and using ethnic dissimilarity as a prominent example, these studies conceptualize

relational diversity as separation and visibility, and look at how these aspects of

relational diversity affect individual effectiveness. Specifically, chapter 4 and 5 test

and develop the model displayed in Figure 3, which assumes that in real groups that

operate under high levels of interdependence ethnic dissimilarity's visibility and

separation aspects become salient. Based on this model the following hypotheses are tested in chapter 4 (Study 2):

Hypothesis 2.1: Visibility is positively related to individual effectiveness

Hypothesis 2.2: Separation is negatively related to individual effectiveness.

Hypothesis 2.3: The effect of group members' ethnic dissimilarity on individual effectiveness is positive when visibility is maximized and separation is minimized, while they are negative when the opposite is the case.

And the following hypotheses are tested in chapter 5 (Study 3):

Hypothesis 3.1: Visibility is positively related to self-monitoring.

Hypothesis 3.2: Separation is negatively related to self-monitoring.

Hypothesis 3.3: The overall effect of ethnic relational diversity on self-monitoring is positive when visibility is maximized and separation is minimized, while they are negative when the opposite occurs.

Hypothesis 3.4: The negative relationship between separation and self-monitoring is attenuated for individuals with high levels of diversity experience.

Hypothesis 3.5: Self-monitoring is positively related to individual effectiveness.

Hypothesis 3.6: Self-monitoring is positively related to impression formation.

Hypothesis 3.7: Impression formation is positively related to individual effectiveness.
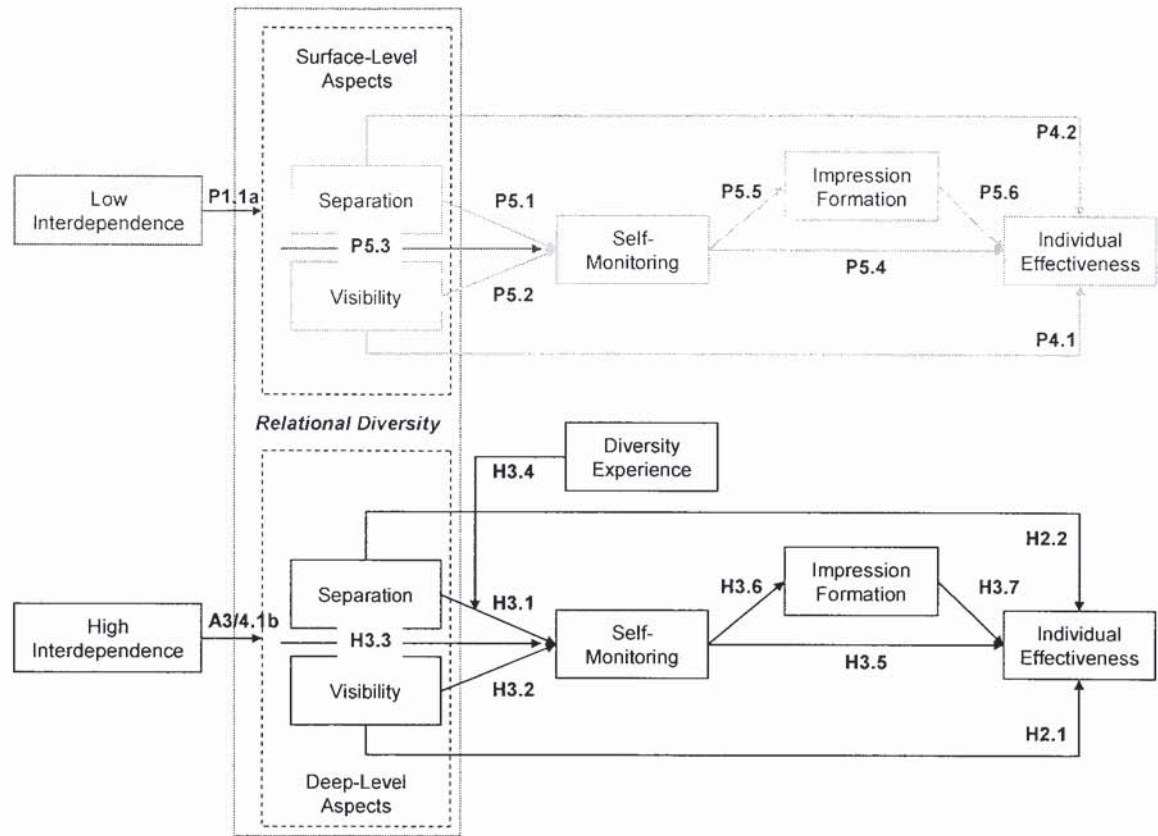
Figure 3. Model tested in Chapter 4 and 5. (Study 2 and Study 3).

H refers to Hypothesis. A refers to Assumption. P refers to Hypothesis. Grey colored Propositions are not tested in this thesis. Black colored Hypothesis are tested in Chapter 4 (Study 2) and 5 (Study 3).

Further propositions (not tested in this thesis). For sake of completeness,

Figure 3 also displays the effects of relational diversity's visibility and separation

effects on individual effectiveness under high interdependence (see Figure 3 greyly

coloured items – upper row), which are not empirically tested within this thesis.

Specifically, under low interdependence surface-level aspects become salient, and

both relational diversity's similarity *and* visibility aspects undermine dissimilar

group member's effectiveness (see Proposition 4.1 and 4.2). These effects are

brought about by both separation and visibility aspects undermining dissimilar group

member's matching-to-standard behaviours (referred to as self-monitoring – see

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Proposition 5.1, 5.2 and 5.3), which in return leads to less favourable impression peers form of the dissimilar group members (Proposition 5.4., 5.5, 5.6), and ultimately to lower effectiveness (Proposition 5.4). As the negative effects of surface-level relational diversity on social integration and individual effectiveness are overcome under high interdependence – looking at these effects under low interdependence would have been solely theoretically motivated without much practical relevance. The studies presented in Chapter 4 and 5 therefore focus solely on the effects of visibility and separation on individual effectiveness under high interdependence.

CHAPTER 3

Study 1: Surface versus Deep Level Relational Diversity, Social Integration and Individual Effectiveness: A Meta-Analytic Integration[3]

Relational demographers and dissimilarity researchers contend that group members who are dissimilar (vs. similar) to their peers in terms of a given diversity attribute (e.g. demographics, attitudes, values or traits) feel less attached to their work group, experience less satisfying and more conflicted relationships with their colleagues, and consequently are less effective. However, qualitative reviews suggest that empirical findings tend to be weak and inconsistent (Chattopadhyay, Tluchowska et al., 2004; Riordan, 2000; Tsui & Gutek, 1999), and that it remains unclear when,

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[3] The following study was presented at the Academy of Management Conference in Los Angeles in 2008. It was co-authored by Michael Riketta and Felix C. Brodbeck. Co-authorship thereby reflects the contributions these authors made while supervising the author during his PhD. As such they guided his research and critically commented on various earlier and the final draft. However, conceptualization, retrieval and coding of primary studies, analysis and writing-up have been exclusively carried out by the author of this PhD project. To reflect the presented paper as closely as possible and to acknowledge the second and third authors contributions, the following study is written using the plural form.

The author is also very grateful to Christina Stroppa and Alexa van Vever for their help locating studies and providing coding assistance, and to Doris Fay, Jane Matthiesen, Claudia Sacramento, and Rolf Van Dick, Dan van Knippenberg and Michael West who commented on an earlier version of this chapter.

Following the guidelines of the Academy of Management Conference this study deviates from the APA style used throughout this dissertation and reports only two decimal places instead of three for all statistics. The same applies to the referencing style used in Appendix A1 and A2.

how and to what extent such differences (i.e. relational diversity) affect group members' social integration (i.e. attachment with their work group, satisfaction and conflicted relationships with their peers) and effectiveness (Riordan, 2000). This absence of meta-analytically derived effect size estimates and the lack of an integrative theoretical framework leave practitioners with inconclusive advice regarding whether the effects elicited by relational diversity are practically relevant, and if so how they should be managed.

Relying on the social identity approach (Tajfel, 1978; Tajfel & Turner, 1979; Turner, 1982), research on relational demography suggests that dissimilarity on demographic attributes triggers *inter-group dynamics*: dissimilar group members categorize themselves in terms of their demographic attributes rather than their work group membership (cf. Chattopadhyay, Tluchowska et al., 2004; cf. Riordan, 2000; cf. Tsui & Gutek, 1999). Consequently, they feel less socially integrated, and therefore become less effective. Yet, in work groups, which usually operate under high levels of interdependence (cf. Hackman, 1987; cf. Katzenbach & Smith, 1993), these inter-group dynamics are frequently overcome, and people are more likely to perceive themselves and each other in terms of their idiosyncratic similarities and differences (cf. van Knippenberg & Schippers, 2007). Consequently deep-level relational diversity characteristics might be more salient in work groups. This might then lead via *inter-personal dynamics* such as similarity-attraction processes (cf. Byrne, 1971) to lower social integration and individual effectiveness of group members who are dissimilar on deep-level attributes. While empirical work on the group level of analysis supports this line of reasoning (cf. Harrison et al., 2002), it remains unclear whether these findings generalize to the individual level of analysis. This study fills the gap

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Moreover, the explanatory power of the similarity-attraction paradigm might be limited in a work group context. Based on Hogg, Hardie and Reynolds (1995), we suggest that deep-level relational diversity might enfold its effects via *intra-group dynamics*, and not via inter-personal dynamics as suggested by the similarity-attraction paradigm. Adopting such an intra-group perspective on deep-level relational diversity effects and relying on self-attention theory (Carver & Scheier, 1982; Duval & Wicklund, 1972; Mullen, 1987), we posit the counterintuitive hypothesis that deep-level relational diversity can have a positive effect on individual effectiveness. Specifically, we argue that employees who categorize themselves in terms of their work group membership but who are dissimilar on deep-level attributes, should be particularly prone to experience a discrepancy between their own behavior and their work group's behavioral standards, which might then lead to higher levels of effectiveness via heightened performance and conformity pressure. These positive effects however might be suppressed, as dissimilar group members are also more likely to experience lower outcome expectancies due to lack of adequate behavioral scripts and social constraints.

Finally, relational diversity research takes a rather negative stance on dissimilar group members (cf. Chattopadhyay, Tluchowska et al., 2004; Riordan, 2000; Tsui & Gutek, 1999) by explaining their lack of social integration and lower effectiveness mainly as a function of dissimilar group members' reactions to their level of dissimilarity (e.g. via the before mentioned self-categorization or similarity-attraction processes). It could be possible, however, in particular for surface-level relational diversity attributes, that relational diversity effects on social integration are also a function of others' psychological reactions towards the focal, dissimilar group members. Since the more similar group members might see their identity as a group

member threatened, they may display intergroup bias, and consequently socially exclude the more dissimilar group members and withhold social support from them (cf. Brickson, 2000; cf. Lau & Murnighan, 1998).

In sum, this study attempts to answer the questions of when, how and to what extent relational diversity affects group members' social integration and individual effectiveness. To do so, we use meta-analytic and structural equation modeling techniques. Thereby, we try to contribute to the literature in several ways. First, the effects of relational diversity on social integration and individual effectiveness are quantified by deriving new meta-analytic correlations for the relationships of surface- and deep-level relational diversity with indicators of social integration and individual effectiveness, and for quality of social relations with individual effectiveness. Second, in testing for interdependence as a moderator of the relationships of surface- and deep-level relational diversity with social integration we attempt to show that the effects of deep-level relational diversity are more important then the effects of surface-level relational diversity in work groups, and that the underlying processes are qualitatively different. Third, in combining the newly derived correlations with already existing meta-analytic correlations, structural equation modeling techniques are used to further qualify these underlying processes. By incorporating a social interactive component, we suggest that existing theoretical frameworks' predictive and explanatory power can be increased by modeling surface-level relational diversity effects and, to a lesser extent, deep-level relational diversity effects on social integration and individual effectiveness as a function of dissimilar group members' negative psychological reactions and other group members' psychological reactions towards them. Informed by the social identity approach and self-attention theory, we then suggest that these effects are elicited by

inter-group dynamics for surface-level relational diversity and by intra-group dynamics for deep level relational diversity. Conceptualized that way, surface-level relational diversity should have a negative effect on individual effectiveness, which is mediated by social integration, and deep-level relational diversity should have a positive effect on individual effectiveness, which is suppressed by social integration.

3.1. Theoretical Background

In line with social identity theory (Tajfel, 1978; Tajfel & Turner, 1979; Turner, 1982), we define a *work group* as a set of individuals who perceive themselves, and who are perceived by non members, as constituting an identifiable social aggregate within a work setting. A *real team* is referred to as a work group that is further characterized by high levels of goal, task, reward and resource interdependence, while a *pseudo team* is defined as a work group that is characterized by low levels of goal, task, reward and resource interdependence (Hackman, 1987; Katzenbach & Smith, 1993).

Relational diversity refers to actual differences on any diversity characteristic on which a focal individual can differ from other members in a social unit. Diversity characteristics refer here to actual *surface-* and *deep-level* relational attributes. According to Harrison, Price, Gavin and Florey (1998) surface-level attributes are overt demographic characteristics. These attributes are almost immediately observable and measurable in simple and valid ways, and social consensus can usually be assumed for each of these demographic attributes. Such attributes for instance include age, sex, race/ethnicity and tenure. Deep-level attributes refer to underlying psychological characteristics. Information about these factors is communicated through verbal and nonverbal behavior patterns and is only learnt through extended interaction and information gathering. These attributes are subject

to construal and are more mutable than other aspects; they include values, attitudes, and personality.

Social integration refers to "the degree to which an individual is psychologically linked to others in a group" (Hambrick, 1994: 189) and is conceptualized here in terms of group members' job attitudes and their quality of social relations. *Quality of social relations* refers to a member's perceptions of the status of his or her social relations with other members of a social unit (Asendorpf & Wilpers, 1998). The construct thereby subsumes an individual's perceptions of relationship conflict experienced when interacting with others in the social unit, the amount of social support received from other members of the social unit, and the extent to which the individual perceives him or herself included in a social unit by his or her coworkers. *Job attitudes* are conceptualized in terms of group members' attachment to their work unit and satisfaction with their job (Harrison et al., 2006). *Attachment* refers to the overlap of an individual's self image with his or her image of the social unit (Riketta & Van Dick, 2005), which comprises the two closely related constructs of commitment and identification (Riketta, 2005; Riketta & Van Dick, 2005). And *job satisfaction* refers to a cognitive and/or affective evaluation of one's work as more or less positive or negative (Brief & Weiss, 2002).

Individual effectiveness refers to desirable inputs to one's work role (Harrison et al., 2006) and is conceptualized here in terms of a group member's permanent withdrawal from work (i.e. *turnover*), as well as his or her task and contextual performance. *Task performance* refers to an individual's proficiency with which he or she performs activities that contribute to a social units' *technical core* either indirectly, by providing needed materials or services, or directly, by implementing part of its technological process (Borman & Motowildo, 1993). *Contextual*

performance refers to discretionary behavior that is not part of an employee's formal job requirements, not enforceable by supervisors, and may not be recognized by formal reward systems (Borman & Motowildo, 1993; Organ, 1988).

3.1.1. Surface- versus Deep-Level Relational Diversity Effects on Social Integration

Relying on social identity theory (Tajfel, 1978; Tajfel & Turner, 1979) and self-categorization theory (Turner, 1982), relational demography researchers argue that surface-level relational diversity attributes trigger *inter-group dynamics*: group members stereotype self and others on the basis of surface-level attributes. Consequently, individuals, who are dissimilar on surface-level relational diversity attributes, categorize themselves in terms of their demographic rather than their work group membership, and should therefore experience weaker psychological links to the work group as a whole and become less socially integrated (cf. Riordan, 2000; Tsui & Gutek, 1999).

Based on the similarity-attraction paradigm (Byrne, 1971) relational diversity researchers argue (e.g. Harrison et al., 1998; Harrison et al., 2002; Riordan, 2000; Schaubroeck & Lam, 2002) that deep-level relational diversity triggers *interpersonal dynamics*: idiosyncratic similarities and differences, such as engendered by deep-level relational diversity attributes of group members, facilitates or hinders interpersonal attraction. Group members that are dissimilar to each other feel less attracted to other group members who are dissimilar on deep-level relational diversity attributes, and find it more difficult and less reinforcing to interact with them. As group members who are dissimilar on deep-level relational diversity attributes do encounter more relationships in which the two interaction partners are

dissimilar, they should feel on average less attracted to their work group, and consequently should experience lower levels of social integration.

Psychological research in the social identity tradition provides an alternative explanation (cf. Hogg et al., 1995). The authors argue that group based attraction (henceforward referred to as social attraction) and not interpersonal attraction, engenders social integration of group members. Group members who categorize themselves in terms of their work group membership do not perceive each other as unique individuals "but as embodiments of the work group – the more prototypical they are the more they are liked" (Hogg et al., 1995:161). Social attraction then is not a function of liking other group members who share the same idiosyncratic values, attitudes and preferences, but rather a function of how prototypical a group member is. Thus, the basis of liking or disliking another group member is not whether this person is similar or different from self, but rather how dissimilar this group member is compared to all other group members. On the basis of this approach we suggest that deep-level relational diversity in work groups engenders *intra-group dynamics*. Thus, work group members who are dissimilar on deep-level relational diversity attributes don't feel less attracted to their work group, because they uphold on average more interpersonal relationships in which both partners are dissimilar to each other, but rather because they perceive self as a less prototypical work group member. This in return should lead to lower levels of social integration.

3.1.2. Surface- versus Deep-Level Relational Diversity Effects on Social Integration under High and Low Levels of Interdependence

These different underlying processes, as described above, might not only account for the weak empirical findings on relational demography (cf. Riordan, 2000); they may also elicit unwanted side effects when managing relational demography. One of the

most common ways of overcoming the negative effects of relational demography is to foster high levels of interdependence (Brickson, 2000), which is generally considered a means of making work groups more effective and turning them into real teams (Katzenbach & Smith, 1993). Re-categorization processes triggered by high levels of interdependence lead group members to categorize themselves and others in terms of a superordinate group identity. This may mitigate the negative effects of surface-level relational diversity and foster high levels of social integration among all group members (van Knippenberg & Schippers, 2007). As more and more work groups are turned into real teams (Lawler, Mohrman, & Ledford, 1998), the effects of surface-level relational diversity on social integration may be underestimated.

Moreover, high levels of interdependence lead not only to re-categorization processes but also to more frequent contact between group members (cf. van Knippenberg & Schippers, 2007). This, in return, might accentuate the negative effects of deep-level relational diversity on social integration, as it makes the underlying deep-level relational diversity attributes more salient. These differences might then lead to lower levels of social integration, either via interpersonal or social attraction. Research on the group level of analysis provides initial support for the idea that interdependence buffers the negative effects of surface-level relational diversity on social integration but accentuates these for deep-level relational diversity (Harrison et al., 1998; Harrison et al., 2002). Yet, these ideas are untested at the individual level. The present study fills this gap.

3.1.3. Intra- and Interpersonal Effects of Surface- and Deep-Level Relational Diversity on Social Integration

Existing theoretical frameworks (e.g. Chattopadhyay, Tluchowska et al., 2004; Riordan, 2000; Tsui & Gutek, 1999) make the implicit assumption that the effects of

relational diversity on social integration are mainly brought about by a focal individual's reactions to his or her level of dissimilarity. Relying on the social identity theory (Tajfel, 1978; Tajfel & Turner, 1979) and self-categorization theory (Turner, 1982), relational diversity researchers argue that "employees compare their own demographic characteristics (e.g. sex, race) with those of other members of their work group or unit and that the extent of perceived dissimilarity with their colleagues influences their identification with their work group and, consequently, work-related outcomes [...]" (Chattopadhyay, Tluchowska et al., 2004: 180). Based on the similarity-attraction paradigm (Byrne, 1971), relational diversity researchers argue that work group members who are dissimilar on deep-level characteristics feel less attracted to their peers, find it more difficult and less reinforcing to interact with them, and consequently may find it more difficult to communicate effectively within the group, which in return may lead to lower levels of social integration (e.g., Schaubroeck & Lam, 2002).

We extend the existing theory by integrating a reciprocity component. We argue that it is also plausible that the effects of relational diversity on social integration are not only brought about by a focal individual's reactions to his or her level of dissimilarity (e.g. via lower identification, ineffective communication etc), but are also affected by other group members' reactions to the focal individual's level of dissimilarity (cf. Brickson, 2000). Thus, dissimilar group members' lower level of social integration might also be brought about through ostracizing and social exclusion behavior by more similar group members against more dissimilar group members in formal and informal group interactions (cf. Brickson, 2000; Lau & Murnighan, 1998).

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As to surface-level relational diversity, the social identity approach (Tajfel, 1978; Tajfel & Turner, 1979; Turner, 1982) would suggest that dissimilar group members not only categorize themselves in terms of their demographic group rather than their work group but also that they are categorized by others in this way. Further, these social categorization process triggered within more similar group members might increase their tendency to discriminate against dissimilar others because they feel more attached to their work group and might thus see dissimilar group members as a threat to their identity as a work group member (Jetten et al., 2004). This type of threat to social identity may in return trigger inter-group bias, which may lead to discrimination, stereotyping and derogation of dissimilar group members (cf. van Knippenberg et al., 2004). Consequently dissimilar member's experience of lower levels of social integration might be further accentuated.

As to deep-level relational diversity, the similarity-attraction paradigm (Byrne, 1971) holds that similarity between group members engenders interpersonal processes of attraction and liking. People that are more similar to each other are more likely to interact and communicate with each other. Because of the fewer number of role partners available for the more dissimilar group members, they are more likely to feel socially excluded and ostracized. Relying on the social identity approach, it could also be argued that group members who are dissimilar on deep-level relational diversity attributes are perceived as being less prototypical (Hogg et al., 1995). According to Hogg et al., people that are perceived as being less prototypical are less liked by *all* group members, and consequently might experience lower quality of social relations compared to the more prototypical group members.

3.1.4. Social Integration and Individual Effectiveness

Meta-analyses provide evidence for the idea that people who are less attached to and satisfied with their social unit are less likely to engage and offer input into their work, and may progressively withdraw from their work (Harrison et al., 2006; Judge, Thoresen, Bono, & Patton, 2001; J. P. Meyer, Stanley, Herscovitch, & Topolnytsky, 2002; Riketta & Van Dick, 2005). Furthermore, because people with negative social relations may have fewer opportunities to meet the performance expectations of their peers (Seers, 1989) and may have less access to resources and information (Seers, 1989), it may be more difficult for them to engage at work and may make it more likely for them to withdraw from work. Thus, lower social integration conceptualized in terms of job attitudes and quality of social relations should decrease individual effectiveness.

3.1.5. Relational Diversity, Social Integration, and Individual Effectiveness

In sum, our previous arguments suggest that surface- and deep-level relational diversity elicit a direct negative effect on social integration, and that lower levels of social integration lead to lower levels of individual effectiveness. Thus, social integration should fully mediate the negative relationship of surface- and deep-level relational diversity on individual effectiveness.

Relying on self-attention theory (Carver & Scheier, 1982; Duval & Wicklund, 1972; Mullen, 1987), it may also be plausible that social integration has two opposing effects on individual effectiveness – a facilitative one resulting from increased awareness of performance standards and a detrimental one resulting from increased awareness of one's failure to meet these standards. More specifically, the theory suggests that dissimilar group members become more self-attentive and in the presence of a behavioral standard increase their attempts to match-to-standard. This

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pressure to match-to-standard might lead via heightened motivation to higher levels of effectiveness in particular among the more dissimilar group members. However, according to self-attention theory, this discrepancy-reduction process is paralleled by an expectancy-assessment process, in which own resources and social constraints are evaluated (cf. Carver & Scheier, 1982). While a favorable assessment will lead to match-to-standard behavior, unfavorable assessments will lead to disengagement. Lack of social integration may either reflect or cause such unfavorable expectancy-assessments. This way relational diversity might elicit positive effects on individual effectiveness, which are then suppressed by lower levels of social integration. Thus, weak links found between relational diversity and individual effectiveness might be a result of the expectancy-assessment and discrepancy-reduction processes occurring simultaneously.

Taking further into account that surface- and deep-level relational diversity might trigger different dynamics within groups, different outcomes for surface- and deep-level relational diversity are likely. It has been argued that surface-level relational diversity triggers inter-group dynamics. Thus, behavioral standards for surface-level relational diversity are not derived from work group membership but from demographic group identity. As such behavioral standards evoked by work group membership are neither informative nor normative for group members who are dissimilar on surface-level diversity attributes. These group members, then, should experience much less pressure or none at all to match to the behavioral standards of their work group. Consequently, positive effects evoked by heightened self-attention are less likely to occur.

If the effects are brought about by interpersonal dynamics, the same should hold true for deep-level relational diversity. Under these dynamics group members

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categorize themselves and others based on idiosyncratic differences and not based on work group membership. Again, behavioral standards elicited by work group membership are neither normative nor informative, and thus group members who are dissimilar on deep-level relational diversity attributes should to a much lesser extent, if at all, experience pressure to match to the behavioral standards of their work group. Thus, positive effects of deep-level relational diversity are unlikely to occur.

If however, deep-level relational diversity engenders intra-group dynamics as we suggested, group members should categorize self and each other based on their work group membership. Then behavioral standards elicited by work group membership become normative and informative, and thus group members that are dissimilar on deep-level relational diversity should experience heightened pressure to conform to the behavioral standards elicited by their work group. This may allow the positive direct effects to occur.

3.2.   Hypothesis and Model Comparisons

3.2.1. The Moderating Role of Interdependence

Based on our argument in the previous section, we suggest that interdependence moderates the relationship of surface- and deep-level relational diversity with social integration in the following ways:

Hypothesis 1a: *The negative relationship between surface-level relational diversity and social integration becomes weaker under high levels of interdependence and stronger under low levels of interdependence.*

Hypothesis 1b: The negative relationship between deep-level relational diversity and social integration becomes stronger under high levels of interdependence and weaker under low levels of interdependence.

3.2.2. Model Comparisons

We further posit four different models, which are displayed in Figures 4-7 and will be described next.

Model 1: Single process, full mediation. The first model is in line with existing theoretical frameworks in relational diversity research (e.g. Riordan, 2000; Tsui & Gutek, 1999). The model suggests that for both surface- and deep-level relational diversity the relationship between relational diversity and individual effectiveness is negative, that this process is mediated by lowered social integration, and that relational diversity elicits lower social integration *only* via dissimilar group members psychological reactions (i.e. via the assumed self-categorization processes for surface-level relational diversity and social or interpersonal attraction processes for deep-level relational diversity attributes).

We argue that this perspective can be operationalized in a model which treats job attitudes (reflected by group members' attachment and satisfaction) and quality of social relations as reflective indicators of the social integration construct (cf. Tsui et al., 1992). Reflective indicators refer to manifestations of a construct whereby its measures are assumed to co-vary (Edwards & Bagozzi, 2000). In particular we suggest that because dissimilar group members show less favorable reactions to their level of dissimilarity, they experience lower levels of social integration and are consequently more likely to report lower job attitudes and quality of social relations. Thus, variations in the social integration construct, brought about by a focal

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individual's level of dissimilarity, are assumed to lead to variations in its indicators (i.e. job attitudes and quality of social relations). Consequently, Model 1 proposes that overall job attitudes and quality of social relations act as reflective indicators of social integration. All variance in the relationship between relational diversity and individual effectiveness is accounted for by social integration. Thus, in this model social integration is proposed to fully mediate the negative effects of relational diversity on individual effectiveness.
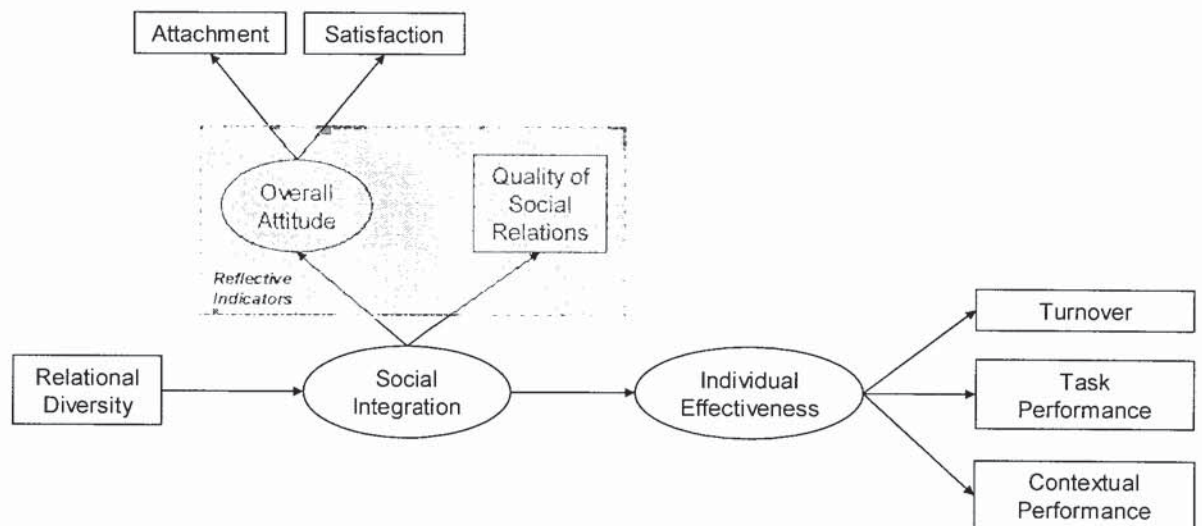
Figure 4. Model 1: Single process, full mediation. (Study 1).

Model 2: Single process, suppression. Model 2 differs from Model 1 in that a direct path between relational diversity and individual effectiveness is added. Thus, this model tests whether social integration reflected by job attitudes and quality of

social relations suppresses the positive effects of relational diversity on individual effectiveness. The latter would be the case if the direct effect is positive and the mediated effect is negative, as postulated above on the basis of self-attention theory.
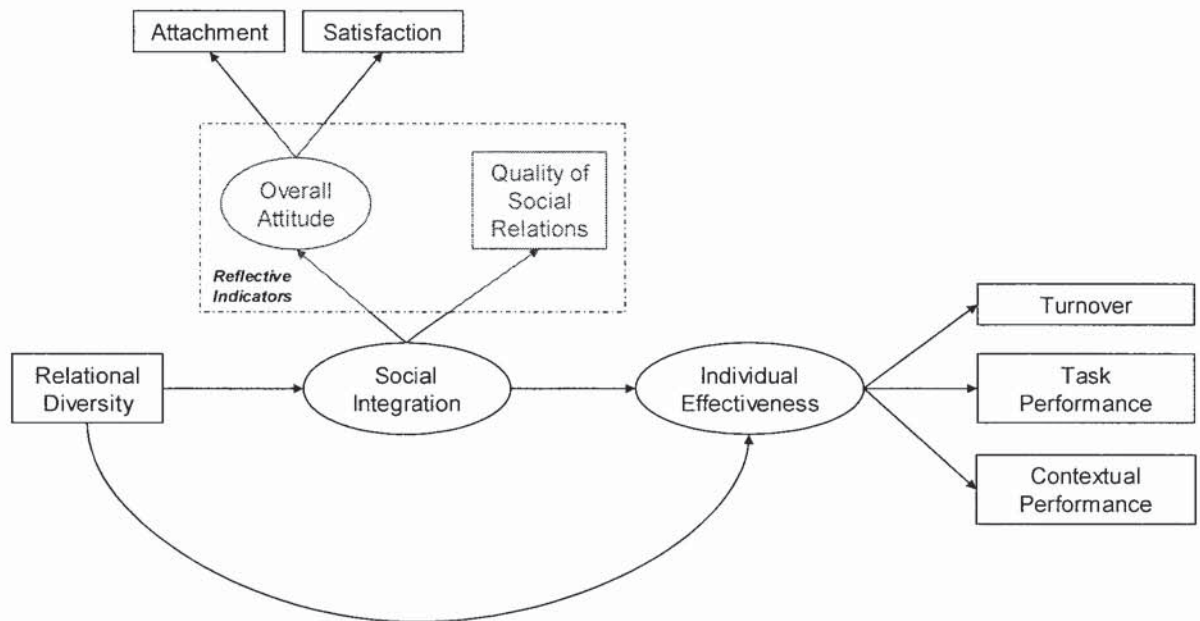
Figure 5. Model 2: Single process, suppression (Study 1).

Model 3: Dual process, full mediation. This model suggests that social integration is not only a function of dissimilar group members' psychological reactions to their level of dissimilarity but also a consequence of other group members psychological reactions towards a focal group members' level of dissimilarity. Social integration is thereby posited to fully mediate the negative relationship between relational diversity and individual effectiveness.

We argue that this perspective can be operationalized by a model that treats overall job attitudes (reflected in group member's attachment and satisfaction) and quality of social relations as formative measures of social integration. Formative measures are used to indicate that a construct is induced by its measures, whereby these measures need not to covary (Edwards & Bagozzi, 2000). In particular we suggest two different routes by which relational diversity affects group members' level of social integration. On the one hand, dissimilar group members may show less favorable reactions to their level of dissimilarity (via the assumed self-categorization processes for surface-level relational diversity and interpersonal or social attraction processes for deep-level relational diversity), which leads via lower levels of job attitudes to lower levels of social integration. On the other hand, dissimilar group members may be more likely to be ostracized and excluded from social interactions by the more similar group members, which in return may lead via lower quality of social relations to lower levels of social integration.

These two distinct processes may further accentuate each other. For instance less favorable attitudes on the side of the dissimilar group member may increase the tendency among the more similar group members to show inter-group bias towards the more dissimilar group member. A dissimilar group member who frequently experiences ostracism and social exclusion may in return show less favorable attitudes. Thus, attitudes and quality of social relations may be correlated with each other. Moreover, because only perceptual measures of quality of social relations were available, dissimilar group members' perceptions of their quality of social relations may be distorted because they might tend to give less favorable accounts of their group experiences. To control for these confounding effects, we allowed attitudes and quality of social relations to correlate with each other.
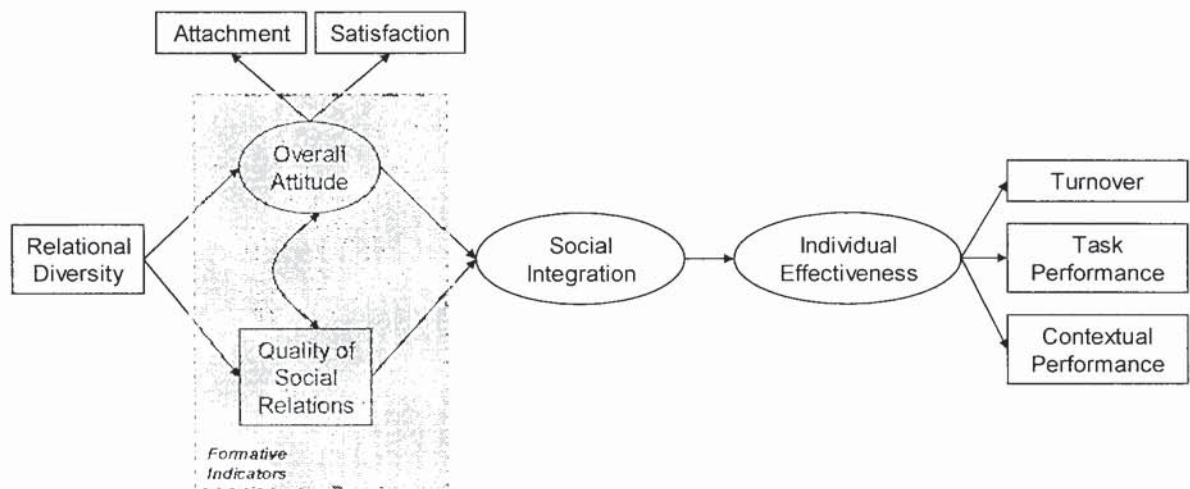
Figure 6. Model 3:Dual process, full mediation (Study 1).

Model 4: Dual process, suppression. This model suggests that social integration is a function of two different processes, as suggested by model 3. However, in this model a path is added between relational diversity and individual effectiveness to test whether social integration suppresses the positive effect of relational diversity on individual effectiveness.
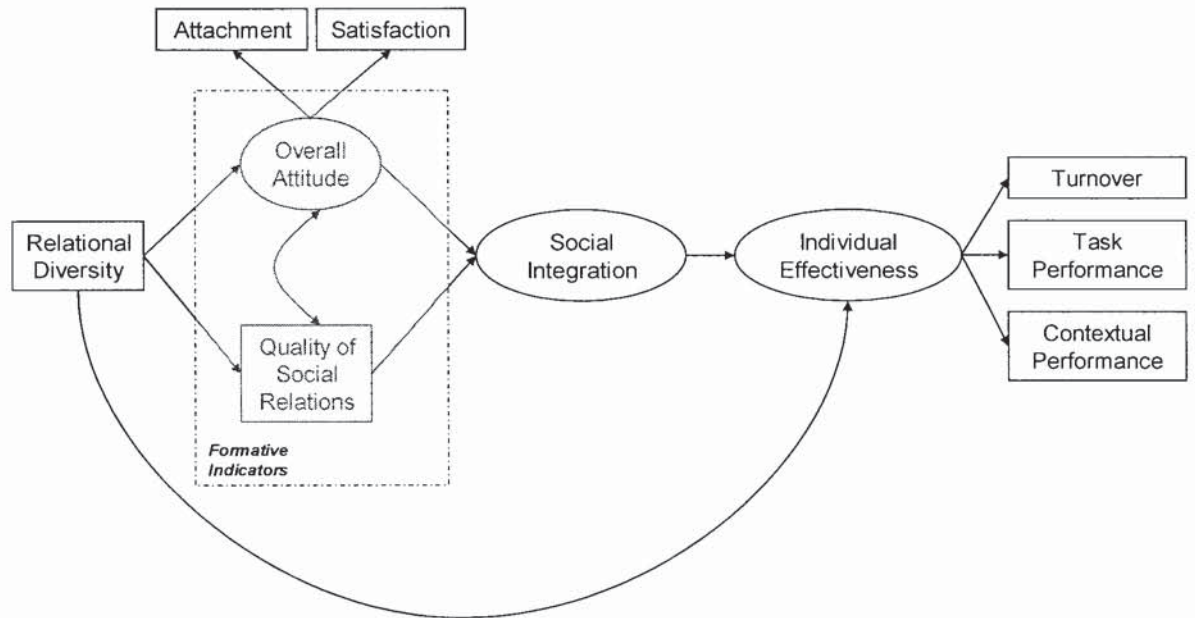
Figure 7. Model 4: Dual process, suppression (Study 1).

Comparative hypothesis testing. Our theoretical arguments suggest that, for

relational diversity, the dual process models (Model 3 and 4) have more explanatory

power than do the single-process models (Model 1 and 2). Furthermore, we argued

that surface-level relational diversity elicits its negative effects via inter-group

dynamics; and that consequently social integration should fully mediate the negative

relationship between surface-level relational diversity and individual effectiveness

(as in Model 3). Deep-level relational diversity on the other hand, we argued elicits

its effects on social integration and individual effectiveness via intra-group

dynamics. Consequently self-attention processes might lead to positive direct effects

on individual effectiveness, which are suppressed by social integration (as in Model

4). Therefore we suggest the following hypothesis:

Hypothesis 2: *The fully mediated dual process model (i.e. Model 3) accounts best for the effects of surface-level relational diversity on social integration and individual effectiveness.*

Hypothesis 3: *The dual process model (i.e. Model 4) in which social integration suppresses the positive effects of relational diversity on individual effectiveness accounts best for the effects of deep-level relational diversity on social integration and individual effectiveness.*

3.3. Method

We tested our hypothesis by conducting structural equation modeling on meta-analytic correlation matrices of relationships of either surface-level or deep-level relational diversity with indicators of social integration (i.e. attachment, satisfaction, quality of social relations) and individual effectiveness (i.e. contextual and task performance, and turnover).

3.3.1. Development of the Meta-Analytic Correlation Matrices

The two correlation matrices were derived by standard meta-analytic methods, that is, by aggregating correlations across previous studies (Hunter & Schmidt, 2004).

Literature search. To locate suitable studies, we searched for published and unpublished research investigating the relationship of surface- and/or deep-level relational diversity with indicators of social integration (i.e. attachment, satisfaction and quality of social relations) and individual effectiveness (i.e. contextual and task performance, and turnover). In particular, we used search engines (e.g., Proquest, PsychInfo, and ISI Web of Science), sent requests for relevant data to listservers

(e.g., those offered by the Academy of Management - Organizational Behavior and Gender and Diversity in Organization Divisions), and checked the reference lists of published qualitative reviews (e.g., Dionne, Randel, Jaussi, & Chun, 2004; Milliken & Martins, 1996; Riordan, 2000; Tsui & Gutek, 1999; K. Y. Williams & O'Reilly, 1998), meta-analyses (e.g. Kristof-Brown et al., 2005) and all relevant studies we retrieved.

Because only a few of the above mentioned studies presented correlations for the relationship of quality of social relations with attachment, satisfaction and indictors of individual effectiveness (i.e. contextual and task performance, and turnover), we separately searched for such studies using search engines (e.g., Proquest, PsychInfo, and ISI Web of Science) and checking the references lists of all relevant studies we retrieved.

Study inclusion. Studies had to meet the following criteria to be included. First, a study had to investigate individual level effects. Second, the social unit under investigation had to be a work group or work unit in a naturalistic setting in which social interaction between members was potentially possible, and tasks accomplished in these units had to be relevant for business-related organizational settings. Third, studies or authors had to provide zero-order correlations, because higher order correlations provide biased estimates (Hunter & Schmidt, 2004; Kristof-Brown et al., 2005). In particular, some of the studies operationalizing relational diversity as an interaction between the distribution of the attribute in the social unit and the focal individual's characteristic on this diversity attribute were not included, because the author didn't provide the zero-order correlations for the interaction term.

Further, to be included, a study on relational diversity had to investigate either a relationship between actual surface- (i.e. age, race/ethnicity, gender, tenure)

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or actual deep-level relational diversity (i.e. personality, attitudes, and values) with any of the following individual work related outcomes: task or contextual performance, attachment, quality of social relationships, turnover or satisfaction. Furthermore, the focus of the study had to be on horizontal relational diversity. Research on vertical relational diversity is conceptually different and usually investigates a different criterion space (Tsui et al., 2002) and was therefore excluded.

From studies investigating the relationship between quality of social relations and either attachment, satisfaction, turnover, or task or contextual performance we included only those bivariate correlations that were either obtained using a different data source (self-reports, supervisor or peer ratings) or at different measurement points to avoid correlation inflation caused by common method variance. In the case of longitudinal studies, we included only the correlations in which quality of social relations was measured first.

Data set. Applying the specified inclusion criteria resulted in an initial set of 129 independent correlations for the relationship between the relational diversity variables and the indicators of social integration and effectiveness and 51 correlations for the relationship of quality of social relations with attachment, satisfaction, turnover, contextual and task performance. Independent data sets were constructed for each of the specific moderator analysis. Dependent correlations in the data set were represented by unit-weighted composite correlations. We didn't encounter any redundancies of data, i.e. where the same data set has been published more than once. A complete list of the articles included in the meta-analysis can be found in Appendix A1 (for the articles included to obtain effect size estimates for the relationship of surface- and deep-level relational diversity with indicators of social integration and effectiveness) and A2 (for the articles included to obtain effect size

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estimates for the relationship of quality of social relations with satisfaction, attachment, and indicators of individual effectiveness).

Coding. The first author (i.e. myself) and a doctoral researcher independently coded all studies. The type of relational diversity variable (surface- versus deep-level) was coded along with the specified moderators (interdependence) and outcomes (attachment, quality of social relations, satisfaction, contextual and task performance, and turnover) using the definitions presented above. Level of interdependence was inferred from type of team. Definitions about real and pseudo teams suggest that the main difference between them lies in the lack or presence of task, goal and reward interdependence (Hackman, 1987; Katzenbach & Smith, 1993). Following this guidance we defined a real team as an intact, bounded social systems, with interdependent members and differentiated member roles that pursue shared, measurable goals (Hackman, 1987), and a pseudo team as a collection of individuals for whom there is no common work product or task that calls for collective skills and mutual accountability (Katzenbach & Smith, 1993). Inter-rater agreement was high, with a mean agreement of .91 (Cohen's Kappa). All disagreements were discussed between the two coders until consensus was reached.

Meta-analytic correlation matrices. The meta-analysis relied on the widely used Hunter and Schmidt (2004) approach. First, the correlations were corrected for unreliability using artifact distributions for the specified criterion (i.e., for the indicators of social integration and individual effectiveness). Correlations were not corrected for unreliability of the actual relational diversity measures, because researchers frequently argue that such hard data represent unbiased measures (Riketta, 2005; Riketta & Van Dick, 2005); and because to our knowledge no

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procedure is available yet, based on which one could correct for unreliability of the relational diversity measures.

In the second step, weighted averages of the corrected correlations across studies were computed using sample size and the disattenuation factor as weights. Finally, these estimates were combined with meta-analytic estimates of the bivariate relationship between job attitudes and work behaviors as reported in Table 2, page 314 in Harrison et al. (2006). As a result, we obtained two meta-analytic correlation matrices, one for the relationship between surface-level relational diversity and the indicators of social integration (i.e. attachment, satisfaction, and quality of social relations) and individual effectiveness (i.e. task and contextual performance, and turnover), and one for the relationship between deep-level relational diversity and the indicators of social integration and individual effectiveness.

3.3.2. Analytic Framework for Hypothesis Testing

Moderators. To test for interdependence as a categorical moderator, we used Hunter and Schmidt's (2004) subgroup analysis. To do so we conducted a meta-analysis on each of the specified moderator levels for the relationship of surface- and deep level relational diversity with social integration. Social integration was operationalized as a unit-weighted composite correlation between all dimensions of social integration (i.e. attachment, satisfaction and quality of social relations).

Model comparisons. To test hypothesis 2 and 3, structural equation modeling was used to compare the fit of the four models, with the meta-analytic correlation matrices for surface- and deep-level relational diversity as inputs, thereby following suggestions by Viswesvaran and Ones (1995). To conduct the various path analyses in our model comparisons, we followed the recommendation to use the harmonic mean of the samples sizes across the different cells in the two meta-analytic

correlation tables. That way standard errors needed for significance testing of the various paths and for some of the model fit indices (e.g. chi-squared values) can be estimated precisely rendering significance testing in this context meaningful (cf. Viswesvaran & Ones, 1995).

All calculations were made using the maximum likelihood estimate method in Mplus 4.0 (Muthén & Muthén, 1998-2006). To assess model fit, we followed recommendations by Kline (2005) and used multiple indexes. In particular, we compared the models on Bentler's (1990) comparative fit index (CFI), Steiger's (1990) root-mean square error of approximation (RMSEA) and the standardized root mean square residual (SRMR). According to Kline (2005) values larger than .9 for CFI and values below .1 for RMSEA and SRMR indicate acceptable fit. To compare the nested models (i.e. Models 1 vs. 2 and Models 3 vs. 4) we calculated the difference in model chi-square and degrees of freedom, and compared the values with the χ^2-distribution (Hu & Bentler, 1999). To test the non-nested models (i.e. Models 1 and 3 vs. Models 2 and 4) we compared them on the Akaike information criterion (AIC, Akaike, 1987). This index can be used to select among competing non-nested models, whereby the model with the smaller AIC fits the data better (Kline, 2005).

3.4. Results

The meta-analytic correlation matrices on which the analyses were conducted are displayed in Table 1.

Hypothesis 1a and 1b. Hypothesis 1a and 1b suggest that interdependence buffers the negative relationship between surface-level relational diversity and social integration, and that it accentuates the relationship between deep-level relational diversity and social integration. Results are displayed in Table 2.

Table 1. Meta-analytic correlations between relational diversity and indicators of social integration and individual effectiveness (Study 1)[a].

Construct	1	2	3	4	5	6	7
1. Relational Diversity[b]	-	-.07	-.18	-.01	.03	-.21	.02
k studies	-	5	7	6	4	7	3
N total observations	-	1016	1727	3934	787	1395	1140
2. Attachment	-.03	-	.38	.18[c]	.25[c]	.60[c]	-.22[c]
k studies	20	-	10	87	42	112	66
N total observations	6948	-	3056	20973	10747	39187	26296
3. Quality of Social Relations	-.08	.38	-	.23	.32	.42	-.19
k studies	17	10	-	11	8	17	5
N total observations.	4375	3056	-	2395	1641	9133	1408
4. Task Performance	-.04	.18[c]	.23	-	.23[c]	.30[c]	-.15[c]
k studies	26	87	11	-	24	312	72
N total observations	26599	20973	2395	-	9912	54471	25234
5. Contextual Performance	-.01	.25[c]	.32	.23[c]	-	.28[c]	-.22[c]
k studies	7	42	8	24	-	32	5
N total observations	1769	10747	1641	9912	-	16348	1619
6. Satisfaction	-.03	.60[c]	.42	.30[c]	.28[c]	-	-.19[c]
k studies	16	112	17	312	32	-	67
N total observations	7630	39187	9133	54471	16348	-	24566
7. Turnover	.03	-.22[c]	-.19	-.15[c]	-.22[c]	-.19[c]	-
k studies	11	66	5	72	5	67	-
N total observations	15626	26296	1408	25234	1619	24566	-

Note: [a]All correlations are disattenuated for unreliability. [b]Correlations for surface-level relational diversity are displayed in the lower triangle of the matrix, for deep-level relational diversity in the upper triangle of the matrix. [c]Source: Harrison et al. (2006).

Table 2. Moderating effects of interdependence on the relationship of relational diversity with social integration (Study 1).

	Uncorrected			Corrected	95% Confidence	Percentage of Variance Accounted for by Sampling	
	r^a	k	Total N	$r^{a,b}$	Interval	Error	Q-Test Statistic
Surface-Level Relational Diversity and Social Integration	-0.04	40	13536	-0.05	-0.09 to -0.01	27.41	145.92***
High Interdependence	-0.01	27	7506	-0.01	-0.06 to 0.04	34.44	78.39***
Low Interdependence	-0.10	13	6030	-0.12	-0.20 to -0.05	27.85	46.67***
Deep-Level Relational Diversity and Social Integration[b]	-0.16	14	3119	-0.17	-0.24 to -0.11	31.58	44.34***
High Interdependence	-0.17	12	2835	-0.19	-0.26 to -0.12	36.51	32.87***
Low Interdependence	-0.11	2	284	-0.13	-0.19 to -0.06	100.00	0.43

Note: [a]Unit-weighted composite correlation between predictor (i.e. surface- or deep-level relational diversity) and indicators of social integration (i.e. attachment, satisfaction, and quality of social relations). [b]Results are corrected for criterion unreliability.***p < .001

For surface-level relational diversity a marginal, negative direct effect on social integration was found (ρ = -.05, 95% CI = -.09 to -.01). Hunter and Schmidt's (2004) Q-statistic (Q = 145.92, p < .001) indicated the operation of moderators. In fact, the effect was more pronounced under low levels of interdependence (ρ = -.12, 95% CI = -.20 to -.05); and disappeared under high levels of interdependence (ρ = -.01, 95% CI = -.06 to .04). For deep-level relational diversity, a direct negative effect on social integration was found (ρ = -.17, 95% CI = -.24 to -.11). Again, the Q-statistic (Q = 44.34, p < .001) indicated the operation of moderators. The effect was less accentuated under low levels of interdependence (ρ = -.13, 95% CI = -.19 to -.06) and more accentuated under high levels of interdependence (ρ = -.19, 95% CI = -.26 to -.12). Thus, Hypotheses 1a and 1b were supported.

Hypothesis 2. Hypothesis 2 suggests that the fully mediated dual process model (i.e. Model 3) accounts best for the effects of surface-level relational diversity on social integration and individual effectiveness. Model fit indexes and comparisons of the four models for the relationship of surface-level relational diversity with social integration and effectiveness are displayed in Table 3.

For surface-level relational diversity Model 3 had the best fit. In particular Model 3 (AIC = 89450.60 CFI = .980, SRMR = .018, RMSEA = .044) had a better fit than Model 1 (AIC = 89466.78, CFI = .976, SRMR = .022, RMSEA = .044), Model 2 (AIC = 89468.54, CFI = .976, SRMR = .022, RMSEA = .046) and Model 4 (AIC = 89452.23, CFI = .980, SRMR = .018, RMSEA = .046). The better fit of Model 3 versus Model 4 was further corroborated by a non significant χ^2-difference between Model 3 and 4 (χ^2 = 0.371, *df* = 1, *ns.*). This suggested that allowing for a direct link between surface-level relational diversity and individual effectiveness

Table 3. Relational diversity – social integration – individual effectiveness model comparisons (Study 1).

	χ^2	df	AIC	RMSEA	SRMR	CFI
Models for Surface-Level Relational Diversity[a]						
Model 1 (Single Process, Full Mediation)	130.92 ***	13	89466.78	0.044	0.022	0.976
Model 2 (Single Process, Suppression)	130.68 ***	12	89468.54	0.046	0.022	0.976
Model 3 (Dual Process, Full Mediation)	110.74 ***	11	89450.60	0.044	0.018	0.980
Model 4 (Dual Process, Suppression)	110.37 ***	10	89452.23	0.046	0.018	0.980
Models for Deep-Level Relational Diversity[b]						
Model 1 (Single Process, Full Mediation)	201.16 ***	13	49834.95	.074	.038	.936
Model 2 (Single Process, Suppression)	127.54 ***	12	49763.34	.060	.029	.961
Model 3 (Dual Process, Full Mediation)	159.87 ***	11	49797.67	.072	.034	.949
Model 4 (Dual Process, Suppression)	115.84 ***	10	49755.63	.063	.025	.964

Note: [a]N = 4745 (Harmonic Mean). [b]N = 2646 (Harmonic Mean). *** p < .001.

didn't improve model fit. Moreover, all indexes of Model 3 indicated an acceptable fit.

We further explored the standardized path estimates for Model 3. Results for the path coefficients are displayed in Figure 8; and total indirect and specific indirect effects of surface-level relational diversity on social integration and individual effectiveness are displayed in Table 4.
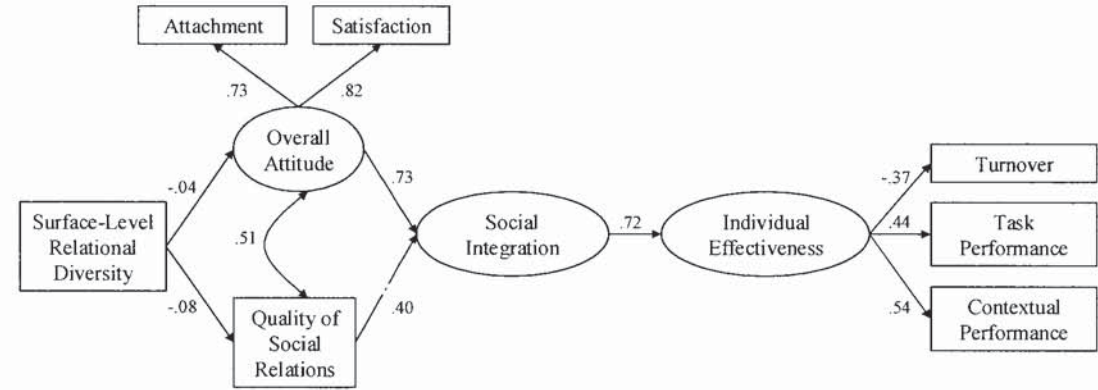
Figure 8. Model 3 for surface-level relational diversity: Dual process, full mediation. (Study 1)

Results for Model 3 suggested that surface-level relational diversity had a negative and significant total indirect effect on social integration ($\gamma_{standaridized} = -.06$, p < .001). The specific indirect effect of surface-level relational diversity on social integration via job attitudes had a significant negative effect ($\gamma_{standaridized} = -.03$, p <

Table 4. Relational diversity effects on social integration and individual effectiveness (Study 1).

Path	Model 3 (Dual Process, Full Mediation) for Surface-Level Relational Diversity[a]	Model 4 (Dual Process, Suppression) for Deep-Level Relational Diversity[b]
	Standardized Estimate	*Standardized Estimate*
Social Integration		
Total Indirect	-0.06***	-0.22***
Specific Indirect via Overall Attitudes	-0.03*	-0.15***
Specific Indirect via Quality of Social Relations	-0.03***	-0.08***
Individual Effectiveness		
Total	-	0.01
Direct	-	0.18***
Total Indirect	-0.04***	-0.17***
Specific Indirect via Overall Attitudes and Social Integration	-0.02*	-0.11***
Specific Indirect via Quality of Social Relations and Social Integration	-0.02***	-0.06***

Note: [a]N = 4745 (Harmonic Mean). [b]N = 2646 (Harmonic Mean). * $p < .05$; ** $p < .01$; *** $p < .001$.

.05), while the specific indirect effect of surface-level relational diversity on social integration via quality of social relations was negative and significant ($\gamma_{standaridized}$ = -.03, p < .001). Moreover, quality of social relations and job attitudes were highly and positively related ($\gamma_{standaridized}$ = .51, p < .001). Thus, the negative effect of surface-level relational diversity on social integration was brought about via lower levels of job attitudes and quality of social relations.

The total indirect effect of surface-level relational diversity on individual effectiveness via social integration was negative and significant ($\gamma_{standaridized}$ = -.04, p < .001). The specific indirect effect of surface-level relational diversity on individual effectiveness via job attitudes was negative and significant ($\gamma_{standaridized}$ = -.02, p < .05), while the specific indirect effect of surface-level relational diversity on individual effectiveness via quality of social relations was negative and significant ($\gamma_{standaridized}$ = -.02, p < .001).

In sum, these results suggested that Model 3 had the best fit and social integration modeled as a function of job attitudes and quality of social relations fully mediated the negative relationship of surface-level relational diversity with individual effectiveness. Thus, hypothesis 2 was supported.

Hypothesis 3. Hypothesis 3 suggests that the dual process model (i.e. Model 4) in which social integration suppresses the positive effects of relational diversity on individual effectiveness accounts best for the effects of deep-level relational diversity on social integration and individual effectiveness.

Model fit indexes and comparisons of the four models for the relationship of deep-level relational diversity with social integration and effectiveness are displayed in Table 3. Model 4 had the best fit. In particular Model 4 (AIC = 49755.63, CFI = .964, SRMR = .025, RMSEA = .063) had a better fit than Model 1 (AIC = 49834.95,

CFI = .936, SRMR = .038, RMSEA = .740), Model 2 (AIC = 49763.34, CFI = .961,

SRMR = .029, RMSEA = .060) and Model 3 (AIC = 49797.67, CFI = .949, SRMR =

.034, RMSEA = .072). The better fit of model 4 versus 3 was further corroborated by

a significant χ^2-difference between Model 3 and 4 (χ^2 = 44.037, df = 1, p < .001).

This suggested that allowing for a direct link between deep-level relational diversity

and individual effectiveness further improved model fit. Moreover, all indexes of

Model 4 indicated an acceptable model fit.

We further explored the standardized path estimates for Model 4. Results for

the path coefficients are displayed in Figure 9; and total, direct, total indirect and

specific indirect effects of deep-level relational diversity on social integration and

individual effectiveness are displayed in Table 4.
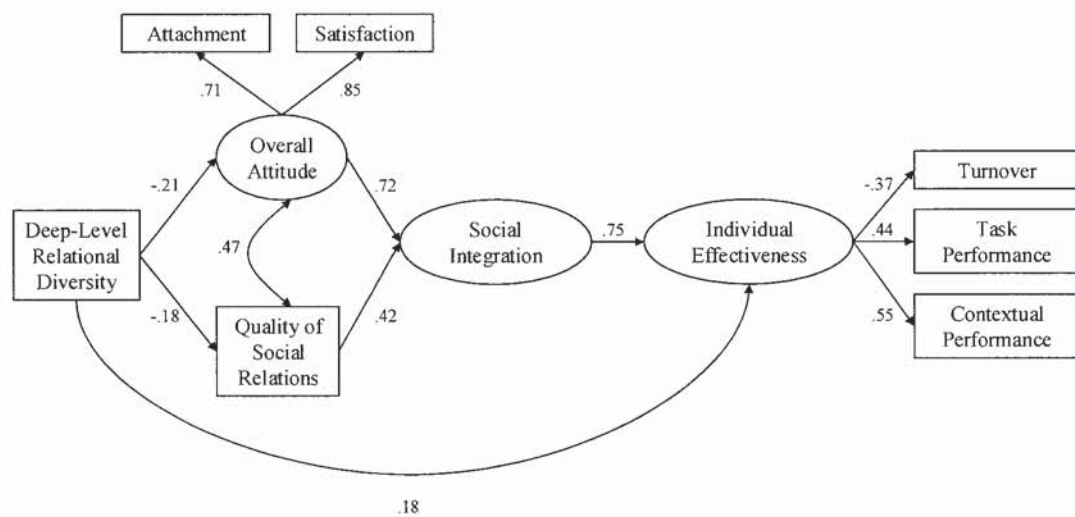
Figure 9. Model 4 for deep-level relational diversity: Dual process, suppression. (Study 1).

Results for Model 4 suggested that deep-level relational diversity had a significantly negative total indirect effect on social integration ($\gamma_{standaridized} = -.22$, $p < .001$). The specific indirect effects of deep-level relational diversity on social integration via job attitudes and via quality of social relations were significantly negative, with the former effect being stronger ($\gamma_{standaridized} = -.15$, $p < .001$ and $\gamma_{standaridized} = -.08$, $p < .001$, respectively). Moreover, quality of social relations and job attitudes were highly and positively related ($\gamma_{standaridized} = .47$, $p < .001$). In total, the negative effects of deep-level relational diversity on social integration were mainly brought about via lower levels of job attitudes, less so via quality of social relations.

The total effect of deep-level relational diversity on individual effectiveness was non-significant ($\gamma_{standaridized} = .01$, $p = ns.$). However, the direct effect of deep-level relational diversity on individual effectiveness was significantly positive ($\gamma_{standaridized} = .18$, $p < .001$), whereas the indirect effect of deep-level relational diversity on individual effectiveness via social integration was significantly negative ($\gamma_{standaridized} = -.17$, $p < .001$). Thus, while direct and indirect effects of deep-level relational diversity on individual effectiveness canceled each other out, it appeared that the statistical removal of the negative indirect effect via social integration on individual effectiveness lead to a positive direct effect of deep-level relational diversity on individual effectiveness. According to MacKinnon, Krull and Lockwood (2000) such a change indicates suppression.

Results further suggest that the specific indirect effect of deep-level relational diversity on individual effectiveness via job attitudes and via quality of social relations were significantly negative ($\gamma_{standaridized} = -.11$, $p < .001$ and $\gamma_{standaridized} = -.06$, $p < .001$, respectively). Thus, the suppressing effect of social integration on

individual effectiveness was a function of both lower job attitudes and lower quality of social relations.

In sum, these results suggested that model 4 had the best fit and social integration modeled as a function of job attitudes and quality of social relations suppressed the positive relationship of deep-level relational diversity with individual effectiveness. Thus, hypothesis 3 was supported.

3.5. Discussion

Using meta-analytic and structural equation modeling techniques, this study provides a comprehensive answer to the question to what extent, when and how relational diversity affects group members' social integration and individual effectiveness. The study showed that the negative effects of surface-level relational diversity on social integration were overcome under high levels of interdependence. By contrast, the negative effects of deep-level relational diversity on social integration were further accentuated under high levels of interdependence. For both surface-level relational and deep level relational diversity, these effects were a function of group members' reactions elicited by their dissimilarity status and other group members' reactions towards focal group members' dissimilarity. Moreover, social integration mediated the overall *negative* effect of surface-level relational diversity on individual effectiveness and thus suppressed the overall *positive* effect of deep-level relational diversity on individual effectiveness.

In line with conclusions drawn in previous qualitative reviews (e.g. Riordan, 2000), the direct effects of surface-level relational diversity on social integration ($\gamma_{standaridized}$ = -.06) and the overall indirect effects on individual effectiveness via social integration ($\gamma_{standaridized}$ = -.04) appear rather marginal in light of the criteria set by Cohen (1992): small effects: .1-.3, medium effects: .3-.5, large effects: <.5. The

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total indirect effects of deep-level relational diversity on social integration ($\gamma_{standaridized}$ = -.22), the total indirect effects on individual effectiveness via social integration ($\gamma_{standaridized}$ = -.17) and the direct effects on individual effectiveness ($\gamma_{standaridized}$ = .18) were stronger but can still be considered small according to Cohen's criteria. Thus, one of the reasons why prior research on relational diversity has failed to detect effects, in particular mediating mechanisms, might be due to the fact that sample sizes were too small. Even if we assume a large effect between the mediator and the outcome variable (such as in this study found between social integration and individual effectiveness), the small effects of surface- and deep level relational diversity on social integration will require at least a sample size of 385, if bias corrected bootstrap methods are used and 414 when Baron and Kenny's classical approach to test for mediation is used to empirically support a fully mediated model (Fritz & MacKinnon, 2007).

3.5.1. Theoretical Implications

The finding that interdependence buffered the negative effects of surface-level relational diversity on social integration but accentuated the negative effects of deep-level relational diversity, generalizes empirical findings from the group level of analysis (cf. Harrison et al., 1998; Harrison et al., 2002) to the individual level. Moreover, this supports the idea that the underlying processes are qualitatively different.

For surface-level relational diversity, the results are in line with the social identity approach (Tajfel, 1978; Tajfel & Turner, 1979; Turner, 1982), which suggests that high levels of interdependence lead to re-categorization of self and others in terms of a superordinate identity. While dissimilar group members may have categorized themselves in terms of their demographic group identity under low

levels of interdependence, they may have categorized themselves in terms of their work group identity under high levels of interdependence; thereby eliminating the negative effects of surface-level relational diversity on social integration. As researchers have over sampled groups that operate under high levels of interdependence (27 of the studies looked at real teams versus 13 that looked at pseudo teams), this might also explain why overall the effects of surface-level relational diversity on social integration, and consequently on individual effectiveness appear to be rather marginal (cf. Riordan, 2000). Thus, future research might want to pay more attention to pseudo teams and teams in early stages when testing for the underlying self-categorization processes, as it is there that these processes appear to be most pronounced and detection is most likely.

Extending previous theorizing on relational demography (cf. Chattopadhyay, Tluchowska et al., 2004; Riordan, 2000; Tsui & Gutek, 1999), our findings suggest that the predictive validity and explanatory power of existing theoretical frameworks in relational demography research might be further increased by incorporating a reciprocity component into these models. It is possible that lower levels of social integration on the side of the more dissimilar group members is also the result of the more similar group members categorizing (and consequently ostracizing and excluding) dissimilar group members as out-group members.

The findings that deep-level relational diversity was accentuated under high levels of interdependence might be explained by the contact hypothesis (Allport, 1954; Pettigrew, 1998) and the similarity attraction paradigm (Byrne, 1971). These theories would suggest that high levels of interdependence facilitated personalization of group members, making the underlying deep-level relational diversity attributes more salient. As individuals prefer similar others, they find interactions with

dissimilar others more difficult and less reinforcing, which in return lead to lower levels of social integration. However, the similarity-attraction paradigm cannot account for the direct positive effects of deep-level relational diversity on individual effectiveness and, consequently, for the suppressing effects of social integration found in this study.

The social identity approach (Tajfel, 1978; Tajfel & Turner, 1979; Turner, 1982) in combination with insights gained from self-attention theory (Carver & Scheier, 1982; Duval & Wicklund, 1972; Mullen, 1987) might be better suited to account for these findings. When group members categorize themselves and others in terms of a higher order identity (e.g. as group members), they perceive themselves and others as depersonalized group members rather than unique individuals (Hogg et al., 1995; Turner, 1982). Group members who categorize themselves and others as work group members regulate their behaviors in terms of this higher order identity (J. P. Meyer, Becker, & Van Dick, 2006; Van Knippenberg, 2000). Self-attention theory (Carver & Scheier, 1982; Duval & Wicklund, 1972; Mullen, 1987) suggests that group members who are dissimilar experience heightened discrepancy between their own behavior and group standards, which they try to reduce, and which then will lead via heightened motivation to higher levels of effectiveness. This is in line with the positive path found between deep-level relational diversity and effectiveness. Moreover, the finding that social integration suppressed this positive relationship and that social integration was a function of group members' evaluations of their work (i.e. attitudes) and the quality of their social relations may reflect the second process postulated by self-attention theory: expectancy-outcome assessments. According to self-attention theory, this process occurs simultaneously with the discrepancy-reduction process. Particularly for dissimilar group members, it may

give rise to negative outcome-expectancies. The reason is that these group members may lack the behavioral scripts to match their behaviors to the behavioral standards of their group and they might encounter more social constrains. This then may lead to lower levels of effectiveness, via lower levels of social integration. In sum, both positive and negative effects elicited by deep-level relational diversity may cancel each other out.

3.5.2. Limitations and Directions for Future Research

While we took great care in developing our categorization system whilst coding of the primary studies, the apple and orange argument can always be made against any meta-analysis that includes more than one different measure for a certain construct (Hunter & Schmidt, 2004). Based on this argument, researchers should not combine statistically results from studies that measured the same construct with different measures. Thus, even though our distinction of surface- versus deep-level diversity is frequently used in the relational diversity literature (cf. Harrison et al., 1998; Harrison et al., 2002; Riordan, 2000), a more fine grained analysis may reveal an even more complex picture of their relationships with social integration and effectiveness. In a similar vein, some researchers may object to our use of the rather broad categories of satisfaction, quality of social relations, contextual and task performance, and may suggest using more fine grained categories. However, the availability of primary studies and the requirement of independent samples required us to use this less fine grained categorization system.

A second limitation concerns the test to what extent the negative effects of relational diversity are transmitted via intra-personal and inter-personal processes. On the one hand, available measures of quality of social relations all referred to perceptions of these processes. In this respect, our results don't provide an ultimate

test of whether relational diversity elicits reactions among the focal individual and other group members alike, which would require modeling the truly interpersonal character of the phenomena by relying on methods such as, for instance, those suggested by Kenny's (1994) social relations model.

Moreover, our conclusions are based on cross-sectional data. Whether quality of social relations and job attitudes serve as formative or reflective indictors would actually require an experimental design to separate cause and effects. On the other hand, the indicators (i.e. quality of social relations and job attitudes) we used to test for the underlying processes (e.g. social categorization and being categorized) served as proxies and didn't directly measure these processes. Future research may want to explicitly model these different processes. Furthermore, quality of social relations may in itself be an interpersonal construct, which could be the result of a focal individual's reactions, other group members' reactions and the focal individual's responses to these reactions. While we allowed quality of social relations to correlate with job attitudes, a more fine grained analysis of these three processes (actor effects, partner effects, and their interaction) using Kenny's (1994) social relations model may be indicated and may provide a promising avenue for future research, as it allows to clearly distinguishing between these three processes.

Finally, while self-attention theory can account for social integration suppressing the positive effects of deep-level relational diversity on individual effectiveness, we did not directly test the underlying processes. Future research might want to look directly at the underlying processes (i.e. heightened self-attention and outcome-expectancy-assessments) and how they affect dissimilar group members' effectiveness in order to replicate and further qualify our findings.

3.5.3. Managerial Implications

Especially when effect sizes are small, it is important to communicate them in such a way that managers can understand their practical significance; for example, using the binomial effect size display (Rosenthal & Rubin, 1982). Translated into this display, the present finding of a surface-level relational diversity -> individual effectiveness effect of $\gamma_{standaridized} = -.04$ means that a manager is likely to encounter low effectiveness among employees with high surface-level relational diversity in 52% of the cases and high effectiveness in only 48% of the cases. The surface-level relational diversity -> social integration effect of $\gamma_{standaridized} = -.06$ means that among employees with high surface-level relational diversity 53% are likely to be found who have low levels of social integration, but only 47% who will have high levels of social integration. For the suppressed positive effects of deep-level relational diversity on individual effectiveness on the other hand, the present finding of a deep-level relational diversity -> individual effectiveness effect of $\gamma_{standaridized} = .17$ means that a manager is likely to encounter high levels of effectiveness among employees with high deep-level relational diversity in 58.5% of the cases and low effectiveness in only 41.5% of the cases. As to deep-level relational diversity and social integration, an effect of $\gamma_{standaridized} = -.22$ means that a manager is likely to face low social integration among employees with high deep-level relational diversity in 61% of the cases and high levels of social integration in only 39% of the cases. In general, such weak effects may be of practical relevance when small increments in effectiveness have far-reaching consequences, such as when the cost of losing an employee is high (e.g. due to a lack of potential new employees or due to large training investments) and when contextual or task performance are essential for

optimal team functioning, as is the case in highly performance oriented or high risk environments.

Managing the negative effects of surface-level relational diversity on social integration and individual effectiveness appears to be straightforward. Our results suggest that these negative effects can be overcome when managers succeed in establishing high levels of interdependence. This might be accomplished by such means as setting and providing a common vision and goals, group tasks, and common rewards (cf. van Knippenberg & Schippers, 2007). When this is not possible, e.g. in early stages in a real team's life, managers should avoid focusing exclusively on dissimilar group members as the source of lowered social integration and also focus on more similar group members. A combination of individual and team coaching in which the higher order group identity is made more salient may help to overcome social categorization on the basis of demographic group membership.

Note, however, that these interventions can come at a cost, as they may just move the source that triggers the negative relational diversity effects to another level. The effects of deep-level relational diversity on social integration were stronger than the respective effects of surface-level relational diversity and therefore call for more attention among practitioners, particularly in groups operating under high levels of interdependence. Still, overcoming them seems to be particularly fruitful, as deep-level relational diversity may also elicit direct positive effects on individual effectiveness. Based on the dual process model, we suggest that managers should focus on dissimilar group members and increase their outcome expectancies, for instance by showing them how they can match their behaviors to group standards and by facilitating understanding among the more similar group members, thereby

removing social constraints. These way managers may harness dissimilar group members' heightened self-attention to increase their motivation and ultimately their effectiveness.

3.5.4. Conclusion

Using meta-analytic and structural equation modeling techniques, this study lent support to the idea that in pseudo groups intergroup dynamics prevail and group members categorize self in terms of surface-level diversity attributes. Under such conditions surface-level relational diversity leads via lower levels of social integration to lower levels of effectiveness. In real groups these negative effects are overcome and deep-level attributes become salient. Under such conditions deep-level relational diversity elicits both positive and negative effects on group member's effectiveness. In line with the self-attention perspective it appears that dissimilar group members are more likely to match their behavior to their work group's standards but at the same time due to lower levels of social integration have more difficulties to do so. Thus, while managers might want to implement real groups to overcome the negative effects of surface-level relational diversity on group members' integration and effectiveness and harness the positive effects elicited by deep-level attributes, they will have to assure at the same time dissimilar group member's social integration.

CHAPTER 4

Study 2: Ethnic Dissimilarity as Visibility and Separation: Simultaneous Positive and Negative Effects on Individual Effectiveness

As presented in the previous chapters, relational demography theory treats demographic variables (such as ethnicity, gender and age) as surface-level characteristics (cf. Harrison et al., 1998; Harrison et al., 2002; Riordan, 2000). Relying on self-categorization theory, relational demographers argue that dissimilar group members categorize self rather on the basis of their membership in a given diversity related social category at the surface-level (e.g. ethnicity, gender or age) than in terms of their work group membership, which in return leads to lower levels of social integration, and ultimately to lower levels of effectiveness (Tsui et al., 1992). These negative effects are however overcome in real groups (see meta-analytic findings in the previous chapter), which act under high levels of interdependence (Katzenbach & Smith, 1993). Under such conditions, the adverse effects elicited by social categorization are buffered, as all group members categorize themselves rather in terms of their work group membership than in terms of their ethnic group membership (cf. Harrison et al., 1998; Harrison et al., 2002). Thus, following this perspective it appears that surface-level relational diversity characteristics (e.g. ethnicity, gender and age) should elicit no effects in real work groups.

In contrast it might be suggested also based on self-categorization theory (Hogg et al., 1995; Turner et al., 1987) that in real work groups that act under high

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levels of interdependence deep-level relational diversity attributes (such as attitudes, beliefs, norms and values) underlying demographic surface-level differences become more salient, and that group members categorize self and others in terms of these deep-level differences as being a more or less prototypical group member (Hogg et al., 1995). Such deep-level differences between group members have been conceptualized in the terminology of work group diversity researchers as *separation* and are thought to be negatively related to task performance (Harrison & Klein, 2007). Relying on self-attention theory (Mullen, 1983, 1987) it might be argued that in real work groups not only are deep-level relational diversity attributes rendered more salient, but demographically different group members also become more self-attentive and concerned to match their behaviour to their work group's standards due to their *visibility*. Thus, according to self-attention theory, visibility should increase pressure to performance and consequently promote demographically dissimilar group members' effectiveness.

Extending previous theorizing on the effects of relational demographics on individual effectiveness in real work groups, this study integrates predictions derived from self-categorization and self-attention theory within a social self-regulation framework (Abrams, 1994). Conceptualizing and operationalizing group member's dissimilarity as separation and visibility it will be illustrated using ethnicity as a prominent example that in real work groups relational demography may simultaneously elicit positive (via its visibility aspects) and negative (via its separation aspects) effects on group members' effectiveness, and that positive outcomes are possible when visibility is maximized and separation is minimized, while they are negative when visibility is minimized and separation is maximized.

4.1. Theoretical Background

Ethnicity is among the most salient individual characteristics in organizational and educational settings (Jackson et al., 1995; Milliken & Martins, 1996), and ethnic dissimilarity has been linked to individual effectiveness in pseudo but not in real work groups (for meta-analytic evidence see previous chapter). A *work group* is defined as a set of three or more people that exists to perform organizationally relevant tasks, interacts socially, maintains and manages boundaries, and is embedded in a wider organizational context (cf., Bell & Kozlowski 2003). A *real work group* is defined as an intact, bounded social systems, with interdependent members and differentiated member roles that pursue shared, measurable goals (Hackman, 1987), while a *pseudo work group* is a collection of individuals for whom there is no common work product or task that calls for collective skills and mutual accountability (Katzenbach & Smith, 1993). In other words, pseudo and real work groups differ in their level of *team interdependence* (henceforward referred to as interdependence), which is defined as the extent to which contextual features such as goal, reward, resource, role and task structures promote a relationship between members of a social unit in which each member is mutually responsible to and dependent on others (Wageman, 1995). *Individual effectiveness* refers here to desirable inputs to one's work role (Harrison et al., 2006).

4.1.1. The Social Self-Regulation Model

Self-categorization theory (SCT: Turner, 1982; Turner et al., 1987) assumes that categorizing self in terms of a given social category and acting upon it, is an automatic process, and generally not consciously controlled (cf. Abrams, 1994). More specifically, relational diversity researchers applying SCT (e.g., Chatman et al., 1998; Chattopadhyay, 1999; Tsui et al., 1992) assume that ethnic dissimilar

group members are more likely to categorize self on the basis of their membership in a given ethnic group rather than their work group, because their ethnic group membership is rendered more salient (Chatman et al., 1998), and that these relatively nonconscious and interpretative processes (cf. Abrams, 1994) have a direct negative effect on demographically dissimilar group members' work related outcomes (Riordan, 2000).

In contrast, self-attention theory (Mullen, 1983, 1987) and the tokenism hypothesis (Kanter, 1977a; Lord & Saenz, 1985; Vohs et al., 2005), derivates of the wider self-regulation theory family (cf. Carver & Scheier, 1982; Duval & Wicklund, 1972; Karoly, 1993), would suggest that ethnic dissimilar group members' numerical minority status increases their level of self-attention, and that they will in light of adequate self-regulatory resources and salient performance standards match their behavior to these standards increasing their level of effectiveness. Matching behavior to these standards is thereby thought of as a conscious self-regulatory process that establishes response goals and monitors responses with reference to these goals (cf. Abrams, 1994).

It appears at first glance that the prediction concerning relational demography effects derived from self-attention theory (Mullen, 1983, 1987) and the tokenism hypothesis (Kanter, 1977a; Lord & Saenz, 1985; Vohs et al., 2005) is hardly reconcilable with that derived from self-categorization theory (Turner, 1982; Turner et al., 1987). However, theorizing and empirical evidence on social self-regulation (Abrams, 1985, 1994; Abrams & Brown, 1989) might provide an avenue for how these approaches can be reconciled. Bringing both theories together, Abrams demonstrates in his social self-regulation model (SSR) that self-attention and social category salience are two independent processes, which are evoked by two different

sets of antecedents, and which have different behavioral consequences. Social category salience thereby specifies which self-categorization becomes salient (e.g. ethnic or work group), whereas self-attention increases group members focus on these self-categorizations and determines to which degree automatic (in case of low self-attention) or conscious (in case of high self-attention) behavioral responses are elicited. It then becomes plausible that the different predictions derived by relational demographers within the self-categorization and the self-attention arena might be a function of conceptualizing and measuring two different underlying processes, which may actually operate simultaneously.

4.1.2. Ethnic Dissimilarity as Separation

Relational demographic researchers define ethnic dissimilarity as *differences between* a focal group member and all other group members in terms of their ethnicity (Tsui et al., 1992). Relying on self-categorization theory (Turner et al., 1987) and conceptualizing ethnic dissimilarity as differences at the surface level (Riordan, 2000), earlier work in this arena reports that such differences increase the salience of a given demographic attribute in particular under lower levels of interdependence. Under such conditions it has been suggested that demographically dissimilar group members use such surface-level differences to categorize self rather on the basis of their demographic than their work group membership (Chatman et al., 1998), thereby undermining ethnic dissimilar group members' social integration and effectiveness (for meta-analytic evidence see previous chapter). Surface-level relational diversity is thereby defined as differences among group members in overt demographic characteristics (Harrison et al., 2006; Harrison et al., 2002; Jackson et al., 1995; Riordan, 2000). These overt demographic characteristics are reflected in visible racial characteristics, such as skin colour, facial features, speech, physical

attributes, clothing, and observable behaviours (Phinney, 1990, 1996). Almost immediately, individuals can make reasonable estimates of the racial/ethnic background of someone else, and therefore categorize self as being similar to or different from that person (Harrison et al., 1998; Harrison et al., 2002; Jackson et al., 1995; Riordan, 2000).

While there is agreement among researchers in the relational demography arena that ethnicity should be treated as a surface-level relational diversity attribute (cf. Harrison et al., 1998; Harrison et al., 2002; Jackson et al., 1995; Riordan, 2000), psychological research on ethnicity and ethnic differences suggests that ethnicity is actually a complex multidimensional construct, which encompasses not only surface-level, but also deep-level attributes (Phinney, 1990, 1996). In support of this are findings that differences in ethnic attributes do not only pertain to differences in physical characteristics, but also to a cluster of deep level characteristics, such as one's national origin, language and religion, as well as the sharing of some cultural identity, values, attitudes, and behaviors (Phinney, 1990, 1996). Moreover, differences in ethnic background have also been related to differences in worldviews and perspectives (Alderfer & Smith, 1982), norms, values, and goals (Cox, 1993; Jackson, Joshi, & Erhardt, 2003; D. C. Thomas, Ravlin, & Wallace, 1996), as well as in reasoning and thinking styles (Nisbett, Peng, Choi, & Norenzayan, 2001; Peng & Nisbett, 1999).

As information about these underlying differences is communicated through verbal and nonverbal behavior patterns and only learnt through extended interaction and information gathering, it follows that it takes time and frequent contact among group members to render them salient (Harrison et al., 1998; Harrison et al., 2002). According to Harrison and colleagues this should be particularly the case under high

levels of interdependence which fosters frequent contact. Other than Harrison and colleagues who rely on the similarity-attraction paradigm (Byrne, 1971) suggesting that group members become personalized under such conditions and categorize self and others based on underlying idiosyncratic differences, it is argued here based on SCT (Hogg et al., 1995; Turner, 1987) that group members become depersonalized under such conditions and categorize self and other group members on the basis of their work group membership.

When group members categorize themselves in terms of their work group membership they do not perceive each other as unique individuals "but as embodiments of the work group – the more prototypical they are the more they are liked" (Hogg et al., 1995, p. 161). Supporting this line of argument Hogg and colleagues demonstrated in an experimental study involving 219 participants that when work group membership is salient people don't perceive each other based on idiosyncratic differences but based on depersonalized perceptions in terms of the group prototype. Moreover, they could demonstrate that were not perceptions of idiosyncratic differences, but perceptions of group prototypicality that accounted for whether a dissimilar group member was downgraded or liked as a group member.

As a group prototype embodies a group's norms, values, beliefs and attitudes (Hogg & Terry, 2000), and as a group member's prototypicality is a function of the extent to which a group member differs on these dimensions from all other group members (Turner, 1987), it follows that the larger the differences in terms of underlying differences, the less prototypical the group member will be categorized by others, and in return the less the group member will be liked as a group member. As ethnically dissimilar group members do not only differ on surface- but also on deep-level attributes (Alderfer & Smith, 1982; Cox, 1993; Jackson et al., 2003;

Nisbett et al., 2001; Peng & Nisbett, 1999; Phinney, 1990, 1996; D. C. Thomas et al., 1996), it also follows that ethnic dissimilar group members are categorized as being less prototypical, and consequently are less liked as a group member.

Thus, one of the reasons why no effects of ethnic relational demography on work related outcomes have been found under high levels of interdependence (see meta-analysis in the previous chapter) might be that relational demographers conceptualized ethnic dissimilarity mainly as differences at the surface-level thereby not taking into account differences at the deep-level (for a similar discussion in the work group diversity literature see Dawson (2007) and Dawson and Brodbeck (2005)). For instance, one would expect that an Irish in a group of otherwise all English will be considered as being more prototypical than a Chinese in in the same situation because the Irish is likely to differ much less from all other group members in terms of values, norms, beliefs and attitudes than the Chinese. Hence, operationalizing such differences only as a dichotomous variable were the differences between the Irish and all the English and the Chinese and all the English in their respective work groups are considered equally large (e.g., Chatman et al., 1998; Chattopadhyay, 1999; 1992) might lack predictive validity in a real work group context.

To test this idea, the current work looks at real work groups that operate under high levels of interdependence (Katzenbach & Smith, 1993) and conceptualizes ethnic dissimilarity in terms of deep-level differences. Because these deep-level differences are thought to reflect differences in terms of attitudes, beliefs, norms and values between ethnic groups and not between individuals, they are these ethnic group differences and not individual differences that will be used to operationalize such ethnic deep-level differences.

Adopting terminology from the work group diversity arena, such deep-level ethnic group differences between a focal group member and all other group members are henceforward referred to as *separation* (Harrison & Klein, 2007); as such differences are thought to pertain to horizontal distances in terms of attitudes, beliefs, norms and values between members belonging to different ethnic groups. Relying on SCT (Hogg et al., 1995; Turner, 1987) separation is thought of as a proxy for a group member's degree of prototypicality, and thus a determinant of whether that person is liked as a group member. Following Harrison and Klein's (2007) advice and relying on Dawson and Brodbeck's (2005) reasoning to incorporate actual cultural distance as a more accurate measure of cultural diversity in work groups, the relational diversity score (Tsui et al., 1992) and data from the GLOBE project (House, Hanges, Javidan, Dorfman, & Gupta, 2004) will be used to operationalize separation.

4.1.3. Ethnic Dissimilarity as Visibility

Research on self-attention theory (Mullen, 1983, 1987) and the tokenism hypothesis (Kanter, 1977a) take a different stance. According to Mullen and Kanter ethnic dissimilarity between group members might be referred to as *differences in the proportion* of the total group comprised of people who are different in ethnicity from a given focal group member. Relying on the gestalt figure-ground principle (cf. Koffka, 1935), both authors argue that in a heterogeneous group context, individuals can be segregated into two (or more) homogenous subgroups on the basis of some social type (e.g. ethnicity). As their subgroup size declines individuals become more visible and capture a disproportionate amount of group members' attention. In gestalt terms they become "figure" rather than "ground", because they appear to be more surprising, unique and noteworthy.

Self-attention theory (Mullen, 1983, 1987) further suggests that due to individuals' visibility in the smaller subgroup, they focus their attention on themselves, and become more self-attentive, while those in the larger subgroup focusing their attention on the smaller subgroup become less self-attentive. In light of a salient performance standard, individuals in the smaller subgroup increase their attempts to match their behaviour to these standards, while individuals in the larger subgroup decrease their attempts to match their behaviour to these standards. In line with these arguments is meta-analytic evidence (Mullen, 1983) of results from 42 previous empirical studies in 4 areas (conformity, prosocial behaviour, social loafing, and antisocial behaviour) supporting the idea that proportionate in-group size increases self-attention and increases concerns with matching to standards of appropriate behaviour.

Thus, applied to ethnic dissimilarity in real work groups one would expect that ethnic dissimilarity may elicit a positive effect on dissimilar group members' effectiveness. In such settings their visibility is increased and they become more self-attentive and aware of their work group's standards. As real work groups operate under high levels of interdependence (Katzenbach & Smith, 1993) dissimilar group members should be more likely to regulate their behavior in line with their work group's standards, and thus as a result should become more effective. In conjunction with the discussion above this might also provide a further explanation why no effects of ethnic dissimilarity are found in real work groups, as the negative effects elicited by self-categorization processes might be cancelled out, as dissimilar group members become more self-attentive and aware of their work group's standards.

Adopting Kanter's (1977) terminology, this aspect of a group member's ethnic dissimilarity will be henceforward referred to as *visibility*. Relying on self-

attention theory (Mullen, 1983, 1987) visibility is thought of as increasing group

members' level of self-attention and their matching-to-standard behaviours. To

operationalize visibility, Mullen's Additive Total-Other Ratio (ATOR) will be used,

which has been validated in a series of studies in various settings (for meta-analytic

evidence see Mullen, 1983; for a review see Mullen, 1987), such as classrooms

(Mullen, 1986b), antisocial behaviour (Mullen, 1986a), and organizations (Mullen et

al., 1987).

4.1.4. Self-Regulation as a Limited Resource

Self-regulation refers to group members' selves' capacity for adjusting their actions

to social, situational and task demands (Baumeister & Vohs, 2007). As such it is a

conscious process that helps to override and alter automatic responses. Self-

regulation is particularly relevant and important as it predicts success in work groups

(Baumeister, 1982). Specifically, it helps establishing trust, earning others' respect,

gaining access to valuable information, and receiving social support, which is

necessary conditions for individual effectiveness (Flynn et al., 2005). Moreover,

while people learn from early in life that they must convey a positive image of self

that conforms to their group's values of social desirability and admired traits,

irregular encounters with peers in ethnically diverse work groups may render these

automatized forms of self-presentation ineffective (cf. Vohs et al., 2005). In

particular when working on complex tasks that require higher order cognitive

processes, such as reasoning, decision making, problem solving and learning, self-

regulation facilitates active deliberation, sustain attention and persistence

(Schmeichel et al., 2003). Thus, group members that use effortful and deliberate

control over their behaviour to select and convey the optimal image and engage in

higher order cognitive processing are more likely to succeed in an ethnic dissimilar work group that works on a complex task.

The literature on self-regulation (Baumeister & Vohs, 2007, Mullen, 1983, Mullen, 1987) emphasizes three ingredients of the self-regulation process: 1) Self-attention, 2) behavioural standards and 3) self-regulatory strength. This literature argues that in light of sufficient levels of self-attention, salient behavioural standards and adequate self-regulatory strength group members will try to match their behaviour to the salient standard (cf. Baumeister & Vohs, 2007; Mullen, 1987).

Self-attention thereby refers to the process of taking oneself as the focus of one's own attention (Mullen, 1987). As self-attention is a function of situational identifiably and personal distinctiveness and lack of perceptual immersion in the group (Prentice-Dunn & Rogers, 1983), it follows that group members who are more visible should become more self-attentive. Moreover, self-regulation also depends on behavioral standards, which are a function of salient goals, norms or rewards within a situation (Baumeister & Vohs, 2007; Mullen, 1987). As such standards in conjunction with self-attention leads people to match-their-behaviour to these standards (Mullen, 1987), it follows that in particular ethnical dissimilar members in real groups that act under high levels of interdependence (Katzenbach & Smith, 1993) should regulate their behaviour in line with their work group's goals.

As self-regulation depends on a limited resource, akin to energy or strength (Muraven & Baumeister, 2000) engaging in some type of self-regulatory behaviour (e.g. self-presentation in order to convey a more favourable image of self) might deplete resources needed to engage in some other type of self-regulatory behaviour (e.g. high level cognitive processing and regulating one's task focused behaviour) (Vohs et al., 2005). As ethnic dissimilar group members are not only more visible,

leading them to become more self-attentive and concerned with matching their behaviour to their work group's standard, they are also considered as being less prototypical and consequently less liked, because of their higher levels of separation. Thus, because dissimilar group members are less liked as group members due to their marginal status in their work group (Hogg et al., 1995), they might try to respond by conveying a more positive image of self (Baumeister, 1982; Flynn et al., 2001). As this might deplete their self-regulatory resources, they might lack the resources needed to engage in task relevant self-regulatory acts (Lord & Saenz, 1985; Vohs et al., 2005).

4.2. Hypothesis

The following model (depicted in Figure 10) tests these ideas.
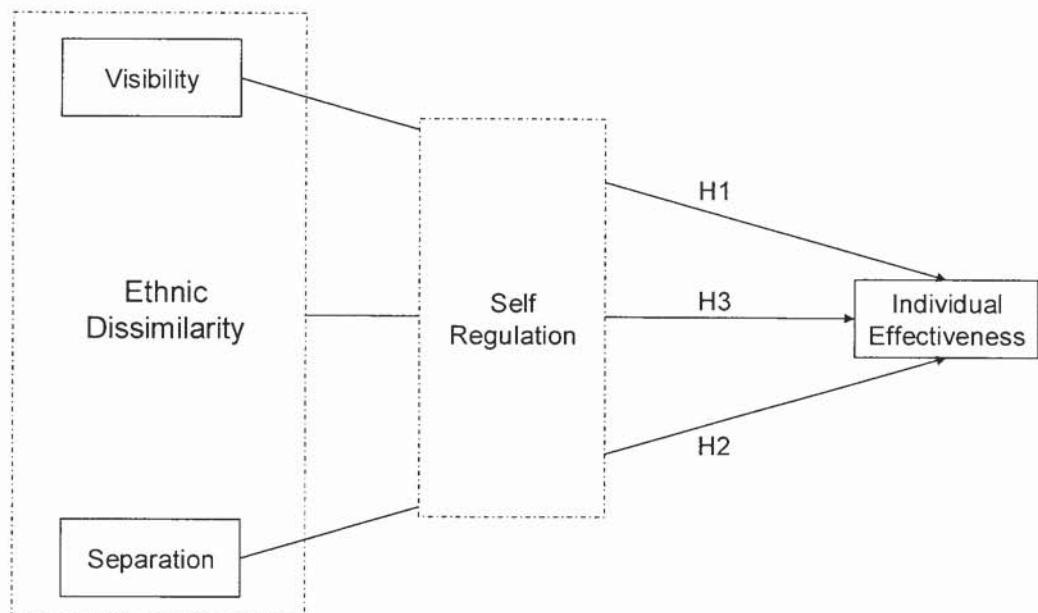
Figure 10. Hypothesized relationships. (Study 2).
H refers to hypothesis.

In particular it suggests that ethnic dissimilarity can be conceptualized as pertaining to visibility and separation aspects, that the respective visibility aspects are positively (Hypothesis 1) and the respective separation aspects are negatively (Hypothesis 2) related to individual effectiveness, and that the overall additive effects are positive for group members high on visibility and low on separation, and that they are negative for group members low on visibility and high on separation (Hypothesis 3). In the following the rationale for this model is delineated.

The social self-regulation framework developed above suggests that the effects of visibility aspects of ethnic dissimilar group members are positively related to individual effectiveness in real groups, because such group members are more visible, become more self-attentive and more concerned with their work groups standards. Consequently they are more likely to engage in task-related self-regulatory behavior in order to meet other group members' expectations, and adhere to work group standards. While this idea has not yet been empirically tested, qualitative findings from research on tokenism would lend support to the idea. For instance Kanter's (1977a) qualitative research has found that some women tend to over perform when they are in a token or numerical minority position, and that they report higher levels of performance pressure. In a similar way Mullen's (1983) meta-analytic findings on the effects of numerical minority status on matching-to-standards behavior further support such claims. Specifically, Mullen could demonstrate that group members who are in the numerical minority show higher levels of conformity, helping, lower levels of social loafing and antisocial behavior. Closer inspection of the interaction effects found in Chatman et al's (see figure 1 on p. 328, 2005) research also indicates that demographically dissimilar group members are more cooperative, when task and goal interdependence are high. Thus,

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Hypothesis 1: *Visibility is positively related to individual effectiveness.*

The social self-regulation framework also suggests that the separation aspects of ethnic dissimilar group members are negatively related to individual effectiveness in real groups, because such group members are perceived as being less prototypical. In order to become liked as a group member they engage in self-presentational acts in order to convey a more positive image of self. This in return captures resources needed to match their behavior to group standards in a group context. Consequently, the chances of succeeding in self-regulating their task related behaviors are significantly reduced. Recent empirical evidence supports these claims. In an experimental setting, racial tokens social self-regulation was impaired when tokens ethnic self-concept was made salient (see experiment 4, Vohs et al., 2005). In a similar vein, Lord and Saenz (1985) suggested based on their empirical results that racial tokens are more likely to engage in self-presentational acts thereby undermining their learning.

Hypothesis 2: *Separation is negatively related to individual effectiveness.*

The extent to which ethnic dissimilar group members differ in terms of separation aspects might vary largely. For instance research within the wider GLOBE research project (House et al., 2004) found cultural differences pertaining to 9 cultural value dimensions and 9 modal practices dimensions (such as performance orientation, uncertainty avoidance, power distance, human orientation, collectivism, etc.). Differences on these scales suggest that for instance an Irish/Indic in an

otherwise all English/Chinese group is much more similar in regard to these underlying attributes than for instance an Indic/Irish in an otherwise all English/Chinese group. It seems therefore reasonable to assume that the resources needed to present a more favourable image of self should be much greater in the latter examples than in the former. Thus, while visibility might generate pressure to adhere to group standards, separation in terms of differences at the deep-level might impose a more or less strongly constraint on how easy it is for a group member to regulate his behaviour as a group member. Accordingly:

Hypothesis 3: The effect of group members' ethnic dissimilarity on individual effectiveness is positive when visibility is maximized and separation is minimized, while they are negative when the opposite is the case.

4.3. Method

4.3.1. Sample

Data for the study were collected within a business simulation course held at a large Business School in the United Kingdom. The data file originally comprised 675 upper-level undergraduate students working in 147 groups. All subjects were studying business administration or related degrees (e.g., Marketing, Finance). After excluding individuals and their respective groups who did not give their informed consent, the final sample consisted of 621 subjects and 135 groups. Excluding not only non-participants, but also their respective group was necessary to calculate the relational diversity indices based on all available information, which leads otherwise in light of missing data to biased results (Allen, Stanley, Williams, & Ross, 2007).

Response rate was 88.8%, average age was 20 years, and the sample comprised 296 females and 326 males. Average group size was $M = 4.61$ ($SD = 0.49$), and the students remained in the same group for the duration of the whole business game (24 weeks).

To assess whether non-response biased the results, only data regarding the grade point average mean in student's first and second academic year ($M_{First\ Year} = 57.849$ and $M_{Second\ Year} = 57.840$) could be obtained from all students. Consequently, a single sample t-test was employed yielding no differences between respondents mean grade point average during their first and second academic year and the mean on these respective variables in the population including all students: $\Delta M_{First\ Year} = 0.015$, $t_{First\ Year}(621) = .041$, $p = .967$ and $\Delta M_{Second\ Year} = 0.141$, $t_{Second\ Year}(621) = .367$, $p = .714$). Thus, it was concluded that non-response was unlikely to have biased the results.

Ethnic background. The students' ethnic background was retrieved from the university's database. This way all diversity indexes could be calculated based on all actual group members. Students were recruited from 33 different ethnic backgrounds: White British (45.7%), Indian (25.9%), China (11.1%), and other (17.3%; respectively Austrian, Bolivian, Costa Rican, Danish, Egyptian, El Salvadorans, Finish, German, Hong Kong, Hungarian, Indonesian, Irish, Israeli, Italian, Japanese, Malaysian, Namibian, Nigerian, Polish, Portuguese, Quatrain, Russian, Singaporean, South Korean, Swedish, Swiss, Thai, U.S. American, Venezuelan, and Zambian).

Procedures. *Business game* The EUROCAR$^{©}$ (2005) simulation was used which is a complex and realistic computer-based simulation of the European automobile industry.[4] Student groups form a company's board for their decision

making. Each student had a different role (such as Managing, Finance, Human Resource, Production and Marketing Director). After 10 weeks students orally presented and handed in business plans. From week 12 onwards, students played the business game in 6 one-hour sessions. Every second week they had a tutorial where they received guided feedback by a tutor on their performance. At the end the most successful company received a prize of £250.

During the business game period, group members had frequent opportunities to interact as they met at least once a week for one hour to engage in the business game simulation or discuss their performance. Additional meetings were required, as the groups had to develop a business plan, prepare a presentation on the business plan, and write a group report. Students were graded on the basis of several group tasks (business plan, business plan presentation, group report and net profit-performance of their company), and on one individual task (a written essay, see below). These evaluations have a significant impact on each individual's final assessment: business plan and business plan presentation (40% of final mark), group report and net-profit performance of their company (25% of final mark), individual essay (35% of final mark).

Work group composition. Members were assigned by the university's office to their work groups on a random basis with two exceptions: a) at least one high-scoring student on prior individual learning performance (on the basis of their grades in the Finance and Accounting Module) had to be present in the group, and b) groups had to be heterogeneous in terms of gender. A one-way ANOVA revealed no significant between-group differences in regard to prior learning performance, $F (1, 134) = 0.852, p = .868$. And no differences in the distribution of females versus

males within the groups were evident, $F(1, 134) = 0.780, p = .958$. This corroborates that group formation was systematic.

4.3.2. Measures

Visibility. On the basis of the above categorization of students' ethnic backgrounds visibility was calculated by using Mullen's (1987) *Additive Other-Total Ratio (AOTR)*:

$$\text{AOTR} = \sum_{1}^{n-1} \frac{O_n}{O_n + S}$$

where $n =$ number of ethnic groups in the work group, $S =$ number of people in the work group with the same ethnic background as the individual, $O_n =$ number of people from any other of the n ethnic groups in the work group. For example, in a work group composed of one Irish, two Dutch, and one Polish, the number of ethnic groups is $n = 3$. AOTR is then the sum of $2/(2+1)$ for the Irish in relation to the Dutch subgroup and $1/(1+1)$ for the Irish in relation to the Polish "subgroup" yielding $(2/3) + (1/2) \sim 1.17$.

In the sample the AOTR ranged from 0.20 (low visibility) to 2.5 (high visibility).

Separation. Following Harrison and Klein's advice (2007) and relying on Dawson & Brodbeck's (2005) reasoning to incorporate actual cultural distance as more accurate measure of cultural diversity in work groups, separation was calculated using Tsui, et al.'s (1992) *relational diversity score (RDS)*. Based on the above ethnic categories the RDS was imputed with data on societal culture differences from the GLOBE project (House et al., 2004). GLOBE measured societal culture across 62 cultures in terms of two manifestations: modal practices and modal values. Modal practices measure what are common behaviors, institutional practices, proscriptions and prescriptions in a particular culture. Modal values measure what should be common institutional practices, proscriptions and prescriptions in a

particular culture. It is argued here that differences on these 18 subscales represent a good proxy for the underlying differences in deep-level ethnic diversity attributes.

GLOBE measured these manifestations on two parallel constructed sets of 9 subscales including performance orientation, uncertainty avoidance, power distance, future orientation, group and institutional collectivism, human orientation and gender egalitarianism. To obtain the separation measure, the response bias adjusted scores (as reported in Table B.2 on pp. 740 – 747 in House et al., 2004) on these 18 subscales were linked in a first step to each student based on his or her ethnic category. In case no data were available for a particular country, the average score for from the same cultural cluster was used. RDS was then calculated for each of these scales using Tsui, et al.'s (1992) formula:

$$RDS = \sqrt{[1/n \sum_i^j (S_i - S_j)^2]}$$

For continuous variables, such as the GLOBE subscales used in this study, RDS is the square root of the summed differences between an individual S_i's value on one of the GLOBE's subscales, and the value on the same subscale for every other individual S_j in the sample for the work group, divided by the total number n of respondents in the work group. For example, in a work group composed of one Irish, two Dutch, and one Polish, work group size is $n = 4$. The response bias adjusted scores for the modal value assertiveness subscale are: 3.74 for the Irish group member, 3.13 for each of the two Dutch group members, and 3.95 for the Polish group member. The ethnic deep-level relational diversity score for this particular subscale for the Irish are then $(3.74 – 3.13)^2 + (3.74 – 3.13)^2 + (3.74 – 3.95)^2 = 0.4603$, of which the square root is taken, leading to approximately 0.68, which is then divided by group size, which gives about 0.17.

This was done for each of the 18 subscales, which were then averaged yielding a single score for each individual in the sample to obtain an overall separation score. Theoretically, the RDS score averaged across all 18 subscales can range from 0 to 6, as each of the 18 subscales was measured on a 7-point Likert scale. However, based on GLOBE's empirical findings the ethnic deep-level relational diversity score can hardly exceed 0.4. In this sample the ethnic deep-level relational diversity score ranged from 0.09 (low separation) to .31 (high separation).

Individual effectiveness. Individual effectiveness was measured as a weighted composite on the following criteria: student's participation in their work group (10%). analysis and discussion of the operations, functioning and performance of their company during the business game as presented in their individual essay handed in at the end of the business game course (40%), midterm and final exams in related courses in the areas of accounting, marketing, operations management and human resource management (each 25%). Such a measure has been employed in other studies on relational demography and individual effectiveness (e.g., Flynn et al., 2001). A correlation of $r = .413$ ($p < .001$) between individual effectiveness aggregated onto the group level and group effectiveness measured at time 3 (i.e. group's performance during the business game) further corroborated the measures' validity. Individual effectiveness was measured on a scale ranging from 0% to 100%.

Control variables. To control for students' prior effectiveness, students' Grade Point Average (GPA) of year 1 in their studies was used. GPA was measured on a scale ranging from 0% to 100%. As the amount of self-attention induced among group members is a also a function of group size (cf. Mullen, 1983; Mullen, 1987), this variable was controlled for. Furthermore, country of birth (dummy-coded: 0 = non-UK, 1 = UK) was included as a control variable in order to rule out alternative

explanations based on differences in intimate experience with the host country's dominant cultural background. As ethnic dissimilarity (i.e. its visibility and separation aspects) might actually mask effects elicited by ethnic differences (cf. Tsui et al., 1992), group members ethnicity was also included as a control (dummy-coded: 0 = non-White, 1 = White). To account for potential gender differences it was also imputed as a control variable (dummy-coded: 0 = female, 1 = male). In order to account for the potentially confounding effects of group dynamics and group performance, the three measures of group performance (i.e. business plan, presentation, group report, and net-profit performance of the company) were controlled for.

4.3.3. Analyses

Due to the hierarchical structure of the data (individuals were nested in work groups) all hypothesis were first tested using multilevel analysis techniques in HLM 6.0. However, after entering the group level control variables as fixed effects into the hierarchical linear model, all variance between groups was explained and the error term of these group level predictors was no longer significant. Moreover, the model relying on OLS regression estimates had the best fit. It was therefore concluded that OLS regression analysis techniques were appropriate to analyze the data (cf. Snijders & Bosker, 1999). Consequently, hypotheses 1 and 2 were tested by using OLS regression analysis techniques in SPSS 16.0, and regressing the dependent variable individual effectiveness on blocks of predictor variables (Table 6). Control variables were entered into the first block of the regression (Model 1, Table 6). The next block contained the predictor variables (Model 2, Table 6). Predictor variables were centered in order to reduce multicollinearity (cf. Aiken & West, 1991). VIF scores varied from 1.038 to 2.861 across regressions, suggesting multicollinearity did not

distort regression results. To test hypothesis 3 a new test was developed based on the rationale of the region of significance test for single intercepts (Bauer & Curran, 2005). The development of the test and the test itself are presented in Appendix B. The underlying rationale of this test is that there are regions for which the additive effects of the two main effects (i.e. visibility and separation respectively) are positive or negative and significantly different from zero.

4.4. Results

Descriptive statistics are displayed in Table 5.

To illustrate that the two measures of visibility and separation of relational diversity discriminate and measure two different concepts, they have been displayed in Figure 11.
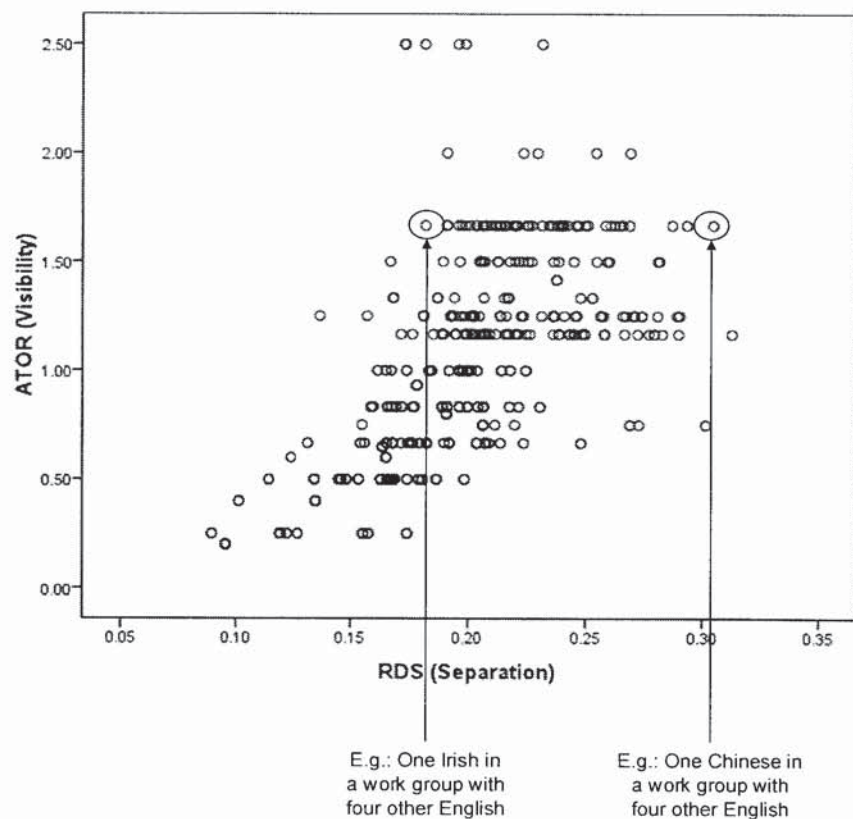
Figure 11. Relationship between visibility and separation. (Study 2).

Table 5. Descriptive statistics (Study 2).

Variables	M	SD	N	1	2	3	4	5	6	7	8	9	10	11
1 Individual Effectiveness	59.94	9.41	622	—										
2 Gender[a]	0.52	0.50	622	-.142**	—									
3 White[b]	0.46	0.50	622	.216***	.085*	—								
4 British[c]	0.74	0.44	622	.191**	.033	.543**	—							
5 Prior Performance	57.98	9.61	621	.502**	-.142**	.058	-.084*	—						
6 Group Performance (Business Plan)	63.60	6.78	622	.166**	.017	.064	.006	.121**	—					
7 Group Performance (Presentation)	65.13	8.11	622	.075	-.037	-.005	.025	.075	.219**	—				
8 Group Performance (Business Game)	65.61	12.85	622	.462**	.002	.102*	.084*	.149***	.165**	.102*	—			
9 Group Size	4.67	0.53	622	-.002	-.025	.013	-.018	.012	.004	.131**	-.130**	—		
10 Visibility	0.90	0.47	622	-.082*	-.060	-.514**	-.476**	-.021	-.069	.080*	-.050	.202**	—	
11 Separation	0.19	0.04	622	-.105**	-.048	-.371**	-.486**	.020	-.064	-.006	.018	-.062	.718**	—

Note. [a] 0 = Female; 1 = Male. [b] 0 = Non-White; 1 = White. [c] 0 = Non-British; 1 = British. *$p < .05$. **$p < .01$.

It can be seen in Figure 11 that for the same visibility score over the whole range of possible scores the separation score ads further information not captured by the visibility measure. For instance one Irish in a work group with all other group members being White Anglos receives a separation score of .17, while a Chinese in an otherwise all White Anglo work group receives a much higher ethnic deep-level relational diversity score (of about .31), indicating that the Chinese is more dissimilar on deep-level attributes than the White Anglo. Thus, the two measures appear to be conceptually distinct.

Hypothesis 1 stated that visibility aspects of ethnic dissimilarity are positively related to individual effectiveness. As can be seen in Table 6 in Model 2, visibility was positively and significantly related to individual effectiveness ($B =$ 3.363, $SE = 1.005$, $\beta = .167$, $p < .0.01$). Thus, hypothesis 1 was fully supported.

Hypothesis 2 stated that separation aspects of ethnic dissimilarity are negatively related to individual effectiveness. Results (as displayed in Table 6 for Model 2) indicate that separation was negatively and significantly related to individual effectiveness ($B = -27.041$, $SE = 10.011$, $\beta = -.125$, $p < .01$). Thus, hypothesis 2 was fully supported.

Hypothesis 3 stated that the effect of ethnic relational diversity on individual effectiveness is positive when differences pertaining to surface-level aspects are maximized and differences pertaining to deep-level aspects are minimized, while they are negative when the opposite is done. To test this hypothesis the additive effects test (AET; see Appendix) was applied and the relationship between ethnic deep-level relational diversity and individual effectiveness at high (one standard deviation above the mean; see solid diagonal) and low (one standard deviation below

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Table 6. Visibility and separation regressed on individual effectiveness ($N = 135$ work groups; $n = 621$ individuals, Study 2)

Variables	Model 1 β	Model 1 B	Model 1 SE	Model 2 B	Model 2 B	Model 2 SE
Constant		59.969	0.279***		59.876	0.278***
Gender[a]	-.095	-1.780	0.568**	-.095	-1.783	0.564**
White[b]	.069	1.303	0.679+	.111	2.095	0.726+
British[c]	.164	3.500	0.763***	.160	3.405	0.816***
Prior Performance (Year 1 Grade Point Average)	.437	0.429	0.030***	.441	0.432	0.030***
Group Performance (Business Plan)	.052	0.073	0.043+	.055	0.076	0.043+
Group Performance (Presentation)	-.022	-0.026	0.036	-.031	-0.036	0.036
Group Performance (Business Game)	.376	0.275	0.023***	.378	0.276	0.023***
Group Size	.045	0.804	0.539	.005	0.083	0.575
Visibility				.167	3.363	1.005***
Separation				-.125	-27.041	10.011**
ΔR^{2} [d]			.461			.01
F for ΔR^{2} [d]			65.429***			5.798**
R^{2}			.461			.471
F			65.429***			54.324***

Note. All variables have been grand mean centered. [a]0 = Female; 1 = Male. [b]0 = Non-White; 1 = White. [c]0 = Non-British; 1 = British. [d]Changes in R^{2} are from the penultimate block within the same model. +p < .1. *p < .05. **p < .01.***p < .001.

the mean; see dotted diagonal) levels of surface level relational diversity was

graphically displayed (see Figure 12).
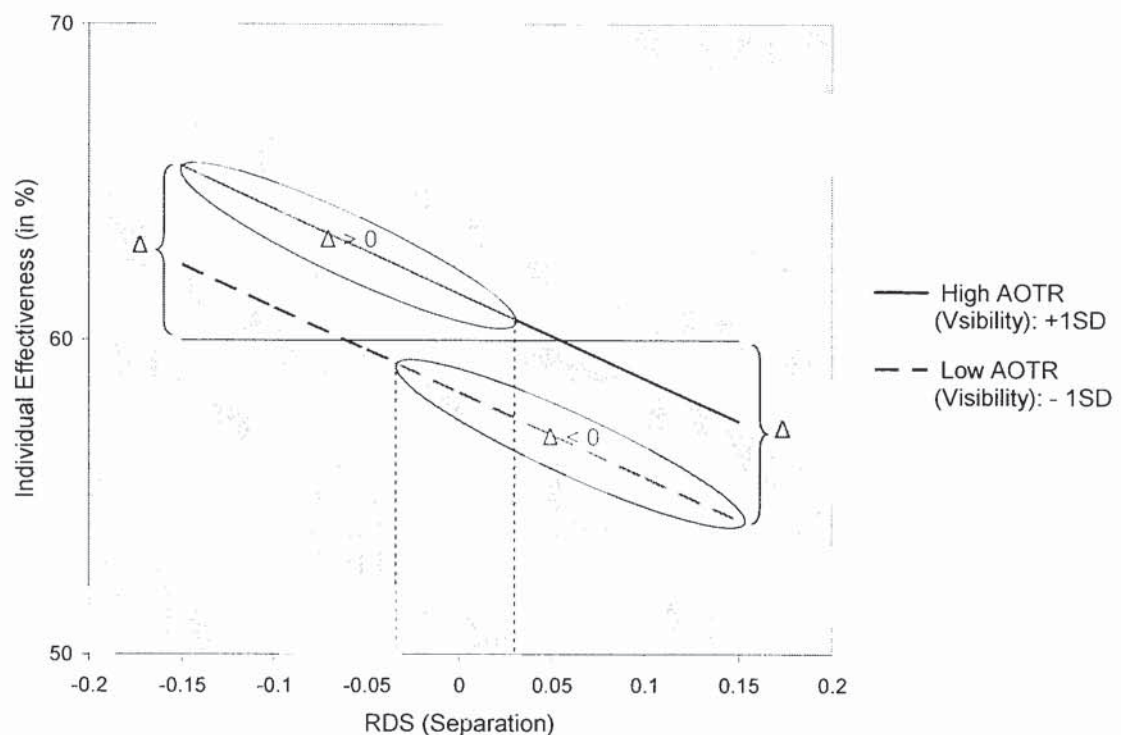
Figure 12. Relationship between separation and individual effectiveness at high (one standard deviation above the mean; see solid diagonal) and low (one standard deviation below the mean; see dotted diagonal) levels of visibility. (Study 2).

The solid horizontal line refers to the estimated mean individual effectiveness score in the sample including control variables only. All predictor variables are grand mean centered. Upper eclipse (and dotted vertical line on the right side) indicates the boundaries of the region of significance (at the .05 level) for separation at high levels (one standard deviation above the mean) of visibility for which the additive effects of separation and visibility are significantly larger ($\Delta > 0$) than the estimated mean individual effectiveness score in the sample including control variables only. Lower eclipse (and dotted vertical line on the left side) indicates the boundaries of the region of significance (at the .05 level) for separation at low levels (one standard deviation below the mean) of visibility for which the additive effects of separation and visibility are significantly smaller ($\Delta < 0$) than the estimated mean individual effectiveness score in the sample including control variables only.

It becomes apparent in Figure 12 that for students with high separation scores (>

0.029 in terms of grand mean centered scores and > 0.219 in terms of raw scores)

and low levels of visibility (= .433 in terms of raw scores) the additive effects of

separation and visibility are negative (see lower eclipse) at the .05 level when

compared to the estimated mean individual effectiveness score in the sample

including control variables, while they are positive (see upper eclipse) for students

with low separation scores (< -0.029 in terms of grand mean centered scores and <0.161 in terms of raw scores) and high levels of visibility (= 1.367 in terms of raw scores). Thus hypothesis 3 was fully supported.

4.5. Discussion

In this study a model was tested suggesting that ethnic dissimilarity pertains to both visibility and separation aspects, that in real work groups visibility aspects are positively and separation aspects are negatively related to individual effectiveness when working on complex tasks, and that if visibility is maximized and separation is minimized individual effectiveness should be facilitated, while if visibility is minimized and separation is maximized individual effectiveness deteriorates. Overall these hypotheses were supported and lend support to the idea that conceptualizing ethnic dissimilarity as visibility and separation within a social self-regulation framework (Abrams, 1994) may help to uncover the simultaneous occurrence of positive and negative ethnic dissimilarity effects on individual effectiveness.

4.5.1. Theoretical Implications

Conceptualizing ethnic dissimilarity as pertaining to both visibility and separation aspects might provide an explanation why previous results (see meta-analytic results presented in the previous chapter) revealed nil effects regarding group members' effectiveness in real groups. The simultaneous occurrence of positive effects (elicited via ethnic dissimilarity's visibility aspects) and negative effects (elicited via ethnic dissimilarity's separation aspects) might have neutralized each other in previous studies where these two different aspects of ethnic relational diversity have not been distinguished. Consequently, conceptualizing and measuring ethnic dissimilarity as pertaining to both visibility and separation aspects might help future research to increase the predictive validity of such studies.

These findings also suggest that a social self-regulation perspective (Abrams, 1994) might provide a useful framework for explaining the simultaneous positive and negative effects elicited by these two different aspects of ethnic dissimilarity. Interpreting the results within such a social self-regulation framework suggests that in real work groups studied here, which operated under high levels of interdependence and in which categorization processes based on ethnic group membership should have been overcome (see meta-analytic results and arguments presented in the previous chapter); ethnic dissimilarity elicited positive and negative effects simultaneously.

Ethnic dissimilar group members became more effective because they were more visible. Thus, they might have become more self-attentive to their work group's standards, and tried to match their behaviour to these standards (Mullen, 1983, 1987). At the same time however, they became less effective. As they were less prototypical in terms of attitudes, norms, beliefs and values due to their ethnic group membership, they might have been less liked as group members given their marginal status in their work group (Hogg et al., 1995), and might have tried to respond by conveying a more positive image of self (Baumeister, 1982; Flynn et al., 2001). As this might have depleted their self-regulatory resources, they might have lacked the resources needed to engage in task relevant self-regulatory acts (Lord & Saenz, 1985; Vohs et al., 2005). It needs to be highlighted that these two opposing effects interacted in an additive and not in a multiplicative way. Thus, it appears that the resource enabling self-regulatory acts might be simultaneously supplied by higher levels of self-attention and depleted by self-regulatory acts.

Interpreting the results within a social categorization framework (cf. Tsui et al., 1992) would suggest that group members categorize self either in terms of their

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work group or in terms of their ethnic group. In case ethnically dissimilar group members had categorized self in terms of their work group (as is likely in real groups studied here given the high levels of interdependence among group members), there should have been no effect between ethnic dissimilarity and individual effectiveness because all group members would have displayed the same levels of social integration. In case ethnically dissimilar group members had categorized self in terms of their ethnic group (which is unlikely in real groups studied here, as high levels of interdependence among group members would have likely prevented them to do so) there should have been only a negative relationship between ethnic dissimilarity and individual effectiveness because ethnic dissimilar group members would have displayed lower levels of social integration. Thus, this framework fails to account for the results of the present study.

Even if the partial focus of self-categorization theory is complemented by social identity theory, and the results are interpreted in light of the wider social identity approach (cf. Chattopadhyay, Tluchowska et al., 2004), the simultaneous occurrence of positive and negative effects can hardly be explained. According to Chattopadhyay et al. ethnically dissimilar group members are likely to identify more strongly with their work group than their more similar peers when they belong to a status lower ethnic group, and when the social setting is permeable. This in return may lead to higher levels of individual effectiveness (cf. Van Knippenberg, 2000).Applied to the current setting, a real group may constitute such a permeable social setting because it allows its members to identify with a status higher group by re-categorizing self in terms of their work group (which is fostered under high levels of interdependence in real groups). Ethnic dissimilar group members belonging to a status lower ethnic group (e.g. two Indian in an otherwise all White Anglo work

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group) may be more likely to identify with their work group, as it may help them to enhance their social identity. However, in the current data status has been controlled for, and further analysis revealed no interaction effect between ethnic dissimilarity and status on individual effectiveness. Moreover, the arguments just derived from the social identity approach provide no explanation for the simultaneous positive and negative effects. Therefore it is suggested here that the social identity approach may not be suited to explain the results in the current study.

Finally, Harrison and colleagues' work (1998; 2002) would suggest that under high levels of interdependence group members learn about each others' deep level differences, and consequently the effects induced by ethnic surface-level aspects become substituted by effects induced by ethnic deep-level aspects. Specifically, their work suggests that when group members know each other barely, they categorize self and others based on salient social categories, while once they learn about each others' idiosyncratic deep-level characteristics similarity-attraction dynamics come into play. While the findings presented here cannot exclude that such dynamics play a role, the negative effect found in this study was elicited by ethnic dissimilarities' separation aspects stemming from ethnic group and not from idiosyncratic differences. This lends support to arguments put forward by SCT (Hogg et al., 1995; Turner, 1987) that group members may categorize self and others based on ethnic group differences even under high levels of interdependence, and that these effects might undermine ethnic dissimilar group members' effectiveness. Leaving aside that Harrison and colleagues' work (1998; 2002) was conducted at the group level, and that they operationalized rather idiosyncratic than deep-level differences stemming from ethnic group membership, their line of argument would also suggest that only ethnic dissimilarities' separation aspects should have been

negatively related to individual effectiveness. As such, their model cannot explain the positive effects of ethnic dissimilarities' visibility aspects found in this study.

4.5.2. Limitations and Further Research

While the results of this study are in line with the social self-regulation framework (Abrams, 1994), it remains unclear how these effects are brought about. One avenue for future research might be to look at self-regulation failure stemming from depletion of self-regulatory resources as a mediating mechanism (cf. Baumeister & Heatherton, 1996; Heatherton & Baumeister, 1996). While ethnic dissimilar group members' visibility might facilitate task related self-regulatory acts, separation aspects might undermine such acts as they might feel more socially excluded due to their marginal status in their work groups (Schmeichel et al., 2003). Alternatively, separation aspects might lead ethnic dissimilar group members to engage in self-presentational acts in order to improve their marginal status thereby depleting self-regulatory resources and undermining task related self-regulatory acts (cf. Lord & Saenz, 1985; Vohs et al., 2005).

Questions might also arise concerning the representativeness of the sample. While it might be desirable to generalize the findings of this study to real work groups found in organizations, student work groups have been included in reviews of diversity in natural work group settings because they are seen as sufficiently realistic to compare to work groups in organizations (e.g., Jackson et al., 2003). Such work groups are comparable to project teams in organizations, which work for a specified amount of time together to accomplish a common task and then disband (Ellis et al., 2003). Such work groups are hybrid teams in the sense that they produce a joint product, but are also representative of many work settings in which people in theory

can improve individual capabilities by benefiting from diverse resources in their work unit.

Moreover, as the current study was mainly concerned with what Calder (1982) called theory generalization (i.e. whether the underlying theory applies to a variety of real-world contexts) the specific context and that actual effect sizes observed are of less concern. Accordingly Calder argues that representative samples are not necessarily required for such theory generalization purposes; as any sample within the theory's domain can provide such a test given the data support the variables under study. And in this respect it appears that the underlying theoretical rationale should also be applicable to real teams in organizational settings in case they are concerned with complex tasks involving high levels of cognitive processing. As to work groups being concerned with more simple tasks involving low levels of self-regulation, the theoretical framework developed in this study would suggest that the positive effects of ethnic dissimilarities' visibility aspects might become even more pronounced. Under such conditions self-regulatory acts play less of a role for effective task performance, and thus the negative separation effects are unlikely to hamper individual effectiveness, while visibility should still facilitate matching-to-standard behaviors thereby increasing dissimilar group member's effectiveness. Thus, future research in more applied settings might want to test these ideas by looking at the simultaneous effects of ethnic dissimilarity as separation and visibility for instance among blue collar workers.

As the data for the separation measure have been imputed, and are based on ethnic group mean differences from the GLOBE data base, it might only partially reflect ethnic dissimilar group members' true scores. While it would be desirable to actually measure dissimilar group members actual separation score, imputing these

data lead to a significant negative effect, which previous studies haven't found when solely imputing group members' ethnicity into the relational diversity score formula (see meta-analytic findings presented in the previous chapter). In light of these findings operationalizing the separation measure as it was done here seems to have increased its predictive validity. As such, both the separation and the visibility measure might provide practitioners, such as people from HR with the means to obtain an adhoc proxy as to whether an ethnic dissimilar person might under or over perform in a real work group setting.

Future research might also want to generalize the findings to other demographic attributes. Many demographic attributes do not only pertain to surface-level differences but also to underlying deep-level differences (cf. Blaine, 2007). For instance Blaine summarizes empirical evidence that gender may not only evoke perceptual differences based on physical attributes, but is also related to different underlying actual and stereotypical attributes embedded in males and females self-concept. In a similar vein, age and tenure may not only relate to overt perceived differences but may also relate to underlying deep-level differences. Future research might want to capture such Janus face like differences by using the measurement approach suggested above, and investigate whether the social self-regulation framework and the current findings generalize to other demographic variables.

4.5.3. Practical Implications

Relational demography research has so far suggested that interdependence might help to overcome the negative effects of demographic dissimilarity on individual effectiveness by leading in particular the more dissimilar group members to re-categorize self rather in terms of their work group membership than in terms of their demographic group membership, thereby facilitating their social integration within

their work group (see meta-analytic evidence presented in the previous chapter). The findings of the current study suggest that at least for ethnic dissimilar group members working on complex tasks in a real work group context, such measures might not be sufficient.

Depending on the extent to which ethnic dissimilar group member's visibility and separation scores are high or low, positive, negative and nil effects are possible. Specifically, positive effects are possible when a group member's visibility score is high (e.g. when he or she is the only individual with a certain ethnic background) and when his or her separation score is low (e.g. as is the case for an Irish in an otherwise all English work group). When these two aspects of ethnic dissimilarity are at medium levels nil effects are likely to occur, while they become negative when the respective visibility score is low and the separation score is high.

While managers and practitioners will hardly want negative effects to occur, the extent to which they want to facilitate positive or nil effects might depend on the diversity paradigm promoted in their organization (i.e. whether they want to harness diversity for effectiveness or whether they want to provide equal opportunities to all employees regardless of their ethnicity, cf. Ely & Thomas, 2001). In any case, the results obtained by this study might be used to compose work groups accordingly in order to overcome the undermining effects of ethnic dissimilarity, and if desirable use them to harness diversity for group members' effectiveness.

4.6. Conclusion

This research extends previous research on relational demographics by conceptualizing ethnic dissimilarity as pertaining to both visibility and separation aspects taking a social self-regulation perspective. In doing so this study lent support to the idea that ethnic dissimilarity's visibility aspect has a positive, while its

separation aspect has a negative effect on group members' effectiveness leading for those high in visibility and low in separation to overall positive additive effects, while to overall negative additive effects for those low in visibility and high on separation. Thus, for managers and practitioners to facilitate ethnic dissimilar group members' effectiveness, they should put ethnic dissimilar group members into settings in which they are highly visible, but in which they differ only marginally in regard to their separation aspects.

CHAPTER 5

Study 3: The Simultaneous Positive and Negative Effects of

Ethnic Dissimilarity on Self-Monitoring and Individual Effectiveness

The study presented in Chapter 4 provided first empirical evidence for the idea that

relational demography attributes, such as ethnicity, may be actually better

conceptualized as pertaining simultaneously to visibility and separation aspects, and

that visibility aspects are positively related to individual effectiveness, while separation

aspects are negatively related. These findings were hardly reconcilable with the

theoretical frameworks commonly used by relational demographers: the similarity-

attraction paradigm and the social identity approach (cf. Riordan, 2000). Instead, it was

argued that the empirical findings appear rather in line with a social self-regulation

framework (Abrams, 1994), which integrates SCT (Hogg et al., 1995; Turner et al.,

1987) and self-attention theory (Mullen, 1983, 1987) within a common theoretical

framework. However, direct evidence could not be obtained in the previous chapter,

because the underlying mechanisms remained untested.

Consequently, the purpose of this chapter is to replicate these findings and delve

further into the potentially underlying mechanisms thereby trying to provide direct

support for the social self-regulation framework (Abrams, 1994). Based on this

framework, this chapter delineates a finer grained model. Specifically, the model

suggests that visibility facilitates group members' self-monitoring, and consequently

leading directly, and indirectly via more favourable impressions, to high levels of

individual effectiveness. Furthermore, it is suggested that separation undermines such

self-monitoring, thereby leading directly, and indirectly via less favourable impressions, to lower levels of individual effectiveness. Moreover, based on the social self-regulation framework (Abrams, 1994) boundary conditions are identified suggesting that self-monitoring is facilitated leading to more favourable outcomes when visibility is maximized and separation is minimized, while self-monitoring and outcomes are undermined when the opposite occurs. Further, the negative effects of separation on self-monitoring are buffered for individuals with high levels of diversity experience. In doing so, the present study extends previous theorizing on relational demographics and social self-regulation, and provides a direct test of the social self-regulation framework developed in the previous chapter.

5.1. Theoretical Background

5.1.1. Self-Regulation in Diverse Work Groups

As a consequence of firms' efforts to diversify their workforce and the expected benefits this might have for performance (Ely & Thomas, 2001), ethnically diverse work groups are ever more concerned with the accomplishment of complex tasks that require high levels of coordination, information processing and creativity, such as it is common in R&D teams or project teams (van Knippenberg et al., 2004). In such settings *self-regulation* – which refers to individuals' selves' capacity to modify and monitor their behaviour – becomes particularly relevant and important, as it helps group members to adjust their actions to task, social, and situational demands (cf. Baumeister & Vohs, 2007; Schmeichel et al., 2003). Specifically, it helps overriding social categorization processes elicited by group members' diversity attributes thereby establishing trust, earning others' respect, gaining access to valuable information, and receiving social support (Flynn et al., 2005). It has also been related to group members' ability to convey a positive image of self that conforms to their group's values of social

desirability and admired traits, which are needed to render social interactions smoother and more effective (Baumeister, 1982). Moreover, complex tasks often require group members' to reason, solve problems and to make decisions. Such activities in return require active planning, monitoring, and revision of information, thus active self-regulation (cf. Schmeichel et al., 2003). Hence, self-regulation is particularly relevant and important as it may predict success in diverse work groups working on complex tasks.

In order for group members to self-regulate their actions, the literature on self-regulation (Abrams, 1994; Baumeister & Vohs, 2007; Carver & Scheier, 1982; Karoly, 1993; Manz, 1986; Mullen, 1987) emphasizes three ingredients of the social self-regulation process: 1) Self-attention, 2) behavioural standards and 3) self-regulatory strength. These three ingredients constitute the so called feedback loop, through which individuals focus their attention on self, try to match their behaviour to these standards, and execute actions accordingly (cf. Carver & Scheier, 1982). Matching behaviours to salient standards, which often is referred to as *self-monitoring*, has thereby been considered as being particularly important, as any self-regulatory behaviour cannot occur in the absence of deliberate attention to qualitative and quantitative aspects of ongoing performance (Baker & Kirschenbaum, 1993; Karoly, 1993; Zimmerman, 1995). Thus, self-monitoring refers to the process or *state* in the self-regulation sequence during which group members detect discrepancies between salient group standards and their own behavior, and by which they try to reduce any detected discrepancies between these salient standards and their own behavior.

As such conceptualizing self-monitoring as a state is different from the conceptualization of self-monitoring as a *trait*, which refers to an individual's disposition to plan, act out, and regulate behavioral decisions in social situations

(Snyder, 1974). While dispositional self-monitoring lets high self-monitors to adapt their behavior to social standards in any social situation, the current work looks at self-monitoring as a state, because it is interested in how the relative positioning of group members (i.e. their dissimilarity in terms of separation and visibility) affect their levels of self-monitoring.

While self-monitoring conceptualized as the process of detecting discrepancies between salient group standards and own behavior, and attempts to reduce any detected discrepancies between these salient standards and own behavior involves active feedback seeking from peers (Ashford & Tsui, 1991), it also involves self-observation and regular checks of own behavior against salient group standards. Thus, self-monitoring as conceptualized here includes feedback seeking as one means to detect discrepancies between own behavior and salient standards, but also includes self-observation as another means to detected such discrepancies. Moreover, self-monitoring reflects not only the discrepancy detection subprocess in the self-regulation sequence, but also the detection-reduction subprocess, i.e. activities through which an individual tries to reduce detected discrepancies between salient group standards and own behavior.

While this literature agrees that in light of sufficient levels of self-attention, salient behavioural standards and adequate self-regulatory strength group members will try to match their behaviour to the salient standard (cf. Baumeister & Vohs, 2007; Mullen, 1987), there is ample debate about which of these three pathways is effected, when self-regulation is impaired (cf. Karoly, 1993). Integrating prior empirical results, Baumeister and colleagues argue that it is most likely the depletion of self-regulatory resources (i.e. lack of self-regulatory strength) that can be hold responsible for such failures (for reviews see e.g., Baumeister & Heatherton, 1996; Heatherton &

Baumeister, 1996; Muraven & Baumeister, 2000). According to this perspective, self-regulation consumes a global – but limited – resource, which once depleted undermines or impairs consecutive acts of self-regulation. Depletion of this resource might be a consequence of unclear or conflicting self-regulatory goals (Vohs et al., 2005), prior or simultaneous acts of self-regulatory behaviour, such as for instance regulating attention or emotion control (Schmeichel et al., 2003) and self-presentational acts (Vohs et al., 2005), and experiences of social exclusion (Baumeister et al., 2005). Consequently, it can be suggested the more self-regulatory acts group members have to engage in and the more they feel socially excluded, the more their self-regulatory resources become depleted.

While the depletion of self-regulatory resources may have severe consequences in diverse work groups working on complex tasks in regard to group members' selves' capacity to adjust their actions to task, social, and situational demands (Baumeister & Vohs, 2007; Schmeichel et al., 2003), heightened levels of self-attention (Baumeister et al., 2005), and repeated practice and rest can improve self-regulatory strength (Muraven & Baumeister, 2000). Thus, both heightened levels of self-attention and having been exposed to similar situation previously might safeguard against self-regulation failure in such settings.

5.1.2. Ethnic Relational Diversity and Self-Regulation

In line with Chapter 4 ethnic relational diversity refers here not to one but to two things: visibility and separation respectively. Visibility it thereby conceptualized in gestalt terms (cf. Koffka, 1935) whereby ethnic dissimilar group members appear as ever more surprising, unique and noteworthy as the relative size of their ethnic subgroup decreases (Kanter, 1977a, 1977b; Mullen, 1983, 1987), which in return should increase their level of self-attention (Mullen, 1983, 1987), and as such they should experience higher

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levels of performance pressure (Kanter, 1977a, 1977b). Separation (Harrison & Klein, 2007) refers to differences in terms of attitudes, beliefs, norms and values between members belonging to different ethnic groups. Relying on SCT (Hogg et al., 1995; Turner, 1987) separation is thought of as a proxy for a group members' degree of prototypicality, and thus a determinant of whether that person is liked as a group member. It follows that group members categorize self and are categorized by others as less prototypical with increasing levels of separation, which makes it more likely that group members with high levels of separation become social excluded and marginalized in their work groups.

For real work groups, empirical results of the study presented in the previous chapter showed that visibility aspects of ethnic relational diversity are positively related to group members' effectiveness, and separation aspects are negatively related to group members' effectiveness. *Real work groups* thereby refer to a set of three or more people that exists to perform an organizationally-relevant task and shares common goals, interacts socially, exhibits task interdependencies, maintains and manages boundaries, and is embedded in a wider organizational context (Kozlowski & Bell, 2003). *Individual effectiveness* refers to desirable contributions made to one's work role (Harrison et al., 2006).

These empirical findings were hardly explainable within the two main theoretical frameworks – the similarity attraction paradigm and the social identity approach – commonly used by relational demographers (cf. Riordan, 2000), as both theories couldn't explain the positive effects elicited by relational diversity. Instead, it was suggested that a social self-regulation framework (Abrams, 1994), which integrates self-attention theory (Kanter, 1977a, 1977b; Mullen, 1983, 1987) and SCT (Hogg et al., 1995; Turner et al., 1987) might be more suitable to explain these effects. According to

this perspective, group members categorize self in terms of their work group membership in real work groups that act under high levels of interdependence, because under such conditions situational cues engendered by high levels of interdependence render group members' work group membership salient (cf. van Knippenberg et al., 2004; van Knippenberg & Schippers, 2007). Furthermore, under such conditions intra-group dynamics prevail, and group members perceive self and others based on deep-level attributes, such as attitudes, beliefs, norms and values as being more or less prototypical (Hogg et al., 1995). The more prototypical they are the more they are liked as group members. Moreover, under such conditions group members regulate their behavior in line with their work groups' norms, standards and goals (Abrams, 1994; Hogg & Terry, 2000). The more self-attentive group members become, the more likely they are to regulate their behavior in line with these standards, norms and goals (Abrams, 1994; Mullen, 1983, 1987).

It follows that in real work groups that act under high levels of interdependence ethnic dissimilar group members should become more self-attentive (due to heightened visibility), and thus should more strongly self-regulate their behavior in line with their work group's goals, norms and standards, which in return should facilitate their effectiveness. At the same time they should experience more difficulties to self-regulate their behavior under such conditions, because they are more likely to become socially excluded (due to heightened separation), which may either directly (Baumeister et al., 2005) or indirectly via engagement in task irrelevant self-presentational acts (Vohs et al., 2005) deplete their self-regulatory resources, and in return might undermine their effectiveness. Yet, these underlying mechanisms remained untested in the study presented in the previous chapter. Consequently, the social self-regulation framework

(Abrams, 1994) is used here and further refined in order to explain the simultaneous positive and negative effects of ethnic relational diversity on individual effectiveness.

5.2. Hypothesis

The model (depicted in Figure 13) that will be tested suggests that ethnic dissimilarity
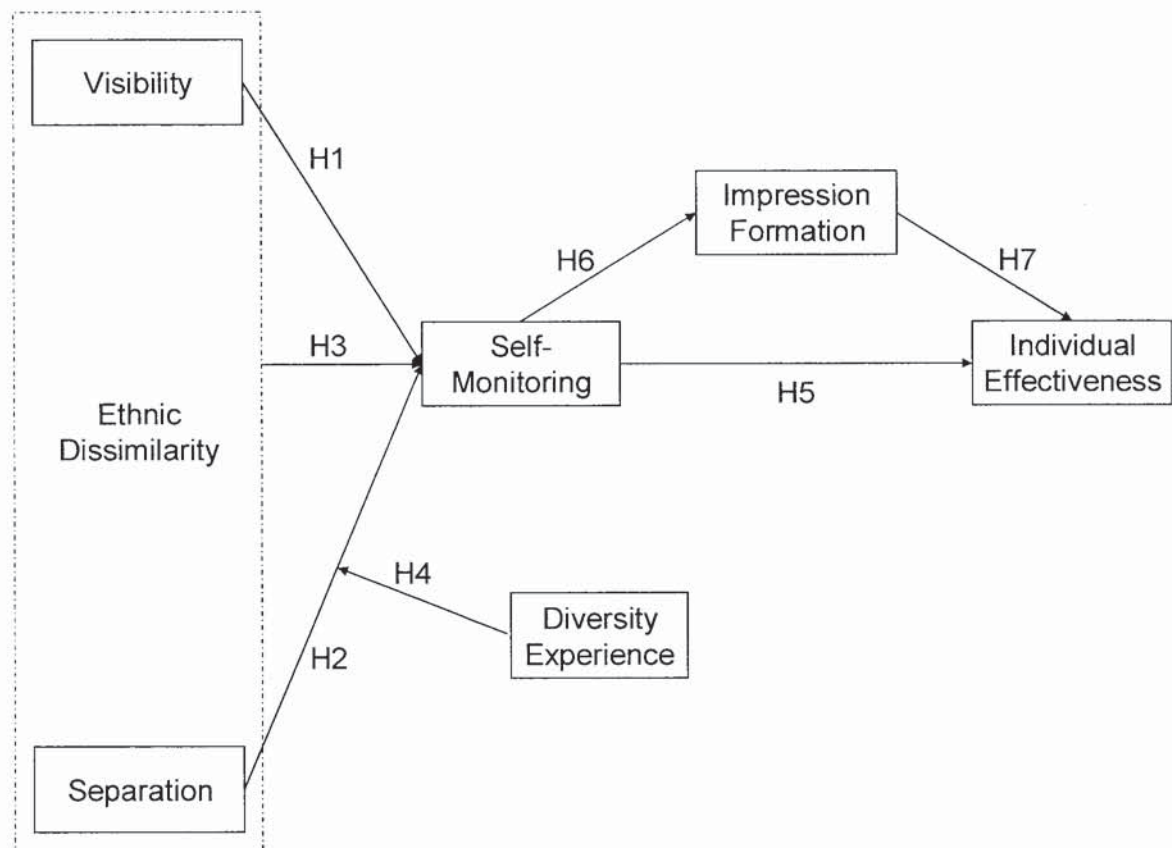
Figure 13. Hypothesized relationships. (Study 3).
H refers to hypothesis.

can be conceptualized as pertaining to visibility and separation aspects, that the respective visibility aspects are positively (Hypothesis 1) and the respective separation aspects are negatively (Hypothesis 2) related to self-monitoring, and that the overall additive effects are positive for group members with high levels of visibility and low levels of separation, and that they are negative for group members with low levels of visibility and high levels of separation (Hypothesis 3). The model further suggests that

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the negative relationship between separation and self-monitoring is buffered for group members who had experiences in similar situations (Hypothesis 4). Furthermore, the model suggests a positive direct effect of self-monitoring on individual effectiveness (Hypothesis 5), and an indirect positive effect via impression formation on individual effectiveness (Hypothesis 6 and 7). In the following the rationale for this model is delineated.

5.2.1. Visibility and Self-Monitoring

Following the gestalt figure-ground principle (Koffka, 1935), visibility should lead group members to segregate peers into two (or more) homogenous subgroups on the basis of their ethnicity (Mullen, 1983, 1987). In return, the individuals in the smaller subgroup become more self-attentive, because they focus their attention on themselves, while the individuals in the larger subgroup become less self-attentive, because they focus their attention on those in the smaller subgroup (Mullen, 1983). In light of a salient standard for performance, which should be the case in real group settings (Katzenbach & Smith, 1993), individuals in the smaller subgroup will increase their attempts to match-to-standard, i.e. self-monitor their actions in light of this standard, while members of the larger subgroup will decrease their attempts to match-to-standard (Mullen, 1983).

While there seems to be no direct empirical evidence supporting such claims, the positive effects found in the previous chapter would support this line of argument. Moreover, indirect evidence is also in line with the argumentation. For instance Kanter's (1977a) qualitative research demonstrated that women tend to over perform when they are in a token or numerical minority position, and that they report higher levels of performance pressure. In a similar way Mullen's (1983) meta-analytic findings on the effects of numerical minority status on matching-to-standards behavior further

supported such claims. Specifically, Mullen could demonstrate that group members who are in the numerical minority show higher levels of conformity, helping, lower levels of social loafing and antisocial behavior. Closer inspection of the interaction effects found in Chatman et al's (see figure 1 on p. 328, 2005) research also indicates that demographically dissimilar group members are more cooperative when task and goal interdependence are high. Thus, there are some empirical results that would support the idea that visibility might facilitate self-monitoring in light of a salient performance standards, which should be the case in real work group settings. Therefore it is suggested:

Hypothesis 1: Visibility is positively related to self-monitoring.

5.2.2. Separation and Self-Monitoring

It has been suggested that separation reflects the degree of how prototypical ethnic dissimilar group members see self and are seen by other group members (Harrison & Klein, 2007; Hogg et al., 1995). The less prototypical they are the less they are liked as group members, and the more likely they become socially excluded and marginalized (Hogg et al., 1995). In return social exclusion and marginal status within their work group may affect ethnic dissimilar group members' self-monitoring in either of two ways.

In an early experimental study Lord and Saenz (1985) demonstrated that students belonging to a numerical ethnic minority displayed limited recall for the contents of a roundtable discussion of everyday topics. The authors speculated that members of a numerical minority "may be overly concerned with the image that they project to others, and may shift attention toward self-presentation and away from the

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ongoing exchange of information" (p. 923). Further evidence for this idea is provided in experiment 4 conducted by Vohs et al. (2005). The authors could show that if an individual is in a numerical minority position, self-regulation failure occurs when the tokens ethnic self-concept is made salient (see experiment 4, Vohs et al., 2005). Thus, according to this perspective one might argue that ethnic dissimilar group members might react to their marginal group status by presenting a more favorable image of self, and this in return might deplete their self-regulatory resources needed for task accomplishment.

More recent theorizing suggests, however, that social exclusion and marginal status may directly undermine ethnic dissimilar group members' capacity to self-regulate their behavior (Baumeister et al., 2005). In line with this perspective are empirical findings showing that socially excluded group members avoid self-awareness (Twenge, Catanese, & Baumeister, 2003), one essential ingredient for effective self-regulation (Carver & Scheier, 1982). Likewise, social exclusion has been found to undermine meaningful thought (Baumeister, Twenge, & Nuss, 2002), vital for group members' matching-to-standard behaviors (Carver & Scheier, 1982), which constitutes the core of effective self-monitoring (Baker & Kirschenbaum, 1993; Karoly, 1993; Zimmerman, 1995). Thus, according to this perspective it seems more reasonable to assume that separation directly undermines group members' self-monitoring. Thus:

Hypothesis 2: Separation is negatively related to self-monitoring.

5.2.3. Additive Effects of Visibility and Separation on Self-Monitoring

Separation and visibility might differ largely between group members. For instance research within the wider GlOBE research project (House et al., 2004) found cultural differences pertaining to nine cultural value dimensions and nine modal practices

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dimensions (such as performance orientation, uncertainty avoidance, power distance, human orientation, collectivism, etc.). Differences on these scales suggest that for instance an Irish/Indic in an otherwise all English/Chinese group is much more similar in regard to these underlying attributes than for instance an Indic/Anglo in an otherwise all English/Chinese group. It seems therefore reasonable to assume that the former will be considered as less prototypical than the latter. Consequently, the likelihood of becoming socially excluded will be much higher for the former than the latter group member. In return, the former group member will likely encounter greater difficulties to self-monitor his or her behaviour.

Furthermore, experimental research on self-regulation failure indicates that increased levels of self-attention, such as those evoked by numerical minority status, might buffer the diametric effects of resource depletion due to experiences of social exclusion (cf. Baumeister et al., 2005, experiment 6). Thus, while visibility might generate pressure to adhere to group standards, separation might undermine effective self-regulation. Because both separation and visibility are thought to directly affect ethnic dissimilar group members' capacity to self-monitor their behaviour, and because one might well find group members that are high on both, low on both, or high on either and low on the other, they are rather additive than interactive effects one is likely to find. Accordingly:

Hypothesis 3: The overall effect of ethnic relational diversity on self-monitoring is positive when visibility is maximized and separation is minimized, while they are negative when the opposite occurs.

5.2.4. Boundary Conditions: The Role of Diversity Experience

While resource-depletion as evoked by separation might undermine consecutive acts of self-regulation, self-regulatory exercise and training might help to guard against these diametric effects (Muraven & Baumeister, 2000). While empirical evidence is scarce, one experiment by Muraven, Baumeister and Tice (1999) supports these claims. Muraven and colleagues assigned students assigned to self-control drills over a period of two weeks. These self-control drills included improving posture, regulating mood, and maintaining diary of eating. Compared to students in the control group not receiving the training, students in the treatment group showed significant improvements in their levels of self-control in unrelated tasks, such as physical stamina and handgrip squeezing.

Based on these arguments and empirical findings it is suggested here that ethnic minority students (i.e. for instance a Chinese student brought up in the UK) should be more likely to be safe guarded against resource depletion in ethnically diverse work groups, because from their early ages on they find themselves in situations where they have to suppress their ethnic self, and adjust to their host countries culture and customs. These experiences should have trained their self-regulatory strength, which will be henceforward called diversity experiences, and should buffer the negative effects elicited in regard to their level of self-monitoring. Thus:

Hypothesis 4: *The negative relationship between separation and self-monitoring is attenuated for individuals with high levels of diversity experience.*

5.2.5. Self-Monitoring, Impression Formation and Individual Effectiveness

The relevance and consequences of consistent self-monitoring in light of competing internal and external demands has been highlighted in reviews conducted in various research arenas, such as clinical settings (Kirschenbaum, 1987), educational settings (Zimmerman, 1990), and organizational settings (Manz, 1986). Self-monitoring might be particularly relevant in diverse work groups, as it helps group members to adjust their behaviour to task, social and situational demands (cf. Baumeister & Vohs, 2007; Schmeichel et al., 2003).

To be effective in such settings, group members have to override social categorization processes elicited by group members ethnicity (Flynn, 2005) in order to maintain high levels of social integration and effectiveness (Flynn et al., 2001), conform to their group's values of social desirability and admired traits (Baumeister, 1982; Vohs et al., 2005) in order to assure coordination, effective information exchange and to receive social support from their peers (Flynn et al., 2001), and maintain high levels of information processing in order to solve problems, make decisions, and accomplish complex tasks (Schmeichel et al., 2003).

As real work groups are characterized by high task interdependence and role differentiation (Hackman, 1987), self-monitoring should have a direct positive effect on group members' effectiveness, but also an indirect effect via the impressions formed by their peers. Direct positive effects of self-monitoring on group members' effectiveness is expected as group members that self-monitor their behavior in light of a group's performance standards, should be better able to accomplish the tasks called for by their functional role within their work group. As such subtasks are often complex, they require high levels of self-monitoring (Schmeichel et al., 2003). Consequently, group

members who self-monitor their behavior should be more effective in accomplishing such tasks. Thus:

Hypothesis 5: Self-monitoring is positively related to individual effectiveness.

Indirect effects are likely to occur via the impression group members form of their peers. Group members that self-monitor their performance in light of their groups' performance standards have been found to elicit more favourable impressions among their peers (Flynn et al., 2001). When these peers form more favourable impressions of a group member, these group members' social interactions should become more effective, and they will receive more social support and help, and crucial information needed to accomplish their tasks more effectively in a work group setting (Van der Vegt, Bunderson, & Oosterhof, 2006). Moreover, when peers form more favourable impressions of a group member, social categorization processes elicited by a group members ethnic dissimilarity are less likely to occur (Flynn et al., 2001). In return the Flynn et al's findings also suggest that under such conditions demographically dissimilar group members become more socially integrated, and as a consequence it becomes easier for them to coordinate their actions, and to receive support and information needed for task accomplishment. In sum then, self-monitoring should also elicit indirect effects on a group members' effectiveness via more favourable impressions their peers form:

Hypothesis 6: Self-monitoring is positively related to impression formation.
Hypothesis 7: Impression formation is positively related to individual effectiveness.

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5.3. Method

5.3.1. Sample

Data for the study were collected within a business simulation course held at a large Business School in the United Kingdom. All subjects were upper-level undergraduate students studying business administration or related degrees (e.g., Marketing, Finance). Initially, 318 individuals working in 69 groups were approached. Of these 261 gave their informed consent. The final sample comprised 69 groups and 261 individuals respectively. Thus, participation rate was 82.1 %, average age was 20 years, 126 were female and 135 male, average group size was $M = 4.66$ ($SD = 0.475$).

To assess whether non-response biased the results, only data regarding the grade point average mean in student's first and second academic year ($M_{First\ Year} = 60.703$ and $M_{Second\ Year} = 58.952$) could be obtained for all students. Consequently, a single sample t-test was employed yielding no differences between respondents mean grade point average during their first and second academic year and the mean on these respective variables in the population including all students: $\Delta M_{First\ Year} = 0.156$, $t_{First\ Year}(261) = .280$, $p = .780$ and $\Delta M_{Second\ Year} = 0.344$, $t_{Second\ Year}(261) = .797$, $p = .426$). Thus, non-response is unlikely to have biased the results.

Ethnic background. The students' ethnic background was retrieved from the university's database. This way all diversity indexes could be calculated based on all actual group members (i.e. the 318 students initially approached). Students were recruited from 20 different ethnic backgrounds: White British (43.9%), Indian (27.7%), China (19.3%), and other (9.1%; respectively Albanian, Australian, Canadian, Danish, French, German, Italian, Kazakhstan, Kuwaiti, Dutch, Nigerian, Portuguese, Russian, South African (Black), Thai, and Zimbabwean).

Procedures. *Business game* The EUROCAR© ("Eurocar© [Computer software and manual]," 2005) simulation was used which is a complex and realistic computer-based simulation of the European automobile industry.[4] Student groups form a company's board for their decision making. Each student had a different role (such as Managing, Finance, Human Resource, Production and Marketing Director). After 10 weeks students orally presented and handed in business plans. From week 12 onwards, students played the business game in 6 one-hour sessions. Every second week they had a tutorial where they received guided feedback by a tutor on their performance. At the end the most successful company received a prize of £250.

During the business game period, group members had frequent opportunities to interact as they met at least once a week for one hour to engage in the business game simulation or discuss their performance. Additional meetings were required, as the groups had to develop a business plan, prepare a presentation on the business plan, and write a group report. Students were graded on the basis of several group tasks (business plan, business plan presentation, group report and net profit-performance of their company), and on one individual task (a written essay, see below). These evaluations have a significant impact on each individual's final assessment: business plan and business plan presentation (40% of final mark), group report and net-profit performance of their company (25% of final mark), individual essay (35% of final mark).

Questionnaires were distributed during week 12 (self-monitoring scale, for details see below) and week 22 (impression formation scale, for details see below). These dates were chosen firstly to assure that the work groups had been completed already one full team development cycle (note that their presentations and business

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[4] For a download of a demonstration version, see http://www.theorangegroup.com/eurocar.html.

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plans were due during week 10), secondly, to overcome problems associated with common source methods and thirdly, to be able later to infer causality.

Work group composition. Members were assigned by the university's office to their work groups on a random basis with two exceptions: a) at least one high-scoring student on prior individual learning performance (on the basis of their grades in the Finance and Accounting Module) had to be present in the group, and b) groups had to be heterogeneous in terms of gender. A one-way ANOVA revealed no significant between-group differences in regard to prior learning performance, $F(1, 68) = 1.185, p = .186$. And no differences in the distribution of females versus males within the groups were evident, $F(1, 68) = 0.468, p = .999$. This corroborates that group formation was systematic.

5.3.2. Measures

Visibility. On the basis of the above categorization of students' ethnic backgrounds visibility was calculated by using Mullen's (1987) *Additive Other-Total Ratio (AOTR)*:

$$\text{AOTR} = \sum_{1}^{n-1} \frac{O_n}{O_n + S}$$

where n = number of ethnic groups in the work group, S = number of people in the work group with the same ethnic background as the individual, O_n = number of people from any other of the n ethnic groups in the work group. For example, in a work group composed of one Irish, two Dutch, and one Polish, the number of ethnic groups is $n = 3$. AOTR is then the sum of 2/(2+1) for the Irish in relation to the Dutch subgroup and 1/(1+1) for the Irish in relation to the Polish "subgroup" yielding (2/3) + (1/2) ~ 1.17. In the sample the AOTR ranged from 0.20 (low visibility) to 1.67 (high visibility).

Separation. Following Harrison and Klein's advice and relying on Dawson & Brodbeck's (2005) reasoning to incorporate actual cultural distance as more accurate

measure of cultural diversity in work groups, separation was calculated using Tsui, et al.'s (1992) *relational diversity score (RDS)*. Based on the above ethnic categories the RDS was imputed with data on societal culture differences from the GLOBE project (House et al., 2004). GLOBE measured societal culture across 62 cultures in terms of two manifestations: modal practices and modal values. Modal practices measure what are common behaviors, institutional practices, proscriptions and prescriptions in a particular culture. Modal values measure what should be common institutional practices, proscriptions and prescriptions in a particular culture. It is argued here that differences on these 18 subscales represent a good proxy for the underlying differences in deep-level ethnic diversity attributes.

GLOBE measured these manifestations on two parallel constructed sets of 9 subscales including performance orientation, uncertainty avoidance, power distance, future orientation, group and institutional collectivism, human orientation and gender egalitarianism. To obtain the separation measure, the response bias adjusted scores (as reported in Table B.2 on pp. 740 – 747 in House et al., 2004) on these 18 subscales were linked in a first step to each student based on his or her ethnic category. In case no data were available for a particular country, the average score for from the same cultural cluster was used. RDS was then calculated for each of these scales using Tsui, et al.'s (1992) formula:

$$\text{RDS} = \sqrt{[1/n \sum_{i}^{j} (S_i - S_j)^2]}$$

For continuous variables, such as the GLOBE subscales used in this study, the relational demography score is the square root of the summed differences between an individual S_i's value on one of the GLOBE's subscales and the value on the same subscale for every other individual S_j in the sample for the work group, divided by the total number n of respondents in the work group. For example, in a work group

composed of one Irish, two Dutch, and one Polish, work group size is $n = 4$. The response bias adjusted scores for the modal value assertiveness subscale are: 3.74 for the Irish group member, 3.13 for each of the two Dutch group members, and 3.95 for the Polish group member. The ethnic deep-level relational diversity score for this particular subscale for the Irish are then $(3.74 - 3.13)^2 + (3.74 - 3.13)^2 + (3.74 - 3.95)^2 = 0.4603$, of which the square root is taken, leading to approximately 0.68, which is then divided by group size, which gives about 0.17.

This was done for each of the 18 subscales, which were then averaged yielding a single score for each individual in the sample to obtain an overall separation score. Theoretically, the RDS score averaged across all 18 subscales can range from 0 to 6, as each of the 18 subscales was measured on a 7-point Likert scale. However, based on GLOBE's empirical findings the ethnic deep-level relational diversity score can hardly exceed 0.4. In this sample the ethnic deep-level relational diversity score ranged from 0.09 (low separation) to .31 (high separation).

Self-monitoring. The literature on self-monitoring usually relies on individuals' self-recordings of specific self-monitoring behaviors (for a review see Karoly, 1993). For instance Baker and Kirschenbaum (1993) asked obese individuals to keep a record on the food they consumed during a certain period of time. Because the main interest in this study focused on a wide array of performance related monitoring activities, keeping record of each of the performance relevant activities seemed to be less suited for the current setting. Snyder's (1974) self-monitoring scale on the other seemed to be less suited for the current work, because it captures dispositional self-monitoring, and also focus rather on self-regulatory activities to influence the impressions others form of oneself, and not so much on activities enabling one to detect and reduce discrepancies

between own behavior and group standards. Therefore to fit the purposes of this study a new scale was developed and validated (see Appendix C for details).

Participants were instructed to report to what extent they engaged in one of the following behaviors in their work groups: "I monitor my actions regularly", "I check on how satisfied others are with my performance", "I check how well I perform", "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 .721 in the present sample.

Impression formation. Impressions of others are focused on attributes that are relevant to the perceiver or are valued regarding a given task (Kelley, 1967). For work groups, Flynn and colleagues (Flynn et al., 2001) identified three such attributes: 1) cooperativeness, 2) leadership ability, and 3) ability to achieve assigned tasks. While Flynn et al. warrant that these attributes may not be the only attributes relevant in work groups; they could demonstrate that these attributes are however important ones. In line with their arguments, Flynn and colleagues found a moderate correlation ($r = .25$) between objectively measured individual performance and impression formed in regard to these three attributes. In order to identify the most important attributes for the current setting, the business game simulation manual ("Eurocar© [Computer software and manual]," 2005) was consulted. The manual provides descriptions for each functional role (i.e. marketing, accounting, production and human resource management), which are all important and relevant to succeed in the simulation. Based on these descriptions, behavioral markers for each of these roles were generated (see Appendix D for details). As can be seen in Appendix D, these descriptions contain the three attributes specified by Flynn and colleagues (2001), but are more specific for the current context. In doing

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so it was hoped to further increase the predictive validity and relevance of these attributes.

Adapting Flynn and colleagues' (2001) approach, all group members were asked to rate each of their peers on one-item scales (ranging from $0 =$ poor to $100 =$ excellent) on each of these four areas (see Appendix D for details). These ratings were made in private during week 24 in the group's bi-weekly tutorial. Each of the four ratings was then averaged separately across all peers for each rated focal individual.

Dawson's (2003) selection rate was used to assesses the accuracy of incomplete group data in predicting true scores as a function of number of responses per group (n) and group size (N). The cut-off point chosen was a selection rate ([N-n]/Nn) of .32. Scores from groups with this value of .32 or below are generally correlated with true scores at .95 or higher. All of the groups included had values of .32 or lower. It was therefore concluded that missing data was not a problem.

Interraterreliability was adequate for each functional area (marketing: $r_{wg} = .99$; accounting: $r_{wg} = .99$; production: $r_{wg} = .99$; HRM: $r_{wg} = .99$). To obtain an overall impression formation score, these four ratings were averaged for each rated focal individual. Reliability for the overall expertness score (Cronbach's alpha = .89) and average interraterreliability ($r_{wg} = 0.99$) were adequate. A moderate correlation ($r = .25$) between individual effectiveness and impression formation in regard to these four functional areas confirmed the measures predictive validity.

Individual effectiveness. Individual effectiveness was measured as a weighted composite on the following criteria: student's participation in their work group (10%). analysis and discussion of the operations, functioning and performance of their company during the business game as presented in their individual essay handed in at the end of the business game course (40%), midterm and final exams in related courses

in the areas of accounting, marketing, operations management and human resource management (each 25%). Such a measure has been employed in other studies on relational demography and individual effectiveness (e.g., Flynn et al., 2001). A correlation of r = .413 (p < .001) between individual effectiveness aggregated onto the group level and group effectiveness measured at time 3 (i.e. group's performance during the business game) further corroborated the measures' validity. Individual effectiveness was measured on a scale ranging from 0% to 100%.

Diversity experience. To measure diversity experience a categorical variable was created. Individuals who had been brought up in the UK but belonged to an ethnic minority group (for instance Anglo-Indians, Anglo-Pakistanis or Anglo-Chinese) were categorized as having diversity experience (dummy coded: 1), while all others have been categorized as having no diversity experience (dummy coded: 0). The underlying rationale of this measure was that in order to successfully cope with numerical minority status in a work group setting in the UK, individuals had to have acquired extensive experience in similar situations. While it might well be that individuals who came from a different country and belonged to a social minority in their respective country (for instance a Chinese brought up in Germany), the situation in a UK context is likely to impose novel strains on that individual (for instance in terms of language and task requirements), and as such experiences as a member of a social minority in a different cultural context might not safeguard against the adverse effects of being in the numerical minority in a work group in a UK setting. White-Anglos finding themselves in a numerical minority position in a work group in a UK context on the other hand might well be accustomed to language and task requirements in such situations; they might however lack the experience of coping adequately with their numerical minority status. As such both White-Anglos and Non-UK individuals were assigned to the same

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category, as both may lack the experience to adequately cope with their numerical minority position albeit because of different reasons. Non-White Anglos on the other hand are likely to have found themselves in numerical minority positions during their whole life, and as such might have learnt to adequately cope with such situations.

Control variables. To control for students' prior effectiveness, students' Grade Point Average (GPA) of year 1 in their studies was used. GPA was measured on a scale ranging from 0% to 100%. As the amount of self-attention induced among group members is a also a function of group size (cf. Mullen, 1983; Mullen, 1987), this was controlled for. Furthermore, country of birth (dummy-coded: 0 = non-UK, 1 = UK) was included as a control variable in order to rule out alternative explanations based on differences in intimate experience with the host country's dominant cultural background. As ethnic dissimilarity (i.e. its visibility and separation aspects) might actually mask effects elicited by ethnic differences (cf. Tsui et al., 1992), group member's ethnicity was also included as a control (dummy-coded: 0 = non-White, 1 = White). To account for potential gender differences this factor was also imputed as a control variable (dummy-coded: 0 = female, 1 = male). In order to account for the potentially confounding effects of group dynamics and group performance, the three measures of group performance (i.e. business plan, presentation, group report, and net-profit performance of the company) were controlled for.

5.3.3. Analyses

Due to the hierarchical structure of the data (individuals were nested in work groups) all hypothesis were first tested using multilevel analysis techniques in HLM 6.0. However, after entering the group level control variables as fixed effects into the hierarchical linear model, all variance between groups was explained and the error term of these group level predictors was no longer significant. Moreover, the model relying on OLS

regression estimates had the best fit. It was therefore concluded that OLS regression

analysis techniques were appropriate to analyze the data (cf. Snijders & Bosker, 1999).

Consequently, hypotheses 1 to 4 were tested using OLS regression analysis

techniques in SPSS 16.0, and regressing the dependent variable self-monitoring on

blocks of predictor variables (Table 8). Control variables were entered into the first

block of the regression (Model 1, Table 8). The next block contained the predictor

variables (Model 2, Table 8). Predictor variables were centered in order to reduce

multicollinearity (cf. Aiken & West, 1991).

Results for Model 2 (see Table 8) were then imputed into the additive effects

test (AET, developed and presented in the previous chapter, see also Appendix B) to

test hypothesis 3. To recap, the underlying rationale of this test is that there are regions

for which the additive effects of the two main effects (i.e. separation and visibility

respectively) are positively or negatively and significantly different from zero when

regressed on self-monitoring.

To test the interaction proposed in hypothesis 4, the two-way interaction term

between separation and self-monitoring was added into the third block of the OLS

regression (Model 3, Table 8).

Because the VIF scores for ethnicity (67.176), nationality (53.634), and

experience with the host country (59.426) indicated a massive multicollinearity

problem, ethnicity and nationality were removed as control variables in these analyses.

Excluding nationality and ethnicity helped to overcome the multicollinearity problem,

yielding VIF scores varying from 1.003 to 1.915 across regressions, suggesting

multicollinearity did not distort regression results any longer. However, the results

presented in table 8 hold even when these variables are included as controls, as can be

seen in the analysis conducted to test hypothesis 5-7 (see later section, and Table 10 and Figure 14).

Due to the relatively low sample size, and following suggestions by Fritz and MacKinnon (2007) on how to achieve adequate power when testing for mediation, hypothesis 5, 6 and 7 were tested employing structural equation modeling and bias corrected bootstrap techniques in AMOS 16.0.1 (Arbuckle, 2007). In a first step, a covariance matrix was assembled including all variables (see SDs and the correlations in the upper diagonal in Table 7). In a second step and following recommendations by Kammeyer-Mueller and Wanberg (2003) to hold control variables constant without using up degrees of freedom, control variables were partialled out of the covariance matrix prior to analyses (see SDs and the partial correlations in the lower diagonal of Table 7).

In order to test the model as delineated in the hypothesis section, a respective path model was specified (yielding Model 3 in Table 9: visibility and separation affected individual effectiveness via self-monitoring directly and indirectly via impression formation). To assess comparative model fit, two further a priori paths were specified. As findings in the previous chapter indicated a direct effect of visibility and separation on individual effectiveness, model 1 included direct links between visibility and separation with individual effectiveness. Based on Lord and Saenz's (1985) arguments that ethnic dissimilar group members rather engage in impression management than task accomplishment, model 1 also included a direct effect between separation and impression formation. Model 2 resembled model 3, but assumed that self-monitoring affects individual effectiveness only via impression formation, and not directly. In so far model 2 follows arguments and empirical findings presented by Flynn

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et al. (2001) in that impression formation should fully mediate the link between ethnic relational diversity and individual effectiveness.

In order to compare model fit of these three models multiple indexes were used (cf. Kline, 2005). In particular, models were compared on Bentler's (1990) comparative fit index (CFI), Steiger's (1990) root-mean square error of approximation (RMSEA) and the standardized root mean square residual (SRMR). According to Kline (2005) values larger than .9 for CFI and values below .1 for RMSEA and SRMR indicate acceptable fit. Because all three models were hierarchically related, the three models' decrements in overall model fit when paths are eliminated could be tested for statistical significance (cf. Kline, 2005). Therefore the difference in model chi-square and degrees of freedom of model 3 when compared with model 1 and 2 were computed, and compared with the values of the $\chi 2$-distribution (Hu & Bentler, 1999). A significant chi-square value thereby indicates that model with the smaller value has a better fit.

Finally, to test the statistical significance of the indirect and total effects, and in order to further corroborate the partial or full mediating effects of self-monitoring and impression formation as delineated in the hypothesis section, indirect and total effects were computed using bias corrected bootstrap techniques, as suggested by Fritz and MacKinnon (2007). Results of these analyses are presented in Table 10.

5.4. Results

The raw scale means, standard deviations, and correlations for the central study variables are presented above the diagonal in Table 7. The subdiagonal correlations have the control variables partialled out and were used to build the covariance matrix.

Hypothesis 1 and 2. Hypothesis 1 stated that visibility is positively related to self-monitoring. As can be seen in Table 8 in Model 2, visibility was positively and

Table 7. Scale means, standard deviations, and correlations (Study 3).

Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 Individual Effectiveness	57.922	7.742	—	.249	.150	-.022	-.035	.101	-.029	.076	.201	.579	.015	.035	.146	-.025
2 Impression Formation	69.128	11.730	.146	*.890*	.199	-.131	-.185	.004	.065	.228	.250	.199	-.079	-.014	.002	-.051
3 Self-Monitoring	5.212	0.778	.193	.209	*.721*	.048	-.153	.090	-.011	-.039	.044	-.015	-.069	-.000	.005	-.026
4 ATOR (Visibility)[a]	1.044	0.502	.117	.016	.043	—	.524	.265	-.002	-.512	-.283	-.147	.058	-.066	-.051	.097
5 RDS (Separation)[b]	0.186	0.041	.068	-.082	-.169	.487	—	-.051	-.020	-.343	-.428	-.043	-.013	.068	-.043	-.127
6 Diversity Experience[c]	0.307	0.462						—	.016	-.567	.411	-.017	-.047	-.053	-.039	-.076
7 Gender[d]	0.517	0.501							—	.048	.064	-.004	.019	.032	.024	-.032
8 White[e]	0.421	0.495								—	.504	.078	.005	-.031	.040	-.008
9 British[f]	0.728	0.446									—	.082	-.041	-.078	.005	-.095
10 Prior Performance	60.890	9.019										—	-.046	.146	.234	.029
11 Group Performance (Business Plan)	62.923	6.901											—	.377	.059	.303
12 Group Performance (Presentation)	63.743	8.342												—	.330	.076
13 Group Performance (Business Game)	66.877	8.226													—	.119
14 Group Size	4.659	0.475														—

Note. $N = 261$. Correlations above the diagonal are for raw score summary scores. Correlations greater than .102 are significant at $p < .05$, correlations greater than .143 are significant at $p < .01$, and correlations greater than .190 are significant at $p < .001$. The subdiagonal correlations have diversity experience, gender, ethnicity, nationality, prior performance, group performance (business plan), group performance (presentation), group performance (business game), and group size partialled out, and all variables except individual effectiveness have been grand mean centered. Partial correlations greater than .103 are significant at $p < .05$, correlations greater than .146 are significant at $p < .01$, and correlations greater than .193 are significant at $p < .001$. Coeffcients alphas and interrater reliability are in bold italics on the diagonal for composite variables. [a]ATOR= additive total other ratio. [b]RDS = relational diversity score. [c]1 = social minority brought up in UK, 0 = others. [d]0 = female; 1 = male. [e]0 = non-White; 1 = White. [f]0 = non-British; 1 = British.

Table 8. Predictor and moderating variables regressed on self-monitoring (Study 3)

Variables	Model 1 β	B	SE	Model 2 β	B	SE	Model 3 β	B	SE
Constant		5.170	.059***		5.200	.058***		5.205	.058***
Gender[a]	-.013	-.020	.097	-.019	-.030	.095	-.019	-.029	.095
Prior Performance (Year 1 Grade Point Average)	-.024	-.002	.006	-.010	.000	.006	-.005	.000	.005
Host Country Experience [b]	.082	.138	.105	.012	.021	.111	.017	.028	.110
Group Performance (Business Plan)	-.080	-.009	.008	-.095	-.011	.008	-.103	-.012	.008
Group Performance (Presentation)	.034	.003	.007	.076	.007	.007	.068	.007	.007
Group Performance (Business Game)	.008	.001	.006	-.006	.000	.006	-.027	-.003	.006
Group Size	.001	.002	.109	-.056	-.092	.110	-.049	-.081	.109
AOTR[c] (Visibility)				.202	.313	.125*	.234	.363	.126**
RDS[d] (Separation)				-.273	-5.209	1.471***	-.343	-6.548	1.605***
RDS[c] (Separation) X Experience							.139	6.894	3.406*
ΔR^{2} [e]		.013			.048			.015	
F for ΔR^{2} [e]		.472			6.404**			4.098*	
R^{2}		.013			.061			.076	
F		.472			1.806+			2.055*	

Note. N = 261. All variables have been grand mean centered. [a]0 = female; 1 = male. [b]0 = no host country experience; 1 = host country experience. [c]AOTR = additive total other ratio. [d]RDS = relational diversity score. [e]Changes in R^{2} are from the penultimate block within the same model. +p < .1. *p < .05. **p < .01.***p < .001.

significantly related to self-monitoring ($B = .313$, $SE = .125$, $\beta = .202$, $p < .05$). Thus, hypothesis 1 was fully supported.

Hypothesis 2 stated that separation is negatively related to self-monitoring. Results (as displayed in Table 8 for Model 2) indicate that separation was negatively and significantly related to self-monitoring ($B = -5.209$, $SE = 1.471$, $\beta = -.273$ $p < .001$). Thus, hypothesis 2 was fully supported.

Hypothesis 3. Hypothesis 3 stated that the effect of ethnic relational diversity on self-monitoring is positive when visibility is maximized and separation is minimized, while they are negative when the opposite is done. To test this hypothesis the additive effects test (AET; see Appendix B and previous chapter) was applied and the relationship between separation and individual effectiveness at high (one standard deviation above the mean; see solid diagonal) and low (one standard deviation below the mean; see dotted diagonal) levels of visibility was graphically displayed (see Figure 14).

It becomes apparent in Figure 14 that for students with high separation scores (> 0.004 in terms of grand mean centered Scores and > 0.190 in terms of raw scores) and low visibility scores (= .542 in terms of raw scores) the additive effects of ethnic dissimilarity on self-monitoring are negative when compared to the estimated mean self- monitoring score in the sample including control variables only, while they are positive (see upper eclipse) for students with low separation scores (< 0.002 in terms of grand mean centered scores and < 0.184 in terms of raw scores) and high levels of visibility (= 1.546 in terms of raw scores). Thus hypothesis 3 was fully supported.
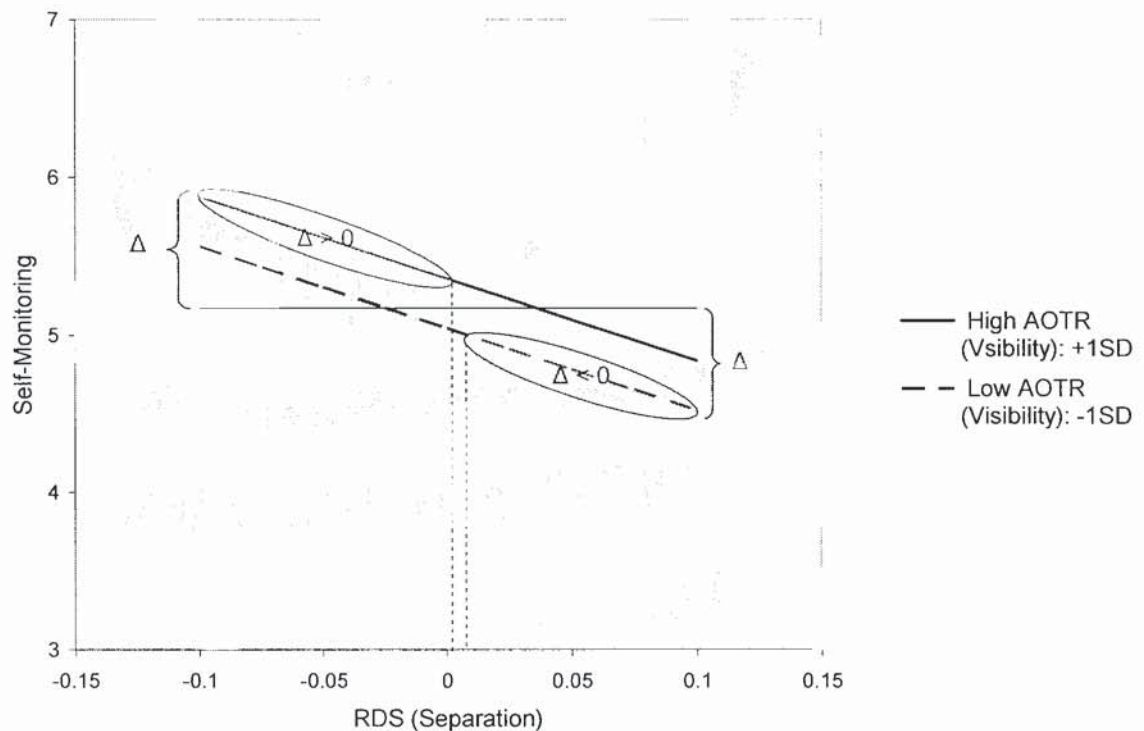
Figure 14. Relationship between separation and self-monitoring at high (one standard deviation above the mean; see solid diagonal) and low (one standard deviation below the mean; see dotted diagonal) levels of visibility. (Study 3).

The solid black line refers to the estimated mean self-monitoring score in the sample including control variables only. All predictor variables are grand mean centered. Upper eclipse (and dotted vertical line) indicates the boundaries of the region of significance (at the .05 level) for separation at high levels (one standard deviation above the mean) of visibility for which the additive effects of ethnic dissimilarity are significantly larger ($\Delta > 0$) than the estimated mean self-monitoring score in the sample including control variables only. Lower eclipse (and dotted vertical line) indicates the boundaries of the region of significance (at the .05 level) for separation at low levels (one standard deviation below the mean) of visibility for which the additive effects of ethnic dissimilarity are significantly smaller ($\Delta < 0$) than the estimated mean self-monitoring score in the sample including control variables only.

Hypothesis 4. Hypothesis 4 stated that diversity experience attenuates the

negative relationship between separation and self-monitoring. Results (as displayed

in Table 8 for Model 3) suggest that diversity experience moderated the relationship

between separation and self-monitoring, as indicated by the significant interaction

term between separation and experience with the host country ($B = 6.894$, $SE =$

3.406, $\beta = .139$, $p < .05$)

To facilitate interpretation of the interaction, the relationship was plotted for

individuals with no diversity experience and for individuals with diversity

experience (Aiken & West, 1991). Figure 15 illustrates the significant moderator effect of diversity experience on the relationship between separation and self-monitoring. It can be seen that the negative relationship is attenuated for individuals with diversity experience, while it becomes more accentuated for individuals with no diversity experience.
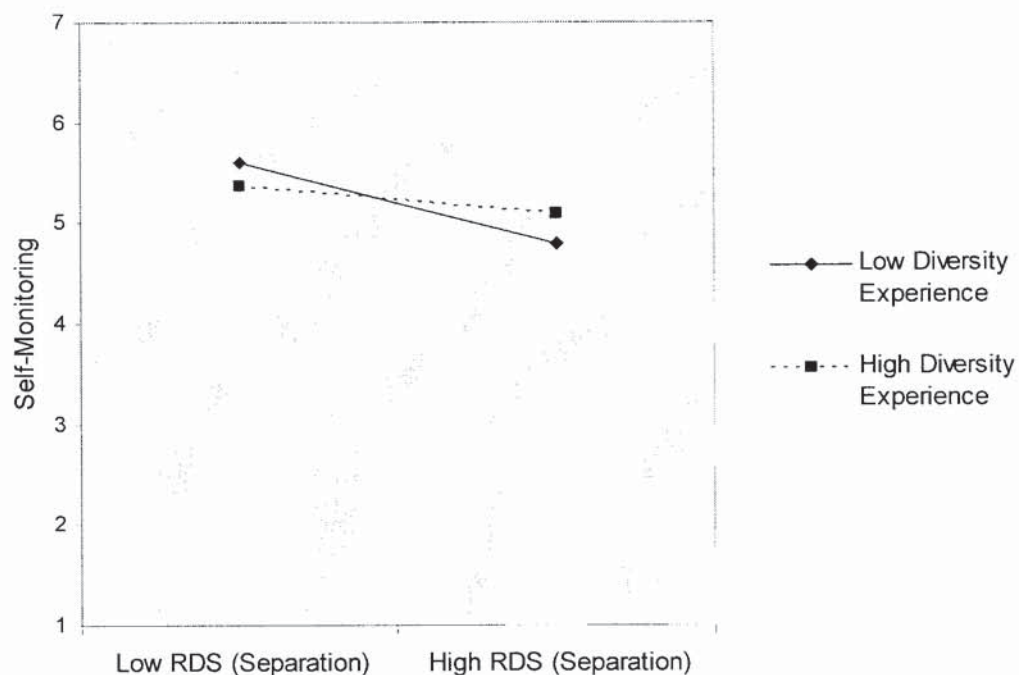
Figure 15. Interaction between separation and host country experience (Study 3).

To empirically corroborate these findings a single slope test was employed (Aiken & West, 1991). The simple slope for individuals with no diversity experience was negative and significant ($B = -9.733$, $SE = 2.671$, $\beta = -.510$, $p < .001$), while the simple slope for individuals with diversity experience was marginally significant ($B = -3.362$, $SE = 1.723$, $\beta = -.176$, $p < 0.100$). Comparing the Bs and βs of the single slope equation with the main effect slope of separation, it appears that for individuals with diversity experience the negative effect on self-monitoring is attenuated, while it is further accentuated for individuals with no diversity experience.

In sum then, hypothesis 4 was fully supported. Diversity experience attenuated the negative relationship between separation and self-monitoring, while no diversity experience further accentuated the negative relationship.

Hypothesis 5, 6 and 7. To test hypothesis 5, 6 and 7 a model (here referred to as model 3) was built as specified in the hypothesis section (see Figure 13 and 16). This model was tested against two alternative models to corroborate the hypothesized model's comparative fit, and to single out alternative models.

Specifically, model 1 resembled model 3, but included three additional paths: directs effects of visibility and separation on individual effectiveness, and a direct effect of separation on impression formation. Model 2 resembled model 3, but assumed that self-monitoring affects individual effectiveness only via impression formation, and not directly. Thus, this model did not include a direct path between self-monitoring and individual effectiveness.

As can be seen in Table 9, model 1 (χ^2 (1) = 0.340, p = .560, RMSEA = .000, SRMR = .070, CFI = 1.000) had more favorable RMSEA, SRMR and CFI values than Model 3 (χ^2 (4) = 5.197, p = .268, RMSEA = .034, SRMR = .100, CFI = .988), however the difference in χ^2 of 4.857 with three less degrees of freedom between model 3 and model 1 was non-significant suggesting that model 3 had a better overall fit than model 1. Model 2 (χ^2 (5) = 12.632, p < .027, RMSEA = .077, SRMR = .277, CFI = .926) had less favorable RMSEA, SRMR and CFI values than Model 3, and the difference in χ^2 of 7.435 between model 2 and model 3 with one less degree of freedom was significant at p < 0.01 suggesting that model 3 had a better model fit than model 2. Moreover, the discrepancy score for model 3 was not significant, and RMSEA, SRMR and CFI all were well within the range as suggested

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Table 9. Fit indices for alternative models (Study 3).

Model	*df*	χ^2	*p*	RMSEA	SRMR	CFI
Model 1	1	0.340	.560	.000	.070	1.000
Model 2	5	12.632	.027	.077	.277	.926
Model 3	4	5.197	.268	.034	.100	.988

Note. N = 261. CFI = comparative fit index; SRMR = standardized root-mean-squared residual; RMSEA = root-mean-squared error of approximation.

by Kline (2005). Consequently, model 3 was used to further test hypothesis 5, 6 and 7.

Hypothesis 5 suggested a positive effect of self-monitoring on individual effectiveness. As can be seen in Figure 16 and Table 10 the path coefficient between self-monitoring and individual effectiveness was positive and significant (*Unstandardized* = 1.691, *SE* = .614, γ = .170, *p* < .01). Thus, hypothesis 5 was fully supported.

Hypothesis 6 suggested a positive effect of self-monitoring on impression formation. As can be seen in Figure 16 and Table 10 the path coefficient between self-monitoring and impression formation was positive and significant (*Unstandardized* = 3.159, *SE* = .917, γ = .209, *p* < .01). Thus, hypothesis 6 was fully supported.

Hypothesis 7 suggested a positive effect of impression formation on individual effectiveness. Results (see Figure 16 and Table 10) indicated a positive effect of impression formation on individual effectiveness, which was marginally significant (*Unstandardized* = .079, *SE* = .042, γ = .110, *p* < .1). Thus, hypothesis 7 received partial support.
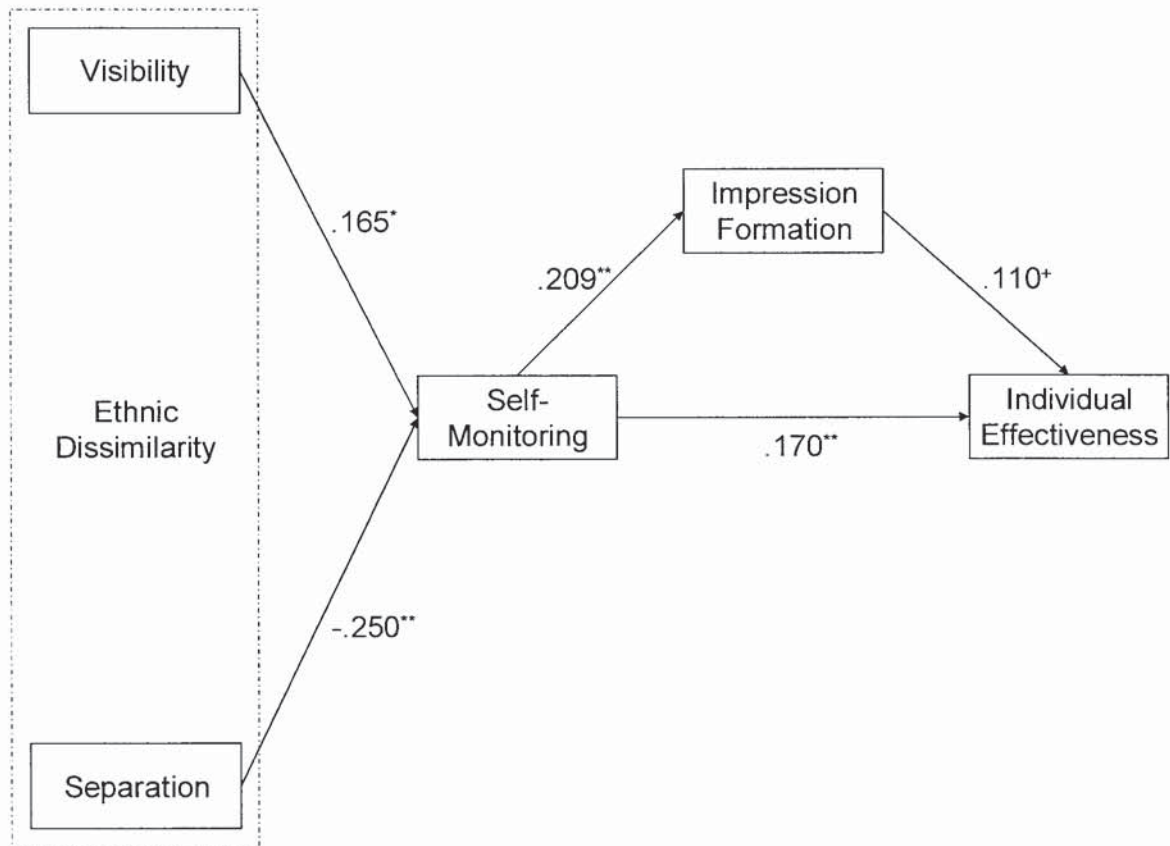
Figure 16. Model 2. (Study 3).

N = 261. All numbers reflect standardized path coefficients with gender, prior performance, ethnicity, nationality, group performance 1 (business plan), group performance 2 (business plan presentation), group performance 3 business game), and group size were partialled out. + p < .1. *p < .05. **p < .01. ***p < .001.

To further corroborate the mediating effects of self-monitoring and impression formation between visibility and separation with individual effectiveness, total and indirect effects for model 3 were estimated using bias corrected bootstrap techniques. Inspection of Table 10 reveals support for a model, in which self-monitoring transforms the effects of ethnic dissimilarity on individual effectiveness directly and indirectly via impression formation suggesting partial mediation. While the total and direct effects are positive and significant (*Unstandardized* = 1.921, SE = .600, γ = .193, p < .01; *Unstandardized* = 1.691, SE = .614, γ = .170, p < .01), the indirect effects are positive and significant at a marginal level (*Unstandardized* = .230, SE = .153, γ = .023, p < .1).

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Table 10. Effects decomposition for model 2 (Study 3)

| | Endogenous Variables | | | | | | | | |
| | Self-Monitoring | | | Impression Formation | | | Individual Effectiveness | | |
Causal variable	Unstandardized	S.E.	γ	Unstandardized	S.E.	γ	Unstandardized	S.E.	γ
AOTR (Visibility)									
Direct effect	.255	.107	.165*	–	–	–	–	–	–
Total indirect effect	–	–	–	.805	.427	.034*	.490	.268	.032*
Total effect	.255	.107	.165*	.805	.427	.034*	.490	.268	.032*
RDS (Separation)									
Direct effect	-4.760	1.310	-.250**	–	–	–	–	–	–
Total indirect effect	–	–	–	-15.037	6.331	-.052**	-9.147	3.816	-.048**
Total effect	-4.760	1.310	-.250**	-15.037	6.331	-.052**	-9.147	3.816	-.048**
Self-Monitoring									
Direct effect				3.159	.917	.209**	1.691	.614	.170**
Total indirect effect				–	–	–	.230	.153	.023+
Total effect				3.159	.917	.209**	1.921	.600	.193**
Impression Formation									
Direct effect							.073	.042	.110+
Total indirect effect							–	–	–
Total effect							.073	.042	.110+
R^2			.049			.044			.049

Note. N = 261. Gender, prior performance, ethnicity, nationality, group performance 1 (business plan), group performance 2 (business plan presentation), group performance 3 (business game), and group size were partialled out of the covariance matrix prior to analysis. Dashes indicate values constrained to zero. Values displayed are based on bias corrected bootstrap estimates. $+ p < .1$. $* p < .05$. $** p < .01$. $*** p < .001$.

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Further qualifying previous empirical findings (see previous chapter) the overall total effects of visibility on individual effectiveness were positive and significant (*Unstandardized* = .490, SE = .268, γ = .032, p < .05). These effects were brought about by lower levels of self-monitoring, which translated directly and indirectly via a less favorable impression formation process into lower levels of individual effectiveness. The overall total effects of separation on individual effectiveness were negative and significant (*Unstandardized* = -9.147, SE = 3.816, γ = -.048, p < .01). These effects were brought about by higher levels of self-monitoring, which translated directly and indirectly via a less favorable impression formation process into higher levels of individual effectiveness.

5.5. Discussion

Relying on a social self-regulation framework (Abrams, 1994), which integrates SCT (Hogg et al., 1995; Turner et al., 1987) and self-attention theory (Mullen, 1983, 1987) the results of this study demonstrate that visibility has a positive, while separation has a negative effect on group members' self-monitoring, leading for those with high levels of visibility and low levels of separation to overall positive additive effects, while to overall negative additive effects for those with low levels of visibility and high levels of separation. Furthermore, the results show that the negative effects of separation on self-monitoring are buffered for group members with diversity experience, while they become more accentuated for group members without such experiences. Self-monitoring in return transmitted both, the positive effects of visibility and the negative effects of separation on individual effectiveness directly and indirectly via impression formation.

5.5.1. Theoretical Implications

The findings of this study corroborate the usefulness of conceptualizing ethnic relational diversity as visibility and separation and suggest that they simultaneously enhance and undermine ethnically dissimilar group members' self-regulatory capacity. As such it provides empirical evidence for the idea that a social self-regulation framework (Abrams, 1994) might be better suited than the social identity approach and the similarity attraction paradigm frequently employed by relational demographic researchers (cf. Riordan, 2000). It appears that in real work groups, for which relational demographers would predict that the negative effects of social categorization processes, are overcome, self-regulation is enhanced when visibility is maximized and separation is minimized, and that they are undermined when the opposite occurs.

Particularly intriguing are the effect sizes between visibility and self-monitoring ($\gamma = .160$) and between separation and self-monitoring ($\gamma = -.250$), which compared to the findings usually encountered by relational demographers appear to be rather large (see for instance the meta-analytic findings in Chapter 3). Considering the relevance of self-monitoring for group members' capacity to adjust their behaviour to task, social and environmental demands (cf. Baumeister & Vohs, 2007; Schmeichel et al., 2003), it seems worthwhile that future research conceptualises ethnic relational diversity effects within the social self-regulation framework developed here.

The findings also extend previous reasoning put forward by self-attention theory, a derivate of the self-regulation literature, which would predict that ethnic dissimilarity might enhance group members' effectiveness, when they uphold favourable outcome expectations, while their effectiveness' should be undermined,

when they uphold poor outcome expectations (cf. Mullen, 1983; Mullen, 1987).

Other than self-attention theory, the present findings suggest that a resource

depletion framework (Baumeister & Heatherton, 1996; Baumeister & Vohs, 2007;

Heatherton & Baumeister, 1996; Muraven & Baumeister, 2000) might be more

suitable to explain why some ethnically dissimilar group members have more

favourable outcomes than others. Diversity experience moderated the negative

effects of deep-level ethnic relational diversity on self-monitoring suggesting that

some group members are safeguarded against self-regulatory failure because they

have more self-regulatory resources at their disposal.

To single out the alternative explanation put forward by self-attention theory

that they are group members' negative outcome expectancies and not the depletion

of their self-regulatory resources that account for the current findings, further

moderated regressions were ran. According to self-attention theory (cf. Mullen,

1987) diversity experience, prior performance, gender, and ethnicity should have

moderated the relationship between visibility and self-monitoring, because all these

variables might serve as proxies for group members' outcome-expectancies (i.e. high

prior performance = high outcome expectancy, low prior performance = low

outcome expectancy; diversity experience = high outcome expectancy, no diversity

experience = low outcome expectancy; male = high outcome expectancy, female =

low outcome expectancy; ethnic majority = high outcome expectancy, ethnic

minority = low outcome expectancy). However, none of these moderated regressions

were significant. These findings further corroborate the idea that it might be rather

the depletion of group members' self-regulatory resources and not their outcome-

expectancies that account for the present findings.

The current findings might also enrich reasoning on work group diversity. For example current theorizing would predict that the simultaneous positive and negative effects of work group diversity are most likely to occur when there is a strong faultline in a work group (e.g. two White English male engineers, and three Chinese female salesperson), and when the work group is accomplishing a complex task (cf. van Knippenberg et al., 2004; van Knippenberg & Schippers, 2007). In such settings, van Knippenberg and colleagues argue that intergroup bias flowing from self-categorization processes interrupt the elaboration of information. Extending the self-regulatory framework developed within this study, one could alternatively predict that in work groups in which visibility is maximized (i.e. all group members have a different cultural background), and separation is minimized (for instance in a work group composed of one Irish, one English, one French and one German, opposed to a work group composed of one English, one Chinese, one Nigerian, and one Brazilian) the group's level of self-regulation should be maximized, which should not only be beneficial on complex, but also on simple tasks, because they are motivational and not so much informational gains that bring about the positive effects of ethnic diversity.

5.5.2. Strengths, Limitations and Further Research

Systematic composition of the work groups (e.g. in regard to gender), inclusion of various control variables (e.g. prior performance and group performance), the four wave design of this study and the different methods used to operationalize the variables under study safeguarded the results against third variables usually not controlled for in field settings, common source and common method bias, and make a strong case that ethnic diversity affected group members' effectiveness via self-monitoring and impression formation. However, while ethnic diversity might have

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caused these effects to occur, it cannot be inferred from the current findings (Cook & Campbell, 1979). Thus, future research might want to try to experimentally replicate the findings presented here.

Other than existing experimental work on surface- and deep-level differences (Phillips & Lloyd, 2006) in which these two aspects are usually conceptualized in a non-overlapping way, such experiments would have to manipulate visibility aspects (for instance a person wearing a red shirt in a group with all others wearing a green shirt), and separation aspects (for instance the person wearing the red shirt in the present example would have to be primed to uphold more or less dissimilar norms, values or attitudes) in an overlapping way. To assess the extent to which these manipulations lead to resource-depletion, known tasks and methods of assessment, such as those used by Baumeister and colleagues (Schmeichel et al., 2003; Vohs et al., 2005) could then be employed.

Field researchers on the other hand might critique the studies ecological validity. While it might be desirable to generalize the findings of this study to real work groups found in organizations, student work groups have been included in reviews of diversity in natural work group settings because they are seen as sufficiently realistic to compare to work groups in organizations (e.g., Jackson et al., 2003). Such work groups are comparable to project teams in organizations, which work for a specified amount of time together to accomplish a common task and then disband (Ellis et al., 2003). Such work groups are hybrid teams in the sense that they produce a joint product, but are also representative of many work settings in which people in theory can improve individual capabilities by benefiting from diverse resources in their work unit.

Moreover, as the current study was mainly concerned with what Calder (1982) called theory generalization (i.e. whether the underlying theory applies to a variety of real-world contexts) the specific context and that actual effect sizes observed are of less concern. Accordingly Calder argues that representative samples are not necessarily required for such theory generalization purposes; because any sample within the theory's domain can provide such a test given the data support the variables under study. And in this respect it appears that the underlying theoretical rationale should also be applicable to real teams in organizational settings, as no variable in the design has been specified which should vary across student and organizational work groups.

Future research might also want to generalize the findings to other demographic attributes. Many demographic attributes do not only pertain to visibility but also to underlying separation aspects (cf. Blaine, 2007). For instance the author Blaine summarizes empirical evidence that gender may not only evoke perceptual differences based on physical attributes, but is also related to different underlying actual and stereotypical attributes embedded in males and females self-concept. In a similar vein, age and tenure may not only relate to overt perceived differences but may also relate to underlying deep-level differences. Future research might want to capture such Janus face like differences by using the measurement approach suggested above, and investigate whether the self-regulation framework and the current findings generalize to other demographic variables.

5.5.3. Practical Implications

Group members' self-regulatory activities are seen as an important means to override social categorization processes elicited in diverse work groups (e.g., Flynn, 2005; Flynn et al., 2001). These authors suggest that personality differences variables, such

as openness, consciousness and self-monitoring might help group members in diverse teams to override the negative effects (such as intergroup bias and stereotyping) elicited by such social categorization processes. The findings of the present study caution managers and practitioners that this might be difficult, in particular for the more ethnically dissimilar group members (in particular when separation aspects are high), because they might lack the self-regulatory resources to do so. Moreover, what might appear to peers and supervisors as social loafing and an intentional act of ethnically dissimilar group members not contributing adequately to their functional roles, might be rather their lack of self-regulatory resources, and thus them not being able to do so.

While these findings might increase awareness and understanding among practitioners and managers that ethnically dissimilar group members' lack of effectiveness is rather a consequence of depleted self-regulatory resources than intentional acts, they also suggest that these negative effects do not necessarily occur, and that even positive effects are plausible. Depending on the extent to which a group is visible and separated, positive, negative and nil effects are possible. Specifically, positive effects are possible when a group member's visibility score is high (e.g. when he or she is the only individual with a certain ethnic background) and when his separation score is low (e.g. as is the case for an Irish in an otherwise all English work group). When these two aspects of ethnic relational diversity are at medium levels nil effects are likely to occur, while they become negative when visibility is low and separation is high.

While managers and practitioners will hardly want negative effects to occur, the extent to which they want to facilitate positive or nil effects might depend on the diversity paradigm promoted in their organization (i.e. whether they want to harness

diversity for effectiveness or whether they want to provide equal opportunities to all employees regardless of their ethnicity, cf. Ely & Thomas, 2001). In any case, the results obtained by this study might be used to compose work groups accordingly in order to overcome the undermining effects of ethnic dissimilarity, and if desirable use them to harness diversity for group members' effectiveness.

While it might be at times unavoidable to put a group member in a token position, in which separation aspects are maximized, managers and practitioners might want to assure that this person has diversity experience. In the current setting diversity experience related to individuals that have been in an ethnic minority position for their whole life (e.g. an Indian brought up in the UK). However, it seems plausible that individuals with expatriate experience or those who have studied abroad, where they could acquire experiences in cross-cultural settings, should be also more likely to be safeguarded against the negative effects of ethnic dissimilar's separation aspects.

Finally, the identified underlying mechanisms, in particular self-monitoring, might provide another means by which team leaders or supervisors might help ethnically dissimilar group members. Both the literature on self-regulation failure (Baumeister & Vohs, 2007) and the literature on self-management leadership suggest extrinsic motivators might help to buffer the negative effects of resource depletion. Thus, if group members have to be put into token position in which their separation score is high, and if they lack diversity experience, team leaders and peers might want to provide frequent feedback and encouragement to the ethnically more dissimilar group members. Managers may also want to highlight to the more similar group members that it might be not so much the dissimilar group member's motivation, but rather the position he or she is in that makes him or her

underperform, and that they (i.e. the more similar group members) should try to help the dissimilar group member so that he or she can better cope with his numerical minority status. This way managers and peers alike might safeguard the more dissimilar group members against the negative consequences of self-regulatory failure.

5.6. Conclusion

This research extends previous research on relational demographics by demonstrating that ethnic relational diversity may simultaneously facilitate and hinder dissimilar group members' self-regulatory capacity, which in return affects the impressions other form of them and their effectiveness. In doing so this study provides empirical support for conceptualizing the effects of ethnic relational diversity within a social self-regulatory framework. This increased not only ethnic relational diversity's predictive validity, but also provided an alternative explanation other than those usually put forward by relational demographic researchers. In light of this new theoretical framework, ethnically dissimilar group members appear not so much to be unwilling when they under perform; they rather seem to be unable to do otherwise. Thus, for managers and practitioners to facilitate ethnically dissimilar group members' effectiveness, they should put ethnically dissimilar group members into settings in which they are in the numerical minority, but in which they differ only marginally in regard to separation aspects, assure that dissimilar group members have diversity experience and/or assure high level of self-monitoring by means of frequent encouragement and feedback, and highlighting the difficult situation of dissimilar group members to their more similar peers.

CHAPTER 6
Discussion

Relational demographers and dissimilarity researchers contend that group members who are dissimilar (vs. similar) to their peers in terms of a given diversity attribute (e.g. demographics, attitudes, values or traits) feel less attached to their work group, experience less satisfying and more conflicted relationships with their colleagues, and consequently are less effective. However, qualitative reviews suggest that empirical findings tend to be weak and inconsistent (Chattopadhyay, Tluchowska et al., 2004; Riordan, 2000; Tsui & Gutek, 1999), and that it remains unclear when, how and to what extent, such differences (i.e. relational diversity) affect group members' social integration (i.e. attachment with their work group, satisfaction and conflicted relationships with their peers) and effectiveness (Riordan, 2000). This absence of meta-analytically derived effect size estimates and the lack of an integrative theoretical framework leave practitioners with inconclusive advice regarding whether the effects elicited by relational diversity are practically relevant, and if so how they should be managed.

The current research tried to fill this gap and developed an integrative theoretical framework. Building on the prior work of relational demographic researchers the framework conceptualized demographic differences as surface-level relational diversity and relational differences in terms of attitudes, values and personality as deep-level relational diversity (Harrison et al., 1998; Harrison et al., 2002; Jackson et al., 1995; Riordan, 2000).

Within the SCT (Hogg & Hains, 1996; Hogg et al., 1995; Hogg & Terry, 2000; Turner, 1987) tradition the framework suggested contrary to relational

demographers (e.g., Harrison et al., 1998; Harrison et al., 2002; Schaubroeck & Lam, 2002) that both types of relational diversity elicit social categorization processes, and that these social categorization processes are contingent on interdependence. Specifically, it was suggested that low levels of interdependence render demographic attributes salient and engender intergroup dynamics. Under such conditions it was argued that surface-level relational diversity leads to lower levels of social integration and consequently to lower levels of effectiveness. It was further argued that dissimilar group members think of themselves rather as members of their demographic group than as members of their work group, and consequently feel less attached to their work group and experience lower quality of social relations with other work group members. In contrast, it was suggested that high levels of interdependence render deep-level attributes salient and engender intragroup dynamics. Under such conditions it was argued that deep-level relational diversity leads to lower levels of social integration and consequently to lower levels of effectiveness, because dissimilar group members are perceived as less prototypical, and are consequently liked less as group members.

Within the self-attention research tradition (Mullen, 1983, 1987) the framework further suggested that dissimilar work group members become more self-attentive and in conjunction with a salient standard increase their attempts to match their behavior to these standards rendering the counterintuitive hypothesis plausible that dissimilarity may actually enhance group members' effectiveness. Extending this line of theorizing and building on the self-regulation failure literature (Baumeister & Heatherton, 1996; Heatherton & Baumeister, 1996; Kirschenbaum, 1987) it was further argued that dissimilar group members are more likely to fail in attempting to match their behavior to salient standards, because they are more likely

to suffer from unfavorable outcome-expectancies (Mullen, 1983, 1987) or depletion of their self-regulatory resources (Baumeister et al., 2005; Vohs et al., 2005).

Integrating both research traditions within a social self-regulation framework (Abrams, 1994) in order to reconcile the opposing predictions derived within the SCT and self-attention research traditions, it was proposed that relational diversity may actually trigger both social categorization and self-attention processes. Within this framework it was suggested that social categorization processes determine social category salience (i.e. whether a person thinks of him or herself in terms of demographic or work group membership), while self-attention processes determine the extent to which group members regulate their behavior in terms of this membership.

It was concluded that under low levels of interdependence where demographic attributes become salient and intergroup dynamics prevail dissimilar group members categorize self in terms of their demographic group membership and regulate their behavior in terms of this membership leading to lower levels of social integration and individual effectiveness. Under high levels of interdependence, where deep-level attributes become salient and intra-group dynamics prevail, it was suggested that dissimilar group members categorize self in terms of their work group membership and regulate their behavior in terms of this membership leading to higher levels of individual effectiveness. However, at the same time they are perceived as less prototypical group members and consequently become less socially integrated. This in return it was argued undermines dissimilar group members self-regulation (due to the depletion of their self-regulatory resources) leading to lower levels of effectiveness.

Finally based on psychological research on demographics (cf. Blaine, 2007; Clore, 1976) it was suggested that relational demographic attributes might be actually treated as deep-level attributes, because they are often related to underlying psychological differences (such as attitudes, values and beliefs). It therefore was suggested that conceptualizing such demographic variables as deep-level relational diversity should elicit the same simultaneous positive and negative effects as suggested for more "typical" deep-level relational diversity variables (such as personality, attitudes and beliefs).

To provide a quantitative test of the effect sizes reported by previous research for the relationship of surface- and deep-level relational diversity with social integration and individual effectiveness the first study used meta-analytic analysis techniques. Moreover it attempted to provide an initial test of the integrative social self-regulation framework using structural equation modeling techniques. Study 2 and 3 sought to provide a more elaborate test of this framework and explored whether it even holds for demographic variables in real work groups that act under high levels of interdependence.

In this chapter, the results from these three studies will be summarized and discussed in light of the integrative social self-regulation framework delineated in Chapter 2. Based on this discussion it will be evaluated whether the new theoretical framework developed in chapter 2 might help to integrate these findings. Moreover, limitations of the current research project will be highlighted and avenues for future research will be suggested. Finally, the findings will be evaluated in light of their practical relevance, and recommendations will be delineated what practitioners can do to manage relational diversity effects.

6.1. Summary of Empirical Findings and Theoretical Implications

6.1.1. Study 1

The first study reported a meta-analytic integration of the results of 129 tests of the relationship between relational diversity with social integration and individual effectiveness. Using meta-analytic and structural equation modeling techniques, it showed different effects of surface- and deep-level relational diversity on social integration. Specifically, low levels of interdependence accentuated the negative effects of surface-level relational diversity on social integration, while high levels of interdependence accentuated the negative effects of deep-level relational diversity on social integration, suggesting different underlying processes. Moreover, social integration mediated the overall negative effects of surface-level relational diversity on individual effectiveness (lower task and contextual performance, higher turnover) but suppressed the overall positive effects of deep-level relational diversity on individual effectiveness.

The study also helped to quantify the size of these effects. Specifically it was found that in real work groups (i.e. that act under high levels of task, reward and goal interdependence) surface-relational diversity has no effect on social integration, and consequently no effect on individual effectiveness. In pseudo groups these effects appeared to be small for social integration ($\rho = -.12$), and when transmitted via social integration into individual effectiveness marginal ($\gamma_{Standardized\ Estimate} = -.04$). For deep-level relational diversity these effects were somehow stronger, but appeared to be still rather small. Specifically, deep-level relational diversity had a small negative effect on social integration ($\rho = -.17$), and a small negative effect on individual effectiveness ($\gamma_{Standardized\ Estimate} = -.17$) when transmitted via social integration, which suppressed the direct positive effect on individual effectiveness ($\gamma_{Standardized\ Estimate} =$

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.18). Moreover, the negative effect on social integration appeared to be more pronounced in real work groups than in pseudo groups ($\rho = -.19$ versus $\rho = -.13$). Echoing Riordan's (2000) conclusions, these effect sizes appear to be indeed rather small and inconsistent. As such, none of the effect sizes exceeded .20, and positive, negative, and nil effects were found.

Responding to Riordan's (2000) call to develop more comprehensive theoretical frameworks, chapter 2 developed an integrative theoretical framework, which built on social self-regulation theory (Abrams, 1994). Specifically the framework suggests that under low levels of interdependence inter-group dynamics prevail. Under such conditions surface-level attributes are rendered salient and demographically dissimilar group members categorize self rather in terms of their demographic group than in terms of their work group. In return, they become they become less socially integrated and display lower levels of effectiveness. Under high levels of interdependence demographic attributes become less salient, and all group members categorize self rather in terms of their work than in terms of their demographic group. The results that the negative relationship between surface-level relational diversity and social integration become more accentuated under low levels of interdependence, and became attenuated under high levels of interdependence support these claims.

The integrative social self-regulation framework further suggests that under high levels of interdependence deep-level relational diversity attributes are rendered salient. In addition, because they are intra-group dynamics that prevail under such conditions, group members that are dissimilar in terms of deep-level attributes are perceived by other group members as less prototypical, are consequently less liked as group members and become less socially integrated. At the same time however, it

was suggested that group members that are less prototypical become more aware of their work group's standards and accordingly are more likely to regulate their behavior in terms of their work group's standards. In line with these ideas are the findings that the negative effects of deep-level relational diversity on social integration became more pronounced under high levels of interdependence. Moreover, the finding that social integration suppressed the overall positive effect of deep-level relational diversity on individual effectiveness support the idea that dissimilar group members may on the one hand become less socially integrated, because they are perceived as being less prototypical, but at the same time display higher levels of effectiveness, because they become more self-attentive, and consequently are more likely to match their behavior to their work group's standards.

These findings also rule out alternative explanations put forward by relational diversity researchers relying solely on the social identity approach to explain surface-level relational diversity effects (cf. Chattopadhyay et al., 2004) and the similarity attraction paradigm to explain deep-level relational diversity effects (e.g., Harrison et al., 1998; Harrison et al., 2002; Schaubroeck & Lam, 2002).

Relational diversity researchers relying on the wider social identity approach (cf. Chattopadhyay et al., 2004) suggest that under low levels of interdependence relational diversity renders demographic membership more salient and leads for members of the status higher group to intergroup bias, while no such effects should be found for members of the lower status group. While a direct test of these claims is not possible, on the basis of the findings of the meta-analysis, the negative effect found between surface-level relational diversity and social integration speak rather against the applicability of the wider social identity approach. Taking social integration as an indicator of inter-group bias (cf. van Knippenberg et al., 2004), the

findings support rather the social self-regulation framework. According to this framework surface-level relational diversity elicits two independent processes: social category salience and self-attention. Thus, the direct effect elicited by surface-level relational diversity may be rather a function of demographically dissimilar group members becoming more aware of their demographic group membership and focusing their attention on the standards evoked by their membership in this social category. In return, they might have been more likely to regulate their behavior in terms of their demographic membership than in terms of their work group, and accordingly become less socially integrated and displayed lower levels of effectiveness.

The counterintuitive findings that deep-level relational diversity elicits both positive and negative effects on individual effectiveness in particular under high levels of interdependence are hardly reconcilable with the similarity-attraction paradigm (Byrne, 1971) or the wider social identity approach (Tajfel & Turner, 1986; Turner et al., 1987), which can only account for the negative effects. Instead, the integrative social self-categorization framework might be more suited to explain these findings. According to this perspective, group members categorize self in terms of their work group membership. Dissimilar group members become more aware of their work group's standards and regulate their behavior in terms of these standards. At the same time however, they are perceived as less prototypical group members, are less liked as group members and become socially excluded. Social exclusion in return undermines self-regulation. As such, deep-level relational diversity might elicit both positive and negative effects simultaneously on dissimilar group member's effectiveness.

To summarize, evidence from the meta-analysis provides empirical support for earlier claims that the effects of relational diversity on social integration and individual effectiveness appear to be rather small and inconsistent (Riordan, 2000). Extending previous research, these findings supported the validity of the integrative social self-regulation framework. While some of the underlying processes were not directly tested, the framework seems to be better suited than those used by previous relational diversity researchers to explain the findings of the meta-analysis presented in Chapter 3 (for instance the sole recurrence on the social identity approach or the similarity-attraction paradigm). As such, the integrative social self-regulation framework helps to explain inconsistencies encountered in prior qualitative reviews.

6.1.2 Study 2

Delving further into the counterintuitive findings that relational diversity might elicit both positive and negative effects in work groups that act under high levels of interdependence; the second study build on a social self-regulation framework (Abrams, 1994) and posited that under high levels of interdependence relational diversity is not one but two things: visibility and separation. Using ethnicity as a prominent example it was proposed that separation has a negative effect on group members' effectiveness leading for those high in visibility and low in separation to overall positive additive effects, while to overall negative additive effects for those low in visibility and high in separation. These propositions were sustained in a sample of 621 business students working in 135 ethnically diverse work groups in a business simulation course over a period of 24 weeks.

In contrast to study 1, ethnic relational diversity, which is usually conceptualized at the surface-level, had a small positive (via its visibility aspect) and negative (via its separation aspect) effect ($\beta = .167$ and $\beta = -.125$) on individual

effectiveness even in real work group setting (i.e. under high levels of interdependence), when ethnicity was treated as a deep-level attribute, and ethnic dissimilarity was conceptualized as encompassing both separation and visibility aspects. These findings are hardly reconcilable with current theorizing in the relational diversity literature. Neither the similarity-attraction paradigm (Byrne, 1971) or the social identity approach (Tajfel, 1978; Tajfel & Turner, 1986) can explain the positive effects found between visibility and individual effectiveness. However, they can be explained within the integrative social self-regulation framework. According to this perspective social category salience and self-attention are two independent factors, which are evoked by two different sets of antecedents, and which have different behavioral consequences. Social category salience thereby specifies which self-categorization becomes salient (i.e. none, personal or social identity), whereas self-attention increases group members focus on these self-categorizations and determines to which degree automatic (in case of low self-attention) or conscious (in case of high self-attention) behavioral responses are elicited.

Interpreting the results of this study in light of this perspective, it seems reasonable to assume that the high levels of interdependence under which the groups in this study operated rendered individuals' work group membership salient. Under such conditions intra-group dynamics prevail and group members are likely to have distinguished themselves and others in terms of deep-level attributes (Hogg et al., 1995; Turner, 1987). According to SCT the more dissimilar group members are on such deep-level attributes the less prototypical they perceive self and the less prototypical they are perceived by others, and the more likely they become socially excluded and marginalized (Hogg et al., 1995; Hogg & Terry, 2000). This in return,

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might undermine their capacity to self-regulate their behavior in either of two ways. In order to become socially included and improve their marginal status within their group, they may try to convey a more positive image of self in order to become socially included and to perform effectively (Baumeister, 1982; Flynn et al., 2001). As engaging in these self-presentational acts is likely to deplete their self-regulatory resources, they will lack these resources, which are needed to engage in task relevant self-regulatory acts (Lord & Saenz, 1985; Vohs et al., 2005). Alternatively, social exclusion and marginal group status may directly undermine group members social self-regulation (Baumeister et al., 2005). Because separation was defined as pertaining to ethnic group differences in terms of attitudes, beliefs, norms and values between a focal group member and all other group members (cf. Harrison & Klein, 2007), it appears that they were these underlying differences steaming from group members ethnicity that undermined ethnic dissimilar group members' capacity to self-regulate their behavior, and consequently their effectiveness. The negative effect found between separation and effectiveness supports this line of argument.

Having conceptualized and measured visibility in gestalt terms (cf. Koffka, 1935) group members in this study are likely to have appeared with increasing levels of visibility as ever more surprising, unique and noteworthy (Kanter, 1977a, 1977b), which in return should have increased their self-attention (Mullen, 1983, 1987). As group members are likely to categorize self in terms of their work group membership when there are high levels of interdependence, this higher level of self-attention is likely to have led those group members that were more visible to self-regulate their behavior in line with their work group's standards (cf. Abrams, 1994), and thus they became more effective. The positive effect found between visibility and group members' effectiveness supports this line of argument.

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In sum then, this study provided further support for the integrative social self regulation framework developed in Chapter 2. Specifically it provided first direct evidence for the idea that in real work groups that operate under high levels of interdependence relational diversity may actually pertain to two things: visibility and separation. While visibility leads in real work groups that operate under high levels of interdependence to an increase in matching-to-standard behaviors, marginal group status that comes with higher levels of separation undermines such self-regulatory acts. While these findings are well in line with those found in study 1, they extend these findings in two respects. First, they were not idiosyncratic differences that accounted for the negative effects. Instead they were deep-level differences stemming from group members' ethnicity. This finding is particular relevant, as it implies that when there are high levels of interdependence, the negative effects elicited by surface-level diversity attributes might be just moved onto a different (i.e. deeper) level. Secondly, the findings in the current study suggest that relational diversity may be actually two and not one thing, visibility and separation respectively. As such, this study explicates the suppression effect found in the meta-analysis. In line with arguments put forward in study 1, it appears that they are self-regulation failure due to social exclusion and marginal status that accounts for the negative effects elicited by relational diversity, while they are self-attention that accounts for the positive effects elicited by relational diversity.

6.1.3. Study 3

Study 3 tried to replicate these findings and to directly test the underlying mechanisms. To that end, study 3 looked again at real work groups that act under high levels of interdependence. Relying on the social self-regulation framework and conceptualizing relational diversity as visibility and separation, the third study

suggested that visibility has a positive, while separation has a negative effect on group members' self-monitoring. The study proposed further that high levels of visibility and low levels of separation lead to overall positive additive effects on self-monitoring, while to overall negative additive effects for those low in visibility and high in separation. Furthermore, it was suggested that the negative effects of separation on self-monitoring are buffered for group members with diversity experience, while they become more accentuated without such experiences. Self-monitoring in return was proposed to transmit the simultaneous positive and negative effects of visibility and separation on individual effectiveness directly and indirectly via impression formation. Results from four waves of data on 261 business students working in 69 ethnically diverse work groups in a business simulation course hold over a period of 24 weeks, support these propositions and the strong relevance of social self-regulation to research on relational demography.

Replicating the findings of study 2 and directly testing the underlying mechanism this study provides even stronger empirical evidence for the integrative social self-regulation framework developed in chapter 2. To interpret these results it is important to highlight that as in study 2, they were real groups that were sampled in this study. As such, these groups operated under high levels of task, reward and goal interdependence (cf. Katzenbach, 1993; Hackman and Oldham, 1987). According to the social self-regulation framework, under such conditions group members regulate their behavior in terms of their work group standards and not in terms of their ethnic group membership.

Considering that visibility served as an indicator of the level of self-attention experienced by group members and separation served as an indicator of the level of a group members' prototypicality, the positive effects of visibility and the negative

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effects of separation on self-monitoring found in this study suggest that ethnic dissimilarity facilitates group members' self-regulation via heightened levels of self-attention and undermines group members' self-regulation via lower levels of prototypicality. As self-monitoring constitutes the first stage in the self-regulation process (Karoly, 1993), the undermining and facilitating effects seem to occur at the very beginning of the self-regulation sequence.

As to the positive effects of visibility on self-monitoring, it appears that group members that were more visible engaged more frequently in self-monitoring acts thereby becoming more aware of discrepancies between work group standards and current performance. This is fully in line with self-attention theory (Mullen, 1983, 1987) that suggests that higher level of self-attention increases awareness of discrepancies between work group standards and current performance.

The findings that separation decreased self-monitoring further qualify earlier findings in the self-regulation literature, which suggested various ways how ethnic dissimilarity might undermine group members' effectiveness (Baumeister et al., 2005, Lord and Saenz, 1985, Mullen, 1983, 1987, Carver & Scheier, 1982, Vohs et al., 2005). In line with Baumeister et al. (2005) it appears that they were rather ethnic dissimilar group members' marginal group status (or social exclusion) brought about by their lower levels of prototypicality, and not so much them engaging in other self-regulatory acts such as self-presentation (Lord and Saenz, 1985; Vohs et al. 2005) that undermined their self-monitoring. This is supported by the finding that there was no direct link between separation or visibility and impression formation (which was conceptualized in this study as an indictor of self-presentational effectiveness).The lower levels of self-monitoring also suggests that ethnic dissimilar group members were more likely to avoid gathering information about their level of performance and

checking upon whether their level of performance met group standards and the expectations of others. This echoes Baumeister et al.'s (2005) interpretation of their empirical findings that marginal group status or social exclusion lead group members to disincline to think about themselves and that they avoid self-awareness.

As such the findings also exclude the explanation put forward by self attention theory (Mullen, 1983, 1987, Carver & Scheier, 1982) that they were lowered outcome expectancies that undermined ethnic dissimilar group member's self-regulation. Had they been lowered outcome-expectancies that accounted for the current findings, dissimilar group members with high separation scores had to be aware of the discrepancies between their performance and group standards. However, as argued previously they were unlikely to have this information, because they were less likely to self-monitor their performance and gather such information.

It is important to highlight that the sole recurrence on reasoning put forward by the self-regulation literature (Baumeister et al., 2005, Lord and Saenz, 1985, Mullen, 1983, 1987, Carver & Scheier, 1982, Vohs et al., 2005) are not sufficient to explain these findings. Only when interpreted through the lenses of the wider social self-regulation framework is it possible to justify that ethnic dissimilarity can be conceptualized as pertaining to both separation and visibility aspects. Moreover, the interpretation of the negative link between separation and self-monitoring rests on the assumptions put forward by SCT that separation reflects group members' prototypicality (for empirical evidence see for instance Chattopadhyay et al. 2004), and that lower levels of prototypicality in return lead to marginal status and social exclusion (for empirical evidence see for instance Hogg et al., 1995). Finally, that such intra-group dynamics occur in real work groups can only be explained by the SCT, which suggests that high levels of interdependence under which these groups

operate lead group members to categorize self in terms of their work group membership and to assess their and others level of group prototypicality (cf. Hogg et al., 1995, Hogg and Hains, 1995, Hogg & Therry, 2000).

The effects of ethnic dissimilarity's visibility and separation aspects on group members' self-monitoring were of small to moderate size ($\beta = .165$ and $\beta = -.250$), and appeared to be rather small in regard to group members' individual effectiveness ($\gamma_{Standardized\ Estimate} = .035$ and $\gamma_{Standardized\ Estimate} = -.048$). While the small to moderate effect sizes on self-monitoring underline the importance of looking at ethnic dissimilarity from a social self-regulation perspective, the smaller effect sizes on group members' effectiveness in particular when compared with study 2 ($\beta = .167$ and $\beta = -.125$; a difference of about 20% and 38.4%) are somehow puzzling.

It might well be that the different analysis techniques used in both studies might explain these findings. While structural equation modeling techniques as employed in study 3 adjust parameter estimates for measurement error, the OLS regression techniques employed in study 2 don't (cf. Kline, 2005). Yet, this adjustment should have increased and not decreased the effect sizes in study 3. Alternatively, the somehow smaller range on both the AOTR measure (study 1: .2 - 2.5; study 2: .2 - .2; a difference of about -27%) and the RDS measure (study 1: .1 - .31; study 2: .09 - .31; a difference of about -5%) might provide a more plausible explanation, in particular for the visibility effects. Range restriction has been found to attenuate effect size measures (Hunter and Schmidt, 1990, 2004), and as such the smaller range of the AOTR measure, and to a lesser extent of the RDS measure in study 3, might account for the somehow smaller effects in this study.

For the RDS measure, the lower effect sizes encountered in study 3 might be also the result of including diversity experience as a control variable (which was not

done in study 2). As demonstrated in study 3 diversity experiences attenuated the negative effects elicited by separation on self-monitoring. As self-monitoring transmitted the effects of separation on individual effectiveness in study 3, controlling for diversity experience in this study (in contrast to not controlling for it in study 2) may ultimately have attenuated the effect sizes between separation and individual effectiveness (when compared to study 2). As such the effects reported in study 3 may actually underestimate the true effects elicited by both ethnic dissimilarity's separation and visibility aspects on self-monitoring and individual effectiveness.

In summary, this study replicates the finding from study 2 that ethnic dissimilarity's separation aspects are negatively and its visibility aspects are positively related to group members' effectiveness. It extends these findings by identifying the underlying mechanisms by which these effects are brought about. In line with the integrative social self-regulation framework, these findings suggest that in real work groups that act under high levels of interdependence, ethnically dissimilar group members categorize self in terms of their work group membership. Under such conditions separation aspects reflecting group members prototypicality undermine group members self-monitoring, which in return are translated directly and indirectly via lower levels of impression formation into lower levels of effectiveness. At the same time ethnic dissimilarity's visibility aspects facilitate group members' self-monitoring, which in return are translated directly and indirectly via high levels of impression formation into high levels of effectiveness. As such it appears that the social self-regulation framework developed in Chapter 2 helps to explain these findings.

6.1.4. Theoretical Integration and Implications

In summary, the empirical findings in Studies 1, 2, and 3 support the validity of the newly developed social self-regulation framework, but can be hardly explained by relying solely on the similarity-attraction paradigm, the social identity approach or self-attention theory (see Table 11). The key differences between the newly developed social self-regulation framework and previous theorizing on relational diversity effects lay 1) in the conceptualization of relational diversity, 2) incorporating group standards as a boundary condition, 3) modeling relational diversity effects as a function of both dissimilar group member's actions and their peers reactions, and 4) taking into account dissimilarity group member's capacity to self-regulate their behavior.

Specifically, it has been found that 1) relational diversity encompasses not one but two aspects (visibility and separation) which engender self-attention (or matching-to-standard behaviors) and self-categorization processes. 2) Interdependence has been found to determine which social category becomes salient (demographic group membership under low interdependence – work group membership under high interdependence), and whether group members match their behavior to work group standards (high interdependence) or standards of their demographic group (low interdependence). In any case it has been further found that 3) dissimilar group members are more likely to become less socially integrated, because they feel less attached to their work group, and are more likely to become socially excluded by their peers. However, it has been also shown 4) that due to their higher visibility dissimilar group members are more likely to self-regulate their behavior in relation to salient standards, leading under low interdependence to lower effectiveness in their work groups, because they regulate their behavior in relation to

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Table 11. Empirical validity of the newly developed social self-regulation framework.

Study	Hypothesis/Empirical Findings	Predicted by			
		Similarity Attraction Paradigm	Social Identity Approach	Self-Attention Theory	Social Self-Regulation Framework
1	**Hypothesis 1a**: Interdependence moderated the effect of surface-level relational diversity on social integration. Negative under low levels of interdependence, no effect under high levels of interdependence	No	Yes	Yes	Yes
	Hypothesis 1b: Interdependence moderated the effect of deep-level relational diversity on social integration. More negative under high levels of interdependence	Yes	No	No	Yes
	Hypothesis 2: Social Integration fully mediated the negative relationship between surface-level relational diversity and individual effectiveness.	No	Yes	Yes	Yes
	Hypothesis 3: Social Integration partially mediated the negative relationship between deep-level relational diversity and individual effectiveness. Social integration suppressed the direct positive effect of deep-level relational diversity on effectiveness.	No	Predicts only negative effect	Predicts only positive effect	Yes
2	**Hypothesis 1**: Visibility had a positive effect on effectiveness	No prediction	No prediction	Yes	Yes
	Hypothesis 2: Separation had a negative effect on effectiveness	Yes	Yes	No prediction	Yes
	Hypothesis 3: The additive effects of separation and visibility on effectiveness were positive, when visibility was high and separation was high, they were negative when visibility was low and separation was high	No prediction	Predicts only positive effect	Predicts only negative effect	Yes
3	**Hypothesis 1**: Visibility had a positive effect on self-monitoring.	No prediction	No prediction	Yes	Yes
	Hypothesis 2: Separation had a negative effect on self-monitoring	Yes	Yes	No prediction	Yes
	Hypothesis 3, 4, 5, 6, 7: The additive effects of separation and visibility on self-monitoring were positive, when visibility was high and separation was high, they were negative when visibility was low and separation was high. This in return translated into higher or lower effectiveness via more or less favorable impressions.	No prediction	Predicts only negative effect	Predicts only positive effect	Yes

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their demographic work group membership. Under high interdependence they regulate their behavior in terms of their work group membership, which in return might lead to more effectiveness, when dissimilar group members are able to make a better impression on their peers. Depending on the extent to which they are different from their peers and the extent to which they become self-attentive to their work group standards, this in return may increase or undermine their effectiveness.

In sum then, the newly developed social self-regulation framework is more comprehensive than previous frameworks (for a review see Riordan, 2000), but at the same time appears to be also more parsimonious. It is more comprehensive, as it helps to explain the effects of relational diversity on social integration and individual effectiveness for any diversity attribute in real and in pseudo work groups (i.e. under high and low interdependent work groups). It is more parsimonious, as it relies on a single theoretical framework to explain both the effects of surface- and deep-level relational diversity effects, namely social self-regulation theory (Abrams, 1994), and not like others on a set of theories which are unrelated (e.g. Harrison et al., 1998; Harrison et al. 2002 who use the similarity attraction paradigm to account for the deep-level effects and SCT to account for surface-level effects without providing a rationale how these two theories are related to each other). Finally, while the integrative social self-regulation framework attributes dissimilar group members' lack of social integration and effectiveness in pseudo groups to their unwillingness (i.e. motivation), it attributes their lower effectiveness under high levels of interdependence to their incapacity (i.e. depletion of self-regulatory resources).

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6.1.5. Further Contributions to the Literature

The current work further contributes to the literature in several other ways, such as 1) by developing a new self-monitoring scale (see Appendix C), 2) by developing a new additive effects test (see Appendix D), and 3) by highlighting the role of social exclusion and social integration in bringing about the effects of relational diversity on individual effectiveness.

As highlighted in study 3, a scale measuring self-monitoring as a state during which individuals detect discrepancies between ongoing performance and salient performance standards wasn't available so far, as the literature on self-regulation usually relies on individuals' self-recordings of specific self-monitoring behaviors (for a review see Karoly, 1993). Given the theoretical relevance of self-monitoring activities in the self-regulation sequence and the impracticability of self-recordings in organizational field settings, the scale might aid future research to investigate self-monitoring behaviors more economically in such settings.

The additive effects test has been found to be particularly useful in the current setting, as it helps to determine under which conditions the combined visibility and separation effects of relational diversity for a given individual yield positive, nil or negative effects. When looking at such additive effects research conducted so far couldn't determine as to whether a certain configuration of two main effects is positive, negative or nil, and as to whether this additive effect is significantly different from 0. The test might be employed in all future research that looks at additive effects, such as for instance studies looking at the extent to which the additive effects of hindrance and challenge stressors affect individual performance (e.g. Lepine, Podsakoff, & Lepine,

2005). By employing the test, these researchers could determine the combinations for an individual under which these effects are positive, nil or negative.

Finally, this thesis found support for the idea that social integration might not only be a function of dissimilar group members feeling less attached to their work group, but also as a function of dissimilar group members being excluded by their peers from group interactions. This became apparent in the meta-analysis presented in Chapter 3 that found models that conceptualize relational diversity effects as a function of both dissimilar group member's actions and peers reactions as being more predictive of relational diversity effects on social integration and individual effectiveness. But it was also supported in study 2 and 3 that found that separation undermines dissimilar group members' social self-regulation which in return leads to less favourable impression others form of dissimilar group members, ultimately undermining dissimilar group members' effectiveness. These findings might thus also add to the literature on social exclusion (K. D. Williams, 2007) by identifying relational diversity as another factor engendering social exclusion. As in this literature the findings presented in this dissertation highlight that the very means by which social exclusion can be overcome (i.e. social self-regulation) might be undermined by group members' dissimilarity (in particular when separation is high) rendering it impossible at times (when their dissimilarity is low) for a dissimilar group member to overcome social exclusion on their own (cf. K. D. Williams & Sommer, 1997). Thus, the literature on ostracism might want to look at relational diversity as another factor affecting social exclusion.

6.2. Limitations and Future Research

In the following limitations in study 1, 2, and 3 that may undermine the conclusions drawn in the previous section are discussed. First, it will be discussed as to what extent study design affected the validity of empirical findings presented in Chapter 3, 4, and 5. Secondly, the measurement and conceptualization of team interdependence will be critically evaluated. And finally, the newly developed conceptualization of dissimilarity as visibility and separation will be appraised in light of the empirical findings presented in study 2 and 3, and the viability of this conceptualization for diversity attributes other than ethnicity will be critically evaluated. Throughout this discussion avenues for future research will be highlighted.

6.2.1. Design Issues

While the findings in all three studies can hardly be explained by solely recurring on SCT, self-attention theory or the similarity-attraction paradigm, overall they supported the integrative social self-regulation framework. This framework proposed various underlying mechanisms, which were not directly tested. These limitations grow out of the methodology employed in study 1, 2, and 3. In study 1 a meta-analytic approach was chosen in order to quantify previous empirical findings. As such the approach was dependent on variables investigated in prior research, and thus did not allow providing a more finely grained test of the proposed model. Study 2 and 3 chose a longitudinal quasi-experimental approach. While this approach helped to balance concerns about the studies ecological validity, causality and practical relevance, the four time point measurement design stretched participants' willingness to participate in this study already to its uttermost limits. Still, future field research might want to include all mechanisms

proposed by the integrative social self-regulation framework to test for the validity of these mechanisms.

Alternatively, future research would benefit from taking an experimentally orientated approach. Both the literature on self-regulation as well as the SCT literature use quite sophisticated experimental methods to separate cause and effect and would help to further explore these underlying mechanism. One way of going about this would be to use the manipulations suggested in chapter 2 to render a dissimilar person's self-attention more or less salient, and to render its membership in diversity related social category or his group membership more or less salient. Such joint manipulations and its anticipated effects even though captured within the social self-regulation framework haven't been tested yet (cf. Mullen, 2003), and might provide a fruitful avenue for future research. As such they would not only advance our understanding of relational diversity effects, but also help to advance our understanding of social self regulation processes.

Moreover, the separate effects of visibility and separation on individual effectiveness and social integration under low levels of interdependence were not directly tested. The reasons in doing so were pragmatic in nature and based on the argument that practitioners and managers hardly want these negative effects to occur. As such it seemed to be sufficient to learn when they are occurring and what could be done to overcome them. Both aims were achieved by the findings of the meta-analysis in that they occur for high levels of surface-level relational diversity and low levels of interdependence, and that they are overcome under high levels of interdependence. However, future research might want to clarify whether they are really the underlying mechanism proposed by the social self-regulation frameworks that are responsible for these effects to occur. To that

end future research might want to look at the simultaneous effects of the AOTR and RDS measure on group members' self-regulation in pseudo group settings. Alternatively and taking a rather experimental approach, researchers may want to manipulate separation and visibility effects and investigate their effects under low levels of interdependence.

6.2.2. Measurement and Conceptualization of Interdependence

In the current work team interdependence was defined as the extent to which contextual features such as task, goal and reward structures promote a relationship between members of a social unit in which each member is mutually responsible to and dependent on others (Wageman, 1995). Definitions about real and pseudo teams suggest that the main difference between them lies in the lack or presence of task, goal and reward interdependence (Hackman, 1987; Katzenbach & Smith, 1993). Accordingly the current work used the terms real teams – high interdependence and pseudo teams – low interdependence interchangeably.

Capitalizing on this line of argument, study 1 measured interdependence by inferring from type of team (real vs. pseudo) as to whether a team had high or low levels of interdependence. In a similar vein teams sampled in study 2 and 3 were characterized as real teams, and it was assumed that these teams operated under high levels of interdependence. As such the study followed a structural approach (cf. Barrick, Bradley, Kristof-Brown, & Colbert, 2007) and assumed that objective contextual features, such as rewards, goals and tasks directly translate into group member's behavior. While this is consistent with most prior research (cf. Hackman, 1987; Katzenbach & Smith, 1993), others have argued that perceptions regarding goal, task and reward interdependence vary among group members, and that they are these perceptions that translate interdependence

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into actual group member behavior (Wageman, 1995). This psychological conception of interdependence would warrant that the current work had measured these perceptions and investigated the effects of these perceptions on actual group member behavior.

While this would have been preferable, this wasn't possible in study 1, as no such measures were available for most of the primary studies included in the meta-analysis. Study 2 and 3 built on the idea that the opposing effects of visibility and separation occur only in real teams. Given the highly interdependent structure (common task, reward and goal) of the teams sampled in study 2 and 3, they clearly qualified as real teams, and in line with the assumptions that visibility and separation elicit simultaneous positive and negative effects in such settings corroborated the direct effects of these structural features on group members' behavior. Still, future research might want to include perceived team interdependence as potential boundary conditions in their design, and corroborate the validity of the findings in the studies presented in this work.

6.2.3. Dissimilarity as Separation and Visibility

To assess ethnically dissimilar group members' level of separation and visibility in study 2 and 3, the AOTR and RDS measure were employed. These measures were high correlated and might raise concerns about multicolinearity. Other than one would expect, multicolinearity was not a problem in any of these two studies (Note that the high VIF indices encountered in study 3 were not due to the high correlations between the AOTR and RDS measure, but due to the inclusion of the variable diversity experience). Still, concerns may remain as to whether the effects found in these studies were artificial, and rather due to these high correlations or reflect actual effects. On the other hand these two measures have been differently conceptualized and in previous studies have been

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separately linked to the postulated underlying mechanisms (i.e. self-attention and prototypicality/category salience, cf. Chatman et al. 1998; Mullen et al. 1983). Moreover, the mathematical transformations explicated in Chapter 2 suggest that they actually measure two different things. Still, future research might want to conduct simulation studies to find out whether they are the high correlations between these two measures that triggered the effects or whether they actually reflect real world phenomena.

In a similar vein, the results of study 2 and 3 suggest that either visibility or separation operated as a suppressor variable bringing about the simultaneous positive and negative effects of ethnic dissimilarity on individual effectiveness (study 2) and self-monitoring (study 3). In light of the high correlations between visibility and separation this raises concerns 1) as to whether the suppressor effects are due to chance, 2) whether the suppressor effects are brought about by the high correlations between visibility and separation, and thus spurious, and 3) whether the simultaneous positive and negative effects of visibility and separation can be interpreted meaningfully.

As to 1) MacKinnon et al. (2000) suggest that a variable engenders suppressing effects in case 1) the population value of the direct effect (c') is significantly different from 0, 2) the population value of the third variable effect (c − c') is significantly different from 0, 3) both effects have opposing signs (i.e. c' is negative and c − c' is positive or c' is positive and c − c' is negative), and 4 a) in case c' is negative and c − c' is positive, c > c' or 4 b) in case c' is positive and c − c' is negative, c < c'. The population value of the direct effect (c') thereby refers to the effect of the independent variable on the dependent variable when the suppressor variable is controlled for; and the population value of the third variable effect (c − c') refers to the difference between the

effect (c) of the independent variable on the dependent variable when the suppressor variable is not controlled for and the effect (c') of the independent variable on the dependent variable when the suppressor variable is controlled for -- in other words the indirect effect of the independent variable via the suppressor variable on the dependent variable. To assess whether the population value of the direct effect (c') was obtained by chance, the significance level of the respective regression coefficient can be inspected, while the Sobel-test (1982) can be used to assess whether the population value of the direct effect (c – c') is significantly different from 0.

As it remains unclear as to whether visibility or separation operated as the independent variable (i.e. as to whether visibility causes separation or as to whether separation causes visibility), both visibility and separation have been tested as suppressor variables. As can be seen in Table 12, visibility and separation were identified in all cases as suppressor variables. Thus, the suppressing effects encountered in study 2 and 3 are not due to chance.

As to 2) Cohen and colleagues (2003) suggest that when highly correlated independent variables are included in the same regression model, multicollinearity occurs. This in return may 1) lead to unstable regression coefficients and large standard errors, increasing the likelihood of Type II errors – i.e. not finding an effect in the sample, when there is actually an effect in the population, and 2) might be indicated by changes in the sign of the independent variable effects – i.e. suppression. High correlations thereby refer to correlations larger than .7.

Thus, the large ($r = .718$) correlation between visibility and separation might have engendered multicollinearity in study 1, but unlikely in study 2, in which the correlation

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Table 12. Tests whether visibility or separation operated as suppressing variables in Study 2 (n = 261) and Study 3 (n = 621).

Independent Variable (IV)	Suppressor Variable (SV)	Dependent Variable (DV)	Population value of the direct effect (c')[a]		Population value of the third variable effect (c-c')[b]		Relationship between c and c'		Suppression Effect
			Negative	Positive	Positive	Negative	c > c'	c < c'	
Study 1									
Separation	Visibility	Individual Effectiveness	-.125**		.100***		-.021 > -.125		Yes
Visibility	Separation	Individual Effectiveness		.167**		-.090**		.077 < .167	Yes
Study 2									
Separation	Visibility	Self-Monitoring	-.239**		.090**		-.149 > -.239		Yes
Visibility	Separation	Self-Monitoring		.164**		-.133**		.031 < .164	Yes

Note. [a]Standardized coefficient estimate c' obtained from OLS regression analysis by regressing DV on IV, while controlling for SV, and the following controls: gender, ethnicity, nationality, prior performance, group performance (business plan, presentation, business game), and group size. [b] Difference between standardized coefficient estimate c and c', whereby c was obtained from an OLS regression analysis by regressing DV on IV, and the following controls: gender, ethnicity, nationality, prior performance, group performance (business plan, presentation, business game), and group size. Significance level calculated based on Sobel-test (1982). +p < .1. *p < .05. **p < .01.***p < .001.

between visibility and separation was moderate (r = .524). However, given the small variance inflation indices (VIFs) in both studies (< 2.0), it can be concluded that it is unlikely that multicollinearity distorted the results neither in study 2, nor in study 3. Moreover, finding significant effects of visibility and separation in both studies, and considering that high correlations between independent variables included in the same regression analysis decreases rather than increases the likelihood of finding significant effects, support rather than undermine the robustness of the findings in study 2 and 3. Finally, and most importantly here, Aiken and colleagues highlight that changes in the sign of highly correlated independent variables when entered simultaneously into a regression equation may be indicative of high levels of multicollinearity, but they do not suggest that multiconlliearity engenders such changes. Given the statistical support for the suppressor effect under 1) and the low VIF indices discussed in this paragraph, it can be concluded that it is unlikely that the moderator effect is spurious, and engendered by multicollinearity.

As to 3), it is important to highlight that given a suppressor effect has been identified; it can be interpreted in a meaningful way, as long as it has been theorized a priori (Cohen et al., 2003). Cohen and colleagues illustrate this by presenting the following example from economics, where suppressor effects are frequently built into theoretical models: Tax cuts (independent variable) engender both higher economic growth (dependent variable) and inflation (suppressor variable). Because inflation undermines economic growth and tax cuts facilitate inflation, tax cuts simultaneously engender a positive and a negative effect (via inflation) on economic growth. Inflation thereby suppresses the positive effects of tax cuts on GDP. In doing

so economists model homeostatic mechanisms, which represent the simultaneous occurrences of forces (e.g. tax cuts) and counterforces (inflation) leading to counteractive effects (e.g. tax cuts positive, inflation negative). It becomes apparent that the social self-regulation framework developed and tested in study 2 and 3 models such a homeostatic mechanism – by proposing simultaneous positive effects of visibility and negative effects of separation on individual effectiveness and self-monitoring. Thus, the suppressor effects found in study 2 and 3 are well in line with the predictions derived within the social self-regulation framework, and can thus meaningfully be interpreted.

In sum then, the simultaneous positive effects of visibility and the negative effects of separation on individual effectiveness (study) and self-monitoring (study 3) are not obtained by chance, but rather indicate suppressor effects. It is further unlikely that these suppressor effects are spurious – caused by the high correlations between separation and visibility, because they have been replicated twice, they are less likely to be found when two independent variables are highly correlated, and the high correlations did not lead to higher levels of multicollinearity – the main driver of such spurious effects. Finally, the suppressor effects can be interpreted meaningfully within the social self-regulation framework, which predicted the simultaneous occurrence of positive and negative effects of ethnic dissimilarity on individual effectiveness and self-monitoring via its visibility and separation aspects.

6.2.3. Further Limitations and Future Research

Relational diversity as encompassing both separation and visibility aspects might pose further challenges, in particular when future research might want to generalize the findings of study 2 and 3 to other diversity attributes. The AOTR measure and RDS measure discriminate only when the diversity attribute can be measured as both

a categorical and a continuous variable. As such it is particularly problematic when concerned with a diversity attribute such as gender which can only be measured as a dichotomous variable. Even though this may be less of a problem for the AOTR measure, it will be particularly problematic for the RDS measure as the distance in terms of deep-level differences is constrained to just one value. One way of going about it might be to more directly measure self-attention and social category salience relying on group members' perceptions. It might well be that any one gender may differ in the extend to which they perceive themselves as visible or are perceived by others as being visible in a group setting, and the extent to which they appear or perceive self as being a prototypical female or male. That way enough variance may become available to test the generalisibility of the positive self-attention and negative prototypicality effects as proposed by the integrative social self-regulation framework.

In a similar vein, problems might arise for continuous variables such as age or values, as one would have to find a meaningful categorization system. One way of going about it would either be to directly measure the level of self-attention and prototypciality as suggested previously or alternatively run some pilot study to determine meaningful clusters empirically. It is well know that people who have been socialized in the same age cohort (e.g. veterans) uphold similar values, attitudes and beliefs, while people who have been socialized in different age cohorts (e.g. veterans, boomers, Xers or Nexters) uphold different values, attitudes and beliefs (cf. Rokeach, 1973). As such group differences in terms of values, attitudes and beliefs could be captured using the RDS measure, and the categories could be imputed into the AOTR measure. Future research might want to use this or a similar

approach to generalize the findings of study 2 and 3 to diversity attributes other than ethnicity.

The findings are also based on the assumption that they are rather dissimilar group members' position and not so much the overall level of diversity within a group that triggers these effects. It might be however interesting to look at whether these effects generalize to the group level of analysis. For instance, might it well be that the level of work group diversity increases a group's level of self-attention, but at the same time may render social integration in such groups more difficult. As such the group's resources to efficiently regulate their actions may become more difficult with increasing levels of diversity, but at the same time might also increase the group's self-attention thereby buffering these negative effects. In any case, these ideas might stimulate further research on work group diversity which up to now mainly considered information-elaboration and social categorization processes (cf. van Knippenberg et al., 2004; van Knippenberg & Schippers, 2007) as possible explanations for the negative and positive effects of work group diversity. Thus, an alternative explanation might be following a social self-regulation perspective that diversity facilitates self-regulation in a diverse group via heightened levels of self-attention, but at the same time might undermine it by depleting group's self-regulatory resources as higher levels of coordination are required.

Furthermore, while study 1 would suggest that the effects of relational diversity hold over a variety of tasks, study 2 and 3 were mainly concerned with tasks that required high levels of information-processing. As such future research might want to test the framework for groups working on less complex tasks. Under such conditions self-regulatory acts play less of a role for effective task performance, and thus the negative separation effects are unlikely to hamper individual

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effectiveness, while visibility should still facilitate matching-to-standard behaviors thereby increasing dissimilar group members' effectiveness. Thus, future research in more applied settings might want to test these ideas by looking at the simultaneous effects of ethnic dissimilarity as separation and visibility for instance among blue collar workers.

Finally, the findings for study 2 and 3 relied on student samples, and as such one needs to be cautious as to whether these findings are ecologically valid. As such, future research might want to replicate these findings in real organizational settings. Still, such students work groups are comparable to project teams in organizations, which work for a specified amount of time together to accomplish a common task and then disband (Ellis et al., 2003), and have been frequently used to investigate the effects of diversity in work groups (e.g., Jackson et al., 2003). As such, and because of the complex nature of the task at hand, the results are most applicable of work groups that work on complex tasks, such as R&D and management teams, but also to student learning groups.

6.3. Practical Implications

Overall effect sizes appear to be small and ranged from .04 - .2. Using the binomial effect size display (Rosenthal & Rubin, 1982), these findings suggest that a manager is likely to encounter relational diversity effects between 52% and 60% of the cases, while he is unlikely to find these effects between 48% and 40% of the cases. In general, such weak effects may be of practical relevance when small increments in effectiveness have far-reaching consequences, such as when the cost of losing an employee is high (e.g. due to a lack of potential new employees or due to large training investments) and when contextual or task performance are essential for optimal team functioning, as is the case in highly performance oriented or high risk

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environments, or in student learning groups in which individual students' are marked based on their work group's performance.

At first glance it appeared that managing the negative effects of surface-level relational diversity on social integration and individual effectiveness is straightforward. Following the results from the meta-analysis presented in Chapter 3, managers can overcome these negative effects by establishing high levels of interdependence. This might be accomplished by such means as setting and providing a common vision and goals, group tasks, and common rewards (cf. van Knippenberg & Schippers, 2007). As such the implementation of real work groups may be one mean of fostering interdependence (Katzenbach & Smith, 1993). When this is not possible, e.g. in early stages in a real team's life, managers could avoid focusing exclusively on dissimilar group members as the source of lowered social integration and also focus on more similar group members. A combination of individual and team coaching in which the higher order group identity is made more salient may help to overcome social categorization on the basis of demographic group membership. In case the task at hand appears to not suitable for group work, rendering organizational membership more salient (by such means as promoting a common organizational vision or highlighting common organizational goals) might provide alternative means to overcome relational diversity's adverse effects. Organizational membership as such constitutes a higher order social category, which when rendered salient leads individuals to think of themselves rather in terms of this higher order identity than in terms of their membership in a diversity related social category, thereby overcoming relational diversity's adverse effects.

However, these interventions are likely to come at a cost, as they may just move the source that triggers the negative relational diversity effects to another (i.e.

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deeper) level. In the meta-analysis presented in Chapter 3 it was found that the effects of deep-level relational diversity on social integration were stronger than the respective effects of surface-level relational diversity and therefore call for more attention among practitioners, particularly in groups operating under high levels of interdependence. Studies 2 and 3 further suggested that at least for ethnic dissimilarity, which is usually treated as a surface-level diversity attribute, simultaneous positive and negative effects on group members' effectiveness are likely to occur even under high levels of interdependence. Relying on the social self-regulation framework it was suggested that under high level of interdependence dissimilar group members increase their efforts to match their behavior to their work group's standards, which ultimately might increase their effectiveness. Yet, at the same time they encounter more difficulties to match their behavior to their work group's standards, as they lack the self-regulatory resources to do so.

These findings imply to raise managers and practitioners' awareness and understanding that ethnically dissimilar group members' lack of effectiveness in real work groups (or under high levels of interdependence) is rather a consequence of depleted self-regulatory resources, than intentional acts. They also suggest that these negative effects do not necessarily occur, and that even positive effects are plausible. Depending on the extent to which a group member is visible and separated, positive, negative and nil effects are possible. Specifically, positive effects are possible when a group member's visibility score is high (e.g. when he or she is the only individual with a certain ethnic background, from a certain age cohort, etc.) and when his separation score is low (i.e. when between category differences in terms of underlying attitudes, values, and beliefs are minimized). When these two aspects of

relational diversity are at medium levels nil effects are likely to occur, while they become negative when visibility is low and separation is high.

While managers and practitioners will hardly want negative effects to occur, the extent to which they want to facilitate positive or nil effects, might depend on the diversity paradigm promoted in their organization (i.e. whether they want to harness diversity for effectiveness or whether they want to provide equal opportunities to all employees regardless of their ethnicity, cf. Ely & Thomas, 2001). In any case, the results obtained by this research might be used to compose work groups accordingly in order to overcome the undermining effects of dissimilarity, and if desirable use them to harness diversity for group members' effectiveness.

While it might be at times unavoidable to put a group member in a token position, in which separation aspects are maximized, managers and practitioners might want to assure that this person had experiences in similar situations. The findings in study 3 highlighted the role of diversity experiences, which referred to group members extensive experiences in a position where he or she was in the numerical minority position and differed in terms of deep-level attributes. Alternatively, Heatherton and Baumeister (1996) highlighted the role of self-regulatory trainings which help to develop coping mechanisms suitable to more effectively deal with such situations.

Finally, the identified underlying mechanisms, in particular self-monitoring might provide another means by which team leaders, teachers or supervisors might help ethnically dissimilar group members. Both the literature on self-regulation failure (Baumeister & Vohs, 2007) and the literature on self-management leadership suggest extrinsic motivators might help to buffer the negative effects of resource depletion. Thus, if group members have to be put into token position in which their

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separation score is high, and if they lack diversity experience, team leaders and peers might want to provide frequent feedback and encouragement to the ethnically more dissimilar group members. Managers may also want to highlight to the more similar group members that it might be not so much the dissimilar group member's motivation, but rather the position he or she is in that makes him or her underperform, and that they (i.e. the more similar group members) should try to help the dissimilar group member so that he or she can better cope with his numerical minority status. This way managers and peers alike might safeguard the more dissimilar group members against the negative consequences of self-regulatory failure.

CHAPTER 7
Conclusion

In light of organizations diversifying their work force or universities attracting ever more students with a different ethnical and social background, the current research posed the questions as to what extent, how and when work group members' dissimilarity affects their social integration and effectiveness. The findings suggest that these effects are albeit small and depend on the level of interdependence under which a work group operates.

It was found that under low levels of interdependence in particular demographic attributes undermine dissimilar group member's social integration and effectiveness. Under high levels of interdependence they are mainly deep-level attributes (such as values, beliefs and attitudes) that undermine dissimilar group members' social integration and effectiveness. Other than previous research the current findings also suggested that at least for ethnic dissimilarity high levels of interdependence may help to overcome the negative effects of ethic dissimilarity on individual effectiveness, but move the problem at a deeper level. Specifically it was found that under high levels of interdependence ethnic dissimilarity renders dissimilar group members more visible and at the same less prototypical. While visibility increased dissimilar group members' attempts to match-their behaviour to their work group's standards, separation depleted their self-regulatory resources rendering them less effective.

Prior theorizing in relational diversity research relying solely on the similarity-attraction hypothesis, the social identity approach or self-attention theory can't fully explain these findings. Instead these findings supported a social self-

regulation framework which integrated self-attention theory and SCT within social self-regulation theory. According to this framework relational diversity pertains to both visibility and separation aspects. Under low levels of interdependence the framework suggested the operation of inter-group dynamics, whereby dissimilar group members become more aware of their diversity related social category and regulate their behaviour on that basis. In return they become less socially integrated within their work group, and accordingly become less effective. Under high levels of interdependence the framework suggested the operation of intra-group dynamics, whereby dissimilar group members become more aware of their work group membership. In return this increases dissimilar group members' level of self-attention and matching-to-standard behaviour, ultimately increasing their effectiveness. At the same time however, dissimilar group members are perceived as less prototypical group members. In return dissimilar group members become socially excluded, which undermines their self-regulation rendering them less effective.

These findings challenge the idea that dissimilar group members are not willing (i.e. motivated) to contribute their fair share to their work group. While this is true for pseudo groups that act under low levels of interdependence, under high levels of interdependence dissimilar group members display higher levels of efforts than the more similar group members, but often fail to harness these efforts for their effectiveness, because they lack the self-regulatory resources to do so. Thus, under high levels of interdependence dissimilar group members are rather incapable than unwilling to contribute their fair share to their work group.

From that it follows that management and practitioners should assure that dissimilar group members regulate their behaviour in terms of their work group or

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organisational membership, which might be facilitated by setting common goals, rewards and tasks or communicating a common vision. This way dissimilar group members will increase their efforts to contribute their fair share to their work group or organisation. Because this undermines at the same dissimilar group members' capability to do so, practitioners and management should assure to minimize deep-level differences when composing diverse groups. If this is not possible practitioners and management should assure that dissimilar group members have diversity experience and raise awareness among the more similar group members highlighting the difficult position of the more dissimilar group members. In case practitioners and management want to harness relational diversity for group members' effectiveness they will have to put group members into a numerical minority position and assure that deep-level differences are minimized.

Thus, it might be not so much the tension between organizational diversification and psychological preference for homogeneity that negatively affect dissimilar employees' social integration and effectiveness, but rather their lack of willingness and incapability to become socially integrated and contribute desired inputs to their role.

REFERENCES

Abrams, D. (1985). Focus of attention in minimal intergroup discrimination. *British Journal of Social Psychology, 24*, 65–74.

Abrams, D. (1994). Social self-regulation. *Personality and Social Psychology Bulletin, 20*, 473-483.

Abrams, D., & Brown, R. (1989). Self-consciousness and social identity: Self-regulation as a group Member. *Social Psychology Quarterly, 52*, 311-318.

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

Akaike, H. (1987). Factor analysis and AIC. *Psychometrika, 52*, 317-332.

Alderfer, C. P., & Smith, K. K. (1982). Studying intergroup relations embedded in organizations. *Administrative Science Quarterly, 27*, 35-65.

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.

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

Amir, Y. (1969). Contact hypothesis in ethnic relations. *Psychological Bulletin, 71*, 319-342.

Arbuckle, J. L. (2007). Amos 16 (Version 16.0.1). Spring House, PA: Amos Development Corporation.

Arthur, W., Winston, B., & Huffcut, A. I. (2001). *Conducting meta-analysis using SAS.* Mahwah, New Jersey: Lawrence Erlbaum Associates.

Asendorpf, T. B., & Wilpers, S. (1998). Personality effects on social relationships. *Journal of Personality and Social Psychology, 74*, 1531-1544.

Ashford, S. J., & Tsui, A. S. (1991). Self-regulation for managerial effectiveness: The role of active feedback seeking. *Academy of Management Journal, 34,* 251-280.

Baker, R. C., & Kirschenbaum, D. S. (1993). Self-monitoring may be necessary for successful weight control. *Behavior Therapy, 24,* 377-394.

Barrick, M. R., Bradley, B. H., Kristof-Brown, A. L., & Colbert, A. E. (2007). The moderating role of top management team interdepdendence: Implications for real teams and working groups. *Academy of Management Journal, 50,* 544-557.

Bauer, D. J., & Curran, P. J. (2005). Probing interactions in fixed and multilevel tegression: Inferential and graphical Techniques. *Multivariate Behavioral Research, 40,* 373-400.

Baumeister, R. F. (1982). A self-presentational view of social phenomena. *Psychological Bulletin, 91,* 3-26.

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.

Baumeister, R. F., & Heatherton, T. F. (1996). Self-regulation failure: An overview. *Psychological Inquiry, 7,* 1-15.

Baumeister, R. F., Twenge, J. M., & Nuss, C. K. (2002). Effects of social exclusion on cognitive processes: Anticipated aloneness reduces intelligent thought. *Journal of Personality and Social Psychology, 83,* 817-827.

Baumeister, R. F., & Vohs, K. D. (2007). Self-regulation, ego depletion, and motivation. *Social and Personality Psychology Compass, 1,* 115-128.

Bentler, P. M. (1990). Comparative fit indexes in structural modelling. *Psychological Bulletin, 107*, 238-246.

Blaine, B. E. (2007). *Understanding the Psychology of Diversity*. London: Sage Publications.

Blau, P. M. (1977). *Inequality and heterogeneity*. New York: Free Press.

Borman, W. C., & Motowildo, S. J. (1993). Expanding the criterion domain to include elements of contextual performance. In N. Schmitt & W. C. Borman (Eds.), *Personnel selection in organizations* (pp. 71-98). San Francisco: Jossey-Bass.

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

Brickson, S. (2000). The impact of identity orientation on individual and organizational outcomes in demographically diverse settings. *Academy of Management Review, 25*, 82-101.

Brief, A. P., & Weiss, H. M. (2002). Affect in the workplace. *Annual Review of Psychology, 53*, 279-307.

Brodbeck, F. C., Guillaume, Y. R. F., & Lee, N. (2007). Diversity as a multilevel construct: Predicting cross-level interaction effects on group member performance. *Manuscript submitted for publication*.

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

Calder, B. J., Phillips, L. W., & Tybout, A. M. (1982). The concept of external validity. *Journal of Consumer Research, 9*, 240-244.

Carver, C. S., & Scheier, M. F. (1982). Control Theory: A useful conceptual framework for personality-social, clinical, and health psychology. *Psychological Bulletin, 92*, 111-135.

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., & O'Reilly, C. A. (2004). Asymmetric reactions to work group sex diversity among men and women. *Academy of Management Journal, 47*, 193-208.

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., & Spataro, S. E. (2005). Using self-categorization theory to understand relational demography-based variations in people's responsiveness to organizational culture. *Academy of Management Journal, 48*, 321-331.

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

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

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

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

Clore. (1976). Interpersonal attraction: an overview. In J. W. Thibaut, J. T. Spence & R. C. Carson (Eds.), *Contempary topics in social psychology* (pp. 135-175). Morristown, NJ: General Learning Press.

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*, 155-159.

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3 ed.). Mahwah, New Jersey: Lawrence Erlbaum Associates Publishers.

Cook, T. D., & Campbell, D. T. (1979). *Quasi experimentation: Design and analytical issues for field settings*. Chicago: Rand McNally.

Cox, T. (1993). *Cultural diversity in organizations: Theory, research and practice*. San Fransico: Berrett-Koehler Publishers.

Crampton, S. M., & Wagner, J. A. (1994). Percept-percept inflation in microorganizational research: An investigation of prevalence and effect. *Journal of applied psychology, 79*, 67-76.

Cunningham, G. B., & Sagas, M. (2004). Examining the main and interactive effects of deep- and surface-level diversity on job satisfaction and organizational turnover intentions. *Organizational Analysis, 12*, 319-341.

Dawson, J. F. (2003). Do we have enough? The accuracy of incomplete data from small groups. *Best paper proceedings of the Academy of Management, Seattle, USA.*

Dawson, J. F. (2007). *Diverse meanings and measurements of diversity: An extension of Harrison and Klein's (2007) typology*. Paper presented at the Academy of Management Conference, Philadelphia, Pennsylvania.

Dawson, J. F., & Brodbeck, F. C. (2005). *Not all differences are the same: Measuring diversity using distances between categories*. Paper presented at the Academy of Management, Honolulu, Hawaii

Dionne, S. D., Randel, A. E., Jaussi, K. S., & Chun, J. U. (2004). Diversity and demography in organizations: A levels of analysis review of the literature. *Multi-Level Issues in Organizational Behaviour and Processes Research in Multi-Level Issues, 3*, 181-229.

Doty, D. H., & Glick, W. H. (1998). Common methods bias: Does vommon methods variance teally bias results? *Organizational Research Methods, 1*, 374-406.

Duval, S., & Wicklund, R. A. (1972). *A theory of objective self awareness*. New York: Academic Press.

Edmondson, A. C., & McManus, S. E. (2007). Methodological fit in management field research. *Academy of Management Review, 32*, 1155-1179.

Edwards, J. R. (1994). The study of congruence in organizational behavior research: critique and a proposed alternative. *Organizational behavior and human decision processes, 58*, 51-100.

Edwards, J. R. (2001). Ten Difference Score Myths. *Organizational Research Methods, 4*, 265-287.

Edwards, J. R., & Bagozzi, R. P. (2000). On the nature and direction of relationships between constructs and measures. *Psychological Methods, 5*, 155-174.

Ellemers, N., de Gilder, D., & Haslam, S. A. (2004). Motivating individuals and groups at work: A social identity perspective on leadership and group performance. *Academy of Management Review, 29*, 459-478.

Ely, R. J., & Thomas, D. A. (2001). Cultural diversity at work: The effects of diversity perspectives on work group processes and outcomes. *Administrative Science Quarterly, 46*, 229-273.

Ethical principles of psychologists and code of conduct. (1992). *American Psychologist, 47*, 1597-1611.

Eurocar© [Computer software and manual]. (2005). Upper Heyford, Oxfordshire, United Kingdom: The Orange Group Ltd.

Fay, D., & Guillaume, Y. R. F. (2007). Team diversity. In S. Clegg & J. R. Bailey (Eds.), *International Encyclopedia of Organization Studies* (pp. 1510-1513). Thousand Oaks, CA: Sage.

Flynn, F. J. (2005). Having an open mind: the impact of openness to experience on interracial attitudes and impression formation. *Journal of Personality and Social Psychology, 88*, 816-826.

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.

Fritz, M. S., & MacKinnon, D. P. (2007). Required sample size to detect the mediated effect. *Psycholgical Science, 18*, 233-239.

Govern, J. M., & Marsch, L. A. (2001). Development and validation of the situational self-awareness scale. *Consciousness and Cognition, 10*, 366-378.

Graves, L. M., & Elsass, P. M. (2005). Sex and sex dissimilarity effects in ongoing teams: Some surprising findings. *Human Relations, 58*, 191-221.

Hackman, J. R. (1987). The design of work teams. In J. W. Lorsch (Ed.), *Handbook of organizational behavior* (pp. 315-342). Englewood Cliffs, NJ: Prentice-Hall.

Hambrick, D. C. (1994). Top management groups: A conceptual integration and reconsideration of the "team" label. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behaviour* (Vol. 16, pp. 171-213). Greenwich, CT: JAI Press.

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.

Harrison, D. A., Newman, D. A., & Roth, P. L. (2006). How important are job attitudes? Meta-analytic comparisons of integrative behavioral outcomes and time sequences. *Academy of Management Journal, 49*, 305-325.

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

Harrison, D. A., Price, K. H., Gavin, J. H., & Florey, A. T. (2002). Time, teams, and task performance: Changing effects of surface- and deep-level diversity on group functioning. *Academy of Management Journal, 45*, 1029-1045.

Haslam, S. A. (2004). *Psychology in organizations: The social identity approach* (2 ed.). London: Sage.

Heatherton, T. F., & Baumeister, R. F. (1996). Self-regulation failure: Past, present, and future. *Psychological Inquiry, 7*, 90-98.

Hewstone, M., Crisp, R. J., Contarello, A., Voci, A., Conway, L., Marletta, G., et al. (2006). Tokens in the tower: Perceptual processes and interaction dynamics in academic settings with 'Skewed', 'Tilted' and 'Balanced' sex ratios. *Group Processes & Intergroup Relations, 9*, 509-532.

Hobman, E. V., Bordia, P., & Gallois, C. (2004). Perceived dissimilarity and work group involvement: The moderating effects of group openness to diversity. *Group & Organization Management, 29*, 560-587.

Hogg, M. A., & Hains, S. C. (1996). Intergroup relations and group solidarity: Effects of group identification and social beliefs on depersonalized attraction. *Journal of personality and social psychology, 70*, 295-309.

Hogg, M. A., Hardie, E. A., & Reynolds, K. J. (1995). Prototypical similarity, self-categorization, and depersonalized attraction: A perspective on group cohesiveness. *European Journal of Social Psychology, 25*, 159-177.

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

Holman, D., Epitropaki, O., & Fernie, S. (2001). Understanding learning strategies in the workplace: A factor analytic investigation. *Journal of Occupational and Organizational Psychology, 74*, 675-681.

Hong, O. P., & Harrod, W. J. (1988). The role of reasons in the ingroup bias phenomenon. *European journal of social psychology, 18*, 537-544.

Research code of conduct, REG/04/76 C.F.R. (2004).

House, R. J., Hanges, P. J., Javidan, M., Dorfman, P. W., & Gupta, N. (Eds.). (2004). *Culture, leadership, and organizations: The GLOBE study of 62 Societies.* Thousand Oaks, CA: Sage Publications

Hu, L., & Bentler, P. (1999). Cutoff criteria for fit indices in covariance structure analysis: conventional criteria versus new alternatives. *Structural Equation Modeling, 6,* 1-55.

Hunter, J., & Schmidt, F. (2004). *Methods of meta-analysis: Correcting for error and bias in research findings* (2 ed.). Thousand Oaks, CA: Sage.

Ibarra, H. (1993). Personal networks of women and minorities in management: A conceptual framework. *Academy of Management Review, 18,* 56-87.

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

Jackson, S. E., Joshi, A., & Erhardt, N. L. (2003). Recent research on team and organizational diversity: SWOT analysis and implications. *Journal of Management, 29,* 801-830.

Jackson, S. E., May, K. E., & Whitney, K. (1995). Understanding the dynamics of diversity in decision-making teams. In R. A. Guzzo & E. Salas (Eds.), *Team effectiveness and decision making in organizations* (pp. 204-261). San Fransisco: Jossey-Bass.

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

Jetten, J., Postmes, T., & Spears, R. (2004). Intergroup distinctiveness and differentiation: A meta-analytic integration. *Journal of Personality and Social Psychology, 86,* 862-879.

Judge, T. A., Thoresen, C. J., Bono, J. E., & Patton, G. K. (2001). The job satisfaction-job performance relationship: A qualitative and quantitative review. *Psychological Bulletin, 127*, 376-407.

Kammeyer-Mueller, J. D., & Wanberg, C. R. (2003). Unwrapping the organizational entry process: disentangling multiple antecedents and their pathways to adjustment. *Journal of Applied Psychology, 88*, 779-794.

Kanter, R. M. (1977a). *Men and women of the corporation.* New York: Basic Books.

Kanter, R. M. (1977b). Some effects of proportions on group life: Skewed sex ratios and responses to token women. *American Journal of Sociology, 82*, 965-990.

Karoly, P. (1993). Mechanisms of self-regulation: A systems view. *Annual Review of Psychology, 44*, 23-52.

Katzenbach, J. R., & Smith, D. K. (1993). *The wisdom of teams: Creating the high-performance organization.* Boston: Harvard Business Press.

Kelley, H. H. (1967). Attribution theory in social psychology. In D. Levine (Ed.), *Nebraska Symposium on Motivation* (Vol. 15, pp. 191-238). Lincoln, NE: University of Nebraska Press.

Kenny, D. A. (1994). *Interpersonal perception. A social relations analysis.* New York: The Guilford Press.

Kernis, M. H., Grannemann, B. D., Richie, T., & Hart, J. (1988). The role of contextual factors in the relationship between physical activity and self-awareness. *Br J Soc Psychol, 27*, 265-273.

Kirchmeyer, C. (1995). Demographic similarity to the work Group: A longitudinal-dtudy of managers at the rarly career stage. *Journal of Organizational Behavior, 16*, 67-83.

Kirschenbaum, D. S. (1987). Self-regulatory failure: A review with clinical implications. *Clinical Psychology Review, 7*, 77-104.

Kline, R. B. (2005). *Principles and practices of structural equation modeling* (2 ed.). New York: Guilford Press.

Koffka, K. (1935). *Principles of gestalt psychology*. New York: Hartcourt, Brace.

Kozlowski, S. W. J., & Bell, B. S. (2003). Work groups and teams in organizations. In W. C. Borman, D. R. Ilgen & R. J. Klimoski (Eds.), *Handbook of psychology: Industrial and organizational psychology* (Vol. 12, pp. 333-375). London: Wiley.

Kristof-Brown, A. L., Zimmerman, R. D., & Johnson, E. C. (2005). Consequences of individuals' fit at work: A meta-analysis of person-job, person-organization, person-group, and person-supervisor fit. *Personnel Psychology, 58*, 281-342.

Lau, D., & Murnighan, J. K. (1998). Demographic diversity and faultlines: The compositional dynamics of organizational groups. . *Academy of Management Review, 23*, 325-340.

Lawler, E. E., Mohrman, S. A., & Ledford, G. E. (1998). *Strategies for high performance organisation: The CEO report*. San Francisco: Jossey-Bass.

Lepine, J. A., Podsakoff, N. P., & Lepine, M. A. (2005). A meta-analytic test of the challenge stressor - hindrance framework: An explanation for inconsistent relationships among stressors and performance. *The Academy of Management Journal, 48*, 764-775.

Liao, H., Chuang, A., & Joshi, A. (2006). *Work outcomes and personality antecedents of perceived deep-level dissimilarity*. Paper presented at the Academy of Management Atlanta.

Liao, H., Joshi, A., & Chuang, A. (2004). Sticking out like a sore thumb: Employee dissimilarity and deviance at work. *Personnel Psychology, 57,* 969-1000.

Lord, C. G., & Saenz, D. S. (1985). Memory deficits and memory surfeits: Differential cognitive consequences of tokenism for tokens and observers. *Journal of Personality and Social Psychology, 49,* 918-926.

MacCallum, R. C., & Browne, M. W. (1993). The use of causal indicators in covariance structure models: Some practical issues. *Psychological Bulletin, 114,* 533-541.

MacKinnon, D. P., Krull, J. L., & Lockwood, C. M. (2000). Equivalence of the mediation, confounding and suppression effect. *Prevention Science, 1,* 172-181.

Mannix, E. A., & Neale, M. A. (2005). What differences make a difference? The promise and reality of diverse teams in organizations. *Psychological Science in the Public Interest, 6,* 31-53.

Manz, C. C. (1986). Self-leadership: toward an expanded theory of self-influence processes in organizations. *Academy of Management Review, 11,* 585-600.

Marsden, P. V. (1988). Homogeneity in confiding relations. *Social Networks, 10,* 57-76.

McGuire, W. J., & McGuire, C. V. (1981). The spontaneous self-concept as affected by personal distinctiveness. In M. D. Lynch, A. A. Norem-Hebeison & K. Gergen (Eds.), *Self-concept: Advances in theory and research* (pp. 147-171). New York: Ballinger.

McPherson, J. M., & Smith-Lovin, L. (1987). Homophily in voluntary organizations: Status distance and the composition of face-to-face groups. *American Sociological Review, 52,* 370-379.

Mehra, A., Kilduff, M., & Brass, D. J. (1998). At the margins: A distinctiveness
approach to the social Identity and social networks of underrepresented
groups. *Academy of Management Journal, 41*, 441-452.

Meyer, J. P., Becker, T. E., & Van Dick, R. (2006). Social identities and
commitments at work: toward an integrative model. *Journal of
Organizational Behavior, 27*, 665-683.

Meyer, J. P., Stanley, D. J., Herscovitch, L., & Topolnytsky, L. (2002). Affective,
continuance, and normative commitment to the organization: A meta-analysis
of antecedents, correlates, and consequences. *Journal of Vocational
Behavior, 61*, 20-52.

Milliken, F. J., & Martins, L. L. (1996). Searching for common threads:
Understanding the multiple effects of diversity in organizational groups.
Academy of Management Review, 21, 402-433.

Mullen, B. (1983). Operationalizing the effect of the group on the individual: A self-
attention perspective. *Journal of Experimental Social Psychology, 19*, 295-
322.

Mullen, B. (1986a). Atrocity as a function of lynch mob composition: A self-
attention perspective. *Personality and Social Psychology Bulletin, 12*, 187-
197.

Mullen, B. (1986b). Stuttering, audience size, and the other-total ratio: A self-
attention perspective. *Journal of Applied Social Psychology, 16*, 139-149.

Mullen, B. (1987). Self-attention theory: The effects of group composition on the
individual. In B. Mullen & G. R. Goethals (Eds.), *Theories of group
behaviour* (pp. 125-146). New York: Springer-Verlag.

Mullen, B., Brown, R., & Smith, C. (1992). Ingroup bias as a function of salience, relevance, and status: An integration. *European Journal of Social Psychology, 22*, 103-122.

Mullen, B., Johnson, D. A., & Drake, S. D. (1987). Organizational productivity as a function of group composition: a self-attention perspective. *Journal of Social Psychology, 127*, 143-150.

Mullen, B., Migdal, M. J., & Rozell, D. (2003). Self-awareness, deindividuation, and social identity: Unraveling theoretical paradoxes by filling empirical lacunae. *Personality and Social Psychology Bulletin, 29*, 1071.

Muraven, M., & Baumeister, R. F. (2000). Self-regulation and depletion of limited resources: Does self-control resemble a muscle. *Psychological Bulletin, 126*, 247-259.

Muraven, M., Baumeister, R. F., & Tice, D. M. (1999). Longitudinal improvement of self-regulation through practice: Building self-control strength through repeated exercise. *Journal of Social Psychology, 139*, 446-457.

Muthén, L., & Muthén, B. (1998-2006). Mplus (Version 4.0). Los Angeles: Muthén & Muthén.

Niemann, Y. F., & Dovidio, J. F. (1998). Relationship of solo status, academic rank and perceived distinctiveness to job satisfaction of racial/ethnic minorities. *Journal of Applied Psychology, 83*, 55-71.

Nisbett, R. E., Peng, K., Choi, I., & Norenzayan, A. (2001). Culture and systems of thought: holistic versus analytic cognition. *Psychological Review, 108*, 291-310.

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

Organ, D. W. (1988). *Organizational citzenship behaviour: The good soldier syndrom.* Lexington, MA: Lexington Books.

Peng, K., & Nisbett, R. E. (1999). Culture, dialectics, and reasoning about contradiction. *American Psychologist, 54,* 741-754.

Pettigrew, T. F. (1998). Intergroup contact theory. *Annual Review of Psychology, 49,* 65-85.

Pettigrew, T. F., & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology, 90,* 751-783.

Pfeffer, J. (1983). Organizational demography. *Research in Organizational Behavior, 5,* 299-357. Greenwich, CT: JAI Press. .

Phillips, K. W., & Lloyd, D. L. (2006). When surface and deep-level diversity collide: The effects on dissenting group members. *Organizational Behavior and Human Decision Processes, 99,* 143-160.

Phinney, J. S. (1990). Ethnic identity in adolescence and adulthood: A review of research. *Psychological Bulletin, 108,* 499-514.

Phinney, J. S. (1996). When we talk about American ethnic groups, what do we mean? *American Psychologist, 51,* 918-927.

Pickett, C. L., Silver, M. D., & Brewer, M. B. (2002). The impact of assimilation and differentiation needs on perceived group importance and judgments of ingroup size. *Personality and Social Psychology Bulletin, 28,* 546-558.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88,* 879-903.

Prentice-Dunn, S., & Rogers, R. W. (1983). Deindividuation in aggression. In R. G. Geen & E. Donnerstein (Eds.), *Aggression: Theoretical and empirical*

reviews (Vol. 2. Issues in research, pp. 155-171). New York: Academic Press.

Riketta, M. (2005). Organizational identification: A meta-analysis. *Journal of Vocational Behavior, 66,* 358-384.

Riketta, M., & Van Dick, R. (2005). Foci of attachment in organizations: A meta-analytic comparison of the strength and correlates of workgroup versus organizational identification and commitment. *Journal of Vocational Behavior, 67,* 490-510.

Riordan, C. M. (2000). Relational demography within groups: Past developments, contradictions, and new directions. *Research in Personnel and Human Resources Management., 19,* 131-173.

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

Riordan, C. M., & Weatherly, E. W. (1999). *Relational demography within groups: An empirical test of a theoretical model.* Paper presented at the Academy of Management, Chicago.

Robins, J. P., Shaver, P. R., & Wrightsman, L. S. (1991). *Measures of personality and social psychological attitudes.* San Diego: Academic Press.

Rogers, E. M., & Kincaid, D. L. (1981). *Communication networks: Toward a new paradigm for research.* New York: Free Press.

Rosenthal, R., & Rubin, D. B. (1982). A simple, general purpose display of magnitude of experimental effect. *Journal of Educational Psychology, 74,* 166-169.

Schaubroeck, J., & Lam, S. S. K. (2002). How similarity to peers and supervisor influences organizational advancement in different cultures. *Academy of Management Journal, 45*, 1120-1136.

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.

Seers, A. (1989). Team-member exchange quality: A new construct for role-making research. *Organizational behaviour and human decision processes, 43*, 118-135.

Simon, B., & Brown, R. J. (1987). Perceived intragroup homogeneity in minority-majority contexts. *Journal of Personality and Social Psychology, 53*, 703-711.

Snijders, T. A. B., & Bosker, R. J. (1999). *Multilevel analysis; An introduction to basic and advanced multilevel modeling.* . London: Sage.

Snyder, M. (1974). Self-monitoring of expressive behavior. *Journal of Personality and Social Psychology, 30*, 526-537.

Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. . In S. Leinhardt (Ed.), *Sociological methodology* (pp. 290-312). Washington, DC: American Sociological Association.

Spangler, E., Gordon, M. A., & Pipkin, R. M. (1978). Token women: An emperical test of Kanter's hypothesis. *American Journal of Sociology, 84*, 160-170.

Steiger, J. H. (1990). Structural model evaluation and modification: An interval estimation approach. *Multivariate Behavioral Research, 25*, 173-180.

Tajfel, H. (1978). *Differentiation between social groups: Studies in the social psychology of intergroup relations.* Oxford: England Academic Press.

Tajfel, H., & Turner, J. (1986). The social identity of intergroup behaviour. In W. A. S. Worchel (Ed.), *Psychology and intergroup relations*. Chicago: Nelson-Hall.

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

Thomas, D. C., Ravlin, E. C., & Wallace, A. W. (1996). Effect of cultural diversity in work groups. In P. A. Baumberger, M. Erez & S. B. Bacharach (Eds.), *Research in sociology of organizations* (Vol. 14, pp. 1-33). Greenwich, CT: JAI.

Thomas, R. R. (1990). From affirmative action to affirming diversity. *Harvard Business Review, 68*, 107-117.

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.

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

Tsui, A. S., & Gutek, B. (1999). *Demographic differences in organizations: Current research and future directions*. Lanham, Maryland: Lexington Books.

Tsui, A. S., Porter, L. W., & Egan, T. D. (2002). When both similarities and dissimilarities matter: Extending the concept of relational demography. *Human Relations, 55*, 899-929.

Turner, J. C. (1982). Toward a cognitive redefinition of the social group. In H. Tajfel (Ed.), *Social identity and intergroup behavior* (pp. 15-40). Cambridge, England: University Press.

Turner, J. C. (1987). A self-categorization theory. In J. C. Turner, M. A. Hogg, P. J. Oakes, S. D. Reicher & M. S. Wetherell (Eds.), *Rediscovering the social group* (2 ed., pp. 42-67). Oxford: Blackwell.

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 Publishers.

Twenge, J. M., Catanese, K. R., & Baumeister, R. F. (2003). Social exclusion and the deconstructed state: Time perception, meaninglessness, lethargy, lack of rmotion, and self-awareness. *Journal of Personality and Social Psychology, 85*, 409-423.

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

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 Knippenberg, D. (2000). Work motivation and performance: A social identity perspective. *Applied Psychology: An International Review, 49*, 357-371.

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

van Knippenberg, D., & Schippers, M. C. (2007). Work group diversity. *Annual Review of Psychology, 58*, 515-541.

Vandewalle, D. (1997). Development and validation of a work domain goal orientation instrument. *Educational and Psychological Measurement, 57*, 995-1015.

Viswesvaran, C., & Ones, D. S. (1995). Theory testing: Combining psychometric meta-analysis and structural equations modeling. *Personnel Psychology, 48*, 865-885.

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.

Wageman, R. (1995). Interdependence and group effectiveness. *Administrative Science Quarterly, 40*, 154-180.

Wagner, W. G., Pfeffer, J., & O'Reilly, C. A. (1984). Organizational demography and turnover in top-management groups. *Administrative Science Quarterly, 29*, 74-92.

Webber, S. S., & Donahue, L. M. (2001). Impact of highly and less job-related diversity on work group cohesion and performance: a meta-analysis. *Journal of Management, 27*, 141-162.

Williams, H. M., & Mean, L. J. (2004). Measuring gender composition in work Groups: A comparison of existing methods. *Organizational Research Methods, 7*, 456-474.

Williams, K. D. (2007). Ostracism. *Annual Review of Psychology, 58*, 425-452.

Williams, K. D., & Sommer, K. L. (1997). Social ostracism by coworkers: Does

rejection lead to loafing or compensation? *Personality and Social Psychology*

Bulletin, 23, 693-706.

Williams, K. Y., & O'Reilly, C. A. (1998). Demography and diversity in

organizations: A review of 40 years of research. In *Research in*

Organizational Behavior, Vol 20, 1998 (Vol. 20, pp. 77-140).

Yoder, J. D. (1991). Rethinking yokenism: Looking beyond numbers. *Gender &*

Society, 5, 178-192.

Yoder, J. D. (1994). Looking beyond numbers: The effects of gender status, job

prestige, and occupational gender-typing on tokenism processes. *Social*

Psychology Quarterly, 57, 150-159.

Zapf, D., Dormann, C., & Frese, M. (1996). Longitudinal studies in organizational

stress research: A review of the literature with reference to methodological

issues. *Journal of Occupational Health Psychology*, 145-169.

Zimmerman, B. J. (1990). Self-regulated learning and academic achievement: An

overview. *Educational Psychologist, 25*, 3-17.

Zimmerman, B. J. (1995). Self-regulation involves more than metacognition: A

social cognitive perspective. *Educational Psychologist, 30*, 217-221.

APPENDICES

Appendix A: Relational Demography and Dissimilarity Measures

Three different ways of measuring relational diversity have been suggested (cf. Riordan, 2000): the difference score (D-score) approach (e.g. Tsui et al., 1992; Wagner et al., 1984); the interaction term approach, often also referred to as polynomial regression approach (e.g. Riordan & Shore, 1997); and the perceptual approach (e.g. Kirchmeyer, 1995).

D-score approach. The D-score approach operationalises relational diversity as the Euclidian Distance between a group member's diversity characteristic and those of his or her peers. Relational diversity researchers thereby rely on Tsui, et al.'s (1992) relational diversity score (RDS) formula:

$$RDS = \sqrt{[1/n \sum_{i}^{j} (S_i - S_j)^2]}$$

Where S_i = a focal individual's value on a specific diversity related attribute, and S_j = the value on the same variable for every other individual in the work group, while n = group size. For categorical variables, the RDS is calculated by assigning a 1 to a focal group member for each other member in the group he or she differs from in terms of ethnical background, and a 0 for each member in the group he or she is similar to in terms of ethnical background. These values are then summed and divided by the total number of group members, and the square root of the result is taken. For example, in a work group composed of one Irish, two Dutch, and one Polish, work group size is $n = 4$. The Irish group member is allocated a 1 for each of the two Dutch group members, and a 1 for the Polish group member yielding the

squared sum of $(1)^2 + (1)^2 + (1)^2 = 3$, divided by the group size $n = 4$ equaling 0.75, of which the square root is 0.87.

For continuous variables, such as age, the relational demography score is the square root of the summed differences between an individual S_i's age, and the age for every other individual Sj in the sample for the work group, divided by the total number n of respondents in the work group. For example, in a work group composed of one 60 year old, two 40 year olds, and one 30 year old , work group size is $n = 4$. The relational diversity score for the 60 year old employee is then $(60 - 45)^2 + (60 - 45)^2 + (60 - 30)^2 = 550$, of which the square root is taken, leading to approximately 23.45, which is then divided by group size, which gives about 5.86.

While the relational diversity score is the most frequently used approach to measure actual relational diversity (cf. Riordan, 2000), there are some concerns about it's use (cf. Edwards, 2001). One refers to the masking of information in that the measure is based on the assumption that actual differences of equal absolute numerical values are the same (Edwards, 1994). For instance, in the earlier example about employee age, the 30 year old employee would receive the same score as the 60 year old. Thus, neither the absolute value at which the difference occurs (i.e. whether the 30 year old employee is compared to the two 40 year old or whether the 60 year old is compared to the 40 year old), nor the direction (i.e. the 60 year old employee is older than everybody else, while the 30 year old employee is younger than everybody else) are captured by this score. The second concern relates to the nonlinear representation of the dissimilarity construct (Edwards, 1994), which is brought about by the measure's square root transformation. This means that the dissimilarity score does not increase linearly as a function of higher actual levels of dissimilarity, but in a curvilinear way. In other words, higher levels of dissimilarity

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lead to smaller incremental changes in the score (e.g. the summed actual differences of 81, 100, 121, 144 differ from each other by 19, 21 and 23 respectively, however taking the square root of these difference scores levels these difference out so it becomes 1 in every case, 12-11 = 1, 11-10 = 1 and 10-9 = 1 suggesting that increasingly larger differences are represented by the same scores). The final concern refers to RDS collapsing two distinct component measures into a single score, namely the individual's value on a specific demographic and the corresponding value of every other group member (Edwards, 1994, 2001). As such it might mask main effects brought about by including each of these two components separately into the analysis. Moreover, it does not take into account the possibility that both components might interact with each other in that they may disproportionately contribute to the prediction of a certain outcome.

Interaction term approach. To remedy these shortcomings relational diversity researchers commonly rely on Edwards' (1994; Edwards, 2001) suggestion to use polynominal regression as a substitute for difference scores (e.g. Riordan & Shore, 1997; cf. H. M. Williams & Mean, 2004). The approach focuses on the individual demographic attribute relative to the group composition for the same attribute in that the outcome is predicted by focal group members' individual demographic attributes, the group's composition and the interaction term composed of both the individual characteristic and the group's composition variable. While this approach remedies most of the shortcomings mentioned above, it seems to be rather unsuited for research in organizational field settings (Riordan & Weatherly, 1999). First, tests for interactions have extremely low power (cf. MacCallum & Browne, 1993), and as such are prone to Type II errors (i.e. failing to detect actual effects). This is even more true when the diversity attribute has many dimensions, as the two

main effects and interaction terms would have to be included for each of the dimensions (e.g. in the Brodbeck et al. 2007 study where they looked at 19 different ethnicities, this would have meant including 59 terms in addition to control variables and other predictors). Secondly, there are some conceptual concerns with this measure as it compares a focal individual's diversity characteristic with the group as a whole rather than with any other group member (cf. H. M. Williams & Mean, 2004).

Perceptual approach. In terms of perceptual approaches, two types can be distinguished. The first uses the perceptual measure as a substitute for lack of objective data (e.g. Kirchmeyer, 1995), and posits to measure actual relational diversity. Therefore respondents are asked to indicate their own diversity attributes (e.g. their gender) and the number of other group members that are similar or different with regard to this diversity characteristic (e.g. how many males and females are in a particular work group). The numbers are then entered into the relational diversity score formula as described above. While taking such an approach may be free of percept-percept inflation (i.e. problems due to common source and common method variance) with regard to self-reports of one's own diversity characteristics as suggested by Crampton and Wagners' (1994) analysis, members often over- or underestimate their actual group size depending on whether they are member of a numerical majority or minority within a given group (e.g. Pickett, Silver, & Brewer, 2002). Therefore it seems preferable to rely on objective rather than self-reported data in order to calculate group members' dissimilarity scores.

The second type of perceptual measures asks respondents to indicate on a Likert scale how dissimilar or similar they think they are in regard to a certain diversity characteristic to the rest of their work group (e.g. Harrison et al., 2002;

Kirchmeyer, 1995). When using these measures to assess a group members' actual level of dissimilarity perceptual distortions triggered for instance by social categorization processes may severely affect the validity of the results. As a case in point, Harrison et al. (2002) assessed various diversity characteristics using both the actual diversity measure RDS and perceptual measures. The mean correlation between both measures was .34 for surface-level relational diversity and .14 for deep-level relational diversity, suggesting that both measures might assess a conceptually different construct. Thus, this second type of perceptual measure is unlikely to measure actual diversity either in regard to surface- or to deep-level characteristics. However, it might be suitable if the focus is not on actual relational diversity but on perceived relational diversity.

Conclusion. In sum, all three approaches have advantages and disadvantages when used to measure relational diversity. As the focus of this work lies on actual relational diversity, conceptualized as the extent to which a group member is dissimilar from his or her peers and its respective effects, the RDS measure is used. As discussed above, the polynomial regression approach might help to overcome the shortcomings of the RDS measure, but it is conceptually different and appears to be rather problematic in field settings due to its low power. Perceptual measures that are used as input for the RDS formula might be problematic as they might provide inaccurate data of a focal group members' work group composition. Finally, while perceptual measures might be of interest in their own right, they are conceptually different and assess rather underlying processes (such as for instance social categorization processes) or proximal effects elicited by actual relational diversity, rather than actual relational diversity itself.

Appendix B: Articles Included in the Meta-Analysis

Appendix B1: List of Studies, their characteristics, and meta-analytically derived correlations for the relationship of surface- and deep-level relational diversity with indicators of social integration (satisfaction, attachment and quality of social relations) and effectiveness (task- and contextual performance, and turnover)

B1.1. List of Studies

*Adkins, C. L., Ravlin, E. C., & Meglino, B. M. 1996. Value congruence between co-workers and its relationship to work outcomes. *Group & Organization Management*, 21: 439-460.

*Bacharach, S. B., Bamberger, P., & Vashdi, D. R. 2004. *Diversity and homophily: Supportive relations among racially dissimilar peers*. Paper presented at the annual meeting of the Academy of Management, New Orleans, Louisiana.

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

*Batt, R., Kim, S., & Roberson, Q. M. 2005. *A multilevel study of demographic diversity, group heterogeneity and performance*. Paper presented at the annual meeting of the Academy of Management, Honolulu, Hawaii.

*Brodbeck, F. C. 2003. [Ethnic and gender dissimilarity and individual performance] Unpublished raw data.

*Brodbeck, F. C. 2004. [Ethnic and gender dissimilarity and individual performance, well-being and team identification] Unpublished raw data.

*Brodbeck, F. C. 2005. [Ethnic dissimilarity and individual performance, well-being and team identification] Unpublished raw data.

*Brodbeck, F. C., Guillaume, Y. R. F., & Lee, N. 2007. *Diversity as a multilevel construct: Predicting cross-level interaction effects on group member performance*. Manuscript submitted for publication.

*Chatman, J. A., & Barsade, S. G. 1995. Personality, organizational culture, and cooperation: Evidence from a business simulation. *Administrative Science Quarterly*, 40: 423-443.

*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., & O'Reilly, C. A. 2004. Asymmetric reactions to work group sex diversity among men and women. *Academy of Management Journal*, 47: 193-208.

*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., & Spataro, S. E. 2005. Using self-categorization theory to understand relational demography-based variations in people's responsiveness to organizational culture. *Academy of Management Journal*, 48: 321-331.

*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., Finn, C. P., & Ashkanasy, N. M. 2006. *Asymmetrical effects of functional dissimilarity on identification, emotion and behavior in surgical teams*. Manuscript submitted for publication.

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

*Chattopadhyay, P., George, E., & Shulman, A. D. 2007. *The asymmetrical influence of sex dissimilarity in distributive versus colocated work groups*. Manuscript submitted for publication.

*Chattopadhyay, P., Glick, W. H., Miller, C. C., & Huber, G. P. 1999. Determinants of executive beliefs: Comparing functional conditioning and social influence. *Strategic Management Journal*, 20: 763-789.

*Choi, J. N. 2007. Group composition and employee creative behaviour in a Korean electronics company: Distinct effects of relational demography and group diversity. *Journal of Occupational and Organizational Psychology*, 80: 213-234.

*Chou, L. F., Cheng, B. S., Huang, M. P., & Cheng, H. Y. 2006. Guanxi networks and members' effectiveness in Chinese work teams: Mediating effects of trust networks. *Asian Journal of Social Psychology*, 9: 79-95.

*Cunningham, G. B. 2005. The importance of a common in-group identity in ethnically diverse groups. *Group Dynamics: Theory, Research, and Practice*, 9: 251-260.

*Cunningham, G. B., & Sagas, M. 2004. Examining the main and interactive effects of deep- and surface-level diversity on job satisfaction and organizational turnover intentions. *Organizational Analysis*, 12: 319-341.

*Day, D. V., & Bedeian, A. G. 1995. Personality similarity and work-related outcomes among African-American nursing personnel: A test of the supplementary model of person-environment congruence. *Journal of Vocational Behavior*, 46: 55-70.

*Elfenbein, H. A., & O'Reilly, C. A. 2007. Fitting in: The effects of relational demography and person-culture fit on group process and performance. *Group & Organization Management*, 32: 109-142.

*Elvira, M. M., & Cohen, L. E. 2001. Location matters: A cross-level analysis of the effects of organizational sex composition on turnover. *Academy of Management Journal*, 44: 591-605.

*Enchautegui-de-Jesús, N., Hughes, D., Johnston, K. E., & Oh, H. J. 2006. Well-being in the context of workplace ethnic diversity. *Journal of Community Psychology*, 34: 211-223.

*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.

*Gilson, L. L. 2001. The role of procedural justice in the relationship between demographic diversity, dissimilarity, work-related affective outcomes, and creative performance (Doctoral Dissertation, Georgia Insitute of Technology, 2001). *Dissertation Abstracts International*, 61: 2802.

*Godthelp, M., & Glunk, U. 2003. Turnover at the top: Demographic diversity as a determinant of executive turnover in The Netherlands. *European Management Journal*, 21: 614-625.

*Graves, L. M., & Elsass, P. M. 2005. Sex and sex dissimilarity effects in ongoing teams: Some surprising findings. *Human Relations*, 58: 191-221.

*Hobman, E. V., & Bordia, P. 2006. The role of team identification in the dissimilarity-conflict relationship. *Group Processes & Intergroup Relations*, 9: 483-507.

*Iverson, R. D., & Buttigieg, D. M. 1997. Antecedents of union commitment: The impact of union membership differences in vertical dyads and work group relationships. *Human Relations*, 50: 1485-1510.

*Jackson, P. B., Thoits, P. A., & Taylor, H. F. 1995. Composition of workplace and psychological well-being: The effects of tokenism on America's black elite. *Social Forces*, 74: 543-557.

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

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

*Kirchmeyer, C. 1995. Demographic similarity to the work group: A longitudinal study of managers at the early career stage. *Journal of Organizational Behavior*, 16: 67-83.

*Lankau, M. J., Ward, A. A., Amason, A., Ng, T., Sonnenfeld, J. A., & Agle, B. R. 2007. Examining the impact of organizational value dissimilarity in top management teams, *Journal of Managerial Issues*, 19: 11-34.

*Liao, H., Chuang, A., & Joshi, A. 2006. *Work outcomes and personality antecedents of perceived deep-level dissimilarity*. Paper presented at the annual conference of the Academy of Management, Atlanta, Georgia.

*Liao, H., Joshi, A., & Chuang, A. 2004. Sticking out like a sore thumb: Employee dissimilarity and deviance at work. *Personnel Psychology*, 57: 969-1000.

*O`Reilly III, C. A., Caldwell, D. F., & Barnett, W. P. 1989. Work group demography, social integration, and turnover. *Administrative Science Quarterly*, 34: 21-37.

*Peeters, M. A. G., Rutte, C. G., van Tuijl, H., & Reymen, I. 2006. The Big Five personality traits and individual satisfaction with the team. *Small Group Research*, 37: 187-211.

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

*Price, K. H., Harrison, D. A., & Gavin, J. H. 2006. Withholding inputs in team contexts: Member composition, interaction processes, evaluation structure, and social loafing. *Journal of Applied Psychology*, 91: 1375-1384.

*Ragins, B. R., Cornwell, J. M., & Miller, J. S. 2003. Heterosexism in the workplace. *Group & Organization Management*, 28: 45-74.

*Randel, A., E., & Jaussi, K., S. 2003. Functional background identity, diversity, and individual performance in cross-functional teams. *Academy of Management Journal*, 46: 763-774.

*Schaubroeck, J. & Lam, S. S. K. 2002. How similarity to peers and supervisor influences organizational advancement in different cultures. *Academy of Management Journal*, 45: 1120-1136.

*South, S. J., Bonjean, C. M., Markham, W. T., & Corder, J. 1982. Social structure and intergroup interaction: Men and Women of the federal bureaucracy. *American Sociological Review*, 47: 587-599.

*South, S. J., Bonjean, C. M., Markham, W. T., & Corder, J. 1983. Female labor-force participation and the organizational experiences of male workers. *Sociological Quarterly*, 24: 367-380.

*Taylor, S. 2003. Relational demography, perceptions of organizational culture, and affective outcomes among registered nurses (Doctoral Dissertation, University of Michigan, 2003). *Dissertation Abstract International*, 64: 2598.

*Thomas-Hunt, M. C., & Phillips, K. W. 2004. When what you know is not enough: Expertise and gender dynamics in task groups. *Personality and Social Psychology Bulletin*, 30: 1585-1598.

*Townsend, A. M., & Scott, K. D. 2001. Team racial composition, member attitudes, and performance: A field study. *Industrial Relations*, 40: 317-337.

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

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

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

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

*Wagner, W. G., Pfeffer, J., & O'reilly, C. A. 1984. Organizational demography and turnover in top-management groups. *Administrative Science Quarterly*, 29: 74-92.

*Wiersema, M. F., & Bird, A. 1993. Organizational demography in Japanese firms: Group heterogeneity, individual dissimilarity, and top management team turnover. *Academy of Management Journal:* 36: 996-1025.

*Zatzick, C. D., Elvira, M. M., & Cohen, L. E. 2003. When is more better? The effects of racial composition on voluntary turnover. *Organization Science*, 14: 483-496.

*Zenger, T. R., & Lawrence, B. S. 1989. Organizational demography: The differential effects of age and tenure distributions on technical communication. *Academy of Management Journal*, 32: 353-376.

B1.2. List of study characteristics

Author	N	Diversity Attribute	Outcome	Type of Team
Adkins, C. L., Ravlin, E. C., & Meglino, B. M. 1996.	100-115	Deep	TP, CP, S	Pseudo
Bacharach, S. B., Bamberger, P., & Vashdi, D. R. 2004	885	Surface	QSR	Pseudo
Barsade, S. G., Ward, A. J., Turner, J. D. F., & Sonnenfeld, J. A. 2000	218 / 234	Surface / Deep	S / S	Real
Batt, R., Kim, S., & Roberson, Q. M. 2005	4119	Surface	TP	Pseudo
Brodbeck, F. C. 2003	307	Surface	TP	Real

Author	N	Diversity Attribute	Outcome	Type of Team
Brodbeck, F. C. 2004	389	Surface	TP, A	Real
Brodbeck, F. C. 2005	375	Surface	TP, A	Real
Brodbeck, F. C., Guillaume, Y. R. F., & Lee, N. 2007	424	Surface	TP	Real
Chatman, J. A., & Barsade, S. G. 1995	119	Surface	TP, QSR	Pseudo
Chatman, J. A., & Flynn, F. J. 2001 (Study 1)	119	Surface	TP, S	Real
Chatman, J. A., & Flynn, F. J. 2001 (Study 2)	116	Surface	TP, A, S	Pseudo
Chatman, J. A., & O'Reilly, C. A. 2004 (Study 1)	39	Surface	A	Real
Chatman, J. A., & O'Reilly, C. A. 2004 (Study 2)	58	Surface	A	Real
Chatman, J. A., Polzer, J. T., Barsade, S. G., & Neale, M. A. 1998	258	Surface	TP, QSR	Pseudo
Chatman, J. A., & Spataro, S. E. 2005	128	Surface	QSR	Pseudo
Chattopadhyay, P. 1999	401	Surface	CP, QSR	Real
Chattopadhyay, P., Finn, C. P., & Ashkanasy, N. M. 2006	244	Surface	TP, A, CP, QSR	Pseudo
Chattopadhyay, P., & George, E. 2001	326	Surface	CP	Real
Chattopadhyay, P., George, E., & Shulman, A. D. 2007	79	Surface	A, QSR	Real
Chattopadhyay, P., Glick, W. H., Miller, C. C., & Huber, G. P. 1999	371	Surface	TP	Real
Choi, J. N. 2007	2993	Surface, Deep	TP TP	Real
Chou, L. F., Cheng, B. S., Huang, M. P., & Cheng, H. Y. 2006	179	Surface	TP, A	Real
Cunningham, G. B. 2005	65-87	Surface	A, S	Real
Cunningham, G. B., & Sagas, M. 2004	235	Surface	S	Real
Day, D. V., & Bedeian, A. G. 1995	171	Deep	TP, S	Pseudo
Elfenbein, H. A., & O'Reilly, C. A. 2007	89	Surface, Deep	TP, QSR, T TP, QSR, T	Real
Elvira, M. M., & Cohen, L. E. 2001 (Study 1)	6856	Surface	TP, T	Pseudo
Elvira, M. M., & Cohen, L. E. 2001 (Study 2)	2559	Surface	TP, T	Pseudo
Enchautegui-de-Jesús, N., Hughes, D., Johnston, K. E., & Oh, H. J. 2006	648	Surface	S	Pseudo
Flynn, F. J., Chatman, J. A., & Spataro, S. E. 2001 (Study 1)	119	Surface	TP, S	Real
Flynn, F. J., Chatman, J. A., & Spataro, S. E. 2001 (Study 2)	245	Surface	TP	Pseudo
Gilson, L. L. 2001	1094	Surface	TP, A, S	Pseudo
Godthelp, M., & Glunk, U. 2003	356	Surface	TP, T	Real
Graves, L. M., & Elsass, P. M. 2005	198	Surface	TP, A, S	Real
Hobman, E. V., & Bordia, P. 2006	165	Surface Deep	A, QSR A, QSR	Real
Iverson, R. D., & Buttigieg, D. M. 1997	460	Surface	S	Real
Jackson, P. B., Thoits, P. A., & Taylor, H. F. 1995	132	Surface	QSR	Pseudo
Jackson, S. E., Brett, J. F., Sessa, V. I., Cooper, D. M., Julin, J. A., & Peyronnin, K. 1991	625	Surface Deep	T T	Real
Jehn, K. A., Chadwick, C., & Thatcher, S. M. B. 1997	440	Surface	S	Real
Kirchmeyer, C. 1995	141	Surface	A, QSR, T	Pseudo

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Author	N	Diversity Attribute	Outcome	Type of Team
Lankau, M. J., Ward, A. A., Amason, A., Ng, T., Sonnenfeld, J. A., & Agle, B. R. 2007		Deep	A, S	Real
Liao, H., Chuang, A., & Joshi, A. 2006 (Study 1)	273	Surface Deep	A, CP A, CP	Real
Liao, H., Chuang, A., & Joshi, A. 2006 (Study 2)	426	Surface Deep	A, T A, T	Real
Liao, H., Joshi, A., & Chuang, A. 2004	286	Surface Deep	A, CP, QSR, S A, CP, QSR, S	Real
O'Reilly III, C. A., Caldwell, D. F., & Barnett, W. P. 1989	79	Surface	T	Real
Peeters, M. A. G., Rutte, C. G., van Tuijl, H., & Reymen, I. 2006	310	Deep	S	Real
Pelled, L. H., Xin, K. R., & Weiss, A. M. 2001	190	Surface	QSR	Pseudo
Price, K. H., Harrison, D. A., & Gavin, J. H. 2006	515	Surface	TP	Real
Ragins, B. R., Cornwell, J. M., & Miller, J. S. 2003	499	Surface Deep	QSR QSR	Real
Randel, A., E., & Jaussi, K., S. 2003	145	Surface	TP	Real
Schaubroeck, J. & Lam, S. S. K. 2002 (Study 1)	386	Deep	TP, QSR	Real
Schaubroeck, J. & Lam, S. S. K. 2002 (Study 2)	185	Deep	TP, QSR	Real
South, S. J., Bonjean, C. M., Markham, W. T., & Corder, J. 1982	230	Surface	QSR	Real
South, S. J., Bonjean, C. M., Markham, W. T., & Corder, J. 1983	387	Surface	QSR	Real
Taylor, S. 2003	351	Surface	A, S	Pseudo
Thomas-Hunt, M. C., & Phillips, K. W. 2004	135	Surface	TP	Real
Townsend, A. M., & Scott, K. D. 2001 (Study 1)	288	Surface	A	Real
Townsend, A. M., & Scott, K. D. 2001 (Study 2)	715	Surface	A	Real
Tsui, A. S., Egan, T. D., & O'Reilly III, C. A. 1992	1705	Surface	A, S	Pseudo
Van der Vegt, G. S. 2002	117	Deep	QSR, S	Real
Van der Vegt, G. S., & Van de Vliert, E. 2005	110	Surface	CP	Real
Van der Vegt, G. S., Van de Vliert, E., & Oosterhof, A. 2003.	129	Surface Deep	A, CP A, CP	Real
Wagner, W. G., Pfeffer, J., & O'reilly, C. A. 1984	576	Surface	TP, T	Real
Wiersema, M. F., & Bird, A. 1993	220	Surface	T	Real
Zatzick, C. D., Elvira, M. M., & Cohen, L. E. 2003	3699	Surface	TP, T	Pseudo
Zenger, T. R., & Lawrence, B. S. 1989	102	Surface	QSR	Pseudo

Note: N refers to number of respondents in sample, Surface refers to Surface-Level Relational Diversity, Deep refers to Deep-Level Relational Diversity, A refers to attachment, S refers to satisfaction, QSR refers to quality of social relations, TP refers to task performance, CP refers to contextual performance, T refers to turnover, Pseudo refers to pseudo team, Real refers to real team. Total number of studies is 66.

B1.3.1. Meta-Analytic Results for the Relationships between Surface-Level Relational Diversity and Indicators of Social Integration and Effectiveness

Variable	k	n	$SWM\,r$	ρ	SD_ρ	% var. acc. for	Q	p	95% CI Lower	95% CI Upper
Attachment	20	6948	-0.033	-0.033	0.075	47.89	41.77	0.002	-0.079	0.013
Quality of Social Relations	17	4375	-0.063	-0.077	0.116	28.63	59.38	0.000	-0.143	-0.012
Satisfaction	16	7630	-0.025	-0.027	0.000	100.00	14.00	0.526	-0.059	0.005
Turnover	11	15626	0.028	0.028	0.053	55.41	19.85	0.031	-0.019	0.075
Contextual Performance	7	1769	-0.013	-0.013	0.000	100.00	3.52	0.741	-0.049	0.023
Task Performance	26	26599	-0.034	-0.040	0.044	70.16	37.06	0.057	-0.071	-0.009

Note. Results are corrected for criterion unreliability. k = number of correlations; n = number of respondents; $SWM\,r$ = sample weighted mean correlation; ρ = corrected population correlation; SD_ρ = standard deviation of the corrected population correlation; % var. acc. for = percentage of variance attributed to sampling error and artifact corrections; Q = homogeneity test of the ρ distribution; p = significance level of the Q – Statistic of the ρ distribution; 95% CI = 95% confidence interval of the ρ.

B1.3.2. Meta-Analytic Results for the Relationships between Deep-Level Relational Diversity and Indicators of Social Integration and Effectiveness

Variable	k	n	$SWM\,r$	ρ	SD_ρ	% var. acc. for	Q	p	95% CI Lower	95% CI Upper
Attachment	5	1016	-0.065	-0.070	0.142	21.46	23.30	0.000	-0.210	0.071
Quality of Social Relations	7	1727	-0.165	-0.179	0.085	40.09	17.46	0.008	-0.260	-0.098
Satisfaction	7	1395	-0.183	-0.208	0.159	19.18	36.49	0.000	-0.339	-0.077
Turnover	3	1140	0.018	0.018	0.000	100.00	1.53	0.466	-0.030	0.066
Contextual Performance	4	787	0.029	0.028	0.000	100.00	3.44	0.329	-0.046	0.102
Task Performance	6	3934	-0.011	-0.011	0.084	48.04	12.49	0.029	-0.104	0.082

Note. Results are corrected for criterion unreliability. k = number of correlations; n = number of respondents; $SWM\,r$ = sample weighted mean correlation; ρ = corrected population correlation; SD_ρ = standard deviation of the corrected population correlation; % var. acc. for = percentage of variance attributed to sampling error and artifact corrections; Q = homogeneity test of the ρ distribution; p = significance level of the Q – Statistic of the ρ distribution; 95% CI = 95% confidence interval of the ρ.

Appendix B2: List of Studies and their characteristics included to obtain effect size estimates for the relationship of quality of social relations with attachment, satisfaction, turnover, contextual and task performance

B2.1. List of studies

*Armstrong-Stassen, M., Cameron, S. J., & Horsburgh, M. E. (2001). Downsizing-initiated job transfer of hospital nurses: How do the job transferees fare? *Journal of Health and Human Services Administration*, 23: 470-489.

*Beehr, T. A., Jex, S. M., Stacy, B. A., & Murray, M. A. (2000). Work stressors and coworker support as predictors of individual strain and job performance. *Journal of Organizational Behavior*, 21: 391-405.

*Bowler, W. M., & Brass, D. J. (2006). Relational correlates of interpersonal citizenship behavior: A social network perspective. *Journal of Applied Psychology*, 91: 70-82.

*Chatman, J. A., & Barsade, S. G. (1995). Personality, organizational culture, and cooperation: Evidence from a business simulation. *Administrative Science Quarterly*, 40: 423-443.

*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.

*Chattopadhyay, P., Finn, C. P., & Ashkanasy, N. M. 2006. *Asymmetrical effects of functional dissimilarity on identification, emotion and behavior in surgical teams*. Manuscript submitted for publication.

*Chattopadhyay, P., George, E., & Shulman, A. D. (2007). *The asymmetrical influence of sex dissimilarity in distributive versus collocated work groups*. Manuscript submitted for publication.

*Chattopadhyay, P., Glick, W. H., Miller, C. C., & Huber, G. P. (1999). Determinants of executive beliefs: Comparing functional conditioning and social influence. *Strategic Management Journal*, 20; 763-789.

*Claes, R., Hiel, E., Smets, J., & Luca, M. (2006). Socializing Hungarians in Transylvania, Romania: A case of international organizational socialization. *European Journal of Work and Organizational Psychology*, 15; 300-321.

*Duffy, M. K., Shaw, J. D., & Stark, E. M. (2000). Performance and satisfaction in conflicted interdependent groups: When and how does self-esteem make a difference? *Academy of Management Journal*, 43: 772-782.

*Elfenbein, H. A., & O'Reilly, C. A. 2007. Fitting in: The effects of relational demography and person-culture fit on group process and performance. *Group & Organization Management*, 32: 109-142.

*Goldberg, C. B.; Riordan, C. M., & Schaffer, B. M. (2007). *Does social identity theory underlie relational demography? A test of the moderating effects of self-continuity and status-enhancement on similarity effects*. Manuscript submitted for publication.

*Greer, L., Jehn, K. A., & van Beest, I. (2006). *The effects of faultline placement and demographic status on individual perceptions of group process*. Paper presented at the Academy of Management, Atlanta.

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*Hobman, E. V., & Bordia, P. (2006). The role of team identification in the dissimilarity-conflict relationship. *Group Processes & Intergroup Relations*, 9: 483-507.

*Iverson, R. D., Olekalns, M., & Erwin, P. J. (1998). Affectivity, organizational stressors, and absenteeism: A causal model of burnout and its consequences. *Journal of Vocational Behavior*, 52: 1-23.

*Kirchmeyer, C. (1995). Demographic similarity to the work group: A longitudinal study of managers at the early career stage. *Journal of Organizational Behavior*, 16: 67-83.

*Ladd, D., & Henry, R. A. (2000). Helping coworkers and helping the organization: The role of support perceptions, exchange ideology, and conscientiousness. *Journal of Applied Social Psychology*, 30: 2028-2049.

*Liao, H., Joshi, A., & Chuang, A. (2004). Sticking out like a sore thumb: Employee dissimilarity and deviance at work. *Personnel Psychology*, 57: 969-1000.

*McCalister, K. T., Dolbier, C. L., Webster, J. A., Mallon, M. W., & Steinhardt, M. A. (2006). Hardiness and support at work as predictors of work stress and job satisfaction. American *Journal of Health Promotion*, 20: 183-191.

*Mossholder, K. W., Settoon, R. P., & Henagan, S. C. (2005). A relational perspective on turnover: Examining structural, attitudinal, and behavioral predictors. *Academy of Management Journal*, 48; 607-618.

*Nakata, A., Haratani, T., Takahashi, M., Kawakami, N., Arito, H., Kobayashi, F., et al. (2004). Job stress, social support, and prevalence of insomnia in a population of Japanese daytime workers. *Social Science & Medicine*, 59: 1719-1730.

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

*Parkes, K. R., & von Rabenau, C. (1993). Work characteristics and well-being among psychiatric health-care staff. *Journal of Community and Applied Social Psychology*, 3: 243-259.

*Pearce, J. L., & Randel, A. E. (2004). Expectations of organizational mobility, workplace social inclusion, and employee job performance. *Journal of Organizational Behavior*, 25: 81-98.

*Pisarski, A., Brook, C., Bohle, P., Gallois, C., Watson, B., & Winch, S. (2006). Extending a model of shift-work tolerance. *Chronobiology International*, 23: 1363-1377.

*Schaubroeck, J., & Lam, S. S. K. (2002). How similarity to peers and supervisor influences organizational advancement in different cultures. *Academy of Management Journal*, 45: 1120-1136.

*Settoon, R. P., & Mossholder, K. W. (2002). Relationship quality and relationship context as antecedents of person- and task-focused interpersonal citizenship behavior. *Journal of Applied Psychology*, 87: 255-267.

*Smith, J., & Gardner, D. (2007). Factors affecting employee use of work-life balance initiatives. *New Zealand Journal of Psychology*, 36: 3-12.

*Sparrowe, R. T., Liden, R. C., Wayne, S. J., & Kraimer, M. L. (2001). Social networks and the performance of individuals and groups. *Academy of Management Journal*, 44: 316-325.

*Suzuki, E., Itomine, I., Kanoya, Y., Katsuki, T., Horii, S., & Sato, C. (2006).

    Factors affecting rapid turnover of novice nurses in university hospitals.

    Journal of Occupational Health, 48: 49-61.

*Taormina, R. J., & Bauer, T. N. (2000). Organizational socialization in two

    cultures: Results from the United States and Hong Kong. *International*

    Journal of Organizational Analysis, 8: 262-289.

*Thompson, C. A., & Prottas, D. J. (2006). Relationships among organizational

    family support, job autonomy, perceived control, and employee well-being.

    Journal of Occupational Health Psychology, 11: 100-118.

*Van der Vegt, G. S. (2002). Effects of attitude dissimilarity and tune on social

    integration: A longitudinal panel study. *Journal of Occupational and*

    Organizational Psychology, 75: 439-452.

*Zhou, J., & George, J. M. (2001). When job dissatisfaction leads to creativity:

    Encouraging the expression of voice. *Academy of Management Journal*,

    44: 682-696.

B.2.2. List of study characteristics

Author	N	Independent Variable	Dependent Variable
Armstrong-Stassen, M., Cameron, S. J., & Horsburgh, M. E. (2001).	268	QSR	A, S
Beehr, T. A., Jex, S. M., Stacy, B. A., & Murray, M. A. (2000).	181	QSR	TP
Bowler, W. M., & Brass, D. J. (2006).	141	QSR	A, S, CP
Chatman, J. A., & Barsade, S. G. (1995).	99	QSR	TP
Chatman, J. A., Polzer, J. T., Barsade, S. G., & Neale, M. A. (1998).	258	QSR	TP
Chattopadhyay, P., Finn, C. P., & Ashkanasy, N. M. 2006	244	QSR	A, TP, CP
Chattopadhyay, P., George, E., & Shulman, A. D. (2007).	101	QSR	A
Chattopadhyay, P., Glick, W. H., Miller, C. C., & Huber, G. P. (1999).	401	QSR	CP
Claes, R., Hiel, E., Smets, J., & Luca, M. (2006).	312	QSR	S

Author	N	Independent Variable	Dependent Variable
Duffy, M. K., Shaw, J. D., & Stark, E. M. (2000).	330	QSR	TP, S
Elfenbein, H. A., & O'Reilly, C. A. 2007.	89	QSR	T
Goldberg, C. B.; Riordan, C. M., & Schaffer, B. M. (2007).	129	QSR	A
Greer, L., Jehn, K. A., & van Beest, I. (2006).	108	QSR	TP
Hobman, E. V., & Bordia, P. (2006).	165	QSR	A
Iverson, R. D., Olekalns, M., & Erwin, P. J. (1998).	487	QSR	S
Kirchmeyer, C. (1995).	141	QSR	A, T
Ladd, D., & Henry, R. A. (2000). (Study 1)	108	QSR	CP
Ladd, D., & Henry, R. A. (2000). (Study 2)	108	QSR	CP
Liao, H., Joshi, A., & Chuang, A. (2004).	286	QSR	A, S
McCalister, K. T., Dolbier, C. L., Webster, J. A., Mallon, M. W., & Steinhardt, M. A. (2006). (Study 1)	310	QSR	S
McCalister, K. T., Dolbier, C. L., Webster, J. A., Mallon, M. W., & Steinhardt, M. A. (2006). (Study 2)	745	QSR	S
Mossholder, K. W., Settoon, R. P., & Henagan, S. C. (2005).	176	QSR	S, T, CP
Nakata, A., Haratani, T., Takahashi, M., Kawakami, N., Arito, H., Kobayashi, F., et al. (2004).	1126	QSR	S
O'Reilly III, C. A., Caldwell, D. F., & Barnett, W. P. (1989).	79	QSR	S, T
Parkes, K. R., & von Rabenau, C. (1993).	145	QSR	S
Pearce, J. L., & Randel, A. E. (2004). (Study 1)	221	QSR	TP
Pearce, J. L., & Randel, A. E. (2004). (Study 2)	234	QSR	TP
Pisarski, A., Brook, C., Bohle, P., Gallois, C., Watson, B., & Winch, S. (2006).	1257	QSR	A, S
Schaubroeck, J., & Lam, S. S. K. (2002). (Study 1)	386	QSR	TP
Schaubroeck, J., & Lam, S. S. K. (2002). (Study 2)	185	QSR	TP
Settoon, R. P., & Mossholder, K. W. (2002).	273	QSR	CP
Smith, J., & Gardner, D. (2007).		QSR	
Sparrowe, R. T., Liden, R. C., Wayne, S. J., & Kraimer, M. L. (2001).	190	QSR	CP
Suzuki, E., Itomine, I., Kanoya, Y., Katsuki, T., Horii, S., & Sato, C. (2006).	923	QSR	T
Taormina, R. J., & Bauer, T. N. (2000).	324	QSR	A, S
Thompson, C. A., & Prottas, D. J. (2006).	2808	QSR	S
Van der Vegt, G. S. (2002).	190	QSR	S
Zhou, J., & George, J. M. (2001).	149	QSR	TP, S

Note: N refers to number of respondents in sample, QSR refers to quality of social relations, A refers to attachment, S refers to satisfaction, TP refers to task performance, CP refers to contextual performance, T refers to turnover. Total number of studies is 38.

B2.3. Meta-Analytic Results for the Relationships between Quality of Social Relations, Attachment, Task Performance, Contextual Performance, Satisfaction, and Turnover

Variable	k	n	$SWM\,r$	ρ	SD_ρ	% var. acc. for	Q	p	95% CI Lower	95% CI Upper
Attachment	10	3056	0.321	0.383	0.224	9.41	106.29	0.000	0.237	0.529
Satisfaction	17	9133	0.335	0.416	0.141	18.77	90.55	0.000	0.342	0.491
Turnover	5	1408	-0.173	-0.193	0.102	40.24	12.42	0.014	-0.308	-0.077
Task Performance	11	2395	0.207	0.232	0.185	14.37	76.52	0.000	0.114	0.350
Contextual Performance	8	1641	0.266	0.321	0.184	16.18	49.43	0.000	0.181	0.461

Note. Results are corrected for criterion and predictor unreliability. k = number of correlations; n = number of respondents; $SWM\,r$ = sample weighted mean correlation; ρ = corrected population correlation; SD_ρ = standard deviation of the corrected population correlation; % var. acc. for = percentage of variance attributed to sampling error and artifact corrections; Q = homogeneity test of the ρ distribution; p = significance level of the Q – Statistic of the ρ distribution; 95% CI = 95% confidence interval of the ρ.

Appendix C: Development of the Additive Effects Test (AET)[5]

In order to test for which values of two predictors b_1 and b_2 in a regression equation their additive effects are significantly positive or negative the regions of significance test for single intercepts developed by Bauer and Curran (2005) was adapted.

A simple fixed-effects regression model involving two predictors can be expressed as

$$y = b_0 + b_1 x_1 + b_2 x_2 + \varepsilon \qquad (1)$$

The regions of significance test for single intercepts tests over what range of the second predictor b_2 the single intercept b_0 at a certain level of the first predictor b_1 is significantly different from 0.

The underlying rationale of the AET is based on the rationale that the intercept b_0 takes on the value at which b_1 and b_2 are 0 and that these values can be manipulated by centering them respectively.

In order to determine whether the additive effects of b_1 and b_2 are significantly positive or negative, AET tests for what range of the second predictor b_2 the single

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[5] I am very grateful to Johannes Ulrich who suggested adapting the regions of significance test for single intercepts developed by Bauer and Curran (2005) to test for the significance of additive effects.

intercepts at varying levels of the first predictor b_1 are significantly different from the intercept when both b_1 and b_2 are 0.

Consequently, the regions of significance test for single intercepts needs to be extended in that it is based on a single sample t-test, while the rationale outlined above requires an independent sample t-test, as the value of the intercept when both b_1 and b_2 will be based on a parameter estimate.

The regions of significance test can be expressed as:

$$\pm t_{crit} = \frac{\omega}{\sqrt{VAR(\omega)}} \tag{2}$$

where

$$\omega = b_0 + b_2 x_2 \tag{3}$$

and

$$VAR(\omega) = VAR(b_0) + 2x_1 COV(b_1, b_2) + x_2^2 VAR(b_2) \tag{4}$$

Transforming the one-sample t-test in equation 2 into an independent sample t-test yields:

$$\pm t_{crit} = \frac{\mu - \omega}{\sqrt{VAR(\mu) + VAR(\omega)}} \qquad (5)$$

where μ refers to the estimated parameter estimate of b_0 when b_1 and b_2 are 0. And

$VAR(\mu)$ refers to the estimated standard error of b_0 when b_1 and b_2 are 0.

Substituting equation (3) and (4) into (5) yields:

$$ax_2^2 + bx_2 + c = 0 \qquad (6)$$

where

$$a = x_2^2 \left[t_{crit}^2 VAR(b_2) - b_2^2 \right] \qquad (7)$$

$$b = x_2 \left[2 \left(t_{crit}^2 COV(b_0, b_2) - b_0 b_2 + \mu b_2 \right) \right] \qquad (8)$$

$$c = t_{crit}^2 VAR(b_0) - t_{crit}^2 VAR(\mu) - b_0^2 + 2\mu b_0 + \mu^2 \qquad (9)$$

The values of x_2 satisfying the equality can then be obtained via the quadratic

formula:

$$x_2 = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \qquad (10)$$

The two values (or roots) of x_2 that are returned by this formula demarcate the boundaries of the regions of significance, that is the range at which the second predictor b_2 is positively or negatively different from the mean in the sample at a certain level of the first predictor b_1.

As the intercept varies as a function of how b_1 and b_2 have been centred it is suggested here to calculate μ based on the uncentred predictors b_1 and b_2 in order to obtain the mean in the sample when both predictors are actually 0.

For reasons of parsimony and following suggestions by Cohen, Cohen, West, & Aiken (2003), it is suggested here to calculate the single intercepts at high (one standard deviation above the mean) and low levels (one standard deviation below the mean) of the first predictor b_1. However, in principle any value of b_1 might be chosen.

Appendix D: Development of the Self-Monitoring Scale

Self-monitoring was defined as deliberate attention to one's ongoing performance within a work group context and involves status checks upon internal events and the results of expressive or instrumental activity (Baker & Kirschenbaum, 1993; Karoly, 1993; Zimmerman, 1995). As such it constitutes the first stage in the self-regulation process through which group members detect and reduce discrepancies between own behavior and salient group standards signaling disengagement from automaticity (Karoly, 1993). To reflect such self-regulatory activities, items on feedback seeking from peers (cf. Ashford & Tsui, 1991), self-observation, monitoring behavior in relation to group standards, and reducing discrepant behavior were included in the original item-pool, which comprised 8 items (see Table 13 for details). As such the scale measured the extent to which group members monitor their performance in relation to salient group standards. To assess the measures' discriminate validity four further items were included that measured automaticity, as opposed to self-monitoring or self-regulation. Therefore Holman, Epitropaki and Ferrie's (2001) reproduction scale was used.

In a first step, these items were administrated to 201 upper-level undergraduate students, who were studying business administration or related degrees (e.g., Marketing, Finance), and who were engaged in group work. Students remained in their groups for 24 weeks. All participants gave their informed consent, and filled in the questionnaire during week 12, after they had already completed to pieces of group coursework. Participants were instructed to report to what extent they engaged in the behaviors described by the items during group work. Items were

answered on a 7-point Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

In a second step an exploratory factor analysis was run including all 14 items. As it was expected that the factors were correlated, the direct oblimin method of oblique rotation was used to obtain a simple structure to improve the interpretability of the

Table 13. Rotated factor structure matrices for self-monitoring, planning, and reproduction items.

Factors and Items	Structure Coefficients		
	1	2	3
Factor I: Self-Monitoring			
(1) I monitor my actions regularly.	**.758**		.467
(2) I check on how satisfied others are with my performance.	**.718**		
(3) I check how well I perform.	**.747**		.352
(4) I check whether my activities produce the expected results.	**.735**		.363
(5) I modify my actions in the light of changing circumstances.[a]	**.537**		
Factor II: Planning			
(6) After I have made a plan how to carry out my work, I stick to it.[a]			.849
(7) Once I have decided on how to do my work, I carry it out.[a]	.437		.801
(8) What I plan corresponds with what I do subsequently.[a]	.427		.818
Factor III: Reproduction			
(9) I do my work without really questioning it.		**.648**	
(10) I do things in this group without really knowing why they are needed.		**.653**	
(11) I often find myself on 'automatic pilot' in this group.		**.803**	
(12) I do my job without thinking about it too much.		**.848**	

Note. $N = 201$. Factor loadings <.30 are suppressed. Items in bold indicate that the items were developed to asses this factor. A Item excluded to produce final instrument.

initial solution (cf. Vandewalle, 1997). Opposite on what was expected. not a two, but a three-factor solution was obtained (see Table 13). Closer inspection of the single items suggested that items correlating with Factor I (Items 1, 2, 3, 4, 5) captured rather self-monitoring activities, Factor II (Items 6, 7, 8) tapped into planning activities, while Factor III (Items 9, 10, 11, 12) replicated the reproduction scale as developed by Holman et al. (2001). In a third step reliability analyses were conducted. Cronbach's alpha for Factor I were .751, for Factor II .725, and for Factor III .729. Omitting item 5 improved Factor I's reliability further to .758. Due to item 6's low factor loadings, its tapping rather into adaptive behavior than self-monitoring, and better reliability of Factor I, item 6 was discarded. So were all items of Factor II, as they measured rather planning activities than self-monitoring.

In a fourth step the factor structure for the retained 8 items was cross-validated on the same sample 12 weeks later. 195 students provided enough data to be included in the analysis. Two competing a priori models were analyzed. The first was a single-factor model to test for the possibility that the self-monitoring and reproduction scale were the result of a single general factor. The second was a correlated factor model to test for the possibility that the two scales were distinct, but correlated. As can be seen in Table 14, the two factor model had the best fit indices.

Table 14. Goodness-of-fit values for measurement models

Model	df	χ^2	p	RMSEA	SRMR	CFI
One-factor model	19	36.915	.008	.097	.070	.962
Two-factor model	20	199.861	.000	.215	.219	.621

Note. N = 195. CFI = comparative fit index; SRMR = standardized root-mean-squared residual; RMSEA = root-mean-squared error of approximation.

Specifically RMSEA = .097, SRMR = .070 and CFI = .962 of the one-factor solution indicated better fit than the two-factor solution with RMSEA = .215, SRMR = .219 and CFI = .621. Moreover these Goodness-of-Fit values for the two-factor solution were favourable, and well within the cut-off values suggested by Kline (2005): RMSEA < .1, SRMR < .1 and CFI > .95. That both scales are distinct was further corroborated by a significant difference in the χ^2 – value ($\Delta \chi^2$ = 162.946, df = 1, p < .001). This also becomes apparent in Table 15 showing that all parameter estimates for the two factors had values of approximately .600 and higher and were all significant at the .01 level.

Table 15. Confirmatory factor analysis parameter estimates for completely standardized solution

Factors and Items	1	2
Factor: Self-Monitoring		
(1) I monitor my actions regularly.	.775	
(2) I check on how satisfied others are with my performance.	.664	
(3) I check how well I perform.	.711	
(4) I check whether my activities produce the expected results.	.593	
Factor: Reproduction		
(9) I do my work without really questioning it.		.581
(10) I do things in this group without really knowing why they are needed.		.728
(11) I often find myself on 'automatic pilot' in this group.		.766
(12) I do my job without thinking about it too much.		.785

Note. N =195. All estimates significant at p< .01.

Moreover, Cronbach's alpha values for the self-monitoring items were .805 indicating favorable internal consistency of the self-monitoring scale at Time 2. Examination of the item-to-total statistics revealed that the alphas could not be improved with further item deletion. To assess the scales predictive validity the self-

monitoring scale measured at Time 2 was correlated with students marks obtained for an individual essay, which they had to hand in 4 weeks later. A correlation of $r = .201$ between self-monitoring measured at Time 2 corroborated the measures predictive validity.

Test-retest reliability of the Time 1 to Time 2 scores of the self-monitoring scale were $r = .537$ exceeding Robinson, Shaver and Wrightsman's (1991) extensive criterion (second highest standard) of a correlation of greater than .400 for a minimum of a 3-month period between data collection points but did suggest that the scores were somewhat variable over time.

In sum, the four items of the self-monitoring scale revealed satisfactory discriminant and predictive validity, as well as favorable internal consistency and test-retest reliability.

Appendix E: Impression Formation Items

For each of the given skill/area of knowledge below please record the number that corresponds with your evaluation of your ability in that skill/area of knowledge and the ability of the other members in your group. Don't spend too much time on these evaluations; write down what comes first to your mind:

1. Production: The production function is responsible for ensuring that the product is made to the specification and in the numbers requested by the marketing function, with the staff provided by the personnel function and within the budget calculated by the financial function and agreed by the board. Please rate your own expertise and that of the following persons on this function:

	0 – Poor Excellent – 100
Managing Director	
Finance Director	
Marketing Director	
HRM Director	
Production Director	
Other, please name:	

2. Personnel: The personnel facility is responsible for ensuring that the workforce required by production is recruited and available, that it is correctly paid at a rate that ensures the required level of recruitment and motivation and at a level that the company can afford. It is also responsible for seeing that the production workforce is adequately trained. Please rate your own expertise and that of the following persons on this function:

	0 – Poor Excellent – 100
Managing Director	
Finance Director	
Marketing Director	
HRM Director	
Production Director	
Other, please name:	

3. Marketing: The marketing function is responsible for ensuring that the correct product is produced at the right price and that it is promoted and is available in the right place. Please rate your own expertise and that of the following persons on this function:

	0 – Poor	Excellent – 100
Managing Director		
Finance Director		
Marketing Director		
HRM Director		
Production Director		
Other, please name:		

4. Finance: The financial function falls into two tasks: The financial control function has to ensure that revenue exceeds the spending, in your particular case ensuring the cars are sold for the correct price to cover both their direct costs and the overheads, as well as making a contribution to profit. Financial management is the whole process of raising capital for investment and of making investment decisions. Please rate your own expertise and that of the following persons on this function:

	0 – Poor	Excellent – 100
Managing Director		
Finance Director		
Marketing Director		
HRM Director		
Production Director		
Other, please name:		