



FACULTEIT PSYCHOLOGIE EN
PEDAGOGISCHE WETENSCHAPPEN

The reduction of racial prejudice: The role of intergroup contact and social attitudes

Kristof Dhont

Promotor: Prof. Dr. Alain Van Hiel

Proefschrift ingediend tot het behalen van de academische graad
van Doctor in de Psychologie

2011

Dankwoord

Een doctoraatstraject doorloop je niet alleen maar wordt door verschillende mensen van dichtbij of iets verderaf opgevolgd en ondersteund. Deze steun is onontbeerlijk om een doctoraat tot een goed einde te brengen en daarom wil ik een aantal mensen bedanken.

In de eerste plaats bedank ik mijn promotor, Alain Van Hiel, om mij de kans te geven het doctoraatsonderzoek op te starten en voor zijn onafgebroken begeleiding doorheen het volledige traject. Hij was altijd beschikbaar voor het grondig en snel herlezen van een paper, voor uitstekende feedback en voor scherp(zinnig)e discussies. Ik heb heel wat geleerd van zijn eigenschappen en vaardigheden, niet enkel als onderzoeker, maar ook als mens. Ik bewonder zijn flexibiliteit, zijn doorzettingsvermogen en zijn persoonlijke betrokkenheid. Maar misschien ben ik nog het meest geïntrigeerd door zijn creatieve ingesteldheid om zich hoofdzakelijk te baseren op de dagelijkse realiteit in plaats van op de literatuur om nieuwe onderzoeksideeën te ontwikkelen en uit te werken. Dit leverde vaak niet enkel goede, maar ongetwijfeld ook de meest relevante ideeën op.

Ik dank ook de leden van mijn begeleidingscommissie, Ivan Mervielde, Johnny Fontaine en Bart Duriez voor hun tijd en moeite die ze hebben besteed aan het lezen van de verschillende hoofdstukken en voor hun waardevolle suggesties en constructieve feedback.

Al mijn collega's op de vakgroep ontwikkelings-, persoonlijkheids- en sociale psychologie wil ik bedanken voor de aangename werkomgeving en de joviale contacten. Bijzondere dank ben ik verschuldigd aan Ilse en Arne, niet enkel omdat ze vanaf het begin hun kennis en expertise wilden delen, maar ook omdat ze

hun bureau, al dan niet vrijwillig, openstelden als gespreks- en ontspanningsruimte. Voor dit laatste ben ik ook Lieven, Anne en Ariane dank verschuldigd.

Eveneens wil ik Emma en Sven bedanken om van onze bureau een unieke plaats te maken door de uitgebalanceerde combinatie van Emma's jeugdig enthousiasme en vrolijkheid en Svens immer aanhoudende vriendelijkheid en de rust die hij uitstraalt.

De collega's aan de Lessius Hogeschool, Barbara Soetens, Tim Vanhoornissen, Griet van Vaerenbergh, Kasia Uzieblo en Ivo Bernaerts bedank ik voor hun hulp en bereidwilligheid bij het verzamelen van data. Miet Craeynest wil ik hiervoor in het bijzonder bedanken alsook voor de aangename samenwerking.

Mijn ouders verdienen een uitzonderlijke bedanking omdat zij mij altijd hebben ondersteund in wat ik onderneem. De warmte en geborgenheid die ze bieden zijn van onschatbare waarde en ik ben ze erg dankbaar dat ik altijd bij hen terecht kan met om het even welk probleem. Ook Frederik en Sarah en mijn schoonfamilie ben ik dankbaar om er altijd welkom te zijn, onafhankelijk van het aantal personen dat ik meebreng; al is dat aantal gevoelig gestegen de laatste jaren.

Tot slot schieten woorden te kort om Frike te kunnen bedanken. Sinds de start van mijn studies heeft zij aan mijn zijde gestaan. Ze heeft mij dag in dag uit gesteund en altijd voor een warme, liefdevolle thuis gezorgd. Doorheen mijn doctoraatsjaren hebben we verschillende mijlpalen in ons leven gekend die dit doctoraatsproefschrift ver overstijgen. Liene, Nora en Elian zijn onze persoonlijke wereldwonderen. Zij zorgen voor de dagelijkse portie animo en avontuur in huis. Dit zou echter niet zo vanzelfsprekend zijn zonder zo'n fantastische mama als Frike.

Frike, voor dit alles ben ik jou enorm dankbaar. Ik zie je ontzettend graag.

Kristof Dhont, januari 2011

Table of contents

Chapter 1	General introduction	1
	The intergroup contact hypothesis	2
	Recent developments in intergroup contact research	3
	Conceptual gaps in the intergroup contact literature	7
	Research objectives and overview of the chapters	8
	References	14
Chapter 2	We must not be enemies: Interracial contact and the reduction of prejudice among authoritarians	23
	Introduction	24
	Study 1	28
	Method	28
	Results	29
	Discussion	31
	Study 2	32
	Method	32
	Results	33
	General Discussion	36
	References	40
Chapter 3	Direct contact and authoritarianism as moderators between extended contact and reduced prejudice: Lower threat and greater trust as mediators	43
	Introduction	44
	Method	49
	Results	53
	Discussion	61

	References	68
Chapter 4	Opening closed minds: The combined effects of intergroup contact and need for closure on prejudice	75
	Introduction	76
	Study 1	83
	Method	83
	Results and discussion	85
	Study 2	87
	Method	87
	Results and discussion	88
	Study 3	90
	Method	90
	Results and discussion	91
	Study 4	93
	Method	93
	Results	94
	Discussion	97
	Study 5	98
	Method	98
	Results and discussion	99
	General Discussion	103
	References	110
Chapter 5	Interracial public-police contact: Relationships with police officers' racial and work-related attitudes and behavior	117
	Introduction	118
	Method	126
	Results	131

	Discussion	133
	References	140
Chapter 6	Longitudinal intergroup contact effects on prejudice and essentialism using self-reports and observer ratings	145
	Introduction	146
	Method	150
	Sample 1	151
	Sample 2	152
	Results	153
	Sample 1	153
	Sample 2	156
	Discussion	158
	References	161
Chapter 7	Research overview & general discussion	168
	Research Overview	169
	The inclusion of individual differences in the intergroup contact framework	171
	Intergroup contact in its social context	174
	Future research: The macro-context of intergroup relations	175
	Conclusion	181
	References	182
	Nederlandstalige samenvatting	187

Chapter 1

General introduction

*"In a world of increasingly diverse societies,
contact is an idea whose time has come"*
Miles Hewstone (2009)

Over the last several decades migration flows have increased due to economic globalization, improved travel and communication possibilities, and the numerous political and ethnic conflicts around the world. As such, modern societies have witnessed an expansion of their immigrant population and become multicultural. However, not all members of the host societies are willing to receive immigrants with open arms. Indeed, the perseverance of anti-immigrant prejudice and discrimination is a prevalent and well-documented social phenomenon (e.g., Esses, Jackson, & Armstrong, 1998; Pettigrew, 1998a; Semyonov, Raijman, & Gorodzeisky, 2006; Zick, Pettigrew, & Wagner, 2008).

However, negative intergroup relations and attitudes are not irreversible. Social scientists have developed a number of intervention programs and strategies to improve intergroup relations and reduce prejudice (for reviews see, Oskamp, 2000; Palluck & Green, 2009; Stephan & Stephan, 2001). These techniques range from multicultural, anti-prejudice, moral, and value education to intercultural diversity training and conflict resolution programs. However, research on one strategy in particular has recently caused a wave of optimism among social scientists and practitioners aiming to promote intergroup tolerance, that is, the research on intergroup contact. Indeed, bringing members of different groups together, as

originally proposed by Allport's (1954) intergroup contact hypothesis, has been found to be one of the most effective methods of promoting positive intergroup relations (Brown & Hewstone, 2005; Dovidio, Gaertner, & Kawakami, 2003; Pettigrew, 1998b). According to Hewstone, Cairns, Voci, Hamberger, and Niens (2006), the intergroup contact hypothesis "*provides both an intervention and a theoretical framework, and has contributed greatly to the fact that psychology is now in its best position ever to make a contribution to the advancement of world peace by actively promoting intergroup tolerance*" (p 100).

The present dissertation builds upon the research tradition of intergroup contact and focuses on the efficacy of contact with immigrants in reducing anti-immigrant prejudice. In this introductory chapter, we first outline the basic principles of Allport's (1954) intergroup contact hypothesis and summarize Pettigrew and Tropp's (2006) meta-analytic findings on the relationship between intergroup contact and prejudice. Then, we review important recent developments in intergroup contact theory. Finally, we point to some important gaps in the current literature and summarize the objectives of the present dissertation.

The intergroup contact hypothesis

Although some ideas related to the effects of intergroup contact can be traced to publications before the 1950s (e.g., Watson, 1947; Williams, 1947), the introduction of the intergroup contact hypothesis is commonly attributed to Gordon Allport (1954). In his seminal work, *The Nature of Prejudice*, Allport (1954) proposed that contact with members of an outgroup can successfully reduce prejudice toward this outgroup, at least when the contact situation is qualified by four essential features. First, the group members need to have an equal status within the contact situation. Second, the members of both groups should strive toward

common goals. Third, the common goals should be accomplished through cooperation. Fourth, authorities, norms, or customs should support the contact.

Since the publication of Allport's book, hundreds of studies, including cross-sectional (e.g., Ellison & Powers, 1994), longitudinal (e.g., Levin, van Laar, & Sidanius, 2003), and experimental (e.g., Desforges et al., 1991) studies, have created a convincing body of empirical support for Allport's contact hypothesis (for recent reviews see, Brown & Hewstone, 2005; Dovidio et al., 2003; Pettigrew, 1998b). Moreover, a recent meta-analysis (Pettigrew & Tropp, 2006) covering more than 500 studies and data from over 250,000 participants revealed a mean effect size for the relationship between intergroup contact and prejudice of $r = -.21$. Furthermore, Allport's (1954) four conditions were found to facilitate the beneficial effects of intergroup contact, but they were not essential for achieving these effects. In sum, the available evidence corroborates Allport's basic premises on the benefits of intergroup contact and demonstrate their validity and applicability to a wide variety of target groups and intergroup settings.

Recent developments in intergroup contact research

Current research on intergroup contact has led to further refinements and extensions of the contact hypothesis and transferred the hypothesis into an integrative and solid theoretical framework (e.g., Brown & Hewstone, 2005; Pettigrew 1998b). In the following paragraphs, we discuss some of the most notable contributions to intergroup contact theory. First, we focus on the role of intergroup anxiety and threat as important mediating processes underlying the prejudice-reducing effects of intergroup contact. Then, we discuss the significance of two types of intergroup contact that are highly efficient in reducing prejudice: direct and indirect cross-group friendships.

Intergroup anxiety and threat as mediating processes

Whereas early theory and research on the contact hypothesis were mainly concerned with the conditions under which intergroup contact would reduce prejudice, recent research attention has gradually shifted toward identifying and elucidating the mediators of this effect. Much research has highlighted the mediating role of a variety of affective and cognitive processes in the contact-prejudice relationship (e.g., Turner, Hewstone, & Voci, 2007; Pettigrew & Tropp, 2008; van Dick, et al., 2004; Voci & Hewstone, 2003); however, most of the evidence collected pertains to the mechanisms of intergroup anxiety and threat reduction.

Intergroup anxiety refers to feelings of uncertainty and fear experienced in, or expecting to be in, an intergroup contact situation (Stephan & Stephan, 1985). Intergroup threat denotes several forms of perceived threat from the outgroup and is, for instance, directed toward the ingroup's welfare, political, and economic power, which is termed a realistic threat, or toward the ingroup's value and belief system, which is termed a symbolic threat (Stephan, Renfro, & Davis, 2008; Stephan & Renfro, 2002). Intergroup anxiety and perceived threat have frequently been associated with negative outgroup attitudes (Riek, Mania, & Gaertner, 2006).

A number of studies have showed that positive contact with outgroup members can reduce intergroup anxiety and threat in a range of intergroup contexts. Examples include contact between Muslims and Hindus in India (Islam & Hewstone, 1993; Tausch, Hewstone, & Roy, 2009), Catholics and Protestants in Northern Ireland (Paolini, Hewstone, Cairns, & Voci, 2004; Tausch, Hewstone, Kenworthy, Cairns, & Christ, 2007; Tausch, Tam, Hewstone, Kenworthy, & Cairns, 2007), and German adults and resident foreigners in Germany (Pettigrew, Christ, Wagner, & Stellmacher, 2007). Furthermore, Page-Gould, Mendoza-Denton, & Tropp (2008) have shown that intergroup contact not only decreases self-reported anxiety but also cortisol reactivity (a stress hormone) among people predisposed to

experiencing intergroup anxiety. In sum, frequent intergroup encounters attenuate intergroup anxiety and threat, which, in turn, leads to less prejudice (e.g., Paolini et al., 2004; Pettigrew, et al., 2007; Tausch, Hewstone, et al., 2007; Tausch, Tam et al., 2007; Tausch et al., 2009; Voci & Hewstone, 2003).

Direct and indirect types of intergroup contact

To achieve a reduction in prejudice that is likely to be sustainable over time and settings, intergroup contact should not only reduce negative feelings of anxiety and threat, but it should also generate positive feelings toward the outgroup. Therefore, cross-group friendship is considered the most valuable form of intergroup contact for prejudice reduction (e.g., Pettigrew, 1997, 1998b; Levin et al., 2003; Turner, Hewstone, & Voci, 2007; Tropp, 2008; van Dick et al., 2004; Vonofakou et al., 2008). Indeed, cross-group friendship not only elicits high-quality contact by meeting several of Allport's (1954) optimal conditions, but this unique type of contact is also highly likely to generate strong affective ties with the outgroup, which allows the development of intergroup trust (Pettigrew, 1997, 1998b; Tropp, 2008). In support of these ideas, the results of Pettigrew and Tropp's (2006) meta-analysis showed that cross-group friendship is more strongly related to reduced prejudice than other, less intimate, forms of intergroup contact.

The value of cross-group friendship is further highlighted by another contact phenomenon: the extended contact effect. The work of Wright, Aron, McLaughlin-Volpe, and Ropp (1997) demonstrated that the prejudice-reducing effects of intergroup contact are not limited to direct forms of intergroup contact; rather, merely knowing or observing an ingroup member who maintains close relations with an outgroup member also reduces prejudice. This form of contact is referred to as extended or indirect contact. Moreover, Wright et al. (1997) argued that extended contact is at least as effective as direct contact in reducing prejudice because it

operates without the real-time experience of anxiety that often accompanies direct contact situations, and it provides normative information about how members of different groups behave during intergroup encounters. During the past decade, correlational and (quasi-)experimental support for the extended contact effect has demonstrated that people who witness friendships between in- and outgroup members report lower levels of prejudice than those without extended contact experiences (Paolini, et al., 2004; Turner, Hewstone, Voci, & Vonofakou, 2008; Wright et al., 1997; for reviews, see Turner, Hewstone, Voci, Paolini, & Christ, 2007; Vonofakou et al., 2008).

The prejudice-reducing capacity of extended contact is especially important because it solves one of the most important limitations associated with direct intergroup contact. Specifically, direct contact requires that individuals have the opportunity to personally interact with outgroup members. However, several circumstances may prevent such interactions, such as when people do not work together, do not attend the same school, or do not live in the same neighborhood. Especially for these individuals with limited or no opportunity for direct contact, it has been proposed that extended contact may be a valuable alternative. As such, intergroup contact can still benefit them in an indirect way through the knowledge or observation of positive encounters between in- and outgroup members (Turner Hewstone, Voci et al., 2007; Vonofakou et al., 2008; Wright et al., 1997). Moreover, Christ et al. (2010) demonstrated that extended contact is most effective among people who live in segregated areas and have few or no direct cross-group friendships.

Conceptual gaps in the intergroup contact literature

The literature reviewed above demonstrates several new trends in contemporary intergroup contact research. However, despite these theoretical advancements, some important gaps in the current literature remain to be studied.

One of these gaps pertains to the inclusion of individual difference or dispositional variables in intergroup contact research. In particular, the potential influence of individual differences that may enhance or obstruct the effects of intergroup contact have been largely neglected within the framework of intergroup contact. Nevertheless, Allport (1954) emphasized that personal factors may have decisive effects on the degree of success intergroup contact has in reducing prejudice. For instance, Allport (1954) suggested that personal variables may hinder the positive effects of intergroup contact when asserting that “... *contact, as a situational variable, cannot always overcome the personal variable in prejudice. This is true whenever the inner strain within the person is too tense, too insistent, to permit him to profit from the structure of the outer situation*” Allport (1954, pp. 280-281).

From time to time, scholars have reiterated the call to consider individual differences when tackling the question of how to reduce prejudice through intergroup contact (e.g., Pettigrew, 1998b; Pettigrew & Tropp, 2006; Stephan, 1987). To date, however, only a handful of studies have investigated the simultaneous influence of individual differences and intergroup contact (e.g., Dunbar, Blanco, Sullaway, & Horcajo, 2004; McGuigan & Scholl, 2007; Miller, Smith, & Mackie, 2003), but none of these studies have focused on the role of individual differences as potential moderators of the effect of intergroup contact on prejudice (for a notable exception, see Hodson, 2008). Hence, a central question of the present dissertation is who benefits (most) from intergroup contact?

A second important limitation in the literature concerns the fact that positive intergroup contact has mainly been studied in isolation from its social context. This limited approach has triggered recent criticisms that the theoretical findings on intergroup contact are sometimes unusable or even meaningless in practice. According to Dixon, Durrheim, and Tredoux (2005), work on intergroup contact *“has produced a picture of intergroup processes that increasingly obscures and prettifies the starker realities of everyday interactions between members of different groups”* (p. 700). This criticism does not refute the validity of the intergroup contact theory, but it definitely emphasizes the need to investigate intergroup contact in its broader social context (see also Pettigrew, 2008). Moreover, the prejudice reducing potential of indirect intergroup contact already offers one example (in a positive way) of the broader impact of direct intergroup contact within a social network of friends or relatives (Turner, Hewstone, Voci et al. 2007; Vonofakou et al., 2008; Wright et al., 1997). Nevertheless, due to the traditional focus on positive intergroup contact, little is known about the simultaneous influence of positive and negative intergroup contact or real-life intergroup contexts that do not even closely meet Allport's (1954) conditions and could potentially lead to an increase of prejudice and conflict (Pettigrew, 2008).

Research objectives and overview of the chapters

In the present dissertation, we aim to address the issues raised above with five empirical chapters. First and foremost, we investigate the combined effects of positive intergroup contact and individual differences in authoritarianism (Chapters 2 and 3) and motivated social cognition, i.e., the need for closure (Chapter 4), on prejudice. Additionally, this dissertation aims to investigate intergroup contact in its social context. Therefore, in addition to the effects of positive intergroup contact, we consider the effects of negative intergroup contact (Chapters 2 and 5) and indirect

intergroup contact (Chapters 3 and 4) on prejudice and study intergroup contact in an applied social context (Chapter 5). The final aim of this dissertation is to address some important methodological issues in the intergroup contact literature (Chapter 6).

The reduction of prejudice among authoritarians

In Chapters 2 and 3, we focus on the moderating role of authoritarianism in the relationship between intergroup contact and prejudice. Previous research has shown that authoritarianism is highly predictive of prejudice (e.g., Altemeyer, 1998; Duckitt, 2001; Duckitt & Sibley, 2007; Van Hiel & Mervielde, 2002; 2005). Furthermore, high authoritarians believe that ethnic prejudice is inevitable, justified, and caused by factors beyond their control (Esses & Hodson, 2006; Hodson & Esses, 2005), and implementations of several other prejudice reduction techniques (e.g., education programs) have been shown to fail, or even increase negative outgroup attitudes among authoritarians (see Esses, Dovidio, Jackson, & Armstrong, 2001).

The important question that arises is whether prejudice among high authoritarians can be reduced through intergroup contact. Allport (1954) suggested that personal variables related to prejudice are likely to overrule the influence of intergroup contact. Conversely, because intergroup contact decreases feelings of threat and anxiety and is able to establish trust, it might be especially effective in reducing prejudice among high authoritarians. The results of two recent studies conducted by Hodson (2008) provided initial evidence for the latter hypothesis by showing that authoritarians indeed benefitted most from intergroup contact.

In Chapter 2, we test these two competing views concerning the simultaneous effects of intergroup contact and authoritarianism on prejudice in two heterogeneous samples of adults. More specifically, in the first study, we investigate

the interaction effects between authoritarianism and quantity of intergroup contact. In the second study, we distinguish between positive and negative intergroup contact and examined the effects of both types of contact and authoritarianism on prejudice.

In Chapter 3, we examine how authoritarianism moderates the influence of extended contact on prejudice reduction in a large, representative sample of adults. More specifically, given that extended contact has the most pronounced effects among people with low levels of direct positive contact (Christ et al., 2010) as well as among high authoritarians (Hodson, Harry, & Mitchell, 2009), we investigate whether the effects of extended contact on prejudice are most pronounced among high authoritarians with low levels of direct positive contact. As such, we test the third-order moderation effect of extended contact, direct contact, and authoritarianism on prejudice. Moreover, we also investigate whether the psychological process behind these moderator effects resides in the potential of extended contact to reduce perceived outgroup threat (Pettigrew et al., 2007) and to build and restore trust in the outgroup (Tam, Hewstone, Kenworthy, & Cairns, 2009).

Opening closed minds

In Chapter 4, we shift our attention to the potential moderating role of motivated social cognition in the contact-prejudice relationship. A prominent concept within the motivated social cognition approach is the need for closure (NFC, Kruglanski, 1989; Kruglanski & Webster, 1996). NFC refers to an individual's desire for firm answers and aversion toward ambiguity. People with a high level of NFC prefer order and predictability and experience an urgent desire to reach closure in judgments. Moreover, they are closed-minded, as reflected in an unwillingness to have their knowledge challenged by alternative opinions (Webster & Kruglanski, 1994).

As described in more detail in Chapter 4, the facets constituting NFC are strikingly similar to the cognitive style characteristics that Allport (1954) held responsible for prejudice development. Moreover, from both NFC theory and Allport's writings, it can be inferred that the characteristics attributed to people with a high NFC may create a motivational-cognitive barrier that blocks situational influences on attitude change, which may create resistance to the influence of intergroup contact on prejudice.

However, based on recent developments in intergroup contact research, an alternative outcome of the interplay between intergroup contact and NFC may be more feasible. Indeed, because intergroup contact does not explicitly challenge existing attitudes but, instead, reduces feelings of uncertainty and anxiety that people high in NFC may experience toward outgroups, intergroup contact may even reduce prejudice most among high NFC people.

These moderation hypotheses are tested in five studies using a variety of prejudice measures. In the first two studies, we test the moderator hypotheses in a sample of undergraduate students and adults. Study 2 also investigate whether NFC moderates the relationship between extended contact and prejudice. In Study 3, we test the causal direction of the moderation effect in an experimental field study. Finally, Studies 4 and 5 investigate whether the moderation effect of NFC is mediated via intergroup anxiety.

Interracial public-police contact

In addition to considering individual differences in the framework of intergroup contact, this dissertation also aim to investigate the effects of intergroup contact in an applied social context. Therefore, in Chapter 5, we focus on a highly specific, real-life context in which intergroup interactions take place. More specifically, in a sample of police officers, we examine positive and negative

interracial public-police contact in relation to police officers' racial and work-related attitudes and self-reported behavior.

Interracial public-police contact is characterized by situational conditions that contradict the facilitating conditions proposed in the intergroup contact literature (Allport, 1954; Pettigrew & Tropp, 2006). Therefore, the first goal of this study is to examine how interracial public-police contact is related to police officers' attitudes and self-reported behavior toward immigrants during work. Given the frequency of negative contact with immigrants, a relevant question is whether positive intergroup contact can still have a decisive effect on prejudice in these conditions.

Furthermore, this applied approach of studying intergroup contact within its social and organizational context makes it possible to investigate relationships with a broader range of variables. In the context of police work, the valence and amount of regular interactions with immigrants constitute inherent and important parts of the job. Therefore, these daily experiences are likely to be related to other important work-related attitudes and behavior. Hence, the second goal of this study is to explore whether positive and negative contact experiences during work are related to police officers' perceptions of organizational fairness and voluntary prosocial behaviors toward colleagues and superiors.

Methodological contribution

In Chapters 2 – 5, we focus on some important conceptual limitations in the current intergroup contact literature. However, methodological issues exist as well, some of which may even threaten the validity of many findings obtained by contact research. In particular, despite the explicit causal character of the intergroup contact theory, only a few studies have investigated the relationship between intergroup contact and prejudice within a longitudinal design. Moreover, because the relationship between intergroup contact and prejudice can be explained in two

directions (i.e., intergroup contact may indeed reduce prejudice, but prejudiced people are also likely to avoid intergroup contact), the causality issue is prevalent in the current literature.

A second important limitation is the excessive use of self-report measures in intergroup contact research. For instance, more than 80% of the studies in Pettigrew and Tropp's (2006) meta-analysis used self-report measures of intergroup contact. Because self-report measures are prone to various response biases, many research findings may be criticized.

We acknowledge that the studies reported in Chapters 2 – 5 of this dissertation suffer from these two limitations as well. Therefore, the goal of Chapter 6 is to contribute methodologically to the contact literature by investigating the effects of intergroup contact on prejudice within a longitudinal, cross-lagged panel design. Furthermore, we aim to validate the self-report measures of intergroup contact with observer ratings of intergroup contact.

Additionally, we want to extend the intergroup contact literature by investigating whether contact reduces essentialism, which refers to the belief that members of a particular social category share a fixed underlying nature or essence. Demonstrating a reduction of essentialism through intergroup contact would indicate that intergroup can change thought patterns about racial groups on a more general level.

References

- Allport, G. W. (1954). *The nature of prejudice*. Reading, MA: Addison-Wesley.
- Altemeyer, R. (1998). The other “authoritarian personality”. In M. P. Zanna (ed.), *Advances in experimental social psychology*, (Vol. 30, pp. 47-91). San Diego, CA: Academic Press.
- Brown, R., & Hewstone, M. (2005). An integrative theory of intergroup contact. In M. P. Zanna (ed.), *Advances in experimental social psychology*, (Vol. 37, pp. 255-343). San Diego, CA: Academic Press.
- Christ, O., Hewstone, M., Tausch, N., Wagner, U., Voci, A., Hughes, J., & Cairns, E. (2010). Direct contact as a moderator of extended contact effects: Cross-sectional and longitudinal impact on outgroup attitudes, behavioral intentions, and attitude certainty. *Personality and Social Psychology Bulletin*, 36, 1662-1674.
- Desforges, D. M., Lord, C. G., Ramsey, S. L., Mason, J. A., Van Leeuwen, M. D., West, S. C., & Lepper, M. R. (1991). *Journal of Personality and Social Psychology*, 60, 531–544.
- Dixon, J., Durrheim, K., & Tredoux, C. (2005). Beyond the optimal contact strategy. A reality check for the contact hypothesis. *American Psychologist* 60, 697-711.
- Dovidio, J. F., Gaertner, S. L., & Kawakami, K. (2003). Intergroup contact: The past, present, and the future. *Group Processes and Intergroup Relations*, 6, 5-21.
- Duckitt, J. (2001). A dual-process cognitive-motivational theory of ideology and prejudice. In M. P. Zanna (ed.), *Advances in experimental social psychology*, (Vol. 33, pp. 41-113). San Diego, CA: Academic Press.

- Duckitt, J., & Sibley, C. (2007). Right wing authoritarianism, social dominance orientation and the dimensions of generalized prejudice, *European Journal of Personality*, *21*, 113–130.
- Dunbar, E., Blanco, A., Sullaway, M., & Horcajo, J. (2004). Human Rights and Ethnic Attitudes in Spain: The Role of Cognitive, Social Status and Individual Difference Factors. *International Journal of Psychology*, *39*, 106–117.
- Ellison, C. G., & Powers, D. A. (1994). The contact hypothesis and racial attitudes among Black Americans. *Social Science Quarterly*, *75*, 385–400.
- Esses, V. M., & Hodson, G. (2006). The role of lay perceptions of ethnic prejudice in the maintenance and perpetuation of ethnic bias. *Journal of Social Issues*, *62*, 453–468.
- Esses, V., Dovidio, J. F., Jackson, L. M., & Armstrong, T. L. (2001). The immigration dilemma: The role of perceived group competition, ethnic prejudice, and national identity. *Journal of Social Issues*, *57*, 389–412.
- Esses, V., Jackson, L. M., & Armstrong, T. L. (1998). Intergroup competition and attitudes toward immigrants and immigration: An instrumental model of group conflict. *Journal of Social Issues*, *54*, 699–724.
- Hewstone, M. (2009). Living apart, living together? The role of intergroup contact in social integration. *Proceedings of the British Academy*, *162*, 243–300.
- Hewstone, M., Cairns, E., Voci, A., Hamberger, J., & Niens, U. (2006). Intergroup contact, forgiveness, and experience of “The Troubles” in Northern Ireland. *Journal of Social Issues*, *62*, 99–120.
- Hodson, G. (2008). Interracial prison contact: The pros for (social dominant) cons. *British Journal of Social Psychology* *47*, 325–351.

- Hodson, G., & Esses, V.M. (2005). Lay perceptions of ethnic prejudice: Causes, solutions, and individual differences. *European Journal of Social Psychology, 35*, 329-344.
- Hodson, G., Harry, H., & Mitchell, A. (2009). Independent benefits of contact and friendship on attitudes toward homosexuals among authoritarians and highly identified heterosexuals. *European Journal of Social Psychology, 39*, 509-525.
- Islam, M. R., & Hewstone, M. (1993). Dimensions of contact as predictors of intergroup anxiety, perceived outgroup variability and outgroup attitude: An integrative model. *Personality and Social Psychology Bulletin, 19*, 700-710.
- Kruglanski, A. W. (1989). *Lay epistemic and human knowledge: Cognitive and motivational bases*. New York: Plenum.
- Kruglanski, A. W., & Webster, D. M. (1996). Motivated closing of the mind: "Seizing" and "freezing." *Psychological Review, 103*, 263-283.
- Levin, S., van Laar, C., & Sidanius, J. (2003). The effects of ingroup and outgroup friendship on ethnic attitudes in college: A longitudinal study. *Group Processes and Intergroup Relations, 6*, 76-92.
- McGuigan, W. M., & Scholl, C. (2007). The effect of contact on attitudes toward old order Amish. *Journal of Applied Social Psychology, 37*, 2642-2659.
- Miller, D. A., Smith, E. R., & Mackie, D. M. (2004). Effects of intergroup contact and political predispositions on prejudice: Role of intergroup emotions. *Group Processes and Intergroup Relations, 7*, 221-237.
- Oskamp S. (2000). *Reducing Prejudice and Discrimination*. Mahwah, NJ: Erlbaum.
- Page-Gould, E., Mendoza-Denton, R., & Tropp, L. (2008). With a little help from my cross-group friend: Reducing anxiety in intergroup contexts through cross-group friendship. *Journal of Personality and Social Psychology, 95*, 1080-1094.

- Paluck, E. L., & Green, D. P. (2009). Prejudice reduction: What works? A review and assessment of research and practice. *Annual Review of Psychology*, 60, 339-67.
- Paolini, S., Hewstone, M., Cairns, E., & Voci, A. (2004). Effects of direct and indirect cross-group friendships on judgments of Catholics and Protestants in Northern Ireland: The mediating role of an anxiety-reduction mechanism. *Personality Social Psychology Bulletin*, 30, 770-786.
- Pettigrew, T. F. (1997). Generalized intergroup contact effects on prejudice. *Personality and Social Psychology Bulletin*, 23, 173-185.
- Pettigrew, T. F. (1998a). Reactions toward the new minorities of western Europe. *Annual Review of Sociology*, 24, 74-103.
- Pettigrew, T. F. (1998b). Intergroup contact theory. *Annual Review of Psychology*, 49, 65-85.
- Pettigrew, T. F. (2008). Future directions for intergroup contact theory and research. *International Journal of Intercultural Relations*, 32, 187-199.
- Pettigrew, T. F., Christ, O., Wagner, U., & Stellmacher, J. (2007). Direct and indirect intergroup contact effects on prejudice: A normative interpretation. *International Journal of Intercultural Relations*, 31, 411-425.
- Pettigrew, T. F., & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*, 90, 751-783.
- Pettigrew, T. F., & Tropp, L. R. (2008). How does intergroup contact reduce prejudice? Meta-analytic tests of three mediators. *European Journal of Social Psychology*, 38, 922-934.
- Riek, B. M., Mania, E. W., & Gaertner, S. (2006). Intergroup threat and outgroup attitudes: A meta-analytic review. *Personality and Social Psychology Review*, 10, 336-353.

- Semyonov, M., Raijman, R., & Gorodzeisky, A. (2006). The Rise of Anti-Foreigner Sentiment in European Societies, 1988-2000. *American Sociological Review*, 71, 426–449.
- Stephan, W. G. (1987). The contact hypothesis in intergroup relations. In C. Hendricks (Ed.), *Group processes and intergroup relations* (pp. 13–40). Newbury Park, CA: Sage.
- Stephan, W. G., & Renfro, C. L. (2002). The role of threat in intergroup relations. In D. Mackie & E. Smith (Eds.), *From prejudice to intergroup emotions: Differentiated reactions to social groups* (pp. 191–205). New York, NY: Psychology Press.
- Stephan, W. G., Renfro, C. L., & Davis, M. D. (2008). The role of threat in intergroup relations. In U. Wagner, L. Tropp, G. Finchilescu, & C. Tredoux (Eds.), *Improving intergroup relations: Building on the legacy of Thomas F. Pettigrew*, (pp. 55-72). SPSSI Series on Social Issues and Interventions. Malden, MA: Wiley-Blackwell.
- Stephan, W. G., & Stephan, C. W. (1985). Intergroup anxiety. *Journal of Social Issues*, 41, 157-176.
- Stephan, W. G., & Stephan, C. W. (2001). *Improving intergroup relations*. Thousand Oaks, CA: Sage
- Tam, T., Hewstone, M., Kenworthy, J., & Cairns, E. (2009). Intergroup trust in Northern Ireland. *Personality and Social Psychology Bulletin*, 35, 45-59.
- Tausch, N., Hewstone, M., Kenworthy, J. B., Cairns, E., & Christ, O. (2007). Cross-community contact, perceived status differences and intergroup attitudes in Northern Ireland: The mediating roles of individual-level vs. group-level threats and the moderating role of social identification. *Political Psychology*, 28, 53-68.

- Tausch, N., Hewstone, M., & Roy, R. (2009). The relationships between contact, status, and prejudice: An Integrated Threat Theory analysis of Hindu-Muslim relations in India. *Journal of Community and Applied Social Psychology, 19*, 83-94.
- Tausch, N., Tam, T., Hewstone, M., Kenworthy, J., & Cairns, E. (2007). Individual-level and group-level mediators of contact effects in Northern Ireland: The moderating role of social identification. *British Journal of Social Psychology, 46*, 541-556.
- Turner, R., Hewstone, M., & Voci, A. (2007). Reducing explicit and implicit outgroup prejudice via direct and extended contact: The mediating role of self-disclosure and intergroup anxiety. *Journal of Personality and Social Psychology, 93*, 369-388.
- Turner, R. N., Hewstone, M., Voci, A., Paolini, S., & Christ, O. (2007). Reducing prejudice via direct and extended cross-group friendship. In W. Stroebe & M. Hewstone (Eds.), *European review of social psychology* (Vol. 18, pp. 212-255). Hove, UK: Psychology Press.
- Turner, R., Hewstone, M., Voci, A., & Vonofakou, C. (2008). A test of the extended intergroup contact hypothesis: The mediating role of intergroup anxiety, perceived ingroup and outgroup norms, and inclusion of the outgroup in the self. *Journal of Personality and Social Psychology, 95*, 843-860.
- Tropp, L. R. (2008). The role of trust in intergroup contact: Its significance and implications for improving relations between groups. In U. Wagner, L. R. Tropp, G. Finchilescu, & C. Tredoux (Eds.), *Improving intergroup relations: Building on the legacy of Thomas F. Pettigrew* (pp. 91-106). SPSSI Series on Social Issues and Interventions. Malden, MA: Wiley-Blackwell.

- van Dick, R., Wagner, U., Pettigrew, T. F., Christ, O., Wolf, C., Petzel, T., et al. (2004). Role of perceived importance in intergroup contact. *Journal of Personality and Social Psychology*, 87, 211-227.
- Van Hiel, A., & Mervielde, I. (2002). Explaining conservative beliefs and political preferences: A comparison of social dominance orientation and authoritarianism. *Journal of Applied Social Psychology*, 32, 965-976.
- Van Hiel, A., & Mervielde, I. (2005). Authoritarianism and social dominance orientation: Relationships with various forms of racism. *Journal of Applied Social Psychology* 35, 2323-2344.
- Voci, A., & Hewstone, M. (2003). Intergroup contact and prejudice towards immigrants in Italy: The mediational role of anxiety and the moderational role of group salience. *Group Processes and Intergroup Relations*, 6, 37-54.
- Vonofakou, C., Hewstone, M., Voci, A., Paolini, S., Turner, R. N., Tausch, N. T., et al. (2008). The impact of direct and extended cross-group friendships on improving intergroup relations. In U. Wagner, L. R. Tropp, G. Finchilescu, & C. Tredoux (Eds.), *Improving intergroup relations : Building on the legacy of Thomas F. Pettigrew* (pp. 107-123). SPSSI Series on Social Issues and Interventions. Malden, MA: Wiley-Blackwell.
- Watson, G. (1947). *Action for unity*. New York: Harper.
- Williams, R. M., Jr. (1947). *The reduction of intergroup tensions*. New York: Social Science Research Council.
- Webster, D. M., & Kruglanski, A. W. (1994). Individual differences in need for cognitive closure. *Journal of Personality and Social Psychology*, 67, 1049-1062.
- Wright, S. C., Aron, A., McLaughlin-Volpe, T., & Ropp, S. A. (1997). The extended contact effect: Knowledge of cross-group friendships and prejudice. *Journal of Personality and Social Psychology*, 73, 73-90.

Zick, A., Pettigrew, T. F., & Wagner, U. (2008). Ethnic prejudice and discrimination in Europe. *Journal of Social Issues*, 64, 233-251.

Chapter 2

We must not be enemies: Interracial contact and the reduction of prejudice among authoritarians

Abstract

In two Flemish samples ($N = 215$ and $N = 90$) two competing hypotheses concerning the simultaneous effects of intergroup contact and authoritarianism on prejudice were tested. While it has been suggested that authoritarianism may hinder the reduction of prejudice through intergroup contact, it has also been proposed that intergroup contact can be especially effective among high scorers on Right-Wing Authoritarianism (RWA) and Social Dominance Orientation (SDO). The present results supported the latter hypothesis. Moreover, high scorers on RWA and SDO exhibited lower levels of prejudice when having more positive contact, as well as exacerbated levels of prejudice when having more negative contact. The discussion focuses on some possible mechanisms that may underlie the reduction of prejudice among high-scoring authoritarians.

This chapter is based on Dhont, K., & Van Hiel, A. (2009). We must not be enemies: Interracial contact and the reduction of prejudice among authoritarians. *Personality and Individual Differences* 46, 172-177.

Introduction

Bringing two areas of research on prejudice together, i.e. the individual differences approach to prejudice (Altemeyer, 1998; Pratto, Sidanius, Stallworth & Malle, 1994) and the research on intergroup contact (Pettigrew 1998; Pettigrew & Tropp, 2006), the present research examines the role of Right-Wing Authoritarianism (Altemeyer, 1981, 1998) and Social Dominance Orientation (Pratto et al., 1994) in explaining the effects of positive and negative intergroup contact. More specifically, the present research challenges Allport's (1954) suggestion that individuals whose prejudice is "deeply rooted in the character structure of the individual" (p. 281) would be resistant to the influences of intergroup contact.

Authoritarian submission and authoritarian dominance

Recent theorizing has made a distinction between a submissive and a dominant type of authoritarianism (Altemeyer, 1998). Right-Wing Authoritarianism (RWA, Altemeyer, 1981) can be considered to be a typical indicator of authoritarian submission and has been defined as the covariation of conventionalism, authoritarian aggression, and authoritarian submission (Altemeyer, 1981). Altemeyer's RWA scale has been most frequently used to measure this authoritarianism type (Van Hiel, Cornelis, Roets, & De Clercq, 2007). Authoritarian dominance has been indicated, among others, by the Social Dominance Orientation scale (SDO, Pratto et al., 1994). SDO is considered to be "a general attitudinal orientation toward intergroup relations, reflecting whether one generally prefers such relations to be equal, versus hierarchical" (Pratto et al., 1994, p. 742).

Several studies have shown that both RWA and SDO are highly and uniquely predictive of racial prejudice (e.g., Altemeyer, 1998; Van Hiel & Mervielde, 2002, 2005), explaining 50% or more of the variance in various racism measures. Moreover, it has been argued that RWA and SDO constitute distinct

prejudice dispositions, driven by different motivational needs. According to dual process theory (Duckitt, 2001, 2006), RWA is related to “hot” forms of discrimination, based on the perception that outgroup members are threatening. SDO-based prejudice, on the other hand, relates to “cold” discrimination resulting from a lack of positive emotions towards outgroup members who are considered to be incompetent.

Effects of intergroup contact among low and high-scoring authoritarians

After decades of empirical investigation of Allport’s (1954) Intergroup Contact Hypothesis (for recent reviews see, Brown & Hewstone, 2005; Pettigrew, 1998), consensus arose that “intergroup contact typically reduces prejudice” (Pettigrew & Tropp, 2006, p. 751). A recent meta-analysis of more than 500 studies based on no less than 713 independent samples has provided clear evidence for the association between intergroup contact and positive outgroup attitudes (Pettigrew & Tropp, 2006).

It is, however, noteworthy that the study of individual difference variables within the contact hypothesis framework has been neglected, with the exception of Hodson (2008). The important question arising here, therefore, is whether racial prejudice among authoritarians can be reduced via intergroup contact. Two competing hypotheses can be formulated.

Our first hypothesis is based on Allport’s work. In his concluding comments of *The Nature of Prejudice*, Allport (1954) highlighted the overwhelming effects of individual differences asserting that “*contact, as a situational variable, cannot always overcome the personal variable in prejudice. This is true whenever the inner strain within the person is too tense, too insistent, to permit him to profit from the structure of the outer situation*” (pp. 280-281). Hypothesis 1a therefore predicts a moderation effect of authoritarianism and intergroup contact on prejudice, indicating

positive effects of contact for low scoring authoritarians only. Highly authoritarian individuals are assumed not to overcome their high levels of prejudice by intergroup contact.

However, Hodson (2008) conducted an empirical study on the moderation effect between intergroup contact and SDO on prejudice in two samples of prison inmates. Overall, his results revealed that inmates scoring higher on the SDO scale exhibited lower levels of prejudice when they had more contact with outgroup members. In other words, unlike what should be expected on the basis of Allport's writings, Hodson (2008) demonstrated that intergroup contact is especially effective among high-SDO individuals. We refer to this possibility by Hypothesis 1b.

It is important to note, however, that Hodson's findings have been obtained in a prison context and that the generalizability of his results may be limited for a number of reasons. As Hodson (2008) wrote, "prisons are characterized by social dominance and group-based hierarchies" (p.326), which made the rather small samples also highly specific.

Furthermore, intergroup contact among prisoners emerges under highly restrictive circumstances in which prisoners cannot freely choose whether they engage in intergroup contact or not. Pettigrew and Tropp's (2006) meta-analysis has, however, shown that especially those studies in which participants did not have a choice to avoid intergroup contact, obtained larger effects of intergroup contact compared to studies that do allowed choice. Hence, the question arises whether the interactions reported by Hodson's (2008) would still emerge in other contexts. Moreover, it can be expected that if authoritarians and social dominators would have a free choice to interact, they would avoid intergroup contact.

The present study

Two studies were conducted in the Flemish part of Belgium. The percentage of foreigners in Belgium is approximately 8.5% of the total population (5.2% in Flanders) which is slightly less than the European mean percentage. Besides citizens from neighboring and South European countries who are generally not targets of racism, most represented countries are Morocco and Turkey.

The first aim of the present studies is to examine the combined effects of free-choice intergroup contact and both RWA and SDO on racial prejudice in a heterogeneous adult sample. In Study 1 intergroup contact was measured in terms of quantity. In Study 2 we extended our analysis by drawing a qualitative distinction between positive and negative intergroup contact.

In line with the contact hypothesis, we expect to find a negative relationship between contact quantity and prejudice, as well as between positive contact and prejudice (Brown, Eller, Leeds, & Stace, 2007; Pettigrew & Tropp, 2006). Conversely, a positive association is expected between negative contact and prejudice (see Stephan et al., 2002).

Additionally, we expect negative relationships between the social attitudes (i.e., RWA and SDO) and intergroup contact (Study 1). We also expect similar negative relationships for positive contact, but positive relations are expected for negative contact (Study 2).

Finally, the most important aim was to test two competing hypotheses concerning the moderation effect between the social attitudes and intergroup contact on prejudice. According to Hypothesis 1a, contact is especially beneficial for low scoring authoritarians and social dominators, whereas Hypothesis 1b states that the most pronounced positive effects should be obtained with high-scoring authoritarians and social dominators.

Study 1

Method

Participants

In order to obtain a heterogeneous sample, undergraduate university students in political science asked their adult neighbors to participate. A total of 220 questionnaires were distributed. Five of the returned questionnaires were excluded because of missing data. The sample ($N = 215$) consisted of 114 females, 95 males, and 6 persons who did not indicate their gender. Mean age was 40.98 years ($SD = 15.00$). All respondents had the Belgian nationality. With respect to educational level, 119 had completed higher education, 72 had completed secondary school, 19 had earned lower scholarly degrees, and five persons did not indicate their educational level.

Measures

Intergroup contact. Quantity of intergroup contact was measured by four items (based on Islam & Hewstone, 1993) on a seven-point Likert scale (1 = very little; 7 = very much). Sample items are: ‘How much contact do you have with immigrants?’ and ‘How often do you have a conversation with immigrants?’ (Cronbach’s $\alpha = .92$).

Authoritarianism. An abridged 11-item RWA Scale (Altemeyer, 1981, translated by Meehan, 1991) and a 14-item SDO Scale (Pratto et al., 1994, translated by Van Hiel & Duriez, 2002) were administered on a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree). Cronbach’s α s were .84 and .89, for RWA and SDO, respectively.

Racism. Participants completed a nine-item blatant racism scale (based on Billiet & De Witte, 1991) on a five-point Likert scale (1 = strongly disagree; 5 = strongly agree, Cronbach’s $\alpha = .91$).

Results

Interrelationships among measures

Descriptive statistics and correlations among the measures are reported in Table 1. In line with the contact hypothesis and previous findings (e.g., Pettigrew & Tropp, 2006), a negative and highly significant correlation was obtained between intergroup contact and racism. Positive and highly significant correlations between RWA, SDO, and racism were obtained, corroborating previous research (e.g., Van Hiel & Mervielde, 2002, 2005). Also as predicted, significant negative correlations between intergroup contact and the social attitude measures were obtained.

Table 1. Descriptive statistics and correlations between intergroup contact, RWA, SDO, and racism.

Scale	Mean	SD	1	2	3	4
1. Contact	3.28	1.56	-	-.34***	-.20**	-.29***
2. RWA	2.69	.72		-	.46***	.61***
3. SDO	2.14	.70			-	.52***
4. Racism	2.08	.80				-

Note. ** $p < .01$; *** $p < .001$

Moderator analyses

In hierarchical regression analyses, we tested the moderation effects between the social attitudes and intergroup contact on prejudice. Following the recommendations of Aiken and West (1991), we first centered the scores of the independent variables. Next, we calculated the interaction terms by multiplying the centered scores. In a first model, the score on intergroup contact and RWA was entered in a first block, and the interaction term was entered in a second block. In a

Table 2. Analyses testing the moderator effects of RWA or SDO and intergroup contact on racism: standardized β 's.

	RWA	SDO
Contact	-.11 ^a	-.21 ^{***}
Social attitude	.56 ^{***}	.48 ^{***}
Contact x Social attitude	-.13 [*]	-.07

Note. ^a $p < .10$ ^{*} $p < .05$; ^{**} $p < .01$; ^{***} $p < .001$

second model, SDO was entered instead of RWA. Table 2 shows the standardized β 's for the two models. We obtained a significant contact x RWA moderator effect. As can be seen in Figure 1 (plotted values of the predictors represent one standard deviation above and below the mean), and as confirmed by simple slopes analyses, intergroup contact was negatively related to prejudice among high RWA scorers, $\beta = -.23$, $p < .01$, but not among low RWA scorers, $\beta = .00$, $p > .99$. This finding confirms Hypothesis 1b, but contests Allport's suggestion that 'prejudiced personalities' would resist the influences of contact (Hypothesis 1a).

The results emerging from the regression model testing the contact x SDO moderation on prejudice were less clear. This moderator effect did not reach conventional significance levels. However, as shown in Figure 1, the trend of the interaction is rather in the opposite direction than what would be expected from Allport (1954). Simple slopes analyses confirmed that the effect of intergroup contact was stronger among high-SDO scorers, $\beta = -.28$, $p < .01$, than among low SDO scorers, $\beta = -.13$, $p < .08$.

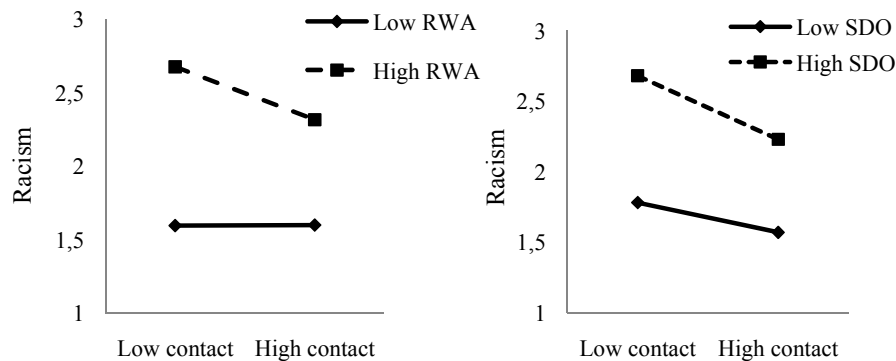


Figure 1. Intergroup contact x Social attitude (RWA and SDO) interaction predicting racism.

Discussion

Study 1 demonstrated a negative correlation between intergroup contact and racism, confirming the contact hypothesis. Moreover, consistent with previous studies (e.g., Van Hiel & Mervielde, 2002, 2005), positive relationships between the social attitudes and prejudice were also obtained. Also as expected, negative correlations between both RWA and SDO and intergroup contact emerged. With respect to the moderation hypotheses, we did not find evidence in support of Allport's (1954) suggestion that personality variables hinder the positive effects of intergroup contact, referred to as Hypothesis 1a. In contrast, we obtained preliminary evidence for Hypothesis 1b which states that effects of intergroup contact would especially be pronounced among high-scoring authoritarians relative to low-scoring authoritarians.

A possible limitation of the research design of Study 1 is that it did not make a qualitative distinction between positive and negative intergroup contact. The use of an exclusively quantitative measure may have masked a possible interaction between

SDO and intergroup contact. It has been repeatedly argued that it is important to take into account the *quality* of intergroup contact (e.g., Islam & Hewstone, 1993; Voci & Hewstone, 2003). In Study 2, we therefore made a distinction between positive and negative contact.

Study 2

Participants' levels of positive and negative contact were assessed in this follow-up study, as well as RWA, SDO, and racism. A similar intergroup contact x RWA interaction as the one obtained in Study 1 was expected for positive contact. However, if a similar moderator effect would occur for negative contact, this would imply that high-scoring authoritarians' levels of prejudice would be even higher.

Method

Participants

The sample ($N = 90$) was recruited by three research students in psychology, who asked their adult neighbors to participate. The sample consisted of 57 females, 32 males and 1 person who did not indicate his/her gender. Mean age was 40.28 years ($SD = 12.15$). All respondents had the Belgian nationality. With respect to their educational level, 56 participants completed higher education, 27 completed higher secondary school, 6 had earned lower scholarly degrees, and 1 person did not indicate his/her educational level.

Measures

Intergroup contact. Based on a combination of previously used items of contact quantity and quality (e.g., Islam & Hewstone, 1993; Voci & Hewstone, 2003), we created eight items assessing the amounts of positive and negative contact. The items were administered with four items for each contact type on seven-point Likert scales (1 = very little; 7 = very much). Sample items of positive contact

are: ‘How often do you have friendly contact with immigrants?’ and ‘How often did you have positive experiences with immigrants up till now?’ (Cronbach’s $\alpha = .93$). Sample items of negative contact are: ‘How often do you have a conflict with immigrants?’ and ‘How often do you have unpleasant contact with immigrants?’ (Cronbach’s $\alpha = .90$).

Authoritarianism and racism. The same scales as in Study 1 were used to measure RWA, SDO, and racism (Cronbach’s α s = .78, .85, and .90, respectively).

Table 3. Descriptive statistics and correlations between positive and negative contact, RWA, SDO, and racism.

Scale	Mean	SD	1	2	3	4	5
1. Positive Contact	3.84	1.59	-	-.06	-.23*	-.19	-.28**
2. Negative Contact	2.34	1.30		-	.26*	.34***	.46***
3. RWA	2.53	.60			-	.52***	.61***
4. SDO	2.07	.64				-	.62***
5. Racism	1.90	.72					-

Note. * $p < .05$; ** $p < .01$; *** $p < .001$

Results

Interrelationships among measures

Table 3 shows the descriptive statistics and interrelationships among our measures. Both types of contact correlated significantly with the other measures, except for the correlation between positive contact and SDO, which only approached significance, $p < .08$. In line with the contact hypothesis, positive contact correlated negatively with racism, while negative contact and racism were positively correlated. Analogous to Study 1 and in line with previous research (e.g., Van Hiel & Mervielde, 2002, 2005), positive and highly significant correlations between

RWA, SDO, and racism were found. Furthermore, negative contact correlated positively with RWA, SDO, and racism, while positive contact was negatively related to these social attitudes.

Table 4. Analyses testing the moderator effects of RWA or SDO and positive and negative contact on racism: standardized β 's.

	RWA	SDO
positive contact	-.21**	-.19*
negative contact	.29***	.29***
social attitude	.43***	.47***
positive contact x social attitude	-.14 ^a	-.16*
negative contact x social attitude	.29***	.18*
positive contact x negative contact	.08	.12

Note. ^a $p < .08$; * $p < .05$; ** $p < .01$; *** $p < .001$

Moderator analyses

Similar to Study 1, we first centered the scores on the independent variables (i.e., RWA, SDO, positive and negative contact) and then calculated their interaction terms. In a first model, the scores on RWA, positive, and negative intergroup contact were entered in a first block, while interaction terms were entered in a second block. A second model was tested with SDO replacing RWA. Table 4 shows the standardized β s for the two models.

We obtained several noteworthy results. All moderator effects were significant (except the positive contact x RWA interaction, which was only marginally significant, $p < .08$). So both positive and negative contact interacted significantly with our social attitude measures. As shown by Figure 2 (plotted values

of the predictors represent one standard deviation above and below the mean), and as confirmed by simple slopes analyses, positive contact was negatively related to racism among high RWA and SDO scorers, $\beta = -.35, p < .01$ and $\beta = -.33, p < .01$, respectively, but not among low RWA and SDO scorers, $\beta = -.10, n.s.$ and $\beta = -.09, n.s.$, respectively, whereas negative contact was positively related to racism among high RWA and SDO scorers, $\beta = .50, p < .001$ and $\beta = .43, p < .001$ respectively, but not among low RWA and SDO scorers, $\beta = .06, n.s.$ and $\beta = .12, n.s.$, respectively. These results thus confirm Study 1 as well as Hypothesis 1b.

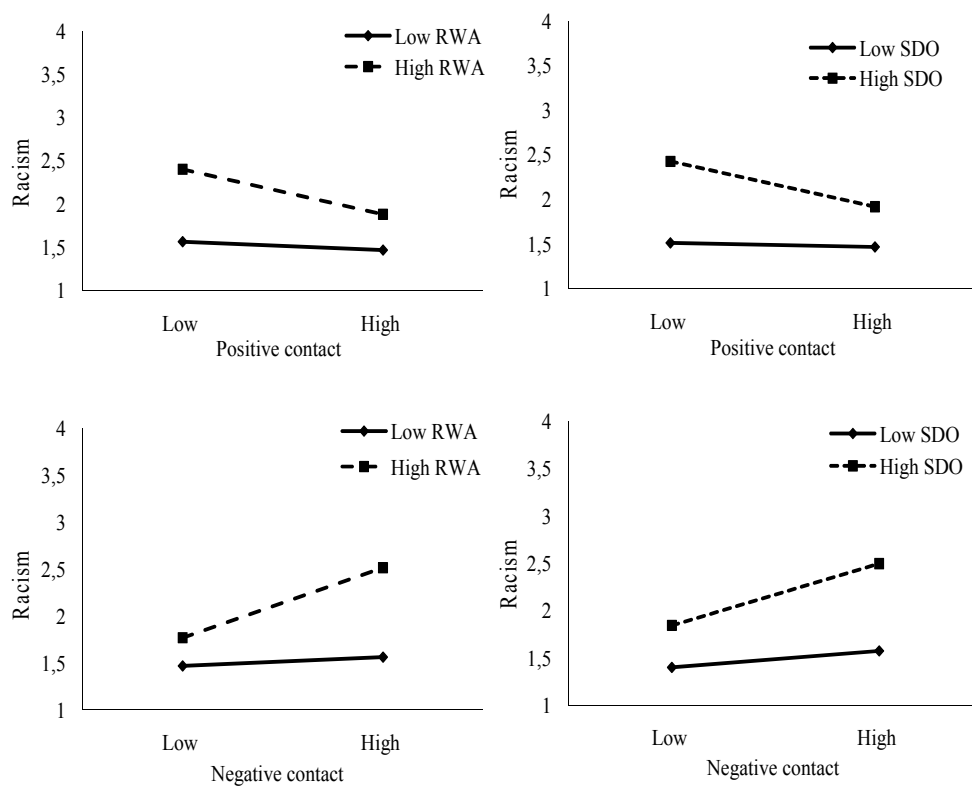


Figure 2. Positive and Negative contact as a function of RWA and SDO predicting racism

General Discussion

The aim of the present studies was twofold. First, we aimed to establish the relationships between social attitudes (i.e., RWA and SDO) and intergroup contact. Second and even more importantly, we wanted to test two competing hypotheses on the moderation effect between intergroup contact and social attitudes on prejudice.

Pertaining to the first aim, we found that high scores on authoritarianism go together with less intergroup contact in general (Study 1) and less positive contact (Study 2), but with more negative contact (Study 2). Hence, the present results show that especially authoritarian individuals are likely to have less contact with outgroup members, and that, as a consequence, the positive effects of contact may be absent for them. Yet, in modern multicultural societies everyone is likely to get in contact with outgroup members to a greater or lesser degree, but it can be expected that the frequency and quality of these contacts diminish with higher levels of RWA and SDO.

But the results of this study are correlational and it is, of course, not possible to make causal inferences about the direction of this relationship. However, several studies using diverse methods showed that the path from contact to prejudice is stronger than the reversed path (see, e.g., Brown et al., 2007; Pettigrew, 1997; Van Dick et al., 2004). For instance Brown et al. (2007) have recently reported that intergroup contact had longitudinal effects on three different measures of intergroup attitudes, i.e. more desired closeness, less negative evaluation, and less inhumanization, while none of these measures predicted intergroup contact over time. Based on this evidence, it is suggested that in the long term intergroup contact could lead to lower levels of RWA and SDO that is, the social attitudes that sustain prejudice. However, only studies using a longitudinal design have the potential to illuminate the causal directions of the relationships among these variables.

Pertaining to the second and most important research aim, on the one hand, Allport (1954) argued that personalities whose prejudice is strongly ingrained in their selves would resist the influences of contact (Hypothesis 1a). On the other hand, there is some evidence obtained among homogenous samples of prison inmates (Hodson, 2008) that prejudiced persons may benefit most of intergroup contact (Hypothesis 1b). Such no-choice contact settings are however known to result in larger effects of intergroup contact than settings that do allow choice (Pettigrew & Tropp, 2006). Despite the overrepresentation of highly educated adults in the present samples, we showed that Hodson's findings still hold in more heterogeneous samples within a context of free-chosen intergroup contact. More specifically, both Study 1 and Study 2 yielded moderator effects in support of Hypothesis 1b which states that (positive) intergroup contact was related to racism especially among high-scoring authoritarians, but not among low-scorers.

However, the devastating impact of negative contact as demonstrated in Study 2 represents a negative side of the same coin. Indeed, the effects of *both* negative and positive contact were especially pronounced among high scorers on RWA and SDO. High scorers on RWA and SDO with high levels of negative intergroup contact showed the highest levels of prejudice. From these results, an interesting positive-negative asymmetry can be inferred: despite the lower mean frequencies of negative relative to positive contact, the regression analyses suggested that negative contact might still have the greatest impact on racism. Indeed, the main effects of negative contact as well as the excitatory effects of negative contact among high scorers on RWA and SDO were clearly more pronounced than the effects of positive contact.

Mechanisms underlying changes in prejudice

How then, can we explain this greater sensitivity for situational contact among high authoritarians? A possible explanation is that intergroup contact may alter the affective processes underlying RWA and SDO-based prejudice. Given that RWA and SDO constitute distinct prejudice dispositions related to distinct intergroup emotions (Duckitt, 2001, 2006; Kossowska, Bukowski, & Van Hiel, 2008), it is plausible that different affective mediators account for the contact x RWA and contact x SDO moderations.

In the contact literature, recent studies have shown repeatedly that intergroup anxiety mediates the relationships between intergroup contact and prejudice (Paolini, Hewstone, Cairns, & Voci, 2004; Stephan et al., 2002; Voci & Hewstone, 2003). Analogously, high levels of anxiety and threat have been shown to mediate the relationship between RWA and prejudice (Duckitt, 2006; Van Hiel, Cornelis, & Roets, 2007). Hence, given that intergroup anxiety is a crucial mediator that explains contact as well as authoritarianism effects on prejudice, it seems plausible to assume that intergroup contact may cause a reduction of RWA-based prejudice via intergroup anxiety.

With respect to the relationships between contact and SDO-based prejudice, dual process theory (Duckitt, 2001) asserts that a lack of positive feelings underlies SDO-based prejudice. We believe that empathy may play an important role here. Batson et al. (1997) already showed that the induction of empathy toward outgroup members can improve outgroup attitudes and it has also been suggested that intergroup contact reduces prejudice by increasing the levels of empathy. Moreover, Hodson (2008) showed that the effect of intergroup contact on SDO-based prejudice among prisoners can be explained by the positive effect of contact on empathy. Thus, it is possible that intergroup contact reduces SDO-based prejudice because it enhances positive emotions.

Implications

Our findings may have important policy implications. Previous studies have convincingly shown the effectiveness of intergroup contact for reducing prejudice (Pettigrew & Tropp, 2006). However, the idea that contact ‘only works’ among those who are already at a low level of prejudice precludes it from being adapted as a social engineering tool. That is, if this idea is correct, contact should be considered a medicine for racism solely for people who should not be cured since they have no prejudiced attitudes. In line with this, Esses and Hodson (2006) also expressed their concerns about the possibility to change the attitudes of right-wing authoritarians and social dominators because they found that especially these individuals believe that their ethnic prejudice is inevitable, justified, and caused by factors beyond their control.

Fortunately, the present data as well as Hodson’s (2008) results show the effectiveness of intergroup contact for those individuals who are most in need of changing their attitudes. These people are thus not resistant to change. It should however be noted that even with high levels of positive contact, high scorers on RWA and SDO are still more prejudiced than low scorers. Hence, our findings do not indicate that positive contact completely eliminates the tendency of high-scoring authoritarians to be prejudiced, but only that it reduces this tendency. Moreover, the present results make it clear that indirect strategies can only be effective when negative intergroup contact is reduced to an absolute minimum. Hence, for high-scoring authoritarians it is important to create situations of positive intergroup contact, which might be achieved by fulfilling the conditions formulated by Allport (1954). Although Pettigrew and Tropp (2006) have shown that positive outcomes may even emerge in the absence of several of Allport’s conditions, the present results suggest that these conditions may be much more important when contact is used to alter prejudice among high-scoring authoritarians.

References

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: testing and interpreting interactions*. Newbury Park: Sage Publications.
- Allport, G. W. (1954). *The nature of prejudice*. Reading, MA: Addison-Wesley.
- Altemeyer, R. (1981). *Right-wing authoritarianism*. Winnipeg: University of Manitoba Press.
- Altemeyer, R. (1998). The other “authoritarian personality”. *Advances in Experimental Social Psychology*, 30, 47-91.
- Batson, C. D., Polycarpou, M. P., Harmon-Jones, E., Imhoff, H. J., Mitchener, E. C., Bednar, L. L., et al. (1997). Empathy and attitudes: Can feeling for a member of a stigmatized group improve feelings toward the group? *Journal of Personality and Social Psychology*, 72, 105-118.
- Billiet, J., & De Witte, H. (1991). *Naar racisme neigende houdingen in Vlaanderen: Typologie en maatschappelijke achtergronden* [Attitudes towards racism in Flanders: Typology and societal backgrounds]. Leuven: Sociologisch Onderzoeksinstituut (SOI).
- Brown, R., Eller, A., Leeds, S., & Stace, K. (2007). Intergroup contact and intergroup attitudes: A longitudinal study. *European Journal of Social Psychology*, 37, 692-703.
- Brown, R., & Hewstone, M. (2005). An integrative theory of intergroup contact. *Advances in Experimental Social Psychology*, 37, 255-343.
- Duckitt, J. (2001). A dual-process cognitive-motivational theory of ideology and prejudice. *Advances in Experimental Social Psychology*, 33, 41-113.
- Duckitt, J. (2006). Differential effects of right wing authoritarianism and social dominance orientation on outgroup attitudes and their mediation by threat from and competitiveness to outgroups. *Personality and Social Psychology Bulletin*, 32, 684-696.

- Esses, V. M., & Hodson, G. (2006). The role of lay perceptions of ethnic prejudice in the maintenance and perpetuation of ethnic bias. *Journal of Social Issues*, 62, 453-468.
- Hodson, G. (2008). Interracial prison contact: The pros for (social dominant) cons. *British Journal of Social Psychology* 47, 325-351.
- Islam, M. R., & Hewstone, M. (1993). Dimensions of contact as predictors of intergroup anxiety, perceived outgroup variability and outgroup attitude: An integrative model. *Personality and Social Psychology Bulletin*, 19, 700-710.
- Kossowska, M., Bukowski, M., & Van Hiel, A. (2008). The impact of submissive versus dominant authoritarianism and negative emotions on prejudice. *Personality and Individual Differences*, 45, 744-749.
- Meloen, J. D. (1991). Inventarisatie Nederlandse F-schalen 1959-1990. In P. Scheepers, & R. Eisinga (Eds.), *Intolerant en Onderdanig* (pp. 186-222). Nijmegen, Netherlands: ITS.
- Paolini, S., Hewstone, M., Cairns, E., & Voci, A. (2004). Effects of direct and indirect cross-group friendships on judgments of Catholics and Protestants in Northern Ireland: The mediating role of an anxiety-reduction mechanism. *Personality Social Psychology Bulletin*, 30, 770-786.
- Pettigrew, T. F. (1997). Generalized intergroup contact effects on prejudice. *Personality and Social Psychology Bulletin*, 23, 173-185.
- 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.
- Pratto, F., Sidanius, J., Stallworth, L. M., & Malle, B. F. (1994). Social Dominance Orientation: A personality variable predicting social and political attitudes. *Journal of Personality and Social Psychology*, 67, 741-763.

- Stephan, W. G., Bonieckie, K. A., Ybarra, O., Bettencourt, A., Ervin, K.S., Jackson, L.A., et al. (2002). The role of threats in the racial attitudes of blacks and whites. *Personality and Social Psychology Bulletin*, 28, 1242-1254.
- Van Dick, R., Wagner, U., Pettigrew, T. F., Christ, O., Wolf, C., Petzel, T., et al. (2004). Role of perceived importance in intergroup contact. *Journal of Personality and Social Psychology*, 87, 211-227.
- Van Hiel, A., Cornelis, I., & Roets, A. (2007). The intervening role of social worldviews in the relationship between the five-factor model of personality and social attitudes. *European Journal of Personality*, 21, 131-148.
- Van Hiel, A., Cornelis, I., Roets, A., & De Clercq, B. (2007). A comparison of various authoritarianism scales in Belgian Flanders. *European Journal of Personality*, 21, 149-168.
- Van Hiel, A., & Duriez, B. (2002). Meetinstrument voor individuele verschillen in sociale dominantie oriëntatie. [A measure of individual differences in social dominance orientation] *Nederlands Tijdschrift voor de Psychologie*, 57, 114-116.
- Van Hiel, A., & Mervielde, I. (2002). Explaining conservative beliefs and political preferences: A comparison of social dominance orientation and authoritarianism. *Journal of Applied Social Psychology*, 32, 965-976.
- Van Hiel, A., & Mervielde, I. (2005). Authoritarianism and social dominance orientation: Relationships with various forms of racism. *Journal of Applied Social Psychology* 35, 2323-2344.
- Voci, A., & Hewstone, M. (2003). Intergroup contact and prejudice towards immigrants in Italy: The mediational role of anxiety and the moderational role of group salience. *Group Processes and Intergroup Relations*, 6, 37-54.

Chapter 3

Direct contact and authoritarianism as moderators between extended contact and reduced prejudice: Lower threat and greater trust as mediators

Abstract

Using a representative sample of Dutch adults ($N = 1238$), we investigated the moderating influence of direct contact and authoritarianism on the potential of extended contact to reduce prejudice. As expected, direct contact and authoritarianism moderated the effect of extended contact on prejudice. Moreover, the third-order moderation effect was also significant, revealing that extended contact has the strongest effect among high authoritarians with low levels of direct contact. We identified trust and perceived threat as the mediating processes underlying these moderation effects. The present study thus attests to the theoretical and practical relevance of reducing prejudice via extended contact. The discussion focuses on the role of extended contact in relation to direct contact and authoritarianism as well as on the importance of trust in intergroup contexts.

This chapter is based on Dhont, K., & Van Hiel, A. (in press). Direct contact and authoritarianism as moderators between extended contact and reduced prejudice: Lower threat and greater trust as mediators. *Group Processes & Intergroup Relations*

Introduction

Originally proposed by Wright, Aron, McLaughlin-Volpe, and Ropp (1997), the extended contact hypothesis asserts that the mere fact of knowing an ingroup member who maintains close relations with an outgroup member ameliorates outgroup attitudes. During the past decade, correlational and (quasi-)experimental support for this hypothesis has increased, demonstrating that people who witness friendships between in- and outgroup members report lower levels of outgroup prejudice than those without extended contact experiences (Paolini, Hewstone, Cairns, & Voci, 2004; Turner, Hewstone, Voci, & Vonofakou, 2008; Wright et al., 1997; for reviews, see Turner, Hewstone, Voci, Paolini, & Christ, 2007; Vonofakou et al., 2008).

However, despite the growing evidence in support of the extended contact hypothesis, researchers have only recently started to investigate the conditions that may increase or decrease the effectiveness of extended contact in reducing prejudice or, in other words, the possible moderators of the extended contact effect (Christ et al., 2010; Hodson, Harry, & Mitchell, 2009). Building on this recent work, the present study investigated both direct contact (i.e., a contextual variable) and authoritarianism (i.e., an ideological variable) as moderators of the extended contact effect on prejudice. At the same time, we examined the mediating role of trust and perceived threat on these moderation effects.

Moderators of extended contact effects

One of the biggest advantages of extended contact over direct contact is that it can reduce prejudice without being contingent on a person's opportunities to interact personally with outgroup members (Christ et al., 2010; Turner, Hewstone, & Voci, 2007; Turner et al. 2008). Indeed, several circumstances may prevent direct contact, e.g., when people do not work together, do not attend the same school, or do

not live in the same neighborhood. Hence, especially for those individuals with limited or no opportunities for direct interaction with outgroup members, extended contact may be a valuable alternative (Turner, Hewstone, & Voci, 2007; Vonofakou et al., 2008; Wright et al., 1997). Moreover, Christ et al. (2010) obtained both cross-sectional and longitudinal evidence supporting the hypothesis that extended contact is most effective among those people who live in segregated areas having only few or no direct cross-group friendships. Hence, when people do not benefit from direct contact because of a segregated context, extended contact seems to have the strongest impact on prejudice.

Whereas Christ et al. (2010) investigated direct contact as a moderator of the extended contact effect, other researchers recently focused on Right-Wing Authoritarianism (RWA, Altemeyer, 1981, 1998) as a moderator of both direct and extended contact effects. RWA is defined as the covariation of conventionalism, authoritarian submission, and authoritarian aggression and is considered a broad social ideological attitude. Although authoritarianism is highly predictive of prejudice (Duckitt, 2001; Duckitt & Sibley, 2007; Van Hiel & Mervielde, 2002, 2005), recent studies have also demonstrated that intergroup contact works better at reducing prejudice among high rather than low authoritarians (Dhont & Van Hiel, 2009, for anti-immigrant prejudice; Hodson, Harry, & Mitchell, 2009, for anti-homosexual prejudice; for a review, see Hodson, in press). Moreover, Harry, and Mitchell, (2009) reported that the strongest beneficial effect of extended contact on anti-homosexual prejudice emerged among high authoritarians.

The present study combined both moderation perspectives and investigated the three-way interaction effect between extended contact, direct contact, and RWA. As we argued above, people who do not personally benefit from positive contact experiences profit the most from their friends' or relatives' contact experiences. However, it could be argued that these beneficial effects may even be stronger

among high authoritarians because this group is likely to be most influenced by the other members of their group. People learn about other ingroup members' attitudes and behavior toward outgroup members by witnessing positive intergroup interactions. These interactions reflect a group consensus that intergroup contact is positively valued (Turner et al., 2008; Wright et al., 1997). Driven by their underlying motivation to conform to others, which satisfies their needs for social order and stability (Duckitt, 2001; Jugert, Cohrs, & Duckitt, 2009), high authoritarians can be expected to be the least critical of their ingroup members' opinions and attitudes. They are therefore more likely to adapt and adhere to perceived social norms. In sum, extended contact may have the strongest impact on prejudice among high authoritarians who are isolated from direct positive contact.

The mediating role of threat and trust

Why should people with little or no direct positive contact benefit more from extended contact than people who experience positive contact themselves? Extending the study of Christ et al. (in press), we investigated whether the psychological process behind this moderator effect resides in the potential of extended contact to reduce perceived outgroup threat and to build and restore trust in the outgroup. Whereas perceived threat relates to feelings of fear, anger, insecurity, and uncertainty (Stephan & Renfro, 2002; Riek, Mania, & Gaertner, 2006), trust is associated with feelings of security and transparency and is based on confidence in another person's good intentions or behavior (Lewicky, McAllister, & Bies, 1998; Rousseau, Sitkin, Burt, & Camerer, 1998; Tropp, 2008).

Researchers have considered perceived threat and lack of trust as central determinants of intergroup conflict and prejudice (Dovidio, Gaertner, Kawakami, & Hodson, 2002; Stephan & Renfro, 2002; Riek et al., 2006; Tam et al., 2008). However, a growing body of research has shown that positive contact with outgroup

members can reduce threat perceptions (Pettigrew, Christ, Wagner, & Stellmacher, 2007; Tausch, Tam, Hewstone, Kenworthy, & Cairns, 2007) and increase outgroup trust (Hewstone, Cairns, Voci, Hamberger, & Niens, 2006; Tam, Hewstone, Kenworthy, & Cairns, 2009; Tausch et al., 2007). Of central importance here, is that some recent studies demonstrated that extended contact is also able to reduce threat perceptions (Pettigrew et al. 2007) and establish trust (Tam et al., 2009).

Hence, when people cannot personally benefit from positive contact experiences, they can still rely on their friends' or relatives' positive contact experiences with outgroup members. As such, they may become aware that ingroup members do not perceive the outgroup as threatening and that they share a social network that directly or indirectly connects ingroup and outgroup members through positive relations, which increases outgroup trust (Tam et al., 2009). Moreover, this beneficial effect of extended contact on perceived threat and trust can be expected to be especially pronounced among people who cannot benefit from direct positive contact, exactly because extended contact represents the only source of positive influence on their feelings of threat and trust. Therefore, we predicted that, insofar as extended contact decreases threat perceptions and establishes trust, it is particularly important in decreasing prejudice when people do not benefit from direct contact.

We also argue that the processes of reducing threat perceptions and establishing trust are also likely to explain why high scorers on RWA are most sensitive to the influence of extended contact. Indeed, according to Duckitt (2001), RWA is "driven by fear and threat generating self-protective, defensive motivational needs for social control and security" (p. 85). RWA has been strongly linked to the belief that the world is a dangerous and chaotic place (e.g., Altemeyer, 1998; Duckitt, 2001; Van Hiel, Cornelis, & Roets, 2007). This basic motivational scheme underlying RWA is also reflected in the readiness to divide the social world into an 'us' versus 'them' scenario in which the good and moral ingroup members should

not trust the bad and immoral outgroup members, who are perceived as threatening (Duckitt, 2001). In other words, threat perceptions and a lack of trust fuel the prejudices of high scorers on RWA. Extended contact has the capacity to reduce threat perceptions (Pettigrew et al., 2007) and establish outgroup trust (Tam et al., 2009); therefore, it should lead to a sharp decrease in RWA-based prejudice. Hodson, Harry, and Mitchell (2009) provided initial support for the mediation effect via threat. They showed that, among high scorers on RWA, perceived threat mediated the effect of extended cross-group friendships with homosexuals on anti-homosexual prejudice.

It should be noted that scholars have theoretically differentiated several types of threat. Stephan and Renfro (2002) distinguished threats to the ingroup's welfare, referred to as realistic threat, from threats to the ingroup's value system, referred to as symbolic threat. However, it was, beyond the scope of the present research to compare the relative strength of different types of threat as mediators of the extended contact effect on prejudice, and therefore we focused here on realistic threat.

The present study

In a large, representative sample of Dutch adults, the present study investigated contact with and prejudice toward immigrants from the Turkish and Moroccan populations, which constitute the two largest Muslim communities in the Netherlands. Our goal was to investigate direct contact, indicated by contact quantity and quality, and RWA as moderators of the extended contact effect and to test the mediating processes of perceived threat and trust.

Moving beyond previous studies demonstrating that the impact of extended contact is most pronounced among people with low levels of direct contact (Christ et al., 2010) as well as among high scorers on RWA (Hodson, Harry, & Mitchell,

2009), we expected a three-way interaction effect between extended contact, direct contact, and RWA on prejudice, where high authoritarians with low levels of direct positive contact would benefit most from extended contact. Moreover, we conducted mediated moderation analyses (Muller, Judd, & Yzerbyt, 2005) to test whether trust and perceived threat mediate the moderator effects of direct contact and authoritarianism on the relationship between extended contact and reduced prejudice.

Method

Sample

We collected the data for this study in a nationally representative sample of Dutch adults (non-Muslim and non-Jewish) without a migration background as part of a larger research project on intergroup contact and attitudes. A total of 1850 people were invited by a survey company to participate in the study and to complete a questionnaire that was administered online in October 2009. Of this sample, 1440 respondents initially agreed to participate, but 202 persons did not complete the full survey. The final sample of 1238 respondents (response rate = 67%) was stratified by age, gender, educational level, family income, and province. Respondents also indicated their religious views. Table 1 summarizes the sample characteristics for age, gender, educational level, family income, and religiosity.

Measures

The questionnaire used a Dutch synonym for immigrant, i.e. ‘allochtoon’, which commonly refers to immigrants with non-European roots and particularly to people belonging to the large Muslim communities of Turks and Moroccans. This meaning of the term was also explained at the start of the questionnaire. The term ‘autochtoon’ was used to refer to native Dutch people.

Table 1. Coding and proportions for demographic variables in the sample (and in the Netherlands if available) as well as the correlations with RWA, prejudice, trust, and threat

Variable	Coding	Proportions in the sample (and in the Netherlands)	RWA	Prejudice	Trust	Threat
Age	Continuous: $M = 47.12$, $SD = 15.61$.09**	.14***	.01	.04
	18 – 29 years	17% (17%)				
	30 – 39 years	17% (16%)				
	40 – 49 years	20% (20%)				
	50 – 59 years	19% (18%)				
	60 ≤	27% (29%)				
Gender	-1 = female +1 = male	51% (51%) 49% (49%)	.06*	-.03	-.03	-.05 [†]
Level of Education	1 = Lower 2 = Middle 3 = Higher	35.4% (34%) 40.2% (41%) 24.4% (25%)	-.28***	-.26***	.24**	-.26***
Family Income	1 = less than €11 000 2 = Between €11 000 and € 23 000 3 = Between €23 000 and €34 000 4 = Between €34 000 and €56 000 5 = More than €56 000 Not indicated	6.3% (5%) 11.9% (19%) 24.5% (17%) 22.5% (32%) 11.1% (27%) 23.7%	-.05 [†]	-.08**	.10***	-.08**
Religiosity	-1 = atheist, agnostic, or non-religious +1 = Christian (or subdivision)	49.8% 50.2%	.23***	-.02	.03	-.05 [†]

Note. [†] $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

Intergroup contact. To assess the levels of *extended contact*, respondents completed four items (Cronbach's $\alpha = .84$), adapted from previous research (Tam et al., 2009; Turner et al., 2008), on seven-point scales (1 = none; 7 = many). The items were: 'How many native Dutch people do you know in your circle of acquaintances who get along well with immigrants?'; 'How many people in your circle of native Dutch friends have immigrants as friends?'; 'How many native Dutch people living in your neighborhood do you know who get along well with immigrants?'; and 'How many members of your family have immigrants as friends?'

We adapted the measures of quantity and quality of intergroup contact from previous studies (e.g., Islam & Hewstone, 1993; Voci & Hewstone, 2003). We assessed *quantity of intergroup contact* with four items on seven-point scales ranging from never (1) to very much (7). Sample items are: 'How much contact do you have with immigrants?' and 'How often do you have a conversation with immigrants?' (Cronbach's $\alpha = .87$).

To assess the *quality of intergroup contact*, participants answered the stem question, 'How often do the following characteristics typify your contact with immigrants?' which was followed by eight adjectives: pleasant, annoying (reverse coded (R)), on an equal footing, nice, distant (R), forced (R), friendly, and hostile (R). Participants rated the items (Cronbach's $\alpha = .89$) on seven-point scales (1 = never; 7 = very much).

Following the procedure of Voci and Hewstone (2003; see also, Tam, Hewstone, Cairns, Tausch, Maio, & Kenworthy, 2007; Tam et al., 2009), we calculated a single multiplicative index of frequent positive contact to simultaneously take into account the quantity and quality of contact. Prior to multiplication, the scores of quantity of intergroup contact were recoded so that 0 corresponded to no contact and 6 to very frequent contact, and the quality scores

were recoded so that the scores ranged from -3 to +3. A higher score on the multiplicative index thus reflects more frequent, high-quality contact. Respondents who indicated that they never have contact with immigrants for all contact quantity items did not complete the quality items ($N = 85$) and scored 0 on the multiplicative direct contact measure.

Next, participants completed the other measures on seven-point scales anchored by strongly disagree (1) and strongly agree (7).

Authoritarianism We administered the 12-item RWA³D scale (Funke, 2005; see Van Hiel, Cornelis, Roets, & De Clercq, 2007) to assess the participants' levels of *authoritarianism* (Cronbach's $\alpha = .67$). Sample items are: 'What our country really needs is a strong, determined leader who will crush evil and take us back to our true path' and 'Obedience and respect for authority are the most important virtues children should learn'.

Table 2. Means, Standard Deviations, and Correlations between the Predictors, Mediators, and Outcome Variable

Scale	Mean	<i>SD</i>	2	3	4	5	6
1. Extended contact	2.76	1.14	.46***	-.23***	.38***	-.28***	-.37***
2. Direct contact	1.34	2.99		-.21***	.52***	-.35***	-.37***
3. RWA	3.91	0.77			-.44***	.49***	.44***
4. Trust	4.19	1.25				-.65***	-.64***
5. Threat	3.59	1.53					.66***
6. Prejudice	2.86	1.51					

Note. * $p < .05$; ** $p < .01$; *** $p < .001$

Mediators. The following four items measured respondents' levels of *outgroup trust* (Cronbach's $\alpha = .82$): 'When immigrants come near me, I do not trust them most of the time' (R); 'I can trust immigrants with personal information'; 'The immigrants in our country can easily be trusted'; and 'Generally, there are enough reasons to distrust the immigrants in our country' (R).

Perceived threat (Cronbach's $\alpha = .84$) was assessed with three items based on Stephan et al. (2002), which focused on perceived threat against the Dutch economy and the employment of native Dutch people by immigrants: 'Immigrants have more economic power than they deserve in this country'; 'Immigrants make it harder for native Dutch people to find a decent job'; and 'The presence of immigrants in our country has a negative influence on the Dutch economy'.

Anti-immigrant prejudice. Respondents completed three items measuring prejudice toward immigrants (Billiet & De Witte, 1991; Van Hiel & Mervielde, 2005). The items (Cronbach's $\alpha = .77$) were: 'Marrying an immigrant is like asking for trouble'; 'Generally speaking, immigrants are not as smart as Dutch people'; and 'the Dutch should never have allowed immigrants into their country'.

Results

Preliminary analyses

Confirmatory factor analysis using LISREL was conducted to test whether the mediator and outcome scales constituted distinct variables. A baseline model with trust, threat, and prejudice items loading on their respective factors fitted the data reasonably well, Satorra-Bentler Scaled $\chi^2 (31) = 98.85, p < .001$; Comparative Fit Index = .995; Root Mean Square Error of Approximation = .044; Standardized Root-Mean-square Residual = 0.024.¹ Alternative models that blended items of different scales into common factors yielded a significantly worse fit compared to the baseline model, $\Delta\chi^2$'s $> 158, p$'s $< .001$.

Descriptive statistics

Means and standard deviations for all measures are presented in Table 2, along with their correlations. Both direct and extended contact were significantly and negatively related to RWA, prejudice, and threat, whereas significant positive relationships emerged for trust. Moreover, RWA, prejudice, and threat were positively interrelated, while they were negatively related to trust.

Mediated moderation analyses

Series of hierarchical regression analyses (Aiken & West, 1991) were conducted to test the hypothesized moderation effects, followed by additional regression analyses to test for mediated moderation effects (Muller et al., 2005). More specifically, in a first series of analyses, we tested the extended contact x direct contact moderation as well as the extended contact x RWA moderation on, respectively, prejudice (i.e., the dependent variable), and on trust and threat (i.e., the mediators). Next, a second series of analyses focused on the three-way interaction effect between extended contact, direct contact, and RWA on prejudice, trust, and threat. Finally, a third series of analyses tested whether trust and threat mediate the moderation effects on prejudice.

In all regression analyses, the demographic variables of age, gender, educational level, family income, and religiosity were entered as control variables in the first step, the centered scores of the independent variables were entered in a second step, and the interaction terms (i.e., the multiplied centered scores) were entered in a third step of the regression models. Because many respondents (23.7%) did not indicate their family income, we substituted the sample mean for the missing values to preserve the whole sample. Table 1 reports the relationships between the demographic variables and RWA, prejudice, trust, and threat.

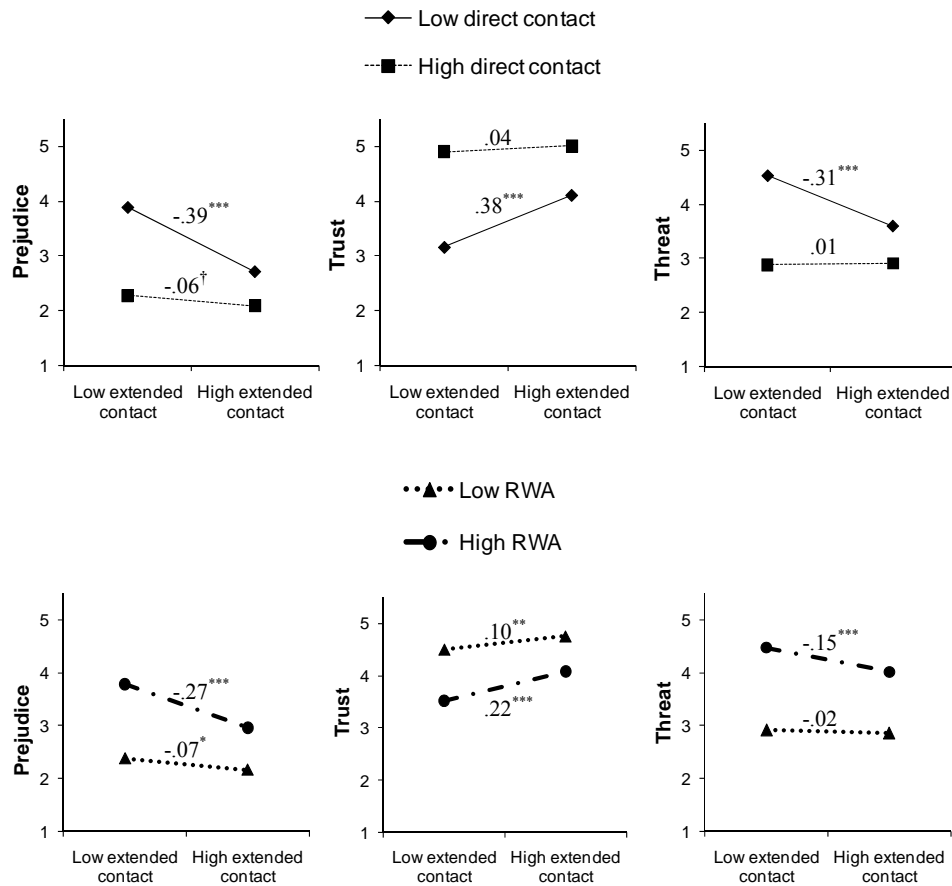


Figure 1. Extended contact x Direct contact moderation and Extended contact x RWA moderation predicting prejudice, trust, and threat. Plotted values are β -values of the slopes at 1 SD above and below the mean. $^{\dagger} p < .10$; $^{*} p < .05$; $^{**} p < .01$; $^{***} p < .001$

Two-way moderations. The analyses testing the extended contact x direct contact moderation effects revealed significant main effects of extended and direct contact as well as significant interaction effects on prejudice, trust, and threat (see Table 3). In line with Christ et al. (2010), simple slopes analyses (see Figure 1) indicated that extended contact was strongly related to prejudice when the level of direct contact was low (1 SD below the mean), whereas this relationship was only marginally significant when the level of direct contact was high (1 SD above the mean). Furthermore, similar interaction patterns were present for trust and threat.

The analyses testing the extended contact x RWA moderation effects, controlling for direct contact, revealed significant main effects of extended contact and RWA as well as a significant interaction effect on prejudice (see Table 3). In line with Hodson, Harry, & Mitchell (2009), simple slopes analyses (see Figure 1) confirmed that extended contact was more strongly related to prejudice among people scoring high on RWA (1 SD above the mean), than among low scorers (1 SD below the mean).² Additionally, we were able to show an analogous pattern of results for trust and threat.

Three-way moderation. In a second series of hierarchical regression analyses, we tested whether the two-way interaction effects reported above were further qualified by a three-way interaction effect between extended contact, direct contact, and RWA. In these analyses, the three variables along with their two-way interaction terms as well as the three-way interaction term were included in the analyses as predictors of prejudice, trust, and threat. As reported in Table 3, we found significant three-way interaction effects on prejudice and threat, and a marginally significant three-way interaction effect on trust. These three-way interaction patterns are plotted in Figure 2, depicting the relationships between extended contact and prejudice, trust, and threat at low and high levels of direct contact and RWA (i.e., 1 SD above and below the mean).

Table 3. Results of the hierarchical regression analyses: presented values of the main and interaction effects are β -values (the demographic variables are controlled for in step 1).

	<u>Prejudice</u>		<u>Trust</u>		<u>Threat</u>		Prejudice, control-ling for mediators
	Step 2	Step 3	Step 2	Step 3	Step 2	Step 3	
Extended contact	-.22***	-.23***	.21***	.21***	-.14***	-.15***	-.10***
Direct contact	-.25***	-.37***	.41***	.53***	-.27***	-.38***	-.05 [†]
Extended contact x Direct contact		.22***		-.22***		.21***	.06**
R^2	.224	.255	.341	.370	.190	.219	.540
Extended contact	-.17***	-.17***	.16***	.16***	-.08**	-.08**	-.09***
Direct contact	-.21***	-.20***	.37***	.37***	-.22***	-.21***	-.01
RWA	.35***	.36***	-.33***	-.33***	.44***	.44***	.10***
Extended contact x RWA		-.10***		.06**		-.07**	-.06**
R^2	.331	.336	.429	.432	.344	.348	.546
Extended contact	-.17***	-.17***	.16***	.16***	-.08**	-.08**	-.09***
Direct contact	-.21***	-.28***	.37***	.46***	-.22***	-.29***	-.04
RWA	.35***	.32***	-.33***	-.30***	.44***	.41***	.08***
Extended contact x Direct contact		.13***		-.16***		.12***	.04 [†]
Extended contact x RWA		-.09***		.04 [†]		-.04	-.06**
Direct contact x RWA		-.06*		.05 [†]		-.08**	-.02
Extended contact x Direct contact x RWA		.09**		-.05 [†]		.08**	.05 [†]
R^2	.331	.361	.429	.452	.344	.370	.549

Note. [†] $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

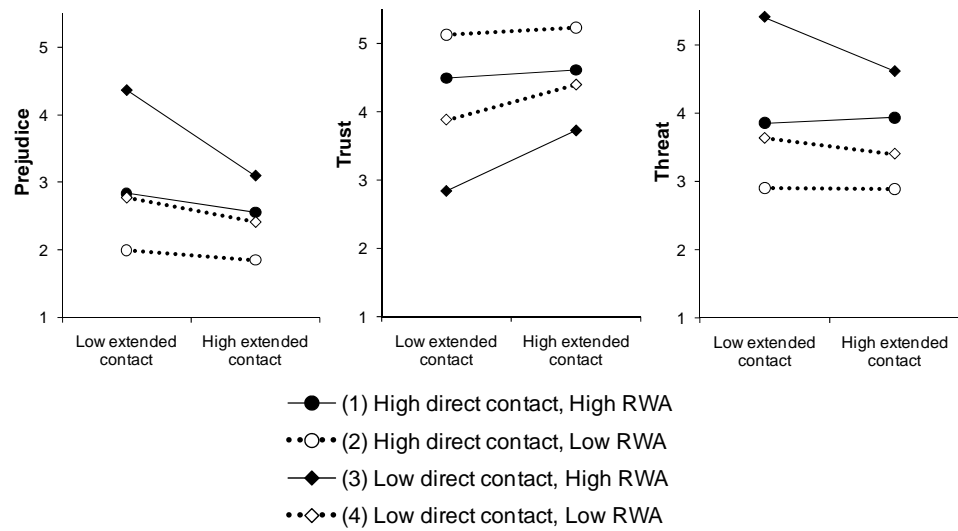


Figure 2. Patterns of three-way interactions between extended contact, direct contact, and RWA predicting prejudice, trust, and threat. Plotted values of the predictors represent 1 SD above and below the mean.

Simple slopes analyses showed that the strongest effect of extended contact on prejudice, trust, and threat were found among people with a low level of direct contact and a high level of RWA (see Table 4). Moreover, slope difference tests (Dawson & Richter, 2006) consistently showed a significantly stronger slope of the extended contact effect among people with a low level of direct contact and a high level of RWA compared to the slopes in the other three combinations of direct contact and RWA, all t 's > 4.23 , p 's $< .001$, all t 's > 2.27 , p 's $< .05$, and all t 's > 2.60 , p 's $< .01$, for prejudice, trust, and threat, respectively.

Table 4. Results of the simple slopes analyses testing the effects (β -values) of extended contact on prejudice, trust, and threat at High (+1SD) and Low (-1SD) levels of direct contact and RWA

	Prejudice	Trust	Threat
1. High direct contact, High RWA	-.09 [†]	.05	.03
2. High direct contact, Low RWA	-.05	.04	-.01
3. Low direct contact, High RWA	-.42 ^{***}	.36 ^{***}	-.26 ^{***}
4. Low direct contact, Low RWA	-.12 [*]	.21 [*]	-.07

Note. [†] $p < .10$; ^{*} $p < .05$; ^{**} $p < .01$; ^{***} $p < .001$

Mediation analyses. In the following analyses we tested whether trust and threat are mediating variables that account for the two- and three-way moderation effects on prejudice. First, we tested whether trust and threat mediated the extended contact x direct contact moderation on prejudice. Therefore, we needed to test an additional regression model that included trust and threat (i.e., the mediators) along with extended and direct contact and their interaction term as predictors of prejudice. This analysis revealed significant effects of trust and threat, $\beta = -.32$, $p < .001$ and $\beta = .40$, $p < .001$, respectively, whereas the moderation effect between extended contact and direct contact was reduced (see last column of Table 3). To confirm that the mediation effect is not caused by only one of the two mediators, two additional regression analyses were conducted in which we separately tested the mediating role of trust and threat. These analyses confirmed that the inclusion of trust, $\beta = -.56$, $p < .001$, as well as the inclusion of threat, $\beta = .55$, $p < .001$, reduced the extended contact x direct contact interaction effect, $\beta = .09$, $p < .001$ and $\beta = .10$, $p < .001$,

respectively (Sobel's $z = 8.15, p < .001$ and $z = 6.47, p < .001$, respectively). Because significant effects of trust and threat on prejudice emerged, and the residual extended contact x direct contact interaction was reduced, the requirements for mediated moderation were fulfilled. Hence, it can be concluded that the moderation effect of extended contact x direct contact on prejudice is mediated through both trust and threat.

Next, we tested whether trust and threat mediated the extended contact x RWA moderation on prejudice. Therefore, we tested a regression model that included trust and threat along with extended contact, RWA, and their interaction term as predictors of prejudice. This analysis yielded significant effects of trust and threat, $\beta = -.30, p < .001$ and $\beta = .37, p < .001$, respectively, while the extended contact x RWA interaction effect was significantly reduced compared to a model in which the mediators were not included (see Table 3). Again, two additional regression analyses that separately tested the mediating role of trust and threat were conducted, confirming that the inclusion of trust, $\beta = -.49, p < .001$, and threat, $\beta = .50, p < .001$, both reduced the extended contact x RWA interaction effect, $\beta = -.07, p < .001$ and $\beta = -.07, p < .001$, respectively (Sobel's $z = 2.74, p < .01$ and $z = 2.83, p < .005$, respectively). Whereas Hodson, Harry, and Mitchell, (2009) found that that the strong effect of extended contact among high scorers on RWA was mediated through perceived threat, we can conclude that both trust and threat mediate the moderation effect between extended contact and RWA on prejudice.

Finally, we tested whether trust and threat mediated the three-way interaction effect on prejudice. A regression analysis was conducted with extended contact, direct contact, RWA, their two- and three-way interaction terms as well as trust and threat as predictors of prejudice. Significant effects of trust and threat were obtained, $\beta = -.30, p < .001$ and $\beta = .36, p < .001$, respectively, whereas the effect of three-way interaction term was curbed (see Table 3). Testing the mediating role of

trust in a separate analysis revealed that the inclusion of trust in the analysis, $\beta = -.47$, $p < .001$, reduced the three-way interaction effect to some extent, $\beta = -.07$, $p < .05$. The indirect effect of the three-way interaction effect via trust was marginally significant, Sobel's $z = 1.72$, $p < .10$. However, an additional regression analysis testing whether trust mediated the extended contact effect on prejudice among people with a low level of direct contact and a high level of RWA, yielded a pronounced indirect effect, Sobel's $z = 7.45$, $p < .001$ of extended contact via trust. Furthermore, a regression analysis to test the mediating role of threat separately revealed that the inclusion of threat, $\beta = .49$, $p < .001$, also reduced the three-way interaction effect, $\beta = .05$, $p = .05$. A Sobel test confirmed the significant indirect three-way interaction effect via threat, Sobel's $z = 2.43$, $p = .01$. In sum, the potential of extended contact to increase trust and to decrease threat is the underlying mechanism that explains why extended contact most strongly reduces prejudice among high scorers on RWA with low levels of direct contact.³

Discussion

The present results demonstrated that the effects of extended contact on prejudice were stronger when people reported low, rather than high levels of direct contact (Christ et al., in press) as well as among high scorers rather than low scorers on RWA (Hodson, Harry, & Mitchell, 2009)⁴. Moreover, we found that both trust and perceived threat mediated these moderation effects. As such, the present results extend Christ et al. (2010) by uncovering two important process variables underlying the extended contact x direct contact moderation effect. Our results also complement Hodson, Harry, and Mitchell (2009) who demonstrated that perceived threat mediated the relationship between extended contact and prejudice among high authoritarians, by showing mediation effects for both threat and trust. Moving beyond previous work, we were the first to demonstrate that a three-way interaction

effect further qualified the moderation effects of direct contact and authoritarianism on prejudice. In particular, we found that extended contact has the greatest effects on prejudice among high authoritarians who do not benefit from direct positive contact via the process of generating trust and reducing threat.

We obtained support for our hypotheses with a large representative sample that reflects the adult population of the Netherlands. Social psychological research rarely relies on such a heterogeneous sample, but rather tends to use convenience samples (e.g., student samples). The high external validity is thus an important strength of the present study and contributes to the development of theoretical principles and practical implications that can be applied to a broad population.

In the following sections, we first discuss the role of trust and perceived threat and reflect on our finding that extended contact is an effective means of combating prejudice among authoritarians. Before concluding, we highlight some limitations of the present study.

Extended contact effects on threat perceptions and outgroup trust

The present results revealed that threat perceptions and outgroup trust are mediating variables that explain the beneficial effects of extended contact for people with little or no direct positive contact experiences. The mediation effect of perceived threat that we found is consistent with several previous studies (Pettigrew et al., 2007; Tausch et al., 2007). Our results not only show that extended contact has the potential to substantially decrease threat perceptions, but that this is particularly so in settings where the influence of direct positive contact is absent. This finding might be especially important because feelings of anxiety and threat typically arise in settings where direct contact is limited or negative (Aberson & Gaffney, 2009; Stephan et al., 2002).

The finding that extended contact increases trust (see also Tam et al., 2009) complements previous studies on the positive effects of direct contact on trust (e.g., Hewstone et al., 2006; Tausch et al., 2007; Turner, Hewstone, & Voci, 2007). Significantly, these studies clarified that through positive interpersonal relations with outgroup members, people not only start to trust the individuals they know but also show an increased readiness to trust other outgroup members (Tropp, 2008). The present study extends these studies and shows that when people are indirectly connected with outgroup members through trusted ingroup members, this connection increases outgroup trust, and especially among those who do not benefit from direct positive contact.

The potential for extended contact to reduce threat perceptions and establish trust increases its applications beyond prejudice reduction. Indeed, both variables may affect outcomes at the behavioral level. The reduction of perceived threat has been related to a decrease in hostile or aggressive actions against outgroup members and may thus help to resolve forms of intergroup conflict (Stephan & Renfro, 2002). Trust building may be even more far-reaching because trust promotes cooperation across many forms of social interaction (Dawes, 1980; De Cremer & Tyler, 2005) and thus paves the way for a positive intergroup climate characterized by mutual cooperation. Future research might investigate the specific characteristics of racially mixed social networks to unveil which network characteristics promote the beneficial effects of extended contact on trust and cooperation.

Prejudice reduction among authoritarians

By increasing trust and decreasing threat, extended contact also affects the basic motivations that underlie authoritarianism (Duckitt, 2001; Duckitt & Sibley, 2007) which explains why the positive effect of extended contact among people who are cut off from positive influences of direct contact is even stronger among high

authoritarians. Indeed, it has been demonstrated that authoritarians view the world as dangerous, unpredictable, and threatening (Van Hiel, Cornelis, & Roets, 2007) and that they have a mistrustful and contemptuous view of human nature (Altemeyer, 1998; Mirels & Dean, 2006). Hence, by reducing threat perceptions and establishing trust, extended contact can alter the motivational processes underlying RWA-based prejudice.

It is important to note that, although a vast amount of research is available on the relationship between authoritarianism and intergroup threat (e.g., Cohrs & Asbrock, 2009; Duckitt, 2006; Hodson, Hogg, & MacInnis, 2009), studies on the relationship between authoritarianism and trust are scarce. However, given that trust can be established through extended contact, even and especially among high authoritarian individuals, it is an interesting variable for future studies both in contact and authoritarianism research. More specifically, because high authoritarians are interpersonally orientated toward social conformity (Jugert et al., 2009), changing the perceptions of ingroup norms may be a first step to establish trust among those people. Future research is thus required to further investigate the processes that may be involved in establishing trust and reducing prejudice among high authoritarians.

Limitations

We acknowledge that the cross-sectional nature of our data does not allow us to draw causal inferences about the direction of the relationships. However, as several researchers have already pointed out (e.g., Christ et al., 2010; Turner et al., 2008; Wright et al., 1997), it is farfetched to attribute the relationship between extended contact and prejudice to the tendency of prejudiced people to avoid extended contact. Indeed, although people can manage their own social networks, they have little or no control over the choice of whom their ingroup friends or

relatives meet. Moreover, laboratory experiments (Wright et al., 1997) and experimental field studies (Cameron & Rutland, 2006; Liebkind & McAlister, 1999) have demonstrated that extended contact promotes more positive outgroup attitudes.

Furthermore, because we only used self-report scales, common method variance may have influenced the strength of the relationships between the studied variables. However, this is a rather unlikely explanation for the obtained moderation effects. Our results also align well with recent cross-sectional (Dhont, Roets, & Van Hiel, in press; Dhont & Van Hiel, 2009; Hodson, 2008; Hodson, Harry, & Mitchell, 2009), longitudinal (Christ et al., 2010), and quasi-experimental (Dhont et al., in press) studies investigating moderators of contact effects. This consistency across studies increases our confidence in the reliability and generalizability of our conclusions.

General implications and conclusions

The finding that extended contact has the strongest effect among people who do not experience high quality direct contact with outgroup members and/or high authoritarians attests to the practical relevance of applying strategies based on extended contact. Indeed, bringing all members of two groups together to develop harmonious intergroup relations is practically impossible and may be too demanding for high authoritarians. However, the impact of extended contact emphasizes the utility of interventions based on direct contact, even when implemented on a small scale, because observers of such direct contact may themselves be influenced by their extended experience of contact. In sum, contact-based interventions are likely to have a much broader impact through the process of extended contact (Wright et al., 1997), and the beneficial effects of this process reach those individuals who are most in need of change.

Notes

1. Given the similar content of the second and third trust item, the errors of these items were correlated.
2. Testing the moderation effect between direct contact and RWA on prejudice yielded a significant moderation effect similar to the extended contact x RWA moderation pattern, $\beta = -.07$, $p < .005$. Simple slopes analyses confirmed that direct contact was more strongly associated with prejudice among high scoring RWAs, $\beta = -.35$, $p < .001$, than among low scoring RWAs, $\beta = -.21$, $p < .001$. The direct contact x RWA interaction on trust and threat were present as well.
3. We also conducted separate series of follow-up regression analyses with the direct contact quality and direct contact quantity measure (replacing the combined measure). These analyses mainly followed the reported findings. In particular, contact quality significantly moderated the extended contact effect on prejudice, $\beta = .08$, $p < .001$, indicating a stronger effect of extended contact among people with low contact quality, $\beta = -.25$, $p < .001$, than with high contact quality, $\beta = -.09$, $p < .05$. For the measure of contact quantity, the interaction effect with extended contact was less pronounced, $\beta = .07$, $p < .05$. The extended contact effect was somewhat stronger among people with low amounts of direct contact, $\beta = -.37$, $p < .001$, than for those with a lot of direct contact, $\beta = -.26$, $p < .001$. The two-way interaction between contact quantity and contact quality, as well as the three-way interaction effects between the direct contact variables and extended contact or RWA, were non-significant. However, a significant four-way interaction effects between extended contact, contact quality, contact quantity, and RWA on prejudice was obtained, $\beta = .09$, $p < .001$. In line with the results of our main analyses, extended contact has the strongest effects on prejudice, among high scorers on RWA with high amounts of low quality contact, $\beta = -.32$, $p < .001$. Similar interaction effects on trust and threat were obtained.
4. The present results also clarified that the extended contact x RWA moderation effect is not merely an artifact of floor effects on prejudice and threat or a ceiling effect on trust among low authoritarians. As can be seen in Figure 1, although low scorers on RWA generally obtained lower levels of prejudice and threat as well as higher levels of trust, these

scores were still far from the scale endpoints (scales ranged from 1 to 7). In other words, not only high scoring authoritarians, but also people who score low on authoritarianism had room to decrease their prejudice and threat levels and to increase their levels of trust. Furthermore, explanations for this moderation effect of authoritarianism in terms of floor or ceiling effects also do not seem to hold in previous studies. For example, Dhont and Van Hiel (2009) demonstrated that negative contact did not significantly increase prejudice in low authoritarians, while they obviously had the most room to increase their prejudice levels.

References

- Aberson, C. L., & Gaffney, A. M. (2009). An integrated threat model of explicit and implicit attitudes. *European Journal of Social Psychology, 39*, 808-830.
- Aiken, L. S., & West, S. G. (1991). *Multiple regression: testing and interpreting interactions*. Newbury Park: Sage Publications.
- Altemeyer, R. (1981). *Right-wing authoritarianism*. Winnipeg: University of Manitoba Press.
- Altemeyer, R. (1998). The other “authoritarian personality”. In M. Zanna (ed.), *Advances in experimental social psychology*, (Vol. 30, pp. 47-91). San Diego, CA: Academic Press.
- Billiet, J., & De Witte, H. (1991). *Naar racisme neigende houdingen in Vlaanderen: typologie en maatschappelijke achtergronden (Attitudes that tend towards racism in Flanders: typology and societal backgrounds)*. Leuven: Sociologisch Onderzoeksinstituut (SOI).
- Cameron, L. & Rutland, A. (2006). Extended contact through story reading in school: Reducing children’s prejudice towards the disabled. *Journal of Social Issues, 62*, 469-488.
- Christ, O., Hewstone, M., Tausch, N, Wagner, U., Voci, A., Hughes, J., & Cairns, E. (2010). Direct contact as a moderator of extended contact effects: Cross-sectional and longitudinal impact on outgroup attitudes, behavioral intentions, and attitude certainty. *Personality and Social Psychology Bulletin, 36*, 1662-1674.
- Cohrs, J. C., & Asbrock, F. (2009). Right-wing authoritarianism, social dominance orientation, and prejudice against threatening and competitive ethnic groups. *European Journal of Social Psychology, 39*, 270–289.
- Dawes, R. M. (1980). Social dilemmas. *Annual Review Psychology, 31*, 169-193.

- Dawson, J. F., & Richter, A. W. (2006). Probing three-way interactions in moderated multiple regression: Development and application of a slope difference test. *Journal of Applied Psychology, 91*, 917-926.
- De Cremer, D., & Tyler, T. R. (2005). Managing group behavior: The interplay between procedural justice, sense of self, and cooperation. In M. Zanna (ed.), *Advances in experimental social psychology*, (Vol. 37, pp. 151-218). San Diego, CA: Academic Press.
- Dhont, K., Roets, A., & Van Hiel, A. (in press). Opening Closed Minds: The Combined Effects of Intergroup Contact and Need for Closure on Prejudice. *Personality & Social Psychology Bulletin*
- Dhont, K., & Van Hiel, A. (2009). We must not be enemies: Interracial contact and the reduction of prejudice among authoritarians. *Personality and Individual Differences 46*, 172-177.
- Dovidio, J. F., Gaertner, S. L., Kawakami, K., & Hodson, G. (2002). Why can't we just get along? Interpersonal biases and interracial distrust. *Cultural Diversity and Ethnic Minority Psychology, 8*, 88-102.
- Duckitt, J. (2001). A dual-process cognitive-motivational theory of ideology and prejudice. *Advances in Experimental Social Psychology, 33*, 41-113.
- Duckitt, J. (2006). Differential effects of right wing authoritarianism and social dominance orientation on outgroup attitudes and their mediation by threat from and competitiveness to outgroups. *Personality and Social Psychology Bulletin, 32*, 684-696.
- Duckitt, J., & Sibley, C. (2007). Right wing authoritarianism, social dominance orientation and the dimensions of generalized prejudice, *European Journal of Personality, 21*, 113-130

- Funke, F. (2005). The dimensionality of right-wing authoritarianism: Lessons from the dilemma between theory and measurement. *Political Psychology*, 26, 195–218.
- Hewstone, M., Cairns, E., Voci, A., Hamberger, J., & Niens, U. (2006). Intergroup contact, forgiveness, and experience of “The Troubles” in Northern Ireland. *Journal of Social Issues*, 62, 99–120.
- Hodson, G. (2008). Interracial prison contact: The pros for (social dominant) cons. *British Journal of Social Psychology*, 47, 325–351.
- Hodson, G. (in press). Authoritarian contact: From “tight circles” to cross-group friendships. In F. Funke, T. Petzel, J. C. Cohrs, & J. Duckitt (Eds.) *Perspectives on Authoritarianism* (pp. 257–282). Wiesbaden, Germany: VS-Verlag.
- Hodson, G., Harry, H., & Mitchell, A. (2009). Independent benefits of contact and friendship on attitudes toward homosexuals among authoritarians and highly identified heterosexuals. *European Journal of Social Psychology*, 39, 509–525.
- Hodson, G., Hogg, S. M., & MacInnis, C. C. (2009). The role of “dark personalities” (narcissism, Machiavellianism, psychopathy), Big Five personality factors, and ideology in explaining prejudice. *Journal of Research in Personality*, 43, 686–690.
- Islam, M. R., & Hewstone, M. (1993). Dimensions of contact as predictors of intergroup anxiety, perceived outgroup variability and outgroup attitude: An integrative model. *Personality and Social Psychology Bulletin*, 19, 700–710.
- Jugert, P., Cohrs, C., & Duckitt, J. (2009). Inter- and interpersonal processes underlying authoritarianism: The role of social conformity and personal need for structure. *European Journal of Personality*, 23, 607–621.

- Lewicki, R.J., McAllister, D.J., & Bies, R.J. (1998). Trust and distrust: New relationships and realities. *Academy of Management Review*, 23, 438-458.
- Liebkind, K., & McAlister, A. L. (1999). Extended contact through peer modelling to promote tolerance in Finland. *European Journal of Social Psychology*, 29, 765-80.
- Mirels, H. L., & Dean, J. B. (2006). Right-wing authoritarianism, attitude salience, and beliefs about matters of fact. *Political Psychology*, 27, 839-866.
- Muller, D., Judd, C. M., & Yzerbyt, V. Y. (2005). When moderation is mediated and mediation is moderated. *Journal of Personality and Social Psychology*, 89, 852-863.
- Paolini, S., Hewstone, M., Cairns, E., & Voci, A. (2004). Effects of direct and indirect cross-group friendships on judgments of Catholics and Protestants in Northern Ireland: The mediating role of an anxiety-reduction mechanism. *Personality Social Psychology Bulletin*, 30, 770-786.
- Pettigrew, T. F., Christ, O., Wagner, U., & Stellmacher, J. S. (2007). Direct and indirect intergroup contact effects on prejudice: A normative interpretation. *International Journal of Intercultural Relations*, 31, 411-425.
- Riek, B. M., Mania, E. W., & Gaertner, S. (2006). Intergroup threat and outgroup attitudes: A meta-analytic review. *Personality and Social Psychology Review*, 10, 336-353.
- Rousseau, D. M., Sitkin, S. M., Burt, R. S., & Camerer, C. (1998). Not so different after all: A cross-discipline view of trust. *Academy of Management Review*, 23, 393-404.
- Stephan, W. G., & Renfro, C. L. (2002). The role of threat in intergroup relations. In D. Mackie & E. Smith (Eds.), *From prejudice to intergroup emotions: Differentiated reactions to social groups* (pp. 191-205). New York: Psychology Press.

- Stephan, W. G., Boniecki, K. A., Ybarra, O., Bettencourt, A., Ervin, K. S., Jackson, L. A., et al. (2002). The role of threats in the racial attitudes of Blacks and Whites. *Personality and Social Psychology Bulletin*, 28, 1242-1254.
- Tam, T., Hewstone, M., Cairns, E., Tausch, N., Maio, G., & Kenworthy, J. (2007). The impact of intergroup emotions on forgiveness. *Group Processes and Intergroup Relations*, 10, 119-136.
- Tam, T., Hewstone, M., Kenworthy, J., & Cairns, E. (2009). Intergroup trust in Northern Ireland. *Personality and Social Psychology Bulletin*, 35, 45-59.
- Tam, T., Hewstone, M., Kenworthy, J. B., Cairns, E., Marinetti, Geddes, L., & Parkinson, B. (2008). Postconflict Reconciliation: Intergroup forgiveness and implicit biases in Northern Ireland. *Journal of Social Issues*, 64, 303-320.
- Tausch, N., Tam, T., Hewstone, M., Kenworthy, J., & Cairns, E. (2007). Individual-level and group-level mediators of contact effects in Northern Ireland: The moderating role of social identification. *British Journal of Social Psychology*, 46, 541-556.
- Turner, R., Hewstone, M., & Voci, A. (2007). Reducing explicit and implicit outgroup prejudice via direct and extended contact: The mediating role of self-disclosure and intergroup anxiety. *Journal of Personality and Social Psychology*, 93, 369-388.
- Turner, R. N., Hewstone, M., Voci, A., Paolini, S., & Christ, O. (2007). Reducing prejudice via direct and extended cross-group friendship. In W. Stroebe & M. Hewstone (Eds.), *European review of social psychology* (Vol. 18, pp. 212-255). Hove, UK: Psychology Press.
- Turner, R., Hewstone, M., Voci, A., & Vonofakou, C. (2008). A test of the extended intergroup contact hypothesis: The mediating role of intergroup anxiety,

- perceived ingroup and outgroup norms, and inclusion of the outgroup in the self. *Journal of Personality and Social Psychology*, 95, 843-860.
- Tropp, L. R. (2008). The role of trust in intergroup contact: Its significance and implications for improving relations between groups. In U. Wagner, L. R. Tropp, G. Finchilescu, & C. Tredoux (Eds.), *Improving intergroup relations: Building on the legacy of Thomas F. Pettigrew* (pp. 91-106). SPSSI Series on Social Issues and Interventions. Malden, MA: Wiley-Blackwell.
- Van Hiel, A., Cornelis, I., & Roets, A. (2007). The intervening role of social worldviews in the relationship between the five-factor model of personality and social attitudes. *European Journal of Personality* 21, 131-148.
- Van Hiel, A., Cornelis, I., Roets, A., & De Clercq, B. (2007). A comparison of various authoritarianism scales in Belgian Flanders. *European Journal of Personality*, 21, 149-168.
- Van Hiel, A., & Mervielde, I. (2002). Explaining conservative beliefs and political preferences: A comparison of social dominance orientation and authoritarianism. *Journal of Applied Social Psychology*, 32, 965-976.
- Van Hiel, A., & Mervielde, I. (2005). Authoritarianism and social dominance orientation: Relationships with various forms of racism. *Journal of Applied Social Psychology* 35, 2323-2344.
- Voci, A., & Hewstone, M. (2003). Intergroup contact and prejudice towards immigrants in Italy: The mediational role of anxiety and the moderational role of group salience. *Group Processes and Intergroup Relations*, 6, 37-54.
- Vonofakou, C., Hewstone, M., Voci, A., Paolini, S., Turner, R. N., Tausch, N. T., et al. (2008). The impact of direct and extended cross-group friendships on improving intergroup relations. In U. Wagner, L. R. Tropp, G. Finchilescu, & C. Tredoux (Eds.), *Improving intergroup relations : Building on the*

legacy of Thomas F. Pettigrew (pp. 107-123). SPSSI Series on Social Issues and Interventions. Malden, MA: Wiley-Blackwell.

Wright, S. C., Aron, A., McLaughlin-Volpe, T., & Ropp, S. A. (1997). The extended contact effect: Knowledge of cross-group friendships and prejudice. *Journal of Personality and Social Psychology*, 73, 73-90.

Chapter 4

Opening closed minds: The combined effects of intergroup contact and need for closure on prejudice

Abstract

Five studies tested whether Need for Closure (NFC) moderates the relationship between intergroup contact and prejudice toward immigrants. The results consistently showed that intergroup contact was more strongly associated with reduced levels of prejudice among people high in NFC compared to people low in NFC. Studies 1 ($N = 138$ students) and 2 ($N = 294$ adults) demonstrated this moderator effect on subtle, modern, and blatant racism. Study 2 also replicated the moderator effect for extended contact. An experimental field study (Study 3; $N = 60$ students) provided evidence of the causal direction of the moderator effect. Finally, Studies 4 ($N = 125$ students) and 5 ($N = 135$ adults) identified intergroup anxiety as the mediator through which the moderator effect influences modern and blatant racism as well as hostile tendencies toward immigrants. The role of motivated cognition in the relationship between intergroup contact and prejudice is discussed.

This chapter is based on Dhont, K., Roets, A., & Van Hiel, A. (in press). Opening closed minds: The combined effects of intergroup contact and need for closure on prejudice. *Personality & Social Psychology Bulletin*

Introduction

Frequent positive contact between members of different groups has been considered one of the most powerful strategies to promote positive intergroup attitudes and reduce intergroup bias (Allport, 1954; Brown & Hewstone, 2005; Dovidio, Gaertner, & Kawakami, 2003; Pettigrew, 1998). Over the last two decades, empirical evidence coming from longitudinal (e.g., Levin, van Laar, & Sidanius, 2003), cross-sectional (e.g., Ellison & Powers, 1994), experimental (e.g., Desforges et al., 1991), and meta-analytic (e.g., Pettigrew & Tropp, 2006) studies have corroborated the *contact hypothesis*, demonstrating its validity and applicability across a wide variety of groups and settings.

However, more than five decades ago, Allport (1954) argued that the effect of situational variables like intergroup contact on prejudice depends on a person's character structure. Recapitulating this suggestion, Pettigrew and Tropp (2006, see also Hodson, 2009; Pettigrew, 1998) insisted that individual differences were important as well, and over the years, several researchers have empirically demonstrated the value of examining the moderating role of individual difference variables while studying intergroup processes (e.g., Britt, Boniecki, Vescio, Biernat, & Brown, 1996; Dhont & Van Hiel, 2009; in press; Hodson, Harry, & Mitchell, 2009; Mendoza-Denton, Downey, Purdie, Davis, & Pietrzak, 2002; Page-Gould, Mendoza-Denton, & Tropp, 2008).

The present research builds on the *situation x person* approach to prejudice and investigated the interplay between intergroup contact and individual differences in motivated social cognition (i.e., the Need for Closure). Moreover, we investigated whether intergroup anxiety can explain this interaction effect.

Intergroup contact

According to Allport (1954), contact with members of an outgroup can successfully reduce prejudice toward this outgroup, at least when contact occurs under the specific preconditions of equal status, intergroup cooperation, the pursuit of common goals, and the presence of institutional support. Pettigrew and Tropp's (2006) meta-analysis of 515 studies confirmed that "Intergroup contact typically reduces intergroup prejudice" (p. 766), showing a moderate mean effect size, $r = -.21$, for the impact of intergroup contact on negative outgroup attitudes.

Although these meta-analytic results corroborate Allport's (1954) main thesis on the benefits of intergroup contact, further refinements and extensions of the contact hypothesis have also been proposed (e.g., Brown & Hewstone, 2005; Pettigrew 1998). For example, Allport's preconditions (e.g., equal status) are now generally accepted as facilitators rather than as necessary conditions to achieve the effects of intergroup contact (Pettigrew & Tropp, 2006).

Another important extension of the contact paradigm pertains to the *extended* contact hypothesis, originally proposed by Wright, Aron, McLaughlin-Volpe, and Ropp (1997), which asserts that having ingroup acquaintances who maintain positive contact with outgroup members is also associated with reduced prejudice. During the past decade, correlational and (quasi-)experimental support for this hypothesis has accumulated, demonstrating that people who witness contact between in- and outgroup members report lower levels of outgroup prejudice than those without extended contact experiences (Paolini, Hewstone, Cairns, & Voci, 2004; Tam, Hewstone, Kenworthy, & Cairns, 2009; Turner, Hewstone, Voci, & Vonofakou, 2008; Wright et al., 1997). The effect of extended contact is especially important for those people with limited or no opportunity to directly interact with outgroup members (Turner et al., 2008; Wright et al., 1997).

Contemporary contact researchers have also elaborated on the underlying mechanisms that explain how contact works. Specifically, they have highlighted the mediating role of affective processes such as empathy and intergroup anxiety (Paolini et al., 2004; Pettigrew & Tropp, 2008; Voci & Hewstone, 2003) as well as cognitive processes such as inclusion of the outgroup in the self and perceived intergroup norms (Hodson et al., 2009; Turner et al., 2008).

Individual differences in motivated social cognition

Allport (1954) argued that not only situational factors (i.e., intergroup contact), but also individual differences in general cognitive style play an important role in prejudice. Indeed, Allport stated that “a person’s prejudice is unlikely to be merely a specific attitude to a specific group; it is more likely to be a reflection of his whole habit of thinking about the world he lives in” (p. 175). In particular, he clarified that people prone to prejudice prefer a clearly structured world and they like “order, but especially social order” (p. 404). They also “feel more secure when they know the answers” (p. 402) and have “a marked need for definiteness; they cannot tolerate ambiguity” (p. 175). Moreover, a prejudiced-prone person is said to be narrow-minded and “fails to see all relevant sides to his problem” (p. 402). In sum, Allport (1954) suggested that prejudiced-prone people exhibit - among other things - a preference for order and predictability, a dislike of ambiguity, and show narrow-mindedness. From Allport’s work it can thus be straightforwardly inferred that prejudice should be understood as an expression of how a person thinks about the social world, that is, in terms of motivated cognition.

During the last two decades, the motivated social cognition perspective, aiming to explain people’s subjective knowledge and beliefs about the social world, has regained substantial scholarly attention. In particular, in his work on lay epistemics, Kruglanski (1989) argued that a cognitive style (e.g., cognitive rigidity)

and subjective knowledge about social reality stems from particular motivational needs rather than being merely a cognitive deficit. A prominent concept in this renewed approach is the Need for Closure (NFC, Kruglanski, 1989; Kruglanski & Webster, 1996), referring to the individual's desire for firm answers and aversion toward ambiguity.

Represented by the five facet scales that constitute the NFC scale (Webster & Kruglanski, 1994), people with a high level of dispositional NFC *prefer order* and structure in their lives, abhorring unconstrained chaos and disorder. They also *prefer predictability*, which is reflected in a desire for secure and stable knowledge that is reliable across circumstances and unchallenged by exceptions. People high in NFC also experience an urgent desire to reach closure in judgments, reflected in their need for *decisiveness*. They feel *discomfort with ambiguity*; experiences without closure are viewed as aversive. Finally, they are *closed-minded*, reflected in an unwillingness to have their knowledge challenged by alternative opinions or inconsistent evidence (Webster & Kruglanski, 1994).

Overall, these facets that constitute NFC are strikingly similar to the cognitive style characteristics that Allport (1954) held responsible for prejudice development. Nevertheless, although Allport explicitly associated this motivated cognitive style with prejudice, contemporary motivated cognition theories have a much broader scope, accounting for how people process information and structure their knowledge and ideas. For example, NFC has been shown to affect a range of phenomena including the extent of information processing and hypothesis generation, subjective confidence in decisions, numerical anchoring, as well as primacy and recency effects (for an overview, see Kruglanski & Webster, 1996). Additionally, various studies have focused on the influence of NFC on authoritarianism, essentialism, political conservatism, and prejudice (e.g., Roets & Van Hiel, 2006, in press; Van Hiel, Pandelaere, & Duriez, 2004). The wide variety

of both social and non-social phenomena influenced by NFC attests to its importance in understanding knowledge construction.

Need for closure: moderator of intergroup contact effects

While emphasizing the role of motivated social cognition in prejudice, Allport (1954) suggested that a person's cognitive style affects the extent to which prejudice can be changed through situational influences. According to Allport, intergroup contact is precluded from having strong effects in rigid people exactly because of their way of thinking. In particular, a person with a rigid cognitive style "does not change his mental set easily, but persists in old ways of reasoning" (p. 175). Moreover, the assertion that cognitively rigid people resist the influence of intergroup contact corresponds to the tendency of high NFC people to *freeze* on existing ideas, exemplified by the desire to consolidate previous knowledge and the resistance to reconsider prior knowledge and attitudes (Kruglanski & Webster, 1996). Translating Allport's (1954) suggestion in terms of NFC, it can thus be inferred that a high NFC poses a motivational-cognitive barrier that prevents beneficial effects of contact to reduce prejudice. In other words, we may hypothesize that positive intergroup contact is associated with reduced prejudice when NFC is low, whereas this relationship is less pronounced or even absent when NFC is high. We refer to this possibility by Hypothesis 1a.

However, even though early thinking (e.g., Allport, 1954) predicts the type of interaction proposed by Hypothesis 1a, more recent work suggests a different view of the interplay between intergroup contact and NFC. In particular, people high in NFC are assumed to experience feelings of discomfort, resistance, and even fear of unfamiliar stimuli. Obviously, outgroups and intergroup situations may constitute such unfamiliar and unknown "stimuli". Indeed, Mous et al. (2010) demonstrated

that people high in NFC showed more psychophysiological stress when interacting with an unknown outgroup member compared to people low in NFC.

In the contact literature, feelings of uncertainty and fear experienced in intergroup contexts are referred to as *intergroup anxiety* (Stephan & Stephan, 1985) and have frequently been associated with negative outgroup attitudes. Most relevant in this regard, positive intergroup contact reduces intergroup anxiety, a well-documented finding established in a variety of real-world intergroup contact situations, such as cross-group friendships in college (Levin et al., 2003), among Muslims and Hindus in Bangladesh (Islam & Hewstone, 1993), British and Japanese students (Greenland & Brown, 1999), and Catholics and Protestants in Northern Ireland (Paolini et al., 2004). Moreover, Page-Gould, et al. (2008) have shown that among people who are predisposed to experiencing intergroup anxiety, intergroup contact not only decreases self-reported anxiety but also cortisol reactivity (a stress hormone). Frequent intergroup encounters often disconfirm negative expectations (Mendoza-Denton, Page-Gould, & Pietrzak, 2006; Page-Gould et al., 2008) and thereby attenuate intergroup anxiety, which in turn, may lead to less prejudice.

Intergroup contact does not aim to explicitly challenge existing attitudes, nor does intergroup contact confront people with what “right” or “wrong” attitudes are. Hence, unlike direct, confronting strategies (e.g., through education programs) that explicitly aim to reduce prejudice, subtle influences of intergroup contact are unlikely to be deflected by the motivational-cognitive barrier of people high in NFC. Moreover, intergroup contact may successfully reduce prejudice among high NFC people because of the potential of intergroup contact to decrease feelings of uncertainty and anxiety in intergroup contexts. Our alternative hypothesis, referred to as Hypothesis 1b, therefore states that frequent positive intergroup contact is most strongly related to lower levels of prejudice among people high in NFC, whereas this relationship is less pronounced or absent among people low in NFC.

The present research

The present work is the first explicit examination of the impact of motivated cognition in the relationship between intergroup contact and prejudice. As outlined above, by combining the intergroup contact and NFC literatures, we contrast two competing hypotheses regarding the moderating role of NFC on the effect of intergroup contact on prejudice.

Hypothesis 1a is based on Allport's (1954) writings and states that the effect of intergroup contact on prejudice is less pronounced or absent among people high in NFC compared to people low in NFC. In this case, high NFC levels should act as a motivational-cognitive barrier. Alternatively, Hypothesis 1b states that intergroup contact reduces prejudice when NFC is high whereas its impact is less pronounced or absent when NFC is low. Furthermore, this moderation effect is expected to be mediated by intergroup anxiety.

To test these competing hypotheses, we conducted five studies among Flemish Belgians, focusing on contact with and prejudice toward non-European immigrants, especially people from countries with a Muslim majority. Moroccans and Turks constitute the two largest immigrant communities in Belgium. In Studies 1 and 2, we tested the moderator hypotheses in a sample of undergraduate students and adults, respectively. Study 2 also investigated whether NFC moderates the relationship between extended contact and prejudice. Study 3 tested the causal direction of the moderation effect in an experimental field study. Studies 4 and 5 investigated whether the moderation effect of NFC is mediated via intergroup anxiety. By including hostile tendencies toward immigrants as a dependent variable, Study 5 also extended the results of Studies 1-4.

Study 1

Method

Participants

A total of 138 undergraduate psychology students (75% women, $M_{\text{age}} = 19.21$, $SD_{\text{age}} = 2.88$) participated as part of a classroom exercise. We assessed respondents' nationality and religious views to ensure that they did not belong to the target outgroup. All respondents were Belgian nationals; none were Muslim (57% Christians, 43% atheists, agnostics, or non-religious people).

Measures

Intergroup Contact. To obtain a single index of frequent positive contact (cf., Voci & Hewstone, 2003; Tam et al., 2009), four questions measured the amount of positive contact (Dhont & Van Hiel, 2009). These items were completed on 7-point Likert scales (1 = never; 7 = very frequently). Sample items include, "How often do you have pleasant contact with immigrants?" and "How often do you have positive experiences with immigrants until now?"

Need for Closure. Participants completed 41 items of the revised NFC questionnaire (for the original scale, see Kruglanski, Webster, & Klem, 1993; for the revised items, see Roets & Van Hiel, 2007) on Likert scales anchored by 1 (certainly disagree) and 6 (certainly agree). Sample items include, "I like to have friends who are unpredictable" (reverse scored), "I do not usually consult many different opinions before forming my own view", and "When I have made a decision, I feel relieved".

Table 1. Means, standard deviations, and correlations between predictor and criterion variables in Study 1 (S1) and Study 2 (S2)

		Mean (<i>SD</i>)	α	2	3	4	5	6
1. Direct Contact	S1	3.74 (1.36)	.90		-.01	-.18*	-.33***	
	S2	3.20 (1.72)	.96	.59***	-.17**			-.34***
2. Extended Contact	S1							
	S2	3.15 (1.58)	.93		-.30***			-.41***
3. NFC	S1	3.65 (.43)	.85			.21*	.07	
	S2	3.84 (.49)	.89					.42***
4. Modern Racism	S1	2.83 (.57)	.80				.61***	
	S2							
5. Subtle Racism	S1	2.87 (.60)	.81					
	S2							
6. Blatant Racism	S1							
	S2	2.21 (.81)	.92					

Note. * $p = .05$; ** $p < .01$; *** $p < .001$

Racial Prejudice. Participants completed measures of modern (McConahay, 1986, see also Dhont, Cornelis, & Van Hiel, 2010) and subtle racism (Pettigrew & Meertens, 1995; see also Van Hiel & Mervielde, 2005) on 5-point Likert scales (1 = strongly disagree; 5 = strongly agree). These more inconspicuous forms of racism are more appropriate to measure racism among psychology students who are generally less likely to hold or express blatant racist views.

The modern racism scale (ten items) consisted of three facet scales: denial of continuing discrimination, (three items; e.g., “Discrimination against immigrants is no longer a problem in Belgium”), antagonism toward immigrants’ demands (three

items; e.g., “Immigrants are getting too demanding in their push for equal rights”), and resentment about special favors for immigrants, (four items; e.g., “Immigrants receive too little attention in the media”; reverse scored).

The subtle racism scale (eight items) consisted of four items assessing defense of tradition (e.g., “Immigrants living in Belgium teach their children values and skills different from those required to be successful in our society”) and four items assessing the denial of positive emotions (e.g., “I admire the immigrant community members who live here under difficult circumstances”; reverse scored).

Table 1 presents the descriptive statistics and the correlations among these measures.

Results and discussion

To test the moderation effect of NFC on the relationship between intergroup contact and racial attitudes, we first centered NFC and intergroup contact scores and then calculated their interaction term by multiplying these centered scores (Aiken & West, 1991). We tested a multivariate regression model in which intergroup contact, NFC, and their interaction term were included as predictors of both modern and subtle racism. The multivariate test yielded significant main effects of intergroup contact, $F(2, 133) = 8.90, p < .001$, and NFC, $F(2, 133) = 3.11, p < .05$, as well as a significant interaction effect, $F(2, 133) = 9.61, p < .001$.

To investigate the interaction effect in greater detail and to test the incremental validity of this interaction effect on both dependent variables, two hierarchical regression analyses were tested with modern racism or subtle racism as the dependent variable. In both analyses, the centered scores of NFC and intergroup contact were entered in the first step and their interaction term was entered in the second step.

The first analysis revealed that intergroup contact and NFC explained a significant portion of the variance in modern racism, $R^2 = .08, p < .005$ and yielded

significant main effects of intergroup contact, $\beta = -.18, p < .05$, and NFC, $\beta = .21, p = .01$. Adding the interaction term in the second step of the regression significantly increased the variance explained, $R^2\text{change} = .05, \beta = -.22, p < .01$.

The second analysis revealed that intergroup contact and NFC also explained a significant portion of the variance in subtle racism, $R^2 = .11, p < .001$, with a significant main effect of intergroup contact, $\beta = -.33, p < .001$, but not of NFC, $\beta = .07, ns$. The interaction term significantly increased the variance explained, $R^2\text{change} = .11, \beta = -.34, p < .001$.

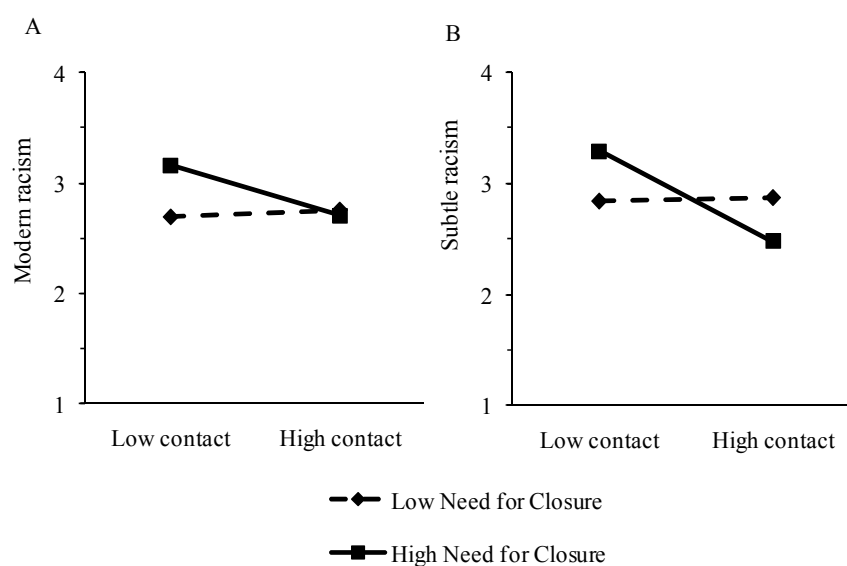


Figure 1. Intergroup contact x NFC interaction predicting modern and subtle racism (Study 1).

Figure 1 depicts the relationship between intergroup contact and modern (Panel A) and subtle (Panel B) racism at high and low levels of NFC (i.e., one SD above and below the mean, respectively). Simple slopes analyses indicated that intergroup contact is significantly related to modern and subtle racism when NFC is high, $\beta = -.40, p < .001$ and $\beta = -.67, p < .001$, respectively, but not when NFC is low, $\beta = .05, ns$ and $\beta = .03, ns$, respectively.

The findings of Study 1 support Hypothesis 1b showing that the negative relationship between intergroup contact and prejudice is especially pronounced among people high in NFC, whereas this relationship is absent when NFC is low. Hence, the present results refute Hypothesis 1a stating that a high NFC operates as a motivational-cognitive barrier preventing the beneficial effects of contact on prejudice.

Study 2

The goal of Study 2 was twofold. First, we aimed to replicate the moderator effect of NFC in the relationship between intergroup contact and prejudice in a heterogeneous sample of adults using a measure of blatant prejudice. Blatant racism refers to a more traditional, overt, and direct form of racism, also denoted as “old-fashioned racism”. Second, we investigated whether NFC also moderates the relationship between extended contact and prejudice.

Method

Participants

To obtain a heterogeneous sample, undergraduate psychology students distributed the questionnaires among their adult neighbors. Students were instructed only to recruit non-Muslim, Belgian citizens. These demographics were double-checked by directly asking respondents' nationality and religion. We collected 294

questionnaires (74% Christians, 26% atheists, agnostics, non-religious people, or other). The sample ($M_{\text{age}} = 47.91$, $SD_{\text{age}} = 4.75$) consisted of 68% women and 27% men; 5% did not indicate their sex. With respect to educational level, 16% had attended university, 42% had completed higher education, 26% had completed secondary school, 11% had earned lower scholarly degrees, and 5% did not indicate their educational level.

Measures

Intergroup Contact and NFC. Respondents completed the measure of positive contact as well as the NFC questionnaire administered in Study 1.

Extended Intergroup Contact. Two items (based on Turner et al., 2008), completed on 7-point Likert scales (1 = none; 7 = many), assessed respondent's level of extended contact, asking (1) whether they know many native Belgian people within their circle of acquaintances who get along well with immigrants and (2) how many people within their circle of native Belgian friends have immigrants as friends.

Racial Prejudice. We administered a nine-item Likert scale measure of blatant racism (1 = strongly disagree; 5 = strongly agree; see also Duriez & Van Hiel, 2002). Sample items include, "In general, immigrants are not to be trusted" and "We have to keep our race pure and fight interracial mixture".

Table 1 presents descriptive statistics and correlations among the measures.

Results and discussion

Similar to Study 1, the centered scores of direct intergroup contact and NFC were entered in the first step of a hierarchical regression analysis as predictors of blatant racism; their interaction term was entered in the second step. Direct intergroup contact and NFC explained a significant portion of the variance in blatant racism, $R^2 = .25$, $p < .001$. There were significant main effects of direct contact, $\beta =$

-.28, $p < .001$, and NFC, $\beta = .37$, $p < .001$. Furthermore, adding the interaction term significantly increased the variance explained, $R^2\text{change} = .02$, $\beta = -.13$, $p = .01$.

A similar regression model with extended contact (instead of direct contact) and NFC as predictors of blatant racism was also significant, $R^2 = .27$, $p < .001$. There were significant main effects of extended contact, $\beta = -.33$, $p < .001$, and NFC, $\beta = .33$, $p < .001$. Again, adding the interaction term significantly increased the variance explained, $R^2\text{change} = .01$, $\beta = -.10$, $p < .05$.

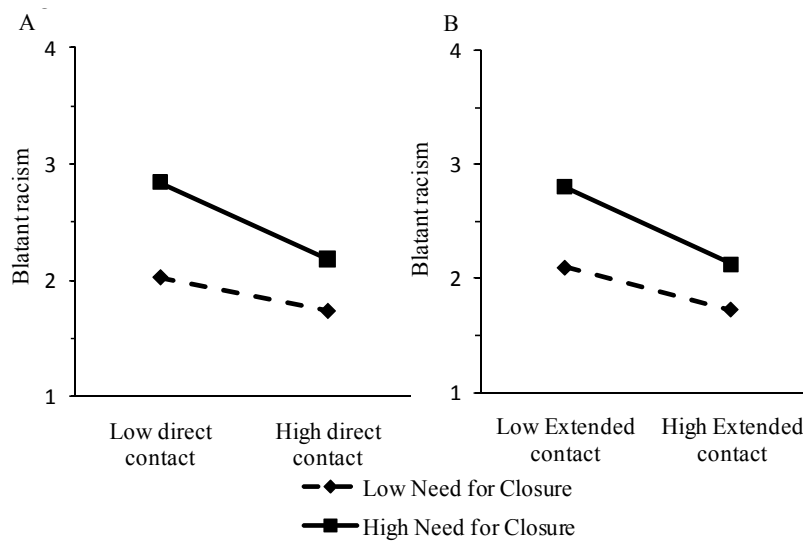


Figure 2. Intergroup contact x NFC interaction and extended contact x NFC interaction predicting blatant racism (Study 2).

Figure 2 depicts the relationship between direct (Panel A) or extended contact (Panel B) and blatant racism at high and low levels of NFC (i.e., one SD above and below the mean, respectively). As in Study 1, simple slope analyses revealed a strong effect of direct contact when NFC was high, $\beta = -.41$, $p < .001$.

When NFC was low, however, this relationship was substantially weaker, $\beta = -.18$, $p < .01$. We obtained a similar interaction pattern with extended contact, revealing a pronounced association between extended contact and blatant racism among people high in NFC, $\beta = -.42$, $p < .001$. Alternatively, this relationship was weaker among people low in NFC, $\beta = -.23$, $p = .001$.

In sum, this second study, conducted in an adult sample with a measure of blatant racism, corroborated Hypothesis 1b and replicated the results of Study 1, indicating the strongest effects of intergroup contact in the high NFC group. Furthermore, we demonstrated a similar result for extended contact.

Study 3

Studies 1 and 2 revealed that NFC moderates the relationship between intergroup contact and prejudice. However, the cross-sectional nature of these data warrants caution when making causal inferences about the direction of these relationships. Therefore, in Study 3, we conducted an experimental field study to compare a naturalistic high quality contact condition to a control condition to draw causal inferences.

Method

Participants and procedure

Sixty high school students (75% women, $M_{\text{age}} = 16.61$, $SD_{\text{age}} = 1.38$; 64% Christians, 36% atheists or non-religious people) from two Belgian schools participated. We recruited students at each school from classes that were collectively involved in an intercultural exchange program. These students ($N = 26$) went on a one-week school trip to Morocco and composed the experimental group. The goal of the program was to become acquainted with Moroccan students as well as with their school, religion, and way of life. The Belgian and Moroccan students spent much time together and were involved in joint activities, such as hiking, sightseeing,

visiting the families of the Moroccan students, organizing a party, and so on. This one-week school trip is thus an exemplary contact-based intervention program including all facilitating contact conditions.

The control group consisted of students ($N = 34$) from two other classes at the same schools who did not participate in the exchange program. Because the choice to participate or not to participate was not decided by the students, selection bias was eliminated. All participants completed measures of NFC and prejudice within two weeks after the experimental group returned from Morocco.

Measures

We assessed NFC with the NFC-scale used in Studies 1 and 2 ($\alpha = .84$, $M = 3.88$, $SD = .47$). Using a modified version of the 'General Evaluation Scale' (Wright et al., 1997), we measured general outgroup attitudes as the dependent variable. Participants described how they felt about Moroccans in general by using four 7-point differential scales: cold/warm, positive/negative, hostile/friendly, and contempt/respect. The items were coded so that higher scores indicated more negative attitudes, resulting in a reliable index ($\alpha = .90$, $M = 4.14$, $SD = 1.51$).¹

Results and discussion

A univariate ANCOVA with condition (contact versus control condition) as the between-subjects variable and NFC (centered) with the interaction of NFC and condition as covariates, revealed a significant main effect of condition, $F(1, 56) = 9.85$, $p < .005$. Participants in the experimental group ($M = 3.50$) had less negative outgroup attitudes than participants in the control group ($M = 4.63$). There was no main effect of NFC $F(1, 56) = .05$, $p = .82$. More importantly, this analysis yielded a significant interaction effect between condition and NFC, $F(1, 56) = 4.31$, $p < .05$, depicted in Figure 3.

Simple slopes analyses demonstrated significantly less negative outgroup attitudes in the contact condition compared to the control condition among people high in NFC (one SD above the mean), $F(1, 56) = 13.33, p < .001$. Conversely, we did not find significant differences between the conditions among people low in NFC (one SD below the mean), $F(1, 56) = .53, p = .47$. In other words, the results of Study 3 corroborated the findings of Studies 1, 2, and Hypothesis 1b, as well as further demonstrated a causal effect of intergroup contact on prejudice among people high in NFC but not among people low in NFC.

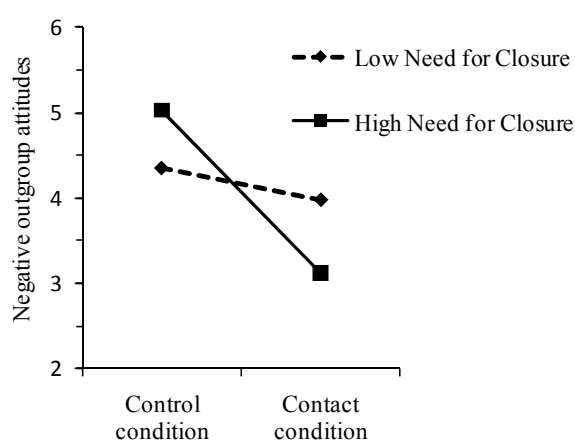


Figure 3. Mean levels of negative outgroup attitudes for participants in the control versus contact condition as a function of NFC (Study 3)

Study 4

Having demonstrated that the degree to which intergroup contact reduces prejudice depends on the levels of NFC, we aimed to determine the process underlying this moderation effect in Study 4. We focused on one of the most robust

mediating mechanisms through which intergroup contact reduces prejudice: intergroup anxiety (Brown & Hewstone, 2005; Paolini et al., 2004; Paolini, Hewstone, Voci, Harwood, & Cairns, 2006; Pettigrew & Tropp, 2008; Voci & Hewstone, 2003).

As we argued in the introduction, people high in NFC are especially prone to experience feelings of discomfort and fear of what is unfamiliar, ambiguous, or unpredictable. Therefore, we hypothesized that the potential for intergroup contact to decrease feelings of uncertainty and fear during intergroup encounters is a central mechanism through which prejudice reduction among people high in NFC occurs. In other words, the effects of contact on intergroup anxiety may explain the pronounced association between contact and prejudice reduction among people high in NFC.

Method

Participants

A total of 125 undergraduate students (63% women, $M_{\text{age}} = 18.60$, $SD_{\text{age}} = 1.61$) participated in return for course credit. Only non-Muslim Belgians participated in the study.

Measures

Intergroup contact, NFC, and modern racism were assessed with the same measures as used in Study 1. After completing these scales, a modified version of the intergroup anxiety scale developed by Stephan and Stephan (1985) assessed respondents' levels of intergroup anxiety (see, e.g., Paolini et al., 2004).

Table 2. Means, standard deviations, and correlations between predictor, mediator and criterion variables in Study 4 (S4) and Study 5 (S5)

		Mean (<i>SD</i>)	α	2	3	4	5	6
1. Contact	S4	3.79 (1.34)	.89	-.12	-.42***	-.45***		
	S5	3.23 (1.31)	.86	-.17*	-.23**	-.36***	-.41***	-.39***
2. NFC	S4	3.54 (.47)	.86		.07	.16 [†]		
	S5	3.86 (.57)	.90		.34***	.39***	.46***	.34***
3. Intergroup anxiety	S4	2.38 (1.21)	.92			.40***		
	S5	3.78 (1.66)	.93			.54***	.55***	.46***
4. Modern racism	S4	2.85 (.54)	.78					
	S5	2.94 (.64)	.80				.77***	.53***
5. Blatant racism	S4							
	S5	2.20 (.88)	.90					.63***
6. Hostile tendencies	S4							
	S5	2.10 (.81)	.85					

Note. [†] $p < .08$; * $p < .05$; ** $p < .01$; *** $p < .001$

Respondents reported the extent to which they felt anxious, nervous, insecure, frightened, or scared when interacting with immigrants on 7-point Likert scales (1 = definitely not; 7 = definitely). Table 2 shows descriptive statistics and correlations among the measures.

Results

Moderation analyses

We conducted a hierarchical regression analysis (referred to as Model 1) with the centered scores of NFC and intergroup contact entered in Step 1 and their interaction term entered in Step 2 as predictors of racism. Table 3 shows that a main

Table 3. Results of the regression analyses tested in Study 4 (β -values), demonstrating a intergroup contact x NFC interaction on racism mediated by intergroup anxiety

	Model 1		Model 2		Model 3
	Racism		Intergroup anxiety		Racism
	Step 1	Step 2	Step 1	Step 2	
Contact	-.43***	-.45***	-.42***	-.44***	-.34***
NFC	.11	.15 [†]	.02	.06	.14 [†]
Contact x NFC		-.19*		-.21**	-.10
Intergroup anxiety					.22**
NFC x Intergroup anxiety					.06
R^2	.21***	.24***	.18***	.22***	.29***
R^2 change		.03*		.04**	

Note. [†] $p < .08$; * $p < .05$; ** $p < .01$; *** $p < .001$

effect of intergroup contact was obtained, whereas NFC did not yield a main effect. In addition, in line with Studies 1-3, a significant interaction effect between intergroup contact and NFC emerged. Figure 4 Panel A reveals a similar pattern of results compared to previous studies. Moreover, simple slopes analyses confirmed a pronounced relation between intergroup contact and racism when NFC was high (one SD above the mean), $\beta = -.63$, $p < .001$; conversely, a weaker relationship emerged when NFC was low (one SD below the mean), $\beta = -.28$, $p = .01$.

We conducted a second hierarchical regression analysis (Model 2) in which we tested the predictive value of contact and NFC on intergroup anxiety (see Table 3). We obtained a main effect of intergroup contact, but not of NFC. Adding the

interaction term in Step 2 significantly increased the variance explained. Figure 4 Panel B plots this interaction and shows that intergroup contact was strongly and negatively associated with intergroup anxiety when NFC was high (one SD above the mean), $\beta = -.65$, $p < .001$. Conversely, a weaker relationship was obtained among people low in NFC (one SD below the mean), $\beta = -.24$, $p < .05$.

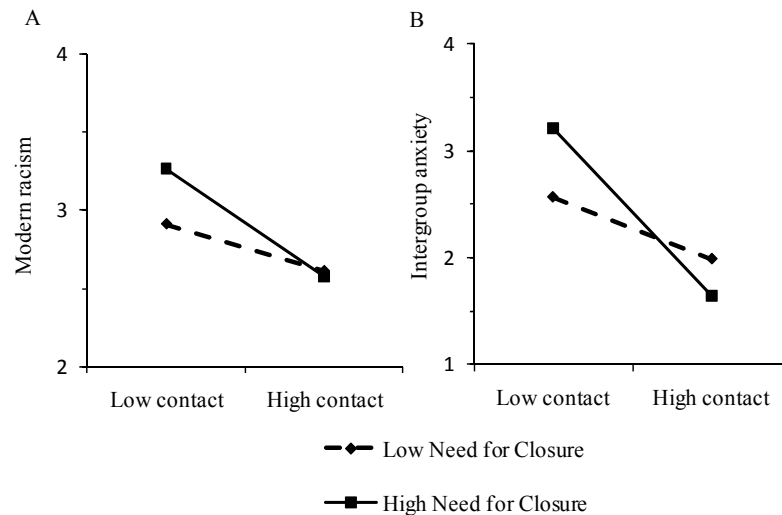


Figure 4. Intergroup contact x NFC interaction predicting modern racism and intergroup anxiety (Study 4).

Mediated moderation

To test whether intergroup anxiety accounts for the interaction between intergroup contact and NFC on racism, we conducted a series of regression analyses following the recommendations of Muller, Judd, and Yzerbyt (2005). To test the hypothesized mediated moderation, three regression models needed to be examined, two of which were reported above. As these analyses show, we obtained a

significant intergroup contact x NFC interaction effect on racism (i.e., the target variable) as well as on intergroup anxiety (i.e., the mediator). The third regression model to be tested includes intergroup contact, NFC, and intergroup anxiety as well as the intergroup contact x NFC and the NFC x intergroup anxiety interaction terms as predictors of racism.

As reported in the last column of Table 3, this third regression model (Model 3) revealed a significant main effect of intergroup contact and intergroup anxiety and a marginally significant main effect of NFC. The two interaction terms were non-significant. Because a significant effect of intergroup anxiety on racism emerged, and the residual intergroup contact x NFC interaction was reduced to non-significance, the requirements for mediated moderation were fulfilled. Hence, we can conclude that the interaction of contact and NFC on racism is mediated through intergroup anxiety. Additional Sobel tests confirmed that the mediation effect of intergroup anxiety was significant among people high in NFC, $z = 2.10$, $p < .05$, but not among people low in NFC, $z = 1.12$, $p = .30$.

Discussion

In line with Hypothesis 1b and replicating the findings in Studies 1-3, the results of Study 4 show a strong negative relationship between intergroup contact and prejudice among people high in NFC. Conversely, this relationship was curbed among people low in NFC. Moreover, our findings showed that this moderation effect was mediated by intergroup anxiety. Thus, the reduction in intergroup anxiety can be considered the underlying mechanism that explains why intergroup contact most strongly reduces prejudice among people high in NFC. In other words, because intergroup contact decreases feelings of intergroup uncertainty, unfamiliarity, and its associated anxiety, people who experience uncertainty and unfamiliarity as highly

aversive (i.e., those high in NFC) benefit the most from the effects of intergroup contact.

Study 5

Study 5 aimed to cross-validate the mediated moderation obtained in Study 4 using a measure of modern and blatant racism within a heterogeneous sample of adults. Additionally, we broadened the scope of our dependent variables by including a measure of hostile behavioral tendencies. Traditional contact research typically investigates contact effects on the affective and cognitive components of outgroup attitudes and racism. However, several researchers have recently stressed the importance of examining contact effects on the behavioral tendency component of prejudice because these tendencies constitute more proximal variables of real-world intergroup behavior (e.g., Plant & Devine, 2003; Paolini, Hewstone, & Cairns, 2007; Tam, et al., 2009).

Method

Participants

The sample was recruited by two research students who contacted their parents' social networks. The sample ($N = 135$) consisted of 58% women and 42% men. Mean age was 41.69 years ($SD = 14.15$) and all respondents reported being non-Muslim and Belgian (68% Christians, 32% atheists, agnostics, non-religious people, or other).

Measures

Similar to Studies 1-4, we assessed intergroup contact, NFC, intergroup anxiety, modern racism, and blatant racism. Given that Study 4 assessed intergroup anxiety at the end of the questionnaire, intergroup anxiety scores may have been

contaminated by the responses on the prejudice scale. Therefore, we administered the intergroup anxiety measure between the contact and prejudice measures in Study 5. Finally, respondents completed five items on 5-point Likert scales (1= strongly disagree; 5 = strongly agree; adapted from Plant & Devine, 2003), to assess their hostile tendencies toward immigrants when expecting intergroup contact. These items were: “If I had to interact with immigrants, I would tend to behave more firmly and harsher”, “I would behave hostile when having contact with immigrants”, “I would be frustrated when interacting with immigrants”, “I would look forward to interacting with immigrants” (reverse scored), and “I would be irritated in a conversation with an immigrant”. Table 2 presents descriptive statistics and correlations among measures.

Results and discussion

Moderation analyses

First, we tested a multivariate regression model in which the centered scores of intergroup contact, NFC, and their interaction term predicted the three dependent variables simultaneously: modern racism, blatant racism, and hostile tendencies. The multivariate test yielded main effects of intergroup contact, $F(3,129) = 8.15, p < .001$, and NFC, $F(3,129) = 13.52, p < .001$, as well as a significant interaction effect, $F(3,129) = 3.62, p = .01$.

Next, separate hierarchical regression analyses were conducted with the centered scores of intergroup contact and NFC entered in Step 1 and their interaction term entered in Step 2 as predictors of modern racism (Model 1a) and blatant racism (Model 1b). Table 4 presents the results of both models and displays the main effects of intergroup contact and NFC. Again, adding the interaction term significantly increased the variance explained.

Table 4. Results of the regression analyses tested in Study 5 (β -values), demonstrating an intergroup contact x NFC interaction on modern, blatant racism and hostile tendencies, mediated by intergroup anxiety

	Moderation Analyses								Moderation mediated by Intergroup anxiety			
	Model 1a				Model 1b				Model 1c			
	Modern racism				Blatant racism				Hostile tendencies			
	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2
Contact	-.30***	-.28***	-.34***	-.31***	-.34***	-.31***	-.34***	-.31***	-.17*	-.15†	-.21**	-.24***
NFC	.33***	.37***	.41***	.45***	.28***	.31***	.31***	.35***	.31***	.35***	.27***	.35***
Contact x NFC		-.19**		-.23**		-.16*		-.19*			-.10	-.14*
Intergroup anxiety											.38***	.35***
NFC x Intergroup anxiety											.09	.08
R^2	.24***	.28***	.33***	.38***	.22***	.25***	.15***	.18***	.41***	.49***	.41***	.34***
R^2 change		.04**		.05**		.03*		.03*				

Note. † $p < .07$; * $p < .05$; ** $p < .01$; *** $p < .001$

Figure 5 (Panels A and B) plots the interaction effects. Simple slopes analyses confirmed the pronounced relationship between intergroup contact and racism when NFC was high (one SD above the mean), $\beta = -.45, p < .001$ (Model 1a) and $\beta = -.51, p < .001$ (Model 1b). Conversely, this relationship was not significant when NFC was low (one SD below the mean), $\beta = -.11, ns$ (Model 1a) and $\beta = -.11, ns$ (Model 1b).

A similar hierarchical regression analysis was conducted with hostile tendencies as the dependent variable (Model 1c), revealing effects comparable to those obtained for the other racism measures (see Table 4). Again, intergroup contact was strongly and negatively related to hostile tendencies when NFC was high (one SD above the mean), $\beta = -.46, p < .001$, whereas no significant effects were found among people low in NFC (one SD below the mean), $\beta = -.17, ns$ (see Figure 5, Panel C).

Finally, we investigated the effects of NFC and intergroup contact on intergroup anxiety (Model 2). The results of these analyses, reported in Table 4, correspond to the those of the previous models (Models 1a, 1b, and 1c), yielding main effects of both intergroup contact and NFC as well as a significant interaction effect (see Figure 5, Panel D). Intergroup contact was strongly related to intergroup anxiety among people high in NFC (one SD above the mean), $\beta = -.32, p < .005$, but was not significantly related to intergroup anxiety among people low in NFC (one SD below the mean), $\beta = .02, ns$.

Mediated moderation

To test whether intergroup anxiety mediated the intergroup contact x NFC interaction on racism, we tested additional regression models for each dependent variable (Models 3a, 3b, and 3c, for modern racism, blatant racism, and hostile tendencies, respectively). In these models, intergroup contact, NFC, and intergroup

anxiety were entered along with the intergroup contact x NFC and NFC x intergroup anxiety interaction terms as predictors (Muller et al., 2005). Significant main effects of intergroup contact, NFC, and intergroup anxiety (last three columns of Table 4) were yielded, whereas the interaction terms were non-significant in Model 3a (modern racism) and Model 3c (hostile tendencies). In Model 3b (blatant racism), the intergroup contact x NFC interaction was still significant but less strong compared to a model without intergroup anxiety (i.e., Model 1b).

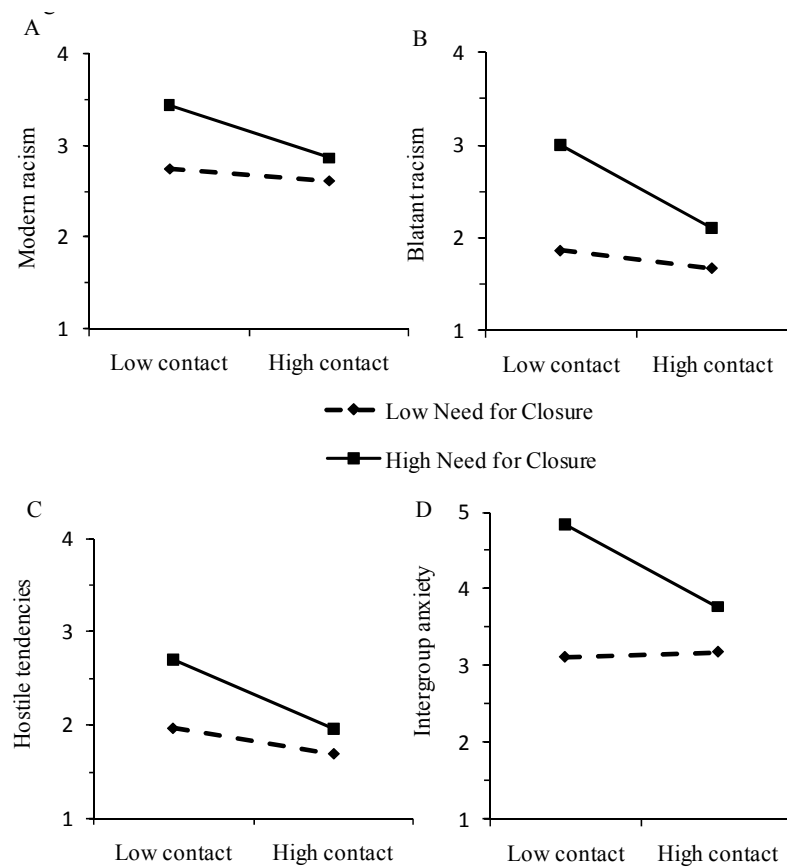


Figure 5. Intergroup contact x NFC interaction predicting modern racism, blatant racism, hostile tendencies, and intergroup anxiety (Study 5).

To summarize, our analyses showed that (a) NFC moderated the effect of intergroup contact on the target variables modern racism (Model 1a), blatant racism (Model 1b), and hostile tendencies (Model 1c); (b) NFC moderated the effect of intergroup contact on the mediator intergroup anxiety (Model 2); (c) a significant effect of intergroup anxiety on modern (Model 3a) and blatant racism (Model 3b) as well as hostile tendencies (Model 3c) was obtained; and (d) entering intergroup anxiety as mediator substantially reduced the magnitude of the intergroup contact x NFC interaction effect (Model 3a, 3b, and 3c compared to Models 1a, 1b, and 1c, respectively). Hence, intergroup anxiety mediates the interaction of intergroup contact and NFC on modern racism as well as on hostile tendencies and partially mediates the intergroup contact x NFC interaction on blatant racism. Additional Sobel tests confirmed significant indirect effects through intergroup anxiety among people high in NFC, $z = 2.62$, $p < .01$, $z = 2.60$, $p < .01$, and $z = 2.47$, $p = .01$, for modern racism, blatant racism, and hostile tendencies, respectively, but not among people low in NFC, all z 's $< .18$.

General discussion

The present research examined the impact of motivated cognition on the relationship between intergroup contact and prejudice. Based on the intergroup contact and NFC literatures, we advanced two competing hypotheses on the possible moderating role of NFC in the relationship between contact and prejudice. Combining Allport's (1954) theoretical insights with the NFC literature, Hypothesis 1a stated that a high dispositional NFC poses a motivational-cognitive barrier that blocks the beneficial effect of intergroup contact on prejudice. Conversely, by also considering recent theories and empirical findings on intergroup contact and anxiety, Hypothesis 1b stated that intergroup contact has stronger effects on prejudice among people high in NFC compared to people low in NFC.

The results of four cross-sectional studies and an experimental field study unambiguously supported Hypothesis 1b, showing that for people high in NFC, intergroup contact was strongly related to lower levels of subtle (Study 1), modern (Studies 1, 4, and 5), and blatant racism (Studies 2 and 5) as well as to less negative outgroup attitudes (Study 3). Conversely, these contact effects on the prejudice variables were curbed (Studies 2 and 4) or not significant (Studies 1, 3, and 5) for people low in NFC.²

Furthermore, the present research revealed that intergroup anxiety is an important underlying psychological mechanism explaining the moderation effect. In particular, intergroup anxiety was shown to mediate the moderator effect of NFC on the relationship between intergroup contact and modern (Studies 4 and 5) and blatant racism (Study 5). Therefore, we can conclude that particularly because intergroup contact reduces the levels of intergroup anxiety, people who are most prone to feelings of uncertainty and fear of what is unfamiliar, ambiguous, or unpredictable (i.e., high NFC scorers) benefit the most from intergroup contact.

These findings were extended in two important ways. First, the effects emerged with extended contact (Study 2) and second, we applied these findings to the behavioral tendency component of prejudice (Study 5). With respect to the first additional finding, the moderator effect of NFC with extended contact is important because some contexts may prevent personal contact with outgroup members (e.g., because of secluded work or school environments). As such, the benefits of intergroup contact can still be obtained through positive encounters between ingroup friends and outgroup members. Because intergroup anxiety was not included in Study 2, it is not yet clear whether intergroup anxiety plays a role here. Nevertheless, previous research has shown that intergroup anxiety mediates both direct and extended contact effects on prejudice (Paolini, et al., 2004; Turner, et al., 2008). Moreover, because extended contact operates without the real-time

experience of actual anxiety that characterizes direct contact situations (Wright et al., 1997; Turner et al., 2008), we may infer that this lack of anxiety also contributes to the positive effects of extended contact in the high NFC group.

A second noteworthy extension is that the moderation effect of NFC was not only restricted to the influence of intergroup contact on negative beliefs and feelings toward the outgroup (as typically measured by prejudice scales), but was also generalized to the behavioral tendency component of prejudice. In particular, among people high in NFC, but not among people low in NFC, higher levels of intergroup contact were associated with less hostile tendencies toward immigrants. Although we did not observe discriminatory behavior, this finding suggests that the obtained results may apply to real-world behavioral reactions during intergroup encounters.

In the following sections, we elaborate on how the moderator effect between intergroup contact and NFC extends previous literature, highlighting the important role of motivated cognition in the relationship between intergroup contact and prejudice. In addition, we elaborate on the importance of the situation x person approach to prejudice.

Increased benefits of intergroup contact for closed minds

Our findings provide an alternative perspective on the quite pessimistic ideas regarding the closed-minded and rigid person described in Allport's (1954) work as well as in the NFC literature. In particular, Allport doubted that intergroup contact would reduce prejudice for rigid people. He argued that because of their way of thinking and reasoning, rigid people would not benefit from situational influences such as intergroup contact. Along similar lines, people high in NFC have been described as having an inflexible way of thinking that increases their resistance to persuasion and leads to the rejection of opinions and arguments inconsistent with their current attitudes (Kruglanski, Pierro, Manetti, & De Grada, 2006). Because of

their strong desire to reach certainty and their opposition to unfamiliarity, people high in NFC seem more likely to hold on to negative outgroup stereotypes and attitudes (e.g., Roets & Van Hiel, 2006, *in press*; Van Hiel, et al., 2004). It was thus suggested that people high in NFC may have a motivational-cognitive barrier that safeguards their negative opinions about outgroup members.

In contrast to the assumptions regarding cognitively rigid persons in Allport's (1954) work and NFC theory, the present results demonstrate that people high in NFC are not necessarily unaffected by the environment. Indeed, the present research suggests that the motivational-cognitive barrier is not impermeable for the subtle influences of intergroup contact. Indeed, instead of using confronting strategies to combat prejudice (e.g., convincing people through arguments, or by implementing other information-based interventions) reducing prejudice in gentle ways, such as creating intergroup contact and thereby reducing the negative feelings of anxiety, may be more effective. Thus, we suggest that the influence of intergroup contact slips through the motivational-cognitive barrier without activating its defense mechanisms.

The present research also shows some parallels with the recent work of Page-Gould and colleagues (2008) who demonstrated beneficial effects of intergroup friendship in people who are most prone to experience anxiety in intergroup contexts (as indexed by their scores on race-based rejection sensitivity). In particular, these people initially displayed an amplified hormonal stress response (i.e., heightened cortisol reactivity) when meeting outgroup members. However, during three later cross-group friendship meetings, a sharp decline in cortisol reactivity was observed. In other words, repeated instances of positive intergroup contact attenuates intergroup stress and its negative consequences (Mendoza-Denton & Page-Gould, 2008; Mendoza-Denton et al., 2006).

Interestingly, other studies have also revealed that a high NFC may evoke high stress levels when unfamiliar stimuli are processed. For example, the findings of Roets and Van Hiel (2008) suggest that task situations inducing uncertainty and ambiguity result in an acute stress response among people high in NFC. Moreover, Mous et al. (2010) reported that people high in NFC experience increased levels of psychophysiological distress when interacting with an unknown outgroup member. Based on the present findings, however, we expect that after subsequent positive intergroup interactions, people high in NFC would show a marked decrease in distress. Hence, a promising pathway for future research is to investigate the combined effects of NFC and intergroup contact on intergroup anxiety and prejudice using a longitudinal design and hormonal or psychophysiological indicators of stress in addition to self-report measures of intergroup anxiety.

The situation x person approach to prejudice

Recently, Hodson (2009) argued that “Nowhere is the theoretical divide between person and situation more evident than the domain of prejudice research” (p. 247). Indeed, many contact researchers ignore individual differences or consider them a nuisance to be controlled in research; however, several studies have demonstrated the utility of studying individual difference variables in intergroup contexts (e.g., Britt et al., 1996; Dhont & Van Hiel, 2009; in press; Hodson, 2008; Hodson et al., 2009; Mendoza-Denton et al., 2002; Page-Gould et al., 2008).

For instance, recent studies (Dhont & Van Hiel, 2009; in press; Hodson, 2008; Hodson et al., 2009) have investigated the interactions between intergroup contact and right-wing attitudes on prejudice, as indicated by Right-Wing Authoritarianism (RWA, Altemeyer, 1981) and Social Dominance Orientation (SDO, Pratto, Sidanius, Stallworth, & Malle, 1994). The results of these studies revealed that high authoritarian people exhibited lower levels of prejudice when they

had increased contact with outgroup members, whereas limited effects of intergroup contact were found among less authoritarian people. Thus, these studies suggest that intergroup contact is especially effective for people prone to prejudice.

The present research is in line with these previously reported interaction effects between intergroup contact and right-wing attitudes on outgroup attitudes. These studies, however, focused on the moderating role of explicitly group-related social attitudes, which are closely linked to prejudice. Conversely, the present research taps into a much broader and more general construct (i.e., motivated cognition) that directs the way in which people process, interpret, and evaluate information within their social environment, or as Allport (1954) put it, their “whole habit of thinking about the world” (p. 175). Because the NFC concept aligns well with Allport’s (1954) motivational-cognitive basis of prejudice, the present research should not only be considered an important contribution to the situation x person approach to prejudice, but also as a test and refinement of Allport’s ideas.

Conclusion

The present results revealed that the strategy of intergroup contact to reduce prejudice might be most successful for people who usually stick strongly to existing attitudes, i.e., people high in NFC. Moreover, intergroup contact seems to sort such efficient effects among these people by remediating the underlying process of intergroup anxiety. Therefore, the present research provides a better understanding of prejudice reduction, paving the way for contact-based interventions in situations characterized by discrimination.

Notes

1. Preliminary analyses showed that the experimental and control groups were not significantly different with respect to their mean NFC levels, $F(1,60) = .14$, $p = .71$. Moreover, NFC was not significantly correlated with outgroup attitudes, $r < .01$.
2. In all the studies, we conducted additional analyses to test whether demographic variables such as sex, age, religious affiliation, and educational level moderated the present findings, but we did not find significant results. Additional tests for nonlinear effects of intergroup contact or NFC (e.g., including the squared terms of these variables into the regression analyses) did not yield significant effects as well.

References

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: testing and interpreting interactions*. Newbury Park: Sage Publications.
- Allport, G. W. (1954). *The nature of prejudice*. Reading, MA: Addison-Wesley.
- Altemeyer, R. (1981). *Right-wing authoritarianism*. Winnipeg: University of Manitoba Press.
- Britt, T. W., Boniecki, K. A., Vescio, T. K., Biernat, M., & Brown, L. M. (1996). Intergroup anxiety: A Person x Situation approach. *Personality and Social Psychology Bulletin*, 22, 1177–1188.
- Brown, R., & Hewstone, M. (2005). An integrative theory of intergroup contact. *Advances in Experimental Social Psychology*, 37, 255-343.
- Desforges, D. M., Lord, C. G., Ramsey, S. L., Mason, J. A., Van Leeuwen, M. D., West, S. C., et al., (1991). *Journal of Personality and Social Psychology*, 60, 531–544.
- Dhont, K., Cornelis, I., & Van Hiel, A. (2010). Interracial Public-Police Contact: Relationships with Police Officers' Racial and Work-Related Attitudes and Behaviors. *International Journal of Intercultural Relations*, 34, 551-560.
- Dhont, K., & Van Hiel, A. (2009). We must not be enemies: Interracial contact and the reduction of prejudice among authoritarians. *Personality and Individual Differences* 46, 172-177.
- Dhont, K., & Van Hiel, A. (in press). Direct contact and authoritarianism as moderators between extended contact and reduced prejudice: Lower threat and greater trust as mediators. *Group Processes and Intergroup Relations*
- Dovidio, J. F., Gaertner, S. L., & Kawakami, K. (2003). Intergroup contact: The past, present, and the future. *Group Processes and Intergroup Relations*, 6, 5-21.

- Duriez, B., & Van Hiel, A. (2002). The march of modern fascism. A comparison of social dominance orientation and authoritarianism. *Personality and Individual Differences*, 32, 1199-1213.
- Ellison, C. G., & Powers, D. A. (1994). The contact hypothesis and racial attitudes among Black Americans. *Social Science Quarterly*, 75, 385-400.
- Greenland, K., & Brown, R. J. (1999). Categorization and intergroup anxiety in contact between British and Japanese nationals. *European Journal of Social Psychology*, 29, 503-521.
- Hodson, G. (2008). Interracial prison contact: The pros for (social dominant) cons. *British Journal of Social Psychology* 47, 325-351.
- Hodson, G. (2009). The puzzling person-situation schism in prejudice-research. *Journal of Research in Personality*, 43, 247-248.
- Hodson, G., Harry, H., & Mitchell, A. (2009). Independent benefits of contact and friendship on attitudes toward homosexuals among authoritarians and highly identified heterosexuals. *European Journal of Social Psychology*, 39, 509-525.
- Islam, M. R., & Hewstone, M. (1993). Dimensions of contact as predictors of intergroup anxiety, perceived outgroup variability and outgroup attitude: An integrative model. *Personality and Social Psychology Bulletin*, 19, 700-710.
- Kruglanski, A. W. (1989). *Lay epistemic and human knowledge: Cognitive and motivational bases*. New York: Plenum.
- Kruglanski, A. W., Pierro, A., Mannetti, L., & De Grada, E. (2006). Groups as epistemic providers: Need for closure and the unfolding of group-centrism. *Psychological Review*, 113, 84-100.
- Kruglanski, A. W., & Webster, D. M. (1996). Motivated closing of the mind: "Seizing" and "freezing." *Psychological Review*, 103, 263-283.

- Kruglanski, A. W., Webster, D. M., & Klem, A. (1993). Motivated resistance and openness to persuasion in the presence or absence of prior information. *Journal of Personality and Social Psychology*, 65, 861-877.
- Levin, S., van Laar, C., & Sidanius, J. (2003). The effects of ingroup and outgroup friendship on ethnic attitudes in college: A longitudinal study. *Group Processes and Intergroup Relations*, 6, 76-92.
- McConahay, J. B. (1986). Modern racism, ambivalence, and the modern racism scale. In J. F. Dovidio & S. L. Gaertner (Eds.), *Prejudice, discrimination and racism* (pp. 91- 126). New York: Academic.
- Mendoza-Denton, R., Downey, G., Purdie, V. J., Davis, A., & Pietrzak, J. (2002). Sensitivity to status-based rejection: Implications for African American students' college experience. *Journal of Personality and Social Psychology*, 83, 896-918.
- Mendoza-Denton, R., & Page-Gould, E. (2008). Can cross-group friendships influence minority students' well being at historically White universities? *Psychological Science*, 19, 933-939
- Mendoza-Denton, R., Page-Gould, E., & Pietrzak, J. (2006). Mechanisms for coping with status-based rejection expectations. In S. Levin and C. van Laar (Eds.), *Stigma and group inequality: Social psychological perspectives* (pp.151-170). Mahwah, NJ: Erlbaum.
- Muller, D., Judd, C. M., & Yzerbyt, V. Y. (2005). When moderation is mediated and mediation is moderated. *Journal of Personality and Social Psychology*, 89, 852-863.
- Mous, L., Samochowiec, J., Florack, A., Wänke, M., Mendes, W. B., & Wilhelm, F. H. (2010). The moderating role of need for cognitive closure on cardiovascular reactions to intercultural encounters: A biopsychosocial analysis. *Psychophysiology*, 46, S140.

- Page-Gould, E., Mendoza-Denton, R., & Tropp, L. (2008). With a little help from my cross-group friend: Reducing anxiety in intergroup contexts through cross-group friendship. *Journal of Personality and Social Psychology*, 95, 1080–1094.
- Paolini, S., Hewstone, M., & Cairns, E. (2007). Direct and indirect intergroup friendship effects: Testing the moderating role of the affective-cognitive bases of prejudice. *Personality and Social Psychology Bulletin*, 33, 1406–1420.
- Paolini, S., Hewstone, M., Cairns, E., & Voci, A. (2004). Effects of direct and indirect cross-group friendships on judgments of Catholics and Protestants in Northern Ireland: The mediating role of an anxiety-reduction mechanism. *Personality Social Psychology Bulletin*, 30, 770–786.
- Paolini, S., Hewstone, M., Voci, A., Harwood, J., & Cairns, E. (2006). Intergroup contact and the promotion of intergroup harmony: The influence of intergroup emotions. In R. Brown & D. Capozza (Eds.), *Social identities: Motivational, emotional, and cultural influences* (pp. 209–238). Hove, UK: Psychology Press.
- Pettigrew, T. F. (1998). Intergroup contact theory. *Annual Review of Psychology*, 49, 65–85.
- Pettigrew, T. F., & Meertens, R. W. (1995). Subtle and blatant prejudice in western Europe. *European Journal of Social Psychology*, 25, 57–75.
- Pettigrew, T. F., & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*, 90, 751–783.
- Pettigrew, T. F., & Tropp, L. R. (2008). How does intergroup contact reduce prejudice? Meta-analytic tests of three mediators. *European Journal of Social Psychology*, 38, 922–934.

- Plant, E. A., & Devine, P. G. (2003). The antecedents and implications of interracial anxiety. *Personality and Social Psychology Bulletin*, 26, 709-801.
- Pratto, F., Sidanius, J., Stallworth, L. M., & Malle, B. F. (1994). Social Dominance Orientation: A personality variable predicting social and political attitudes. *Journal of Personality and Social Psychology*, 67, 741-763.
- Roets, A., & Van Hiel, A. (2006). Need for closure relations with authoritarianism, conservative beliefs and racism: The impact of urgency and permanence tendencies. *Psychologica Belgica* 46, 235-352.
- Roets, A., & Van Hiel, A. (2007). Separating ability from need: Clarifying the dimensional structure of the need for closure scale. *Personality and Social Psychology Bulletin*, 33, 266-280.
- Roets, A., & Van Hiel, A. (2008). Why some hate to dillydally and others do not: The arousal-invoking capacity of decision-making for low and high-scoring need for closure individuals. *Social Cognition*, 26, 333-346.
- Roets, A., & Van Hiel, A. (in press). The role of need for closure in essentialist entitativity beliefs and prejudice: An epistemic needs approach to racial categorization. *British Journal of Social Psychology*. DOI: 10.1348/014466610X491567
- Stephan, W. G., & Stephan, C. W. (1985). Intergroup anxiety. *Journal of Social Issues*, 41, 157-176.
- Tam, T., Hewstone, M., Kenworthy, J., & Cairns, E. (2009). Intergroup trust in Northern Ireland. *Personality and Social Psychology Bulletin*, 35, 45-59.
- Turner, R., Hewstone, M., Voci, A., & Vonofakou, C. (2008). A test of the extended intergroup contact hypothesis: The mediating role of intergroup anxiety, perceived ingroup and outgroup norms, and inclusion of the outgroup in the self. *Journal of Personality and Social Psychology*, 95, 843-860.

- Van Hiel, A., & Mervielde, I. (2005). Authoritarianism and social dominance orientation: Relationships with various forms of racism. *Journal of Applied Social Psychology* 35, 2323-2344.
- Van Hiel, A., Pandelaere, M., & Duriez, B. (2004). The impact of need for closure on conservative beliefs and racism: differential mediation by authoritarian submission and authoritarian dominance. *Personality and Social Psychology Bulletin*, 30, 824-837.
- Voci, A., & Hewstone, M. (2003). Intergroup contact and prejudice towards immigrants in Italy: The mediational role of anxiety and the moderational role of group salience. *Group Processes and Intergroup Relations*, 6, 37-54.
- Webster, D. M., & Kruglanski, A. W. (1994). Individual differences in need for cognitive closure. *Journal of Personality and Social Psychology*, 67, 1049-1062.
- Wright, S. C., Aron, A., McLaughlin-Volpe, T., & Ropp, S. A. (1997). The extended contact effect: Knowledge of cross-group friendships and prejudice. *Journal of Personality and Social Psychology*, 73, 73-90.

Chapter 5

Interracial public-police contact: Relationships with police officers' racial and work-related attitudes and behavior

Abstract

In a sample of Flemish police officers ($N = 172$), we examined whether interracial public-police contact is associated with police officers' racial and work-related attitudes and self-reported behavior. Complementing previous studies, it was revealed that interracial contact (both positive and negative) is related to prejudiced behavior toward immigrants via the mediating role of racial attitudes. Moreover, intergroup contact was also shown to be related to police officers' organizational citizenship behavior toward colleagues and superiors via their perceptions of organizational fairness. In the discussion section we elaborate on the severe impact of negative contact as well as the applied consequences of our findings within police organizations.

This chapter is based on Dhont, K., Cornelis, I., & Van Hiel, A. (2010). Interracial public-police contact: Relationships with police officers' racial and work-related attitudes and behaviors. *International Journal of Intercultural Relations*, 34, 551-560.

Introduction

Ethnic minorities are likely to hold negative attitudes toward the police, often perceiving police officers as being unfair and prejudiced (Hurst, Frank, & Browning, 2000; Tyler & Huo, 2002; Weitzer & Tuch, 2005). Examination of police officers' attitudes and behavior has shown that these negative perceptions are not completely unwarranted. Indeed, studies across different Western countries have indicated that police officers effectively obtain relatively high racial prejudice scores compared to the general population (Colman & Gorman, 1982; Pitkänen & Kouki, 2002; Wortley & Homel, 1995), which might result in an increased likelihood of ethnic minority members being accosted by police officers on the streets (e.g., Home Office, 2004).

Evidently, police officers often interact with members of ethnic minorities during the exercise of their duty, and several authors have shown that minority members' negative attitudes toward the police arise from negative personal experiences (Hurst et al., 2000; Tyler & Huo, 2002; Weitzer & Tuch, 2005). An underinvestigated issue, however, is the possibility that police officers' attitudes and behavior are related to those daily intergroup experiences as well, which can, as we discuss below, be reasonably expected based on the existing contact literature and Allport (1954). Therefore, the present study examines the associations between the frequency of positive and negative contact and police officers' levels of prejudiced attitudes and (self-reported) behavior toward immigrants (i.e., ethnic minorities with non-European roots). Furthermore, because interracial public-police contact constitutes such a vital part of police work, the present study extends the traditional intergroup contact approach of studying prejudice-related variables by also addressing the relationships with global work-related attitudes and behavior. These two focal issues are addressed in the following sections.

Intergroup contact hypothesis

The intergroup contact hypothesis formulated by Allport (1954) proposed that under optimal conditions contact between members of different groups reduces intergroup prejudice. Allport listed four essential features for successful intergroup contact to occur: (1) equal status between the groups, (2) intergroup cooperation, (3) common goals, and (4) support of authorities, norms, or customs. Later on, two factors were added to the list: opportunity for personal acquaintance and the development of intergroup friendships (Pettigrew, 1998; Pettigrew, 2008). A recent meta-analysis of more than 500 studies (Pettigrew & Tropp, 2006) provided clear evidence for the association between intergroup contact and positive outgroup attitudes. Of course, part of this association can be explained by the tendency of prejudiced people to avoid intergroup contact, but several studies adopting non-recursive structural equation models (e.g., Pettigrew, Christ, Wagner, & Stellmacher, 2007) or longitudinal designs (e.g., Brown, Eller, Leeds, & Stace, 2007) have demonstrated that contact has a stronger impact on prejudice than the reverse (Pettigrew, 2008). Hence, the available empirical evidence has led to the consensus that “intergroup contact typically reduces prejudice” (Pettigrew & Tropp, 2006, p. 751).

However, the majority of studies has typically focused on positive contact and the necessity of Allport’s ‘ideal’ conditions, triggering recent criticism that “everyday contact between groups bears little resemblance to this ideal world” (Dixon, Durrheim, & Tredoux, 2005, p. 699). Dixon et al. (2005) argued that this focus not only resulted in theories that are sometimes unusable or even meaningless in practice, but also “has produced a picture of intergroup processes that increasingly obscures and prettifies the starker realities of everyday interactions between members of different groups” (p. 700). While this criticism does not devalue the importance of contact as a mechanism to reduce prejudice, it emphasizes the need to

investigate intergroup contact in its societal context (see also Pettigrew, 2008). Moreover, because of the traditional focus on positive intergroup contact, little is known about intergroup encounters that lead to an increase of prejudice and conflict (Pettigrew, 2008).

Interracial public-police contact constitutes a good example of everyday intergroup encounters devoid of most (if not all) optimal contact conditions. Status inequality, for example, is intrinsic to police work. Nevertheless, based on their meta-analysis, Pettigrew and Tropp (2006) concluded that even though Allport's (1954) conditions facilitate the contact effect, positive outcomes even emerge in the absence of several of the proposed conditions. An important question arising here is how interracial public-police contact is related to the attitudes of police officers toward immigrants, given the situational conditions that are in contradiction to the proposed conditions. Suggestive but inconclusive evidence regarding this issue has been obtained by Liebkind, Haaramo, and Jasinskaja-Lahti (2000) who examined attitudes toward immigrants among various professional groups including police officers. It was reported that contact quality, as indicated by the degree of familiarity of the immigrant who respondents knew best, improved attitudes toward immigrants, even in unequal and non-voluntary contact situations.

Unfortunately, instances of negative intergroup contact may occur more frequently during police work, overruling the potential effects of high quality contact. Dhont and Van Hiel (2009) found in a general community sample that even though negative contact occurs less frequently than positive contact, negative contact had the strongest impact on prejudice, which may be attributed to a higher emotional salience of negative experiences. Along similar lines, Boniecki and Britt (2003) discussed the relationship between negative contact and prejudice of soldiers during peacekeeping operations abroad. Similar to police officers, soldiers often hold negative outgroup attitudes (e.g., Bosman, Richardson, & Soeters, 2007).

However, peacekeeping forces are also likely to experience hostile encounters with the local population that foster feelings of threat and anxiety, which eventually strengthen their negative attitudes even more (Boniecki & Britt, 2003).

Given the likelihood of negative contact with ethnic minority members during police work, the relationship between negative contact and racial prejudice may also be exacerbated in a police context. Indeed, police officers may be forced to deal with a lot of unpleasant situations involving members of ethnic minorities, leading to stronger associations between the amount of negative contact with prejudiced attitudes and, eventually with their behavior toward ethnic minority members.

In sum, the available evidence suggests that positive interracial public-police contact is linked to less prejudiced attitudes among police officers, and ultimately to less racially biased behavior. Conversely, negative contact between police officers and immigrants is expected to be related to more prejudiced attitudes, and eventually to more racially biased behavior. Therefore, the present study investigates the relationships between interracial public-police contact (positive and negative) and police-officers' attitudes and behavior toward immigrants and aims to demonstrate an indirect relationship between intergroup contact and their behavior through police officers' prejudiced attitudes.

Intergroup contact and work-related outcomes

A host of studies has examined the relationships between intergroup contact and specific intergroup variables (e.g., prejudice, intergroup anxiety, discrimination, and stereotyping). However, bearing in mind Pettigrew's (2008) argument that intergroup contact also needs to be viewed in its' specific institutional settings and larger societal context, it is somewhat surprising that other, relatively more distal outcome variables have received little attention. Indeed, the study of intergroup

contact within, for example an organizational context makes it possible to investigate relationships with a broader range of variables that are highly relevant in that particular context as well. Frequent intergroup contact ‘on the job’ may thus be related to workers’ perceptions and attitudes toward their work and organization. In the context of police work, there are regular interactions with immigrants and the valence and amount of this contact constitutes an inherent and important part of police work. It is therefore likely that these experiences are linked to other work-related attitudes and behavior. Uncovering such relationships would not only broaden the theoretical framework in which intergroup contact can be studied but would also significantly extend its applied relevance. Therefore, in the present study we broaden the traditional intergroup contact research questions by examining the potential relationship between contact and two important work-related variables: procedural fairness perceptions and organizational citizenship behavior (OCB).

Procedural fairness refers to the extent to which people consider the procedures used by the organization and hierarchical authorities to arrive at outcomes as fair. In particular, Leventhal (1980) proposed that procedural fairness is based on elements such as the opportunity for voice and the perception of procedures to be consistent, free of bias, accurate, correctable, and ethical. Some authors have argued that procedural fairness also includes issues of interpersonal treatment, such as politeness, respect, and dignity (e.g., Tyler & Blader, 2000; Tyler & Lind, 1992).

Although procedural fairness is commonly defined as originating from (an authority within) the organization, the multifoci justice model of Cropanzano, Byrne, Bobocel, and Rupp (2001) emphasizes the presence of multiple sources of (un)fairness, especially in terms of interpersonal treatment, at the level of the organization, supervisor, co-workers or, important in this context, customers (e.g., Rupp & Spencer, 2006; Spencer & Rupp, 2009). Indeed, Rupp and colleagues

demonstrated that employees perceive customers as a potential source of unfairness, which influences employees' adherence to organizational guidelines regarding emotional display rules (i.e., emotional labor). In particular, they demonstrated that injustice perceptions can be triggered by contact with impolite, rude, disrespectful, and deceitful customers.

Even though the multifoci model of fairness assumes the strongest effects to occur at the level of the source of the injustice, there is also evidence of cross-over effects, suggesting that fairness perceptions caused by one source may also spill over to and affect outcomes related to a different source (Liao & Rupp, 2005). This notion can be traced back to social information processing theory which claims that individuals gather information from one's direct social context to judge organizational policies, leaders, and practices (Salancik & Pfeffer, 1978). Hence, we would not only expect negative contact (characterized by impoliteness, a lack of respect, etc) with immigrants to be related to perceptions of 'customers' (i.e., prejudice), but these perceptions may also be related to perceptions of other potential fairness sources in the work environment as well, such as organization-focused fairness.

In the context of this study, we thus expect intergroup contact to be associated with fairness perceptions related to the organization as well. Indeed, because an important part of police officers' job is to interact with immigrants, positive or negative intergroup contact may be closely entangled with fairness perceptions. For example, hurtful and undeserved criticism, exaggerated accusations and derogations from immigrant civilians might not only be associated with police officers' levels of prejudice toward immigrants, but could also be linked to the extent to which they perceive their organization as fair. More specifically, frequent pleasant and constructive public-police contact is assumed to be accompanied by the perception of a positive, supportive and fair working climate, or in other words, by

increased levels of police officers' procedural fairness perception whereas frequent negative contact may be accompanied by the perception that one is not being sufficiently backed by the organization when encountering immigrants, and thus, associated with lowered levels of perceived organizational fairness. An additional interesting issue here is to look at the extent to which positive intergroup contact can counteract the relationship between negative intergroup contact and organization-focused fairness perceptions (for a similar suggestion, see also Spencer & Rupp, 2009).

While it is theoretically interesting to examine the links between intergroup contact and organizational procedural fairness perceptions, from a more applied point, it is even more important to focus on a behavioral work-related variable, that is, on organizational citizenship behavior (OCB). OCB is generally conceived as voluntary extra-role behavior that is beneficial to the organization (Organ, 1990), and which is known to predict productivity and profitability at the organizational level (Koys, 2001; Podsakoff, Ahearne, & MacKenzie, 1997). Procedural fairness, especially organization-focused procedural fairness, is considered as an important antecedent of an employee's willingness to perform OCB (e.g., Konovsky & Cropanzano, 1991; Podsakoff, MacKenzie, Paine, & Bachrach, 2000). Indeed, employees' procedural fairness perceptions not only enhance overall job satisfaction, compliance, and the motivation to do the required tasks, but also motivates employees to go beyond their prescribed role requirements. These voluntary prosocial behaviors are not driven by reinforcements or punishments, but instead motivated by the perception that the organization has one's best interests in mind (Cropanzano & Schminke, 2001) and can be trusted not to exploit its employees (De Cremer & Tyler, 2005). We therefore assume that the previously hypothesized relationships between intergroup contact and procedural fairness perceptions, in

turn, translates itself into indirect relationships between intergroup contact and OCB's via procedural fairness perceptions.

The present research

The present study focuses on the frequency of positive and negative contact of Flemish (from the Dutch speaking part of Belgium) operational police officers with immigrant citizens. The term immigrants refers here to its consensual meaning in Flanders to denominate members of ethnic minorities with non-European roots, and particularly to people from countries with a Muslim majority, with Moroccans and Turks constituting the two largest immigrant communities in Belgium.

In particular, we examine the relationships between the amount of positive and negative interracial public-police contact and police officers' levels of prejudice toward immigrants, as indicated by prejudiced attitudes as well as self-reported prejudiced behavior. At the same time, we examine the relationships between the amount of positive and negative intergroup contact and work-related perceptions and behavior, as indicated by procedural fairness perceptions and OCB. Based on the literature discussed in the introduction, the following hypotheses are formulated.

Hypothesis 1a. The amount of positive intergroup contact is negatively related to police officers' levels of prejudiced attitudes toward immigrants, while negative contact is expected to be positively related to their prejudiced attitudes.

Hypothesis 1b. Police officers' prejudiced attitudes are expected to be positively and directly related to their prejudiced behavior toward immigrants, while intergroup contact (positive and negative) is expected to be indirectly related (i.e., negatively and positively, respectively) to prejudiced behavior toward immigrants through prejudiced attitudes.

Hypothesis 2a. The amount of intergroup contact (positive and negative) is related (i.e., positively and negatively, respectively) to positive work-related perceptions, i.e., procedural fairness perceptions.

Hypothesis 2b. Procedural fairness perceptions is expected to be positively and directly related to OCB, while intergroup contact (positive and negative) is indirectly related (i.e., positively and negatively, respectively) to OCB through police officers' procedural fairness perceptions.

Method

Participants

Respondents were 188 police officers recruited among the active members of the operational staff of one small and two middle-sized local police corps in Flanders (i.e., the Dutch speaking region of Belgium) counting a total of 527 police officers across the three corps (83, 185, and 259 respectively). Data from 16 respondents were excluded from analyses because of too many missing values. The sample ($N = 172$; $n_1 = 22$, $n_2 = 77$, and $n_3 = 72$ for the separate corps, respectively) comprised 143 males, 28 females and 1 respondent did not indicate his or her sex.

Respondents' age ranged from 21 to 60 years ($M = 40.89$, $SD = 9.94$) and their seniority from 1 to 44 years ($M = 18.07$ years, $SD = 10.07$). None of the respondents belonged to an ethnic minority group and respondents reported being non-Muslim citizens. Nine percent of respondents were (chief) commissioners, 20% were chief inspectors (i.e., superintendents), 66% were inspectors (regular police officers equivalent to constables) and 5% were auxiliary officers. The distribution of these sample characteristics largely mirrors the distribution of these characteristics in the police corps.

Overall, respondents indicated on a 7-point scale ranging from 1 (Never) to 7 (Very much) to have frequent contact with immigrant citizens during work ($M =$

5.48), however commissioners reported somewhat less contact ($M = 3.27$) compared to the three other categories ($M = 5.53$).

Measures

Means and standard deviations for all scales described below are presented in Table 1, along with their correlations. All measures were administered in Dutch.

Intergroup contact. Quantity of positive and negative intergroup contact was measured with an adapted version of the intergroup contact measure of Dhont and Van Hiel (2009) based on Islam and Hewstone (1993). The measure consisted of four items for each contact type and had to be rated on 7-point Likert scales ranging from 1 (Never) to 7 (Very much). We explicitly asked respondents to consider only 'intergroup contact with immigrant citizens (no colleagues) during working hours, e.g., during interventions.' The four positive contact items ($\alpha = .84$) measured how often during work they have (1) friendly contact, (2) pleasant contact, (3) constructive contact, and (4) positive experiences with immigrant citizens. The four negative contact items ($\alpha = .93$) measured how often during work they have (1) conflicts, (2) unpleasant contact, (3) hostile contact, and (4) negative experiences with immigrant citizens.

In order to check the dimensionality of the positive-negative intergroup contact scales we entered the eight intergroup contact items into a principal-component analysis. This analysis clearly revealed a two-factor solution, accounting for 76% of the variance. Factor loadings after OBLIMIN-rotation showed that all negative contact items loaded strongly onto the first factor (loadings $> .90$), while the positive contact items loaded strongly onto the second factor (loadings $> .75$), with no absolute cross-loadings larger than .13. The two components showed no correlation, $r = .01$.

Hence, this principal component analysis indicated that both types of contact can indeed be differentiated (see also, Aberson & Gaffney, 2009; Dhont & Van Hiel, 2009) and we therefore employ separate averaged scores for the four positive contact items and the four negative contact items in the remainder of our analyses. Unlike previous studies in a more general population (Aberson & Gaffney, 2009; Dhont & Van Hiel, 2009), but in line with our expectations given the specific police context, participants reported significantly more negative contact than positive contact, $t(171) = 4.54, p < .001$.

Prejudice. To measure police officers' *prejudiced attitudes*, participants completed an adjusted 9-item version of McConahay's (1986) Modern Racism Scale on a 5-point Likert scale (1 = Strongly disagree; 5 = Strongly agree). The original items were first translated in Dutch and then adjusted to the Belgian context. The scale has been pretested in several student and adult samples with satisfactory indexes of validity and reliability and has also been used by Roets and Van Hiel (in press). The scale consists of three facet scales: three items assessed the denial of continuing discrimination, e.g. 'Discrimination against immigrants is no longer a problem in Belgium', three items assessed antagonism toward immigrants' demands, e.g., 'Immigrants are getting too demanding in their push for equal rights', and three items assessed resentment about special favors for immigrants, e.g., 'Immigrants are receiving too little attention in the media' (reverse scored). The complete nine-item scale proved to be internally consistent ($\alpha = .75$).

Three items assessed *prejudiced behavior* ($\alpha = .78$) on a 7-point Likert scale (1 = Strongly disagree; 7 = Strongly agree), e.g., 'When problems with immigrants occur, I tend to behave harsher than with problems with non-immigrants' and 'I act more firmly when I am confronted with a problem in which immigrants are involved'.

Measures related to the organization. Respondents completed measures of procedural fairness perceptions and OCB on 5-point Likert scales ranging from 1 (Certainly not) to 5 (Certainly). To measure *procedural fairness perceptions* participants were asked to rate the seven items ($\alpha = .87$) of Colquitt's Procedural Fairness scale (2001) (see also De Cremer & Van Hiel, 2006), concerning the procedures applied by their organization when making decisions about their job. Sample items are 'Are you able to express your views and feelings during those procedures?' and 'Are those procedures based on accurate information?'

OCB or extra-role behavior, was assessed with seven items ($\alpha = .83$) based on Konovsky and Organ (1996) and on Tyler and Blader (2000). Sample items are 'I volunteer to help others when they have heavy workloads' and 'I put an extra effort into doing my job well, beyond what is normally expected from me'.

Table 1. Means, standard deviations, and correlations among measures

	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Positive contact	3.38	1.25	-				
2. Negative contact	4.12	1.72	.01	-			
3. Prejudiced attitudes	3.35	.62	-.33***	.36***	-		
4. Prejudiced behavior	2.92	1.37	-.08	.24***	.30***	-	
5. Procedural fairness	2.87	.76	.11	-.37***	-.26***	-.12	-
6. OCB	3.73	.60	.20**	-.16*	-.12	-.05	.35***

* $p < .05$; ** $p < .01$; *** $p < .001$

Data-preparation, analyses and fit criteria

We tested our predictions using structural equation modeling (SEM) with latent variables (LISREL, version 8.71, Jöreskog & Sörbom, 2004). Based on the covariance matrix among items SEM tests the extent to which variations in one variable corresponds to variations in one or more variables. Compared to zero-order correlations, SEM is more versatile because it allows to test the interrelationships of multiple variables simultaneously and is able to model measurement error. Moreover, SEM permits modeling of indirect relations between variables (i.e., mediation models) and also estimates the strength and the significance of such indirect relations. Following the recommendations of Bagozzi and Heatherton (1994), we adopted a partial disaggregation approach for scales consisting of more than five items in order to maintain an adequate ratio of cases to parameters and to increase the reliability of our indicators. As such, for prejudiced attitudes, procedural fairness perceptions, and OCB, we averaged subsets of items to create three indicator parcels for each construct. For positive and negative contact and for prejudiced behavior, the items served as indicators.

We investigated Hypotheses 1a and 1b by fitting a model (Model 1) in which positive and negative intergroup contact are directly related to prejudiced attitudes as well as indirectly related to prejudiced behavior via prejudiced attitudes. Furthermore, to investigate Hypotheses 2a and 2b, intergroup contact variables were modeled to test the direct relations with procedural fairness perceptions as well as to test the indirect relationship with OCB via procedural fairness perceptions. To test the strength of the direct versus indirect relationships between contact and behaviors, we also tested whether the addition of the direct paths between contact and the behavioral variables (i.e., prejudiced behavior and OCB), would improve the fit of Model 1.

The goodness-of-fit was assessed using the Chi-square test, the comparative fit index (CFI), the root-mean-square error of approximation (RSMEA), and the standardized root-mean-square residual (SRMR). Following standard recommendations, a satisfactory fit is indicated by a Chi-square lower than double the degrees of freedom, a CFI value greater than .95, an RMSEA value of less than .06, and a SRMR value of less than .08 (Hu & Bentler, 1999).

Results

Hypotheses 1a and 1b: Testing the relations between intergroup contact and prejudiced attitudes and behavior

Figure 1 presents the tested model (Model 1). This model indicated a good fit to the data, $\chi^2(163) = 217.75, p = .003$; CFI = .97; RMSEA = .044; SRMR = .068. As can be seen in Figure 1, all hypothesized relations were significant. More specifically, confirming Hypothesis 1a, positive and negative contact were, respectively negatively and positively, related to prejudiced attitudes, while in accordance with Hypothesis 1b police officers' prejudiced attitudes were significantly and positively related to their prejudiced behavior toward immigrants. Furthermore, both positive and negative contact were significantly and indirectly related to prejudiced behavior via prejudiced attitudes, IE = -.11, $p < .01$ and IE = .14, $p < .01$, respectively.

Hypotheses 2a and 2b: Testing the relations between intergroup contact and procedural fairness perceptions and OCB

As can be seen in Figure 1 as well, and in accordance with Hypothesis 2a, both positive and negative contact were, respectively positively and negatively, related to procedural fairness perceptions. Furthermore, in accordance with Hypothesis 2b, procedural fairness was positively related to OCB, while both

positive and negative contact were significantly and indirectly related to OCB via procedural fairness, $IE = .08, p < .05$ and $IE = -.18, p < .001$, respectively.

Finally, adding the direct paths from positive and negative contact to prejudiced behavior and OCB, which were not included in Model 1, did not significantly ameliorate the model fit, $\Delta\chi^2(3) = 2.44, ns$. Moreover, the additional direct paths from positive and negative contact to prejudiced behavior and to OCB were not significant. Therefore, Model 1 without these direct paths, as presented in Figure 1, is more parsimonious and is therefore preferred.¹

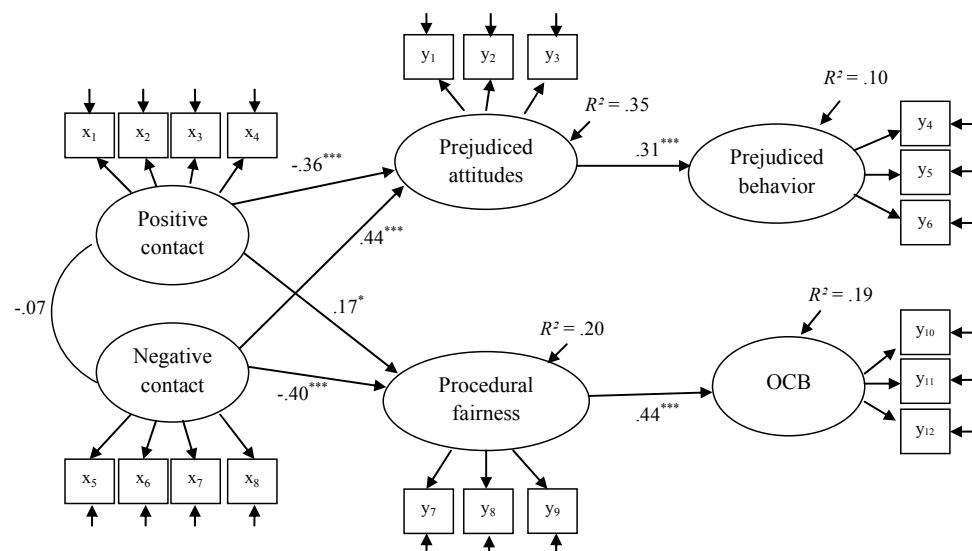


Figure 1. Structural equation model (Model 1) of the relationships between positive and negative intergroup contact with prejudiced behavior via prejudiced attitudes and with OCB via procedural fairness perceptions. * $p < .05$; ** $p < .01$; *** $p < .001$

Discussion

The present study had two major aims. First, we wanted to investigate whether the frequency of positive and negative contact between police officers and immigrants is related to police officers' prejudiced attitudes and behavior toward immigrants. Simultaneously, we aimed to examine whether interracial public-police contact is related to the general work-related variables of procedural fairness perceptions and OCB.

The present study yielded corroborative evidence for our hypotheses. In line with Hypothesis 1a, we demonstrated that both positive as well as negative intergroup contact are significantly (respectively, negatively and positively) related to police officers' levels of prejudiced attitudes toward immigrants. Moreover, confirming Hypothesis 1b, police officers' prejudiced attitudes were significantly and positively related to prejudiced behavior toward immigrants and intergroup contact (positive and negative) demonstrated a significant indirect relationship with police officers' behavior toward immigrants through their prejudiced attitudes.

With respect to the relationship between intergroup contact and work-related variables, we hypothesized that intergroup contact (positive and negative) would be associated with police officers' general work-related perceptions and behavior because contact with immigrants constitutes an important and potentially stressful and demanding aspect of their work (Richeson & Shelton, 2007). The present results corroborated our hypotheses. In particular, in line with Hypothesis 2a we showed that intergroup contact (positive and negative) was significantly related to procedural fairness perceptions. Furthermore, in accordance with Hypothesis 2b, procedural fairness perceptions were positively related to OCB. This finding corroborates earlier research where perceived procedural fairness was linked to extra-role voluntary employee behaviors in a variety of settings (e.g., Konovsky & Cropanzano, 1991; Podsakoff, et al., 2000). Moreover, further in line with

Hypothesis 2b, positive and negative contact were only indirectly related to OCB through procedural fairness perceptions.

In the present model, the significant relationships between prejudice and work variables can thus be explained by the sheer fact that both these variable types are related to intergroup contact. The relationships between prejudice and work-related variables are thus grounded in the daily interaction between police officers and ethnic minority members. Hence, only to the extent that intergroup contact comes to the forefront during daily work experiences, people might use it as a cue for inferring levels of procedural fairness of their organizations and act accordingly through displaying OCB. This result clarifies that organizations should be attentive to their members' daily experiences and provide support and a listening ear, enabling them to reevaluate their recent encounters (Boniecki & Britt, 2003).

We first discuss our main findings, highlighting some important implications. In the remainder of the discussion we go further into some limitations of the present study and point out interesting avenues for future research.

Relationships between interracial public-police contact and police officers' prejudiced attitudes and behavior

With respect to the relationship between intergroup contact and police officers' attitudes and behavior toward immigrants, the present findings are in line with the contact hypothesis showing that positive intergroup contact was negatively related to police officers' levels of prejudice toward immigrants. Importantly, this finding demonstrates that even under conditions that seem to be in contradiction with the conditions formerly proposed as prerequisite (e.g. equal status, cf. Allport, 1954; Pettigrew 1998), the relationship between positive contact and prejudice still holds. Indeed, the context of policemen at work does not even closely resemble the cooperative setting envisaged by scholars advancing the contact hypothesis. This

finding aligns well with Pettigrew and Tropp's (2006) conclusion that the proposed conditions spelled out by contact theory may play a facilitating role rather than a necessary one.

Furthermore, negative contact experiences with immigrants were related to police officers' levels of prejudice as well. Importantly, the reported mean frequency of negative contact was quite high compared to the few negative contact experiences reported in the general community (e.g., Dhont & Van Hiel, 2009) or in student samples (e.g., Aberson & Gaffney, 2009). Moreover, police officers reported significantly more negative contact compared to positive contact. These findings, along with the result that negative contact shows a more pronounced relationship with prejudice than positive contact (see also Dhont & Van Hiel, 2009), demonstrate the importance of studying the effects of intergroup contact in specific samples, such as police officers. Indeed, the demonstrated benefits of positive contact become superfluous when negative contact occurs more frequently and shows stronger relations with prejudice than positive contact, not at least because it might be impossible to exclude negative intergroup contact experiences from police work.

However, police officers have considerable leeway in how they handle contact situations and, the present results suggest that this behavior is likely to be biased by their attitudes toward immigrants. As such, their actions will affect the quality of future intergroup contact situations which, in turn, may reinforce or even polarize the existing attitudes of immigrants toward the police. In sum, the attitudes and behavior of both parties toward each other are shaped by the same contact experiences, suggesting a vicious circle which is hard to break due to the predominant negative contact during the immigrant-police interactions.

Our findings resemble the observations and reports about peacekeeping operations in conflict areas (Boniecki & Britt, 2003). Soldiers on peacekeeping mission are often confronted with small groups of local citizens who may challenge

the authority of the soldiers, as testified for instance by American soldiers deployed to Kazakhstan (Britt & Adler, 1999) or by Dutch soldiers who served in Bosnia (Soeters & Rovers, 1997). Such instances of negative contact may range from dishonest and disrespectful treatment to severe verbal and physical aggression. Indeed, peacekeepers have been the target of violent attacks from the people they are mandated to protect. Additionally, when operating in a non-Western context, cultural differences in values and norms between the Western soldiers and the local population often give rise to mutual misunderstandings (e.g., Soeters, Tanerçan, Varoglu, & Sigri, 2004). Although these hostile actions are usually initiated by only a small fraction of the local population, soldiers encountering hostilities from local citizens are likely to attribute this behavior to the group (Boniecki & Britt, 2003). As such, negative attitudes toward the local population are formed and strengthened, surfacing through the soldiers' behavior, which may jeopardize their mission. Our results suggest that similar mechanisms might be at play in public-police contact.

Relationships between interracial public-police contact and work-related variables

By demonstrating the relationships between intergroup contact and organizational fairness perception, the present findings uniquely contribute to both the organizational justice and intergroup contact literature. Indeed, the contact literature is in dire need of studies that examine variables beyond those directly associated with prejudice and studies that investigate contact within specific contexts. At the same time, the organization justice literature has only recently started to look into factors that influence fairness perceptions that do not necessarily emanate from within the organization (i.e., Rupp & Spencer, 2006; Spencer & Rupp, 2009).

The present results strongly reveal that daily work experiences with people outside the organization is related to how fair the organization itself is perceived.

Because we did not compare the impact of negative intergroup contact to negative experiences with the public in general, our conclusions are necessarily limited to the link between intergroup contact and organizational procedural fairness perceptions. Still, our findings suggest that employees are not purely at mercy of the organizations' whims with respect to organizational fairness perceptions. Instead, individuals within an organization actively construct organizational fairness perceptions based on both their experiences within the organization as well as on encounters with the public during their working hours.

This finding aligns partly with previously demonstrated examples where employees' fairness perceptions were influenced by contact with external sources when this interaction constituted a substantial part of the job (Rupp & Spencer, 2006). Moreover, our results fit within a cross-level multifoci perspective of procedural justice where the antecedents of injustice resulting from contact with the public are generalized to unfairness perceptions of the organization (Liao & Rupp, 2005).

Interestingly, similar to the contact-prejudice relationships, the work variables (i.e., procedural fairness perceptions and OCB) were more strongly related to negative contact than to positive contact. Hence, while positive contact might counter to some degree negative contact experiences, this latter type of contact still showed the strongest relations with the work variables. More frequent negative contact may also be related to work related variables through other processes than those presently studied. Indeed, after large-scale Belgian police reforms in 1998, community oriented policing became the official model. This approach includes an emphasis on partnerships with members of ethnic minorities in a climate of mutual respect, propagating positive intergroup contact. Importantly, while this model of policing was embraced by the higher level police authorities, it might be perceived as being soft and unrealistic by operational police officers (e.g., Easton et al, 2009).

Hence, it is possible that not only negative intergroup contact in itself ‘spills over’ to procedural fairness perceptions of the organization, but that the additional clash between the organization’s ideals and the harsh reality of frequent negative contact might further strengthen police officers’ negative perceptions of their organizations’ procedural fairness.

An important consequence of linking intergroup contact to fairness perceptions relates to the indirect relationships of intergroup contact with employees’ behavior during their work, at least in the context of public-police contact. Indeed, the results of the present study not only show that intergroup contact is related to prejudiced attitudes and behavior but also (indirectly) to constructive extra-role behavior toward colleagues and superiors. Hence, since two vital elements of the police job are involved, the present findings highlight the importance of actively coaching police officers in their contact with immigrants. Such investments from police organizations are needed not only because correct behavior toward immigrants is highly desired, but also in order to retain and attract motivated police officers who are feeling at home in their organization.

Limitations and directions for future research

An important limitation of the present study concerns the use of a cross-sectional design which implies that we cannot make causal inferences about the significant relationships. A solution to this problem would require a longitudinal design. As in most intergroup contexts it is likely that these relationships work in a bi-directional way. Previous research on the contact-prejudice relationship has indeed revealed that intergroup contact typically predicts prejudice, but at the same time prejudiced people are likely to avoid most instances of intergroup contact (e.g., Pettigrew et al., 2007; Pettigrew, 2008).

Secondly, because of the strong relations between negative contact and police officers' attitudes and behavior, the concluding message of the present study does not seem to be particularly encouraging. Furthermore, finding effective strategies that can break the negative spiral may prove to be a major challenge. However, we only considered immigrant-police contact during working hours, while it might be more hopeful to consider contact with immigrants in police officers' personal lives as well. Indeed, Peruche and Plant (2006) demonstrated that when police officers had positive intergroup contact outside of work, their attitudes and beliefs about Black's violence were less negative, resulting in less negative behavior (i.e., a decreased bias of shooting unarmed Black suspects on a shooting simulation). These authors suggested that positive contact outside of work counteracts the large degree of negative contact with Blacks during work. Hence, while the effects of positive contact on the job may be overruled by negative contact experiences during police work, positive contact in police officers' personal lives may counteract the effects of negative contact on the job.

Notes

1. We also tested the fit of a competing Model 2 where positive and negative contact were considered as 'outcomes' of prejudiced attitudes and behaviors and procedural fairness perceptions and OCB. Even though this alternative model fitted the data relatively well, it did not fit as well as Model 1, $\chi^2(163) = 266.39$, $p < .0001$; CFI = .96; RMSEA = .061; SRMR = .102. Model 1 was therefore preferred.

References

- Aberson, C. L., & Gaffney, A. M. (2009). An integrated threat model of explicit and implicit attitudes. *European Journal of Social Psychology, 39*, 808-830.
- Allport, G. W. (1954). *The nature of prejudice*. Reading, MA: Addison Wesley.
- Bagozzi, R. P., & Heatherton, T. F. (1994). A general approach for representing multifaceted personality constructs: Application to state self-esteem. *Structural Equation Modeling, 1*, 35-67.
- Bonietek, K. A., & Britt, T. W. (2003). Prejudice and the peacekeeper. In T. W. Britt & A. B. Adler (Eds.), *The psychology of the peacekeeper: Lessons from the field* (pp. 53-70). Westport, CT: Praeger Press.
- Bosman, F., Richardson, R., Soeters, J. (2007). Multicultural tensions in the military? Evidence from the Netherlands armed forces. *International Journal of Intercultural Relations, 31*, 339-361.
- Britt, T. W., & Adler, A. B. (1999). Stress and health during medical humanitarian assistance missions. *Military Medicine, 164*, 275-279.
- Brown, R., Eller, A., Leeds, S., & Stace, K. (2007). Intergroup contact and intergroup attitudes: A longitudinal study. *European Journal of Social Psychology, 37*, 692-703.
- Colquitt, J. A. (2001). On the dimensionality of organizational justice: A construct validation of a measure. *Journal of Applied Psychology, 86*, 386-400.
- Colman, A. M., & Gorman, L. P. (1982). Conservatism, dogmatism, and authoritarianism in British police officers. *Sociology, 16*, 1-11.
- Cropanzano, R., Byrne, Z. S., Bobocel, Z. S., & Rupp, D. E. (2001). Moral virtues, fairness heuristics, social entities, and other denizens of organizational justice. *Journal of Vocational Behavior, 58*, 164-209.

- Cropanzano, R., & Schminke, M. (2001). Using social justice to build effective work groups. In M. E. Turner (Ed.), *Groups at work: Theory and research* (pp. 143 – 172). Mahwah, NJ: Erlbaum.
- De Cremer, D., & Tyler, T.R. (2005). Managing group behaviour: The interplay between fairness, self, and cooperation. *Advances in Experimental Social Psychology*, 37, 151-218.
- De Cremer, D., & Van Hiel, A. (2006). When it matters to me that you are treated fairly: Effects of other's fair treatment as a function of other's willingness to help. *Organizational Behavior and Human Decision Processes*, 100, 231-249.
- Dhont, K., & Van Hiel, A. (2009). We must not be enemies: Interracial contact and the reduction of prejudice among authoritarians. *Personality and Individual Differences* 46, 172-177.
- Dixon, J., Durrheim, K., & Tredoux, C. (2005). Beyond the optimal contact strategy. A reality check for the contact hypothesis. *American Psychologist* 60, 697-711.
- Easton, M., Ponsaers, P., Demarée, C, Vandevoorde, N., Enhus, E., Elffers, H., et al.(2009). *Multiple community policing: Hoezo?* Ghent, Belgium: Academia Press.
- Home Office (2004). Stop and search action team strategy 2004-2005. London: Home Office.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6, 1-55.
- Hurst, Y. G., Frank, J., & Browning, S. L. (2000). The attitudes of juveniles toward the police: A comparison of Black and White youth. *Policing: An International Journal of Police Strategies and Management*, 23, 37-53.

- Islam, M. R., & Hewstone, M. (1993). Dimensions of contact as predictors of intergroup anxiety, perceived outgroup variability and outgroup attitude: An integrative model. *Personality and Social Psychology Bulletin*, 19, 700-710.
- Jöreskog, K. G. & Sörbom, D. (2004) LISREL 8.7 for windows (computer software). Lincolnwood: Scientific Software International, Inc.
- Konovsky, M., & Cropanzano, R. (1991). Perceived fairness of employee drug testing as a predictor employee attitudes and job performance. *Journal of Applied Psychology*, 76, 698-707.
- Konovsky, M. A., & Organ, D. W. (1996). Dispositional and contextual determinants of organizational citizenship behavior, *Journal of Organizational Behavior*, 17, 253-266.
- Koys, D. J. (2001). The effects of employee satisfaction, organizational citizenship behavior, and turnover on organizational effectiveness: A unit-level, longitudinal study. *Personnel Psychology*, 54, 101-114.
- Leventhal, G. S. (1980). What should be done with equity theory? New approaches to the fairness in social relationships. In K. Gergen, M. Greenberg, & R. Willis (Eds.), *Social exchange theory* (pp. 27-55). New York: Plenum.
- Liao, H., & Rupp, D. E. (2005). The impact of justice climate and justice orientation on work outcomes: A cross-level multifoci framework. *Journal of Applied Psychology*, 90, 242-256.
- Liebkind, K., Haaramo, J., & Jasinskaja-Lahti I. (2000). Effects of contact and personality on intergroup attitudes of different professionals. *Journal of Community and Applied Social Psychology*, 10, 171-181.
- McConahay, J. B. (1986). Modern racism, ambivalence, and the modern racism scale. In J. F. Dovidio & S. L. Gaertner (Eds.), *Prejudice, discrimination and racism* (pp. 91- 126). New York: Academic Press.

- Organ, D.W. (1990). The motivational basis of organizational citizenship behavior. *Research in Organizational Behavior*, 12, 43-72.
- Peruche, B. M., & Plant, E. A. (2006). The correlates of law enforcement officers' automatic and controlled race-based responses to criminal suspects. *Basic and Applied Social Psychology*, 28, 193-199.
- Pettigrew, T. F. (1998). Intergroup contact theory. *Annual Review of Psychology*, 49, 65-85.
- Pettigrew, T. F. (2008) Future directions for intergroup contact theory and research. *International Journal of Intercultural Relations*, 32, 187-199.
- Pettigrew, T. F., Christ, O., Wagner, U., & Stellmacher, J. (2007). Direct and indirect intergroup contact effects on prejudice: A normative interpretation. *International Journal of Intercultural Relations*, 31, 411-425.
- Pettigrew, T. F., & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*, 90, 751-783.
- Pitkänen, P., & Kouki, S. (2002). Meeting foreign cultures: A survey of the attitudes of Finnish authorities towards immigrants and immigration. *Journal of Ethnic and Migration Studies*, 28, 103-118.
- Podsakoff, P. M., Ahearne, M., & MacKenzie, S. B. (1997). Organizational citizenship behavior and the quantity and quality of work group performance. *Journal of Applied Psychology*, 82, 262-270.
- Podsakoff, P. M., MacKenzie, S. B., Paine, J. B., & Bachrach, D. G. (2000). Organizational citizenship behaviors: A critical review of the theoretical and empirical literature and suggestions for future research. *Journal of Management*, 26, 513-563.
- Richeson, J. A., & Shelton, J. N. (2007). Negotiating interracial interactions: Costs, consequences, and possibilities. *Current Directions in Psychological Science*, 16, 316-320.

- Roets, A., & Van Hiel, A. (in press). The role of need for closure in essentialist entitativity beliefs and prejudice: An epistemic needs approach to racial categorization. *British Journal of Social Psychology*.
DOI: 10.1348/014466610X491567
- Rupp, D. E., & Spencer, S. (2006). When customers lash out: The effects of customer interactional injustice on emotional labor and the mediating role of discrete emotions. *Journal of Applied Psychology, 91*, 971-978.
- Salancik, G. R., & Pfeffer, J. (1978). Social information-processing approach to job attitudes and task design. *Administrative Science Quarterly, 23*, 224-253.
- Soeters, J. L., & Rovers, J. H. (1997). *Netherlands annual review of military studies 1997: The Bosnian experience*. Breda, The Netherlands: Royal Netherlands Military Academy.
- Soeters, J., Tanerçan, E., Varoglu, K., & Sigri, U. (2004). Turkish–Dutch encounters in peace operations. *International Peacekeeping, 11*, 354–368.
- Spencer, S., & Rupp, D. (2009). Angry, guilty, and conflicted: Injustice toward coworkers heightens emotional labor through cognitive and emotional mechanisms. *Journal of Applied Psychology, 94*, 429-444.
- Tyler, T. R., & Blader, S. (2000). *Cooperation in groups: Procedural justice, social identity, and behavioral engagement*. Philadelphia: Psychology Press.
- Tyler, T. R., & Huo, Y. J. (2002). *Trust in the law*. New York: Russel-Sage.
- Tyler, T. R., & Lind, E. A. (1992). A relational model of authority in groups. *Advances in Experimental Social Psychology, 25*, 115-191.
- Weitzer, R., & Tuch, S. A. (2005). Racially biased policing: Determinants of citizen perception. *Social Forces, 83*, 1009-1030.
- Wortley, R. K., & Homel, R. J. (1995). Police prejudice as a function of training and outgroup contact. *Law and Human Behavior, 19*, 305-317.

Chapter 6

Longitudinal intergroup contact effects on prejudice and essentialism using self-reports and observer ratings

Abstract

Longitudinal effects of intergroup contact on prejudice and essentialism were investigated in a sample of 65 young adults (sample 1) and a sample of their close friends (sample 2, $N = 172$), adopting a full cross-lagged panel design. We first validated the self-report measure of intergroup contact from sample 1 with observer ratings from sample 2 and showed that self-reports and observer ratings of contact were highly correlated. Moreover, we obtained significant cross-lagged effects of intergroup contact on prejudice with both measures, unambiguously corroborating contact theory. In sample 2, we also found cross-lagged effects of self-reported contact on essentialism, demonstrating that intergroup contact changes the general way of thinking about racial groups. Methodological and theoretical implications are discussed.

This chapter is based on Dhont, K., Van Hiel, A., & Roets, A. Longitudinal intergroup contact effects on prejudice and essentialism using self-reports and observer ratings.

Manuscript in revision

Introduction

Over the past decades, a vast body of research has provided convincing empirical support for the theory that positive intergroup contact is likely to improve intergroup attitudes and reduce prejudice (Allport, 1954; Brown & Hewstone, 2005; Pettigrew, 1998). Bringing together this body of research in a meta-analytic study, Pettigrew and Tropp (2006) confirmed that “intergroup contact typically reduces intergroup prejudice” (p. 766), revealing a moderate mean effect ($r = -.21$). Intergroup contact in the form of cross-group friendship is considered especially effective in reducing prejudice because this specific type of contact incorporates several of Allport’s (1954) favorable conditions (e.g., equal status and common goals), while it is also likely to generate strong affective ties with the outgroup (e.g., Pettigrew, 1997, 1998; Turner, Hewstone, Voci, Paolini, & Christ, 2008).

However, despite the accumulating evidence supporting the contact theory, some authors have highlighted some important limitations which might render the interpretation of the findings troublesome (e.g., Dixon, Durrheim, & Tredoux, 2005; Finchilescu & Tredoux, 2008; Pettigrew, 1998, 2008). One of these limitations pertains to the scarcity of longitudinal studies testing the causal direction of the relationship between intergroup contact and prejudice. Moreover, the almost exclusive use of self-report measures of intergroup contact may also undermine the validity of many findings. The goal of the present study was to address these two important issues. As an additional goal, we also aimed to extend contact theory literature by investigating whether contact reduces essentialism, i.e., the way of thinking about racial groups on a more general level.

The causality issue

Despite the explicit causal character of the contact theory, it is remarkable that our knowledge of intergroup contact relies heavily on findings obtained with

cross-sectional data (Pettigrew, 2008; Pettigrew & Tropp, 2006), which do not allow causal inferences about the direction of the contact-prejudice relationship. Contact with outgroup members may indeed lead to lower levels of prejudice, but prejudiced people may also avoid most instances of intergroup contact. Because an interpretation in both directions is theoretically feasible, the causality issue looms large in the current contact literature.

To date, only a few longitudinal studies have investigated the effects of intergroup contact on prejudice, yielding somewhat mixed findings. The most extensive longitudinal study so far followed a cohort sample of more than 2,000 American students over a period of five years (Levin, van Laar, & Sidanius, 2003). The results indicated that those students having more cross-group friends during college were more positively inclined toward outgroup members at the end of their college years. However, equally strong effects were found for students' prior levels of outgroup attitudes on the amount of cross-group friendships. Other longitudinal studies also obtained causal effects in both directions (e.g., Binder et al., 2009; Eller & Abrams, 2003, 2004), whereas some studies only found significant paths from contact to prejudice (e.g., Brown, Eller, Leeds, & Stace, 2007).

It should also be noted that most of these studies have used regression analyses (e.g., Binder et al., 2009; Brown, et al., 2007; Eller & Abrams, 2003, 2004; Levin et al., 2003) and tested the effects of contact at Time 1 on prejudice at Time 2, while controlling for prejudice at Time 1, but not for contact at Time 2. The reverse causal order is then tested in a similar but separate analysis. One potential drawback of this approach is that effects of contact at Time 1 on prejudice at Time 2 may have emerged solely because of the association of both variables with contact at Time 2, i.e., due to the stability of contact over time and the cross-sectional association between contact and prejudice at Time 2. Analogously, effects of prejudice at Time

1 on contact at Time 2 may have emerged because both variables were associated with prejudice at Time 2.

A *full* cross-lagged panel approach allows to control for these potential confounds. In particular, a causal effect of contact on prejudice can straightforwardly be demonstrated if contact at Time 1 affects prejudice at Time 2 when controlling for the stability of both variables over time as well as the cross-sectional covariances between the variables (i.e., including both prejudice at Time 1 and contact at Time 2 in the analyses). Such a design also allows for the direct comparison between contact effects on prejudice and prejudice effects on contact in the same analysis.

Self-reported intergroup contact

The second methodological issue addressed in the present research concerns the wide use of self-report measures to assess intergroup contact. In particular, self-reported levels of intergroup contact may be prone to various response biases. On one hand, participants may respond in a socially desirable way, resulting in an overestimation of the amount and quality of intergroup contact or cross-group friendships. On the other hand, and even more problematic for the construct validity of the contact measure, participants might be biased by their own prejudice levels when completing the contact items. In particular, it is possible that prejudiced respondents are more likely to indicate low levels of positive contact or having regularly low-quality contact precisely because they are biased in remembering the amount and quality of intergroup encounters they had. Moreover, reporting frequent negative contact may also serve as a justification for their negative attitudes. For the same reasons, non-prejudiced people can be expected to report frequent positive contact. As a consequence, the strength of the contact-prejudice relationship may be artificially inflated.

A multi-source approach can overcome this single-source method bias and allows for the validation of self-reports (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). By assessing intergroup contact through both self-reports as well as through reports made by the respondents' friends about the respondents' levels of intergroup contact, the self-report measure can be validated in two ways: (1) by investigating the association between self-reports and observer ratings and (2) by replicating cross-lagged effects of self-reported contact on prejudice with the observer ratings.

Intergroup contact effects on essentialism

Besides addressing the methodological issues described above, the present research also aimed to contribute theoretically to the contact literature by investigating whether intergroup contact affects the way people think about racial groups more generally. Most studies have examined contact effects on prejudice toward the contacted outgroup, but recent studies have shown that intergroup contact may also have spillover effects on attitudes toward other, uninvolved outgroups (Pettigrew, 1997, 2009; van Laar, Levin, & Sidanius, 2008), which is referred to as the secondary transfer effect of contact (Pettigrew, 2009). This finding seems to suggest that contact with members of one outgroup may alter the way of thinking about outgroups in general. More specifically, intergroup contact may reduce essentialist thinking, the cognitive process of organizing (social) stimuli into discrete categories (e.g., racial groups).

In social psychology, essentialism refers to the belief that members of a particular social category share a fixed underlying nature or essence (e.g., Gelman, 2003; Haslam & Levy, 2006). A fundamental aspect of essentialist thinking is that members of a particular social group are considered to be fundamentally alike, with shared inherent core characteristics, which allows inferences about individual members (Haslam, Rothschild, & Ernst, 2000, 2002; Roets, & Van Hiel, in press).

Moreover, essentialism is strongly related to various forms of racism (Haslam et al., 2002; Roets & Van Hiel, in press). Investigating contact effects on essentialism may therefore allow to evaluate the broader impact of contact on the way people think about racial categories in general.

The present research

The goal of the present research was to contribute to the contact literature in three important ways. First, we aimed to demonstrate longitudinal contact effects on prejudice in two samples using a full cross-lagged panel design, controlling for both stability effects and cross-sectional covariances. Second, we wanted to validate the self-report contact measure by gathering observer ratings of contact. Third, we aimed to test whether contact not only affects prejudice levels toward the contacted outgroup but also whether contact reduces levels of essentialism.

Method

Overview

We conducted a longitudinal study in two samples (samples 1 and 2) of young adults living in the Flemish community in Belgium. We focused on contact with and prejudice toward immigrants with non-European roots, especially people from countries with a Muslim majority. Participants in sample 1 completed measures of intergroup contact and prejudice twice with an interval of approximately two months, referred to as Time 1 and Time 2. Additionally, they were requested to distribute up to three questionnaires to be completed by their closest friends, both at Time 1 and Time 2. As such, sample 1 participants recruited sample 2 participants. In the questionnaire for sample 2, participants first rated the levels of intergroup contact of their friend from sample 1 and then completed self-report measures of intergroup contact, prejudice, and essentialism. Both at Time 1 and Time 2, the

questionnaires of sample 2 were returned within two weeks after sample 1 respondents completed their questionnaires.

Sample 1

Participants

A total of 65 undergraduate students (89% women, $M_{\text{age}} = 18.78$, $SD_{\text{age}} = 1.28$) participated in the study in return for course credit. None of the respondents belonged to the target outgroup (all had a Belgian nationality and none were Muslim; 63% Christians, 37% atheists, non-religious people, or having another religion). A total of 59 participants (91%) also participated at Time 2.

Measures

Intergroup contact Intergroup contact was assessed with a self-report measure as well as with observer ratings derived from participants of sample 2. The self-report measure consisted of seven items (based on previously used items, e.g., Turner et al., 2008; see also Dhont & Van Hiel, 2009) rated on 7-point Likert scales, focusing on the amount of cross-group friendship experiences and quantity of positive intergroup contact. Sample items included “How many immigrant friends do you have?” (1 = none; 7 = many) and “How often do you have contact with immigrants within your circle of friends?” (1 = never; 7 = very often).

Observer ratings for intergroup contact of sample 1 participants were provided by their friends (sample 2) who completed seven items analogous to the self-report items, such as “How many immigrant friends does your friend have?” (1 = none; 7 = many). For each sample 1 participant, an average of 2.65 (Time 1) and 2.05 (Time 2) observer scores were obtained. Observer scores pertaining to the same participants were averaged into a single index.

Prejudice To assess prejudice toward immigrants, participants completed measures of subtle racism, negative outgroup attitudes, and endorsement of negative stereotypes. The subtle racism scale (Pettigrew & Meertens, 1995; see also Dhont, Roets, & Van Hiel, 2010) was assessed with eight items using 7-point Likert scales (1 = strongly disagree; 7 = strongly agree). A sample item was “I admire the immigrant community who live here under difficult circumstances” (reverse scored).

Outgroup attitudes were measured using a modified version of the ‘General Evaluation Scale’ (Wright et al., 1997), which asks participants to describe how they feel about immigrants in general by using four 7-point differential scales: cold-warm, positive-negative, hostile-friendly, contempt-respect. The items were coded so that higher scores indicated a more negative attitude.

Finally, to assess the endorsement of negative stereotypes, participants indicated on 7-point Likert scales (1 = certainly not; 7 = certainly) “whether the following traits represent good descriptions for immigrants in our country”: lazy, untrustworthy, arrogant, noisy, and aggressive.

Sample 2

Participants

A total of 172 participants (62% women, $M_{\text{age}} = 19.39$, $SD_{\text{age}} = 1.83$) were recruited by sample 1 at Time 1 and completed the questionnaire. All respondents belonged to the majority group (95% having Belgian nationality, 5% having Dutch nationality). None were Muslim (53% Christians, 47% atheists, non-religious people, or having another religion). A total of 123 participants (72%) completed the questionnaire again at Time 2.

Measures

In addition to providing observer ratings for intergroup contact of their sample 1 friends, respondents in sample 2 completed the same self-report measures of intergroup contact and subtle racism as sample 1 participants. They also completed the essentialism scale developed and validated by Roets and Van Hiel (in press) using 7-point Likert scales (1= strongly disagree; 7 = strongly agree). A sample item is “If you know to which racial group someone belongs, you know a lot about his/her personality”.

Results

Sample 1

Preliminary Analyses

Comparison of the scores of the respondents who dropped out at Time 2 with those of the respondents who completed the questionnaires at both times revealed no significant differences for any variable (all t s < 1.4). Moreover, comparison of means and covariances of all variables using Little's (1988) MCAR test revealed that data were missing completely at random, $\chi^2(17) = 10.45, p = .88$. Therefore, missing values were estimated using maximum likelihood estimation (Schafer, 1997) with the expectation maximization algorithm.

Table 1 presents the descriptive statistics and intercorrelations for the measures. For further analyses, all items from the three prejudice measures were averaged into a general index of prejudice. Importantly, the observer ratings of contact were highly correlated with self-reported contact at Time 1 as well as at Time 2, thereby providing a first validation of the self-report measure of intergroup contact.

Table 1. Descriptive statistics and correlations between the variables of Sample 1 at Time 1 (T1) and Time2 (T2)

	Intergroup Contact					Prejudice Indicators							
	Self reported					Observer ratings		Subtle racism		Outgroup attitudes		Stereotypes	
	T1	T2	T1	T2	T1	T1	T2	T1	T2	T1	T2	T1	T2
Mean (SD)	α												
Intergroup contact													
Self reported	T1	2.85 (1.42)	.95	.86***	.71***	.67***							
	T2	2.76 (1.19)	.94		.70***	.72***	-.40***	-.49***	-.42***	-.44***	.03	-.24*	-.30*
Observer ratings	T1	2.66 (1.00)	.93			.88***	-.45***	-.53***	-.47***	-.42***	-.02	-.34**	-.35**
	T2	2.63 (.99)	.94				-.32**	-.40***	-.29*	-.43***	.06	-.28*	-.22†
Prejudice Indicators													
Subtle racism	T1	4.04 (1.04)	.88				-.31**	-.34**	-.26*	-.32***	.01	-.25*	-.22†
	T2	4.09 (1.13)	.90					.86***	.79***	.49***	.61***	.71***	.94***
Outgroup attitudes	T1	3.74 (.98)	.85						.75***	.62***	.45***	.71***	.81***
	T2	3.98 (1.01)	.99							.65***	.52***	.71***	.85***
Stereotypes	T1	3.69 (1.22)	.89								.27*	.63***	.51***
	T2	3.82 (1.19)	.90								.72***	.82***	.56***
General index	T1	3.87 (.95)	.93									.81***	.88***
	T2	3.98 (.99)	.94										.84***

Note. .† $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

Cross-lagged analyses

Using LISREL (Version 8.71, Jöreskog & Sörbom, 2004), path-analysis with observed variables (instead of latent variables, due to the small sample size) was conducted to test the cross-lagged relationships between contact and prejudice. In particular, we simultaneously analyzed the longitudinal effects of contact and prejudice at Time 1 on prejudice and contact at Time 2. A first model included the self-report measure of contact (Model 1), whereas a second model included the observer ratings (Model 2). Because all paths were estimated, these models were saturated (yielding perfect model fit).

Figure 1 depicts the results of both models. Model 1 (values on the left) revealed a significant longitudinal effect of contact on prejudice, whereas no significant longitudinal effect of prejudice on contact was found. Importantly, the observer ratings in Model 2 (values on the right) yielded similar effects, cross-validating the findings obtained with the self-report measure.

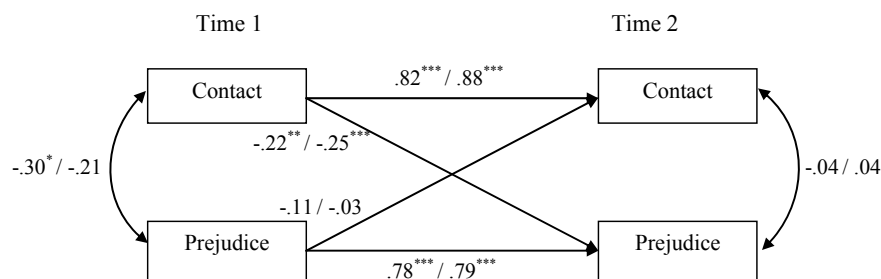


Figure 1. Cross-lagged model testing the longitudinal effects of intergroup contact on prejudice in sample 1 with self-report (values on the left) and observed (values on the right) levels of intergroup contact. Presented values are standardized coefficients, $^{*}p = .05$; $^{**}p < .01$; $^{***}p < .001$.

Sample 2

Preliminary analyses

As in sample 1, comparison of the scores of respondents that dropped out at Time 2 with those of the respondents who completed the questionnaires twice revealed no significant differences for any variable (all t s < 1.5). Little's MCAR test revealed that data were missing completely at random, $\chi^2(23) = 23.28$, $p = .45$, and therefore missing values were estimated. Table 2 presents the descriptive statistics and correlations.

Table 2. Descriptive statistics and correlations between the variables in Sample 2 at Time 1 (T1) and Time 2 (T2)

		Mean (<i>SD</i>)	α	Intergroup contact		Prejudice		Essentialism	
				T1	T2	T1	T2	T1	T2
Intergroup contact	T1	2.75 (1.27)	.93		.84***	-.31***	-.40***	-.18*	-.30***
	T2	2.66 (1.16)	.94			-.20**	-.38***	-.18*	-.23**
Prejudice	T1	4.45 (1.20)	.86				.77***	.54***	.50***
	T2	4.56 (1.04)	.87					.57***	.65***
Essentialism	T1	2.86 (.62)	.80						.67***
	T2	2.81 (.59)	.83						

Note. * $p = .05$; ** $p < .01$; *** $p < .001$

Cross-lagged analyses

To test the cross-lagged relationships between contact, prejudice, and essentialism, we used structural equation modeling (SEM) with latent variables in LISREL. To smooth measurement error and maintain an adequate ratio of cases to parameters, we averaged subsets of randomly selected items to create indicator parcels for each construct (Bagozzi & Heatherton, 1994). The Satorra-Bentler Scaled

Chi-square/degrees of freedom ratio ($SBS-\chi^2/df$), the comparative fit index (CFI), the root-mean-square error of approximation (RMSEA), and the standardized root-mean-square residual (SRMR) were used to evaluate the model's goodness-of-fit (see Hu & Bentler, 1999).

The tested model included all possible paths from Time 1 variables (contact, prejudice, and essentialism at Time 1) to Time 2 variables (contact, prejudice, and essentialism at Time 2) as well as all associations between the variables within each wave. The model test indicated a good fit to the data; $SBS-\chi^2(86) = 149.26, p < .001$; $SBS-\chi^2/df = 1.74$; CFI = .99; RMSEA = .066; SRMR = .047. Figure 2 presents the tested model, depicting the significant paths. In line with the findings in sample 1,

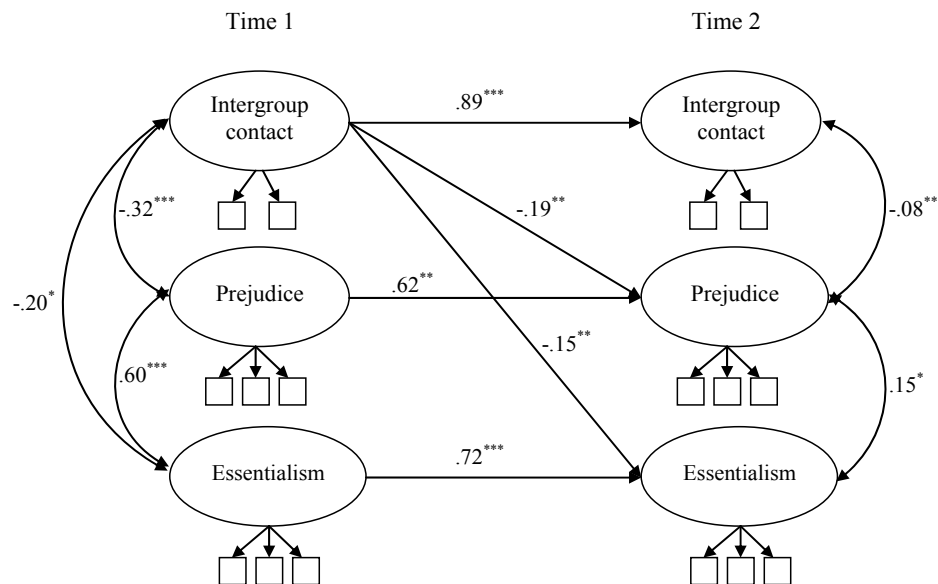


Figure 2. Latent cross-lagged model demonstrating longitudinal effects of intergroup contact on prejudice and essentialism in sample 2. Presented values are the significant standardized coefficients, $^*p = .05$; $^{**}p < .01$; $^{***}p < .001$.

the results revealed that contact at Time 1 significantly reduced prejudice at Time 2, whereas no significant longitudinal effects of prejudice on contact were found. Moreover, the model also revealed longitudinal contact effects on essentialism, whereas essentialism did not predict contact over time.

Discussion

The goal of the present study was threefold. First, we aimed to investigate longitudinal effects of intergroup contact on prejudice within a full cross-lagged panel design. Second, we wanted to validate the self-report measure of intergroup contact with observer ratings provided by close friends of the respondents. Third, we aimed to demonstrate that intergroup contact reduces essentialist thinking about racial groups.

With respect to the first aim, the findings provided convincing longitudinal evidence for the prejudice reducing effects of intergroup contact. Indeed, within two different samples, contact significantly predicted prejudice over time whereas prejudice did not predict contact over time. By simultaneously controlling for the stability effects of contact and prejudice over time and the cross-sectional associations between contact and prejudice within each wave, the present study provided a more rigorous test of longitudinal contact effects on prejudice than the regression analyses used in most studies (e.g., Brown et al., 2007; Eller & Abrams, 2003, 2004; Levin et al., 2003). Moreover, Sample 2 data showed the longitudinal effects with the statistically superior technique of SEM using latent variables, which had not yet been done, to the best of our knowledge, in other published longitudinal studies on intergroup contact. In sum, whereas previous cross-sectional and most longitudinal studies have left room for alternative interpretations about the direction of the contact-prejudice relationship, the present findings unambiguously support the contact theory (Allport, 1954; Brown & Hewstone, 2005; Pettigrew, 1998).

Future research may now focus on the mediating mechanisms of these longitudinal effects. Contact research has recently accumulated cross-sectional evidence for the role of many mediators, such as self-disclosure, perceived importance of contact, and intergroup anxiety and threat (e.g., Paolini, Hewstone, Cairns, & Voci, 2004; Pettigrew, Christ, Wagner, & Stellmacher, 2007; Turner, et al, 2008; van Dick, et al. 2004), yet only a few of these variables have demonstrated a mediating role over time (e.g., intergroup anxiety, Binder et al., 2009).

Concerning the second aim, most contact research may be subject to criticism because of the use of self-report measures of intergroup contact, which are subjective and therefore potentially biased. However, adopting a multi-source approach, the present research showed that observer ratings of contact were highly correlated with self-reports. Moreover, cross-lagged analyses with the observer ratings of contact yielded longitudinal effects on prejudice parallel to the effects obtained with self-reports. As such, the present research uniquely contributes to the contact literature by providing a double validation of the use of self-report measures of intergroup contact, thereby reassuring the validity of previously reported contact effects based on self-reports.

Finally, with respect to the third aim, the present study is the first to demonstrate longitudinal contact effects on essentialist thinking about racial groups. In other words, we showed that intergroup contact changes the cognitive process of categorizing people into ingroups and outgroups based on race or ethnicity. This finding may have important theoretical implications for current theorizing in at least two ways. First, by changing ways of thinking about racial groups in general, intergroup contact lays the foundation to reduce prejudice toward other non-contacted outgroups (Pettigrew, 1997, 2009; van Laar, et al., 2008). In other words, the reduction of essentialism might be one of the underlying processes accounting for the secondary transfer effect of contact.

The second implication pertains to the currently hotly debated issue of whether intergroup contact can promote social equality between groups. In particular, recent theorizing suggests that because of a positive atmosphere characterized by improved intergroup attitudes, intergroup contact deflects attention of the disadvantaged group away from ongoing material inequality (e.g., Dixon, Tropp, Durrheim, & Tredoux, 2010; Saguy, Tausch, Dovidio, & Pratto, 2009). As such, distributive injustice between groups in society continues and may even be strengthened. However, the present research offers a more optimistic view of this issue in terms of positive cognitive changes among majority members. Indeed, several authors have argued that an important function of essentialist thinking is to rationalize and legitimize social inequality and to maintain the status quo, thereby providing an ‘objective legitimacy’ to the existing system (e.g., Haslam & Levy, 2006; Yzerbyt, Rocher, & Schadron, 1997). By reducing essentialist thinking among majority members, as shown in the present study, intergroup contact may facilitate majority members to accept measures that counter distributive injustice toward minority members, such as Affirmative Action Programs (Crosby & Franco, 2003; Crosby, Iyer, & Sincharoen, 2006).

References

- Allport, G. W. (1954). *The nature of prejudice*. Reading, MA: Addison-Wesley.
- Bagozzi, R. P., & Heatherton, T. F. (1994). A general approach for representing multifaceted personality constructs: Application to state self-esteem. *Structural Equation Modeling, 1*, 35-67.
- Binder, J., Zagefka, H., Brown, R., Funke, F., Kessler, T., Mummendey, A., et al. (2009). Does contact reduce prejudice or does prejudice reduce contact? A longitudinal test of the contact hypothesis among majority and minority groups in three European countries. *Journal of Personality and Social Psychology, 96*, 843-856.
- Brown, R., Eller, A., Leeds, S., & Stace, K. (2007). Intergroup contact and intergroup attitudes: A longitudinal study. *European Journal of Social Psychology, 37*, 692-703.
- Brown, R., & Hewstone, M. (2005). An integrative theory of intergroup contact. *Advances in Experimental Social Psychology, 37*, 255-343.
- Crosby, F. J., & Franco, J. L. (2003). Connections between the ivory tower and the multicolored world: Linking abstract theories of social justice to the rough and tumble of affirmative action. *Personality and Social Psychology Review, 7*, 362-373.
- Crosby, F. J., Iyer, A., & Sincharoen, S. (2006). Understanding affirmative action. *Annual Review of Psychology, 57*, 585-611.
- Dhont, K., & Van Hiel, A. (2009). We must not be enemies: Interracial contact and the reduction of prejudice among authoritarians. *Personality and Individual Differences, 46*, 172-177.
- Dhont, K., Roets, A., & Van Hiel, A. (in press). Opening closed minds: The combined effects of intergroup contact and Need for Closure on prejudice. *Personality and Social Psychology Bulletin*

- Dixon, J., Durrheim, K., & Tredoux, C. (2005). Beyond the optimal contact strategy. A reality check for the Contact Hypothesis. *American Psychologist* 60, 697-711.
- Dixon, J., Tropp, L. R., Durrheim, K., & Tredoux, C. (2010). "Let them eat harmony": Prejudice-reduction strategies and attitudes of historically disadvantaged groups. *Current Directions in Psychological Science*, 19, 76-80.
- Eller, A., & Abrams, D. (2003). 'Gringos' in Mexico: Cross-sectional and longitudinal effects of language school-promoted contact on intergroup bias. *Group Processes and Intergroup Relations*, 6, 55-75.
- Eller, A., & Abrams, D. (2004). Come together: Longitudinal comparisons of Pettigrew's reformulated intergroup contact model and the Common Ingroup Model in Anglo-French and Mexican-American contexts. *European Journal of Social Psychology*, 34, 229-256.
- Finchilescu, G., & Tredoux, C. (2008). Intergroup contact, social context and racial ecology in South Africa. In U. Wagner, L. R. Tropp, G. Finchilescu, & C. Tredoux (Eds.), *Improving Intergroup Relations: Building on the Legacy of Thomas F. Pettigrew* (pp. 179-194). SPSSI Series on Social Issues and Interventions. Malden, MA: Wiley-Blackwell.
- Gelman, S. A. (2003). *The essential child: Origins of essentialism in everyday thought*. Oxford, UK: Oxford University Press.
- Haslam, N., & Levy, S. R. (2006). Essentialist beliefs about homosexuality: Structure and implications for prejudice. *Personality and Social Psychology Bulletin*, 32, 471-485.
- Haslam, N., Rothschild, L., & Ernst, D. (2000). Essentialist beliefs about social categories. *British Journal of Social Psychology*, 39, 113-127.

- Haslam, N., Rothschild, L., & Ernst, D. (2002). Are essentialist beliefs associated with prejudice? *British Journal of Social Psychology, 41*, 87-100.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*, 1-55.
- Jöreskog, K. G., & Sörbom, D. (2004) LISREL 8.7 for Windows (Computer Software). Lincolnwood: Scientific Software International, Inc.
- Levin, S., van Laar, C., & Sidanius, J. (2003). The effects of ingroup and outgroup friendship on ethnic attitudes in college: A longitudinal study. *Group Processes & Intergroup Relations, 6*, 76-92.
- Little, R. J. A. (1988). Missing data in large surveys. *Journal of Business and Economic Statistics, 6*, 287-301.
- Paolini, S., Hewstone, M., Cairns, E., & Voci, A. (2004). Effects of direct and indirect cross-group friendships on judgments of Catholics and Protestants in Northern Ireland: The mediating role of an anxiety-reduction mechanism. *Personality Social Psychology Bulletin, 30*, 770-786.
- Pettigrew, T. F. (1997). Generalized intergroup contact effects on prejudice. *Personality and Social Psychology Bulletin, 23*, 173-185.
- Pettigrew, T. F. (1998). Intergroup contact theory. *Annual Review of Psychology, 49*, 65-85.
- Pettigrew, T. F. (2008). Future directions for intergroup contact theory and research. *International Journal of Intercultural Relations, 32*, 187-199.
- Pettigrew, T. F. (2009). The secondary transfer effect of contact: Do intergroup contact effects spread to noncontacted outgroups? *Social Psychology, 40*, 55-65.
- Pettigrew, T. F., & Meertens, R. W. (1995). Subtle and blatant prejudice in western Europe. *European Journal of Social Psychology, 25*, 57-75.

- Pettigrew, T. F., & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*, 90, 751-783.
- Pettigrew, T. F., Christ, O., Wagner, U., & Stellmacher, J. S. (2007). Direct and indirect intergroup contact effects on prejudice: A normative interpretation. *International Journal of Intercultural Relations*, 31, 411-425.
- 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.
- Roets, A., & Van Hiel, A. (in press). The role of need for closure in essentialist entitativity beliefs and prejudice: An epistemic needs approach to racial categorization. *British Journal of Social Psychology*. DOI: 10.1348/014466610X491567
- Saguy, T., Tausch, N., Dovidio, J., & Pratto, F. (2009). The irony of harmony: Intergroup contact can produce false expectations for equality. *Psychological Science*, 20, 14-121.
- Schafer, J. L. (1997). *Analysis of incomplete multivariate data*. London, Chapman & Hall
- Turner, R. N., Hewstone, M., Voci, A., Paolini, S., & Christ, O. (2008). Reducing prejudice via direct and extended cross-group friendship. In W. Stroebe & M. Hewstone (Eds.), *European review of social psychology* (Vol. 18, pp. 212-255). Hove, E. Sussex: Psychology Press.
- van Dick, R., Wagner, U., Pettigrew, T. F., Christ, O., Wolf, C., Petzel, T., et al. (2004). Role of perceived importance in intergroup contact. *Journal of Personality and Social Psychology*, 87, 211-227.
- van Laar, C., Levin, S., & Sidanius, J. (2008). Ingroup and outgroup contact: A longitudinal study of the effects of cross-ethnic friendships, dates, roommate relationships and participation in segregated organizations. In U. Wagner, L.

- R. Tropp, G. Finchilescu, & C. Tredoux (Eds.), *Improving Intergroup Relations: Building on the Legacy of Thomas F. Pettigrew* (pp. 128-142). SPSSI Series on Social Issues and Interventions. Malden, MA: Wiley-Blackwell.
- Wright, S. C., Aron, A., McLaughlin-Volpe, T., & Ropp, S. A. (1997). The extended contact effect: Knowledge of cross-group friendships and prejudice. *Journal of Personality and Social Psychology*, 73, 73-90.
- Yzerbyt, V. Y., Rocher, S. J., & Schadron, G. (1997). Stereotypes as explanations: A subjective essentialistic view of group perception. In R. Spears, P. J. Oakes, N. Ellemers, & S. A. Haslam (Eds.), *The social psychology of stereotyping and group life* (pp. 20-50). Cambridge, UK: Blackwell.

Chapter 7

Research overview and general discussion

*"To prescribe more separation because of discomfort,
racism, conflict, or the need for autonomy is
like getting drunk again to cure a hangover"*
Thomas F. Pettigrew (1971)

This chapter summarizes the main findings reported in the five empirical chapters and situates them within the overall research goals of the present dissertation. Furthermore, we discuss the theoretical extensions and implications of our findings within the current theoretical framework on intergroup contact. Finally, we point to some limitations of the studies and highlight interesting pathways for future research.

Research Overview

This dissertation focused on two conceptual gaps in the current contact literature. The first gap pertained to the potentially important, but somewhat neglected, role of individual differences that may moderate the effects of intergroup contact on prejudice. In the present dissertation, such moderation effects were obtained for authoritarianism and need for closure. The second gap concerned the fact that researchers have mainly focused on positive intergroup contact, studying its effects in isolation from the social context in which it occurs. In the present dissertation, we obtained effects of indirect intergroup contact experienced by ingroup members and effects of negative intergroup contact, and we were able to show that intergroup contact may have consequences for organizational behavior. An additional aim of the present dissertation was to clarify some of the methodological issues that characterize the current contact literature. In this regard, we were able to establish contact effects using longitudinal data and observer ratings. In the following paragraphs, we first summarize the main findings obtained in each chapter.

Findings organized by chapter

In Chapters 2 and 3, we addressed whether the prejudice-reducing effect of intergroup contact is moderated by individual differences in authoritarianism. Specifically, in Chapter 2, we tested two competing hypotheses regarding the interaction effect between direct intergroup contact and authoritarianism on prejudice in two samples of Flemish adults. Based on Allport's (1954) early writings, one possible outcome was that high authoritarians would resist the influence of intergroup contact. Conversely, based on Hodson (2008), we expected that the effect of intergroup contact would be most pronounced among high authoritarians. In support of the latter hypothesis, both studies revealed the strongest

effects of (positive) intergroup contact among high authoritarians. However, Study 2 tempered this positive message by also showing that the effect of negative intergroup contact was the most pronounced among high authoritarians.

In Chapter 3, we aimed to replicate and extend the findings obtained in Chapter 2 in a representative sample of Dutch adults. In particular, we considered the moderating effects of authoritarianism and direct intergroup contact in the relationship between extended intergroup contact and prejudice. Moreover, we wanted to identify the mediating processes underlying these moderation effects. We found that the effect of extended contact was stronger among high authoritarians and among people with low levels of direct contact than among low authoritarians and people with high levels of direct contact, respectively. Moreover, we also found a significant third-order moderation effect, revealing that the effect of extended contact was most pronounced among high authoritarians with low levels of direct contact. Finally, we demonstrated that these moderation effects on prejudice operated via the mediating processes of reduced threat perceptions and increased outgroup trust.

In Chapter 4, we considered the role of the need for closure (NFC) in the relationship between intergroup contact and prejudice. The results of four cross-sectional studies and an experimental field study consistently showed that intergroup contact has an especially strong relationship with reduced levels of prejudice among people who are high in NFC. This moderation effect was demonstrated for both direct and extended intergroup contact in samples composed of undergraduate students and adults and with a variety of prejudice measures (including subtle, modern, and blatant racism) and hostile tendencies toward immigrants. Furthermore, intergroup anxiety was identified as an important underlying psychological mechanism that mediates the moderating effects of intergroup contact and NFC on prejudice.

In Chapter 5, we investigated the effects of intergroup contact in an applied context. Therefore, we conducted a cross-sectional study in a sample of Flemish police officers and examined the effects of positive and negative interracial public-police contact in relation to the police officers' racial and work-related attitudes and behavior. We found that both positive and negative intergroup contact were significantly related (negatively and positively, respectively) to the police officers' levels of prejudiced attitudes toward immigrants. Furthermore, both positive and negative intergroup contact were also significantly and indirectly related to police officers' self-reported behavior toward immigrants via the mediating role of prejudiced attitudes.

We also expected that intergroup contact would be associated with the police officers' general work-related perceptions and behaviors because of the significance of intergroup contact during police work. The results confirmed that both positive and negative intergroup contact were associated (positively and negatively, respectively) with the police officers' perceptions of procedural fairness of the organization. Moreover, both types of intergroup contact were also indirectly related to the police officers' organizational citizenship behavior via the mediating process of procedural fairness perceptions.

In the final empirical chapter, Chapter 6, we investigated the longitudinal effects of intergroup contact on prejudice within a full cross-lagged panel design using both self-reported and observer ratings of intergroup contact. The study showed that the observer ratings of contact were strongly correlated with the self-reports, which attests to the validity of self-reported ratings of intergroup contact. Moreover, cross-lagged analyses with the observer ratings of contact yielded longitudinal effects on prejudice that were similar to the effects obtained with self-reports and provided convincing longitudinal evidence for the prejudice-reducing effects of intergroup contact.

Additionally, this study also demonstrated longitudinal contact effects on essentialist thinking about racial groups. As such, we found some initial evidence for the idea that intergroup contact can change the cognitive process of categorizing people into several groups based on race or ethnicity.

The inclusion of individual differences in the intergroup contact framework

In the past few years, contact researchers have started to include individual difference variables in their research designs. The studies reported in Chapters 2, 3, and 4 fit directly into this recent trend and are part of a compelling body of evidence that has been accumulated across several recent studies (see Adesokan, Ullrich, van Dick, & Tropp, in press; Hodson, 2008; Hodson, Harry, & Mitchell, 2009; for a partial review, see Hodson, in press).

Across these studies, a variety of indicators and forms of intergroup contact have been administered (i.e., quantity and quality of direct intergroup contact, the degree of indirect intergroup contact, and the number of direct and indirect intergroup friendships) and several individual difference variables directly or indirectly related to prejudice have been investigated (i.e., SDO, RWA, ingroup identification, diversity beliefs, NFC). Some studies (including our own) focused on contact with and prejudice toward racial or ethnic outgroups whereas others investigated homosexuals as the target outgroup. Finally, these studies were conducted across different countries (Belgium, Canada, the United Kingdom, the Netherlands, and the United States) and in samples of prison inmates, community samples, and student samples.

The results of these studies show a remarkably high level of consistency, and all conclude with the same straightforward message: intergroup contact is most effective in reducing prejudice among individuals who are most prone to being

prejudiced. Hence, the fact that prejudice-prone people profit the most from intergroup contact represents a solid finding.

On a theoretical level, this finding addresses an important part of Pettigrew's (1998) reformulation of intergroup contact theory. Indeed, Pettigrew (1998) emphasized the significance of considering the influence of individual differences in contact research because "prior attitudes and experiences influence whether people seek or avoid intergroup contact, *and what the effects of contact will be*" (p. 77). Hence, if we want to know the full potential of intergroup contact for reducing prejudice, individual differences, especially those that are relevant to prejudice, can no longer be ignored (see also Hodson, 2009).

Early views regarding the possibility of reducing prejudice among prejudice-prone people were pessimistic (Allport, 1954) because their prejudice is "lockstitched into the very fabric of personality" (p. 408), and, indeed, several techniques have failed among prejudice-prone people (see Hodson, *in press*). However, we argued in Chapters 2 and 3 that intergroup contact may actually work well among prejudice-prone people (i.e., high authoritarians). Indeed, intergroup contact represents a non-confronting strategy in which individuals can experience or witness a positive intergroup climate without being "forced" to change their opinions about the outgroup (see also Hodson, 2008; Hodson, et al. 2009). An even more important feature of intergroup contact pertains to the psychological processes that have been proposed as mediators of the contact-prejudice relationship in the literature. In particular, researchers have shown that intergroup contact reduces the negative feelings of intergroup anxiety and threat, while it induces empathy and trust and increases closeness with the outgroup (e.g., Pettigrew & Tropp, 2008; Tausch, Tam, Hewstone, Kenworthy, & Cairns, 2007; Turner, Hewstone, & Voci, 2007). In line with these previous studies, we provided empirical support for the mediating

processes of threat and trust in the moderating effects of intergroup contact and authoritarianism on prejudice (Chapter 3), whereas others demonstrated similar roles for empathy and closeness with the outgroup (Hodson, 2008; Hodson et al. 2009).

We also extended the “individual differences research line” in Chapter 4 by investigating similar moderating effects of NFC rather than focusing on social attitudes or ideological variables that are directly related to prejudice. As we explained in Chapter 4, NFC aligns well with the motivated cognitive style that Allport (1954) held responsible for the presumed unwillingness of prejudice-prone people to change their racial attitudes. Consistent with the moderating effects of authoritarianism, we found that intergroup contact is the most effective among high-NFC people because intergroup contact decreases the feelings of uncertainty and anxiety in intergroup contexts. In other words, intergroup contact does not only reduce prejudice the most among ideologically intolerant people (e.g., authoritarians), but also among cognitively rigid people who usually stick strongly to their existing attitudes.

From a pragmatic viewpoint, we are convinced that we have touched upon an important issue concerning the functional value of intergroup contact as a prejudice intervention strategy. Indeed, social scientists and practitioners are not searching for techniques that reduce prejudice among the people who are the least likely to hold prejudiced ideas or express discriminatory behaviors. Instead, they are aiming to find techniques that change the attitudes of people who are in the most need of change. We have put intergroup contact theory to this test, and we can conclude that the theory has withstood this test with distinction.

Intergroup contact in its social context

When Pettigrew (1998) proposed his reformulated intergroup contact theory more than a decade ago, he did not only emphasize the significance of considering individual differences in intergroup contact research, but also stressed the importance of studying the social context in which intergroup contact takes place. Furthermore, by investigating positive intergroup contact isolated from other influences on prejudice (i.e., by including positive intergroup contact as the sole predictor of prejudice in research designs), the simultaneous influences of intergroup situations that lead to negative effects (i.e., increased prejudice) have often been overlooked in intergroup contact research (Pettigrew 2008; Pettigrew & Tropp, 2006).

The results based on the sample of police officers (Chapter 5) provide some enlightening insights into how important the characteristics of the social context can be. On the positive side, the findings are encouraging by indicating that positive intergroup contact that does not emerge under the facilitating conditions proposed in the literature (Allport, 1954; Pettigrew, 1998; Pettigrew & Tropp, 2006) still yields reduced prejudice. Moreover, the results in Chapter 5 demonstrate the impact that intergroup contact can have in an applied setting by affecting a broader range of outcome variables (i.e., work-related variables) that are not directly related to prejudice.

Furthermore, the results in Chapter 3 (based a heterogeneous adult sample) emphasize that direct intergroup contact, even on a small scale, is likely to have a much broader impact that goes well beyond the interaction partners, spreading within their social networks through the process of indirect contact (Wright, Aron, McLaughlin-Volpe, & Ropp, 1997; Turner, Hewson, Voci, & Vonofakou, 2008). Indeed, we showed that when people are indirectly connected to outgroup members

through their ingroup members, this connection leads to less prejudice, and especially among those who do not benefit from direct intergroup contact.

However, Chapter 5 also presents the opposite side of the same coin. Indeed, we clarified that, in some settings (such as the context of interracial public-police contact), the influence of positive intergroup contact may be overruled by the higher frequency of negative intergroup contact, which can tremendously poison intergroup relations. Furthermore, the results of Chapter 2 did not only reveal that positive intergroup contact reduces prejudice the most among prejudice-prone persons, but also revealed that their prejudice levels worsen the most under the influence of negative intergroup contact. Fortunately, unlike in the police context, negative intergroup contact occurs less frequently in most intergroup contexts, and most intergroup contact takes place under conditions that reduce prejudice (Pettigrew, 2008; Pettigrew & Tropp, 2006). However, when negative contact occurs, it is likely to have a stronger impact on prejudice than positive intergroup contact because of the higher emotional salience of negative experiences and the increased salience of the group categories (Paolini, Harwood, & Rubin, 2011). In sum, it should be clear that the implementation of (positive) intergroup contact as a prejudice-reduction strategy makes the most sense when instances of negative intergroup contact are also addressed.

Future research: The macro-context of intergroup relations

In the present dissertation, we tried to answer some questions, but we left many more open. In this section, we would like to reflect upon issues that might be interesting avenues for future studies.

Although we accounted for the impact of the social context in some chapters of the present dissertation, we mainly focused on predictors and outcomes on the (inter)personal level (e.g., personal contact experiences and outgroup attitudes). In

other words, we paid attention to the micro-context of intergroup relations, as was done in most intergroup contact research to date. This research approach has recently been criticized for its theoretical individualism (e.g., Dixon, Durrheim, & Tredoux, 2005) because it is necessary to place intergroup contact in the macro-context of intergroup relations (see also, Pettigrew, 2008) for at least two reasons. First, the characteristics of the macro-context are likely to determine important features of the micro-context of intergroup contact and may also enhance or constrain the effects of intergroup contact on prejudice (Pettigrew, 1998). Second, because of the restricted focus on prejudice reduction as an outcome, little is known about the potential influence of intergroup contact on broader attitudes regarding intergroup relations and the support for macro-level social change. In the following paragraphs, we elaborate on these two issues. In particular, we propose an extended theoretical model of intergroup contact, presented in Figure 1, which includes both micro- and macro-level variables.

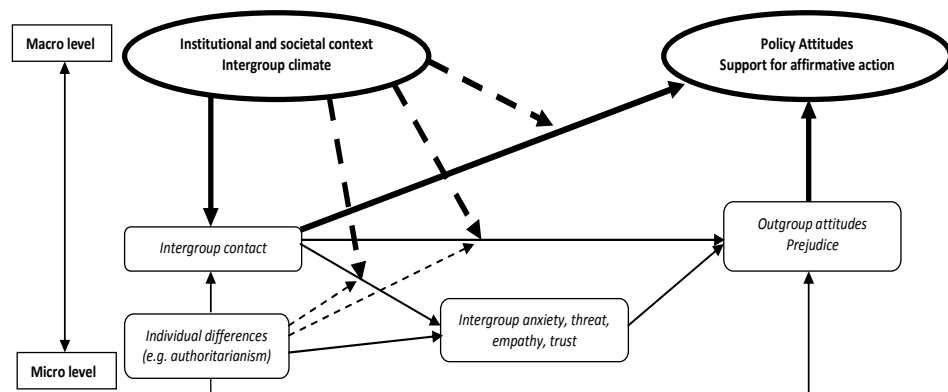


Figure 1. An intergroup contact model including both micro- and macro-level variables.

Macro-contextual factors shape intergroup contact effects

Pettigrew (1998) already argued that societal and institutional contexts have distinct effects on the form and amount of intergroup contact and, in turn, may constrain the effect of intergroup contact on prejudice. The general intergroup climate, which refers to the degree to which society and societal institutions perceive and promote intergroup contact and equality-supportive norms, can be considered as one of the most relevant macro-level variables. An interesting pathway for future research is to investigate the combined effects of intergroup contact and climate on prejudice and the psychological processes that mediate these effects.

Based on the common tenor in the traditional contact literature, amplifying effects of positive intergroup contact on prejudice should be expected when it takes place in a positive intergroup macro-climate, whereas a negative intergroup climate may obstruct the influence of intergroup contact on prejudice (Pettigrew, 1998). However, in the light of the findings presented in the present dissertation (Chapters 2 and 3, see also Hodson 2008; Hodson et al., 2009), we might expect a reverse effect. Indeed, given that positive intergroup contact reduces prejudice the most strongly among intolerant and prejudice-prone persons, could intergroup contact have its greatest effect on reducing prejudice in an intolerant, negative intergroup climate? In a cross-sectional pilot study conducted in a heterogeneous adult sample ($N = 239$), we already found corroborative evidence for the latter hypothesis (Dhont & Van Hiel, 2011).

An additional question is why would the most beneficial effects on prejudice occur in a negative intergroup climate? The reduction of intergroup anxiety and threat and the increase of trust and empathy have been shown to explain the pronounced effects of intergroup contact on prejudice among prejudice-prone people (e.g., Chapter 3; Hodson 2008; Hodson et al., 2009). Therefore, we expect that

intergroup contact reduces prejudice in a negative intergroup climate to the greatest extent because of these same processes.

Policy attitudes and support for macro-level changes

Future research should not only investigate the combined impacts of the societal context and intergroup contact on micro-context outcomes (i.e., prejudice and outgroup attitudes), but should also broaden the set of dependent variables by investigating whether intergroup contact can contribute to the reduction of intergroup inequality at the macro-level. In particular, future research may, for instance, investigate whether intergroup contact affects majority members' general attitudes toward affirmative action (AA, Crosby & Franco, 2003; Crosby, Iyer, & Sincharoen, 2006) and their support for specific AA programs (Harrison, Kravitz, Mayer, Leslie, & Lev-Arey, 2006; Kravitz & Platanina, 1993).

According to Crosby, et al. (2006), AA occurs “whenever an organization devotes resources (including time and money) to making sure that people are not discriminated against on the basis of their gender or their ethnic group” (p. 587). AA can be implemented through different programs that can be classified on a dimension of ‘prescriptiveness’ (Harrison et al. 2006; Kravitz, 1995). The most lenient AA programs refer to *opportunity enhancement*, which offers assistance to minority group members (e.g., through recruitment or training) with the aim of enlarging the pool of qualified minority candidates. Somewhat stricter AA programs are the *equal-opportunity programs*, which protect minority members from discriminatory treatment. Finally, some types of preferential treatment AA programs are intimately tied to the selection process itself and provide weak or strong advantages to minority members on the basis of their group membership. In *weak preferential-treatment programs*, minority members are given preference over others, given that they have equivalent qualifications, whereas *strong preferential-*

treatment AA programs grant special preferences to minority members (i.e., “quotas”), even when their qualifications are lower than those of majority members.

Wright and Lubensky (2008) recently expressed doubt on whether intergroup contact would lead to macro-level changes because a positive intergroup atmosphere at the micro-level deflects attention away from ongoing material inequality at the macro-level (see also Dixon, Tropp, Durrheim, & Tredoux, 2010). However, on the basis of a cross-sectional study, Dixon and his colleagues demonstrated that intergroup contact is negatively associated with an opposition to race-compensatory policies (which include opportunity enhancement and equal-opportunity programs) and preferential treatment programs (Dixon, Durrheim et al. 2010).

More research is needed to obtain longitudinal evidence for the effect of direct intergroup contact on AA attitudes and support for AA programs, and similar effects may also be demonstrated for indirect intergroup contact. Moreover, in line with the predictions formulated above, the strength of these relationships may be moderated by the quality of the intergroup climate, indicating that intergroup contact can ameliorate AA attitudes and increase the support for AA programs to the greatest extent when it takes place in a negative intergroup climate.

A methodological note

Before concluding, we want to highlight the methodological innovations of recent intergroup contact research, which further attests to the validity of the theory. Indeed, the repeatedly criticized issue of solely relying on cross-sectional data to investigate intergroup contact effects (e.g., Pettigrew, 1998; 2008) has not been left unanswered. Hence, a growing number of longitudinal studies have demonstrated that intergroup contact leads to less prejudice (e.g., Binder et al., 2009; Brown, Eller, Leeds, & Stace, 2007; Eller & Abrams, 2004; Levin, van Laar, & Sidanius, 2003). In

Chapter 6, we provided a more rigorous test of longitudinal contact effects by adopting a full cross-lagged panel design (simultaneously controlling for the stability effects of the variables and the cross-sectional associations among the variables) and by using latent variables instead of observed variables.

However, future studies should also use three-wave data to enable latent growth-curve modeling. This would increase our understanding of the dynamic nature of changes in intergroup contact and prejudice over time and their relationships with changes in the mediating processes. Moreover, given the call to consider macro-context features in intergroup contact research (Pettigrew, 1998; 2008), not only more longitudinal studies are needed, but also studies that gather both micro- and macro-level data that enable multilevel analyses to investigate the simultaneous and combined effects of the micro- and macro-level variables (Pettigrew, 2006).

Chapter 6 also addressed the potential bias of self-reported ratings of intergroup contact and provided a validation of the self-reports using observer ratings of intergroup contact. This finding corresponds well with the results of Hewstone, Judd, & Sharp (in press), who used a round-robin design and four-person groups of friends to demonstrate the significant agreement between self-reported and observer ratings of intergroup contact across two studies and two different outgroups. Such a multi-source approach, using measures of both intergroup contact and prejudice, provides researchers with multiple indicators of these variables, thereby decreasing potential biases that arise from a common method variance. As concluded in Chapter 6, these findings place greater confidence in the previously reported effects of intergroup contact based on self-report measures.

Conclusion

There are no reasons to expect that migration will stop or that society will be less diverse in the future. As such, finding ways to reduce (mutual) prejudice and establish harmonious intergroup relations is likely to remain at the top of international research agendas. At the moment, research into intergroup contact is taking the lead in this field and, with the forthcoming publication of two books (Hodson & Hewstone, in press; Pettigrew & Tropp, in press) and two special issues of prominent social psychological journals devoted to intergroup contact (i.e., *British Journal of Social Psychology* and *Group Processes & Intergroup Relations*), it seems that this trend will continue.

The present dissertation contributes to the literature by demonstrating the moderating roles of individual differences (i.e., authoritarianism and NFC) in the relationship between intergroup contact and reduced prejudice while illuminating the mediating roles of several psychological processes (i.e., perceived threat, trust, and intergroup anxiety) in these relationships. An additional contribution was made to the literature by using longitudinal data and observer ratings. Finally this dissertation highlights the value of studying intergroup contact in an applied setting by demonstrating meaningful relationships with work-related variables, but it also warns against the risk of drawing overoptimistic conclusions about the effects of positive intergroup contact because of the potential occurrence of negative contact.

References

- Adesokan, A. A., Ullrich, J., van Dick, R., & Tropp, L. R. (in press). Diversity beliefs as moderator of the contact – prejudice relationships. *Social Psychology*
- Allport, G. W. (1954). *The nature of prejudice*. Reading, MA: Addison-Wesley.
- Binder, J., Zagefka, H., Brown, R., Funke, F., Kessler, T., Mummendey, A., et al. (2009). Does contact reduce prejudice or does prejudice reduce contact? A longitudinal test of the contact hypothesis among majority and minority groups in three European countries. *Journal of Personality and Social Psychology*, 96, 843-856.
- Brown, R., Eller, A., Leeds, S., & Stace, K. (2007). Intergroup contact and intergroup attitudes: A longitudinal study. *European Journal of Social Psychology*, 37, 692-703.
- Crosby, F. J., & Franco, J. L. (2003). Connections between the ivory tower and the multicolored world: Linking abstract theories of social justice to the rough and tumble of affirmative action. *Personality and Social Psychology Review*, 7, 362-373.
- Crosby, F. J., Iyer, A., & Sincharoen, S. (2006). Understanding affirmative action. *Annual Review of Psychology*, 57, 585-611.
- Dhont, K. & Van Hiel, A. (2011). *The combined effects of intergroup contact and intergroup climate on prejudice*. Manuscript in preparation
- Dixon, J., Durrheim, K., & Tredoux, C. (2005). Beyond the optimal contact strategy. A reality check for the contact hypothesis. *American Psychologist* 60, 697-711.
- Dixon, J., Durrheim, K., Tredoux, C., Tropp, L., Clack, B., Eaton, L., & Quale, M. (2010). Challenging the stubborn core of opposition to equality: Racial contact and policy attitudes. *Political Psychology*, 31, 931-855.

- Dixon, J., Tropp, L. R., Durrheim, K., & Tredoux, C. (2010). Let them eat harmony: Prejudice-reduction strategies and attitudes of historically disadvantaged groups. *Current Directions in Psychological Science*, 19, 76-80.
- Eller, A., & Abrams, D. (2004). Come together: Longitudinal comparisons of Pettigrew's reformulated intergroup contact model and the Common Ingroup Model in Anglo-French and Mexican-American contexts. *European Journal of Social Psychology*, 34, 229-256.
- Harrison, D. A., Kravitz, D. A., Mayer, D. M., Leslie, L. M., & Lev-Arey, D. (2006). Understanding attitudes toward affirmative action programs in employment: Summary and meta-analysis of 35 years of research. *Journal of Applied Psychology*, 91, 1013-1036.
- Hewstone, M., Judd, C. M., Sharp, M. (in press). Do observer ratings validate self-reports of intergroup contact? A round-robin analysis. *Journal of Experimental Social Psychology*. Doi: 10.1016/j.jesp.2010.12.014
- Hodson, G. (2008). Interracial prison contact: The pros for (social dominant) cons. *British Journal of Social Psychology* 47, 325-351.
- Hodson, G. (2009). The puzzling person-situation schism in prejudice-research. *Journal of Research in Personality*, 43, 247-248.
- Hodson, G. (in press). Authoritarian contact: From "tight circles" to cross-group friendships. In F. Funke, T. Petzel, J. C. Cohrs, & J. Duckitt (Eds.) *Perspectives on Authoritarianism* (pp. 257-282). Wiesbaden, Germany: VS-Verlag.
- Hodson, G., Harry, H., & Mitchell, A. (2009). Independent benefits of contact and friendship on attitudes toward homosexuals among authoritarians and highly identified heterosexuals. *European Journal of Social Psychology*, 39, 509-525.

- Hodson, G. & Hewstone, M. (Eds.) (in press). *Advances in intergroup contact*. London: Psychology Press.
- Kravitz, D. A. (1995). Attitudes toward affirmative action plans directed at blacks: Effects of plan and individual differences. *Journal of Applied Social Psychology*, 25, 2192-2220.
- Kravitz, D. A., & Platania, J. (1993). Attitudes and beliefs about affirmative action: Effects of target and of respondent sex and ethnicity. *Journal of Applied Psychology*, 78, 928-938.
- Levin, S., van Laar, C., & Sidanius, J. (2003). The effects of ingroup and outgroup friendship on ethnic attitudes in college: A longitudinal study. *Group Processes and Intergroup Relations*, 6, 76-92.
- Paolini, S., Harwood, J., & Rubin, M. (2010) Negative intergroup contact makes group memberships salient: Explaining why intergroup conflict endures. *Personality and Social Psychology Bulletin*, 36, 1723-1738.
- Pettigrew, T. F. (1998). Intergroup contact theory. *Annual Review of Psychology*, 49, 65-85.
- Pettigrew, T. F. (2006). The advantages of multilevel approaches. *Journal of Social Issues*, 62, 615-620.
- Pettigrew, T. F. (2008) Future directions for intergroup contact theory and research. *International Journal of Intercultural Relations*, 32, 187-199.
- Pettigrew, T. F., & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*, 90, 751-783.
- Pettigrew, T. F., & Tropp, L. R. (2008). How does intergroup contact reduce prejudice? Meta-analytic tests of three mediators. *European Journal of Social Psychology*, 38, 922-934.
- Pettigrew, T. F., & Tropp, L. R. (in press). *When groups meet: The dynamics of intergroup contact*. Philadelphia, PA: Psychology Press.

- Tausch, N., Tam, T., Hewstone, M., Kenworthy, J., & Cairns, E. (2007). Individual-level and group-level mediators of contact effects in Northern Ireland: The moderating role of social identification. *British Journal of Social Psychology, 46*, 541-556.
- Turner, R., Hewstone, M., & Voci, A. (2007). Reducing explicit and implicit outgroup prejudice via direct and extended contact: The mediating role of self-disclosure and intergroup anxiety. *Journal of Personality and Social Psychology, 93*, 369-388.
- Turner, R., Hewstone, M., Voci, A., & Vonofakou, C. (2008). A test of the extended intergroup contact hypothesis: The mediating role of intergroup anxiety, perceived ingroup and outgroup norms, and inclusion of the outgroup in the self. *Journal of Personality and Social Psychology, 95*, 843-860.
- Wright, S. C. & Lubensky, L. (2008). The struggle for social equality: Collective action vs. prejudice reduction. In S. Dumoulin, J.P. Leyens, & J. F. Dovidio (Eds.), *Intergroup misunderstandings: Impact of divergent social realities* (pp. 291-310). New York: Psychology Press.
- Wright, S. C., Aron, A., McLaughlin-Volpe, T., & Ropp, S. A. (1997). The extended contact effect: Knowledge of cross-group friendships and prejudice. *Journal of Personality and Social Psychology, 73*, 73-90.

Nederlandstalige samenvatting

De reductie van raciale vooroordelen: De rol van intergroepscontact en sociale attitudes

Introductie

Gedurende de voorbije decennia zijn de migratiestromen fors gestegen omwille van de economische globalisatie, verbeterde reis- en communicatiemogelijkheden alsook door talrijke, wereldwijde politieke en etnische conflicten. Zo zijn moderne samenlevingen getuige geweest van een groei in hun migrantenpopulatie en werden ze multicultureel. Niet alle leden van de gastlanden zijn daar echter tevreden mee. De hardnekkigheid van raciale vooroordelen en discriminatie tegenover immigranten is een uitgebreid gedocumenteerd sociaal fenomeen (bv. Esses, Jackson, & Armstrong, 1998; Pettigrew, 1998a; Semyonov, Raijman, & Gorodzeisky, 2006; Zick, Pettigrew, & Wagner, 2008).

Sociale wetenschappers hebben echter een breed gamma aan interventieprogramma's en strategieën ontwikkeld om de relaties tussen verschillende groepen te verbeteren en racisme te verminderen (voor overzichten, zie Oskamp, 2000; Palluck & Green, 2009; Stephan & Stephan, 2001). Eén van de meest effectieve methodes om wederzijdse vooroordelen te verminderen is de leden van verschillende groepen in contact brengen met elkaar en is gebaseerd op Allports (1954) intergroepscontacthypothese (Brown & Hewstone, 2005; Dovidio, Gaertner, & Kawakami, 2003; Pettigrew, 1998b).

Deze hypothese stelt dat contact met leden van een andere groep ('uitgroepsleden') vooroordelen tegenover die uitgroep succesvol kan doen dalen als het contact voldoet aan de volgende vier voorwaarden: de interactiepartners moeten tijdens het contact een gelijke status bezitten, samenwerken, een gezamenlijk doel nastreven en ondersteund worden door een autoriteit of sociale normen. Een recente meta-analyse (Pettigrew & Tropp, 2006) van meer dan 500 studies en data van meer dan 250 000 participanten leverde duidelijke evidentie voor het negatieve verband tussen intergroepscontact en vooroordelen en demonstreerde de toepasbaarheid en validiteit van de contacthypothese in de meest uiteenlopende groepen en contexten. Bovendien bleek uit de meta-analyse dat de aanwezigheid van Allports (1954) vier condities de effecten van intergroepscontact wel versterkte maar niet noodzakelijk was om deze effecten te bekomen.

Doorheen de tijd werd de contacthypothese verder verfijnd en uitgebreid en transformeerde de hypothese tot een stevig theoretisch kader (Brown & Hewstone, 2005; Pettigrew, 1998b). Recente studies identificeerden, bijvoorbeeld, verschillende psychologische processen onderliggend aan de daling van vooroordelen door intergroepscontact zoals de vermindering in intergroepsangst en gepercipieerde dreiging vanuit de uitgroep (bv. Paolini, Hewstone, Cairns, & Voci, 2004; Pettigrew, Christ, Wagner, & Stellmacher, 2007; Pettigrew & Tropp, 2008; Tausch, Hewstone, Kenworthy, Cairns, & Christ, 2007; Tausch, Hewstone, & Roy, 2009; Voci & Hewstone, 2003).

Wright, Aron, McLaughlin-Volpe en Ropp (1997) toonden bovendien aan dat niet enkel directe vormen van intergroepscontact, maar ook louter het kennen of observeren van een ingroepslid dat een goede band heeft met een uitgroepslid vooroordelen doet dalen. Dergelijke indirecte vormen van intergroepscontact zijn vooral van belang wanneer bepaalde situaties verhinderen om in contact te treden met uitgroepsleden, bijvoorbeeld als de leden van verschillende groepen naar een

andere school gaan, ander werk hebben of niet in dezelfde buurt wonen (Paolini et al., 2004; Turner, Hewstone, Voci, & Vonofakou, 2008; Wright et al., 1997; voor overzichten, zie Turner, Hewstone, Voci, Paolini, & Christ, 2007; Vonofakou et al., 2008). Daarenboven toonden Christ et al. (2010) aan dat indirect contact zelfs het meest effectief is bij mensen die in een gesegregeerde buurt wonen en weinig of geen direct intergroepscontact hebben.

Tekortkomingen in de literatuur en doelstellingen van het doctoraatsonderzoek

Ondanks de uitgesproken theoretische vooruitgang in de huidige intergroepscontact-literatuur, zijn er verschillende belangrijke tekortkomingen die verder onderzoek noodzakelijk maken. Eén van deze tekortkomingen heeft betrekking tot het opnemen van individuele verschilvariabelen of dispositionele variabelen in het onderzoek naar intergroepscontact. Meer specifiek is de potentiële invloed van individuele verschilvariabelen die de effecten van intergroepscontact kunnen versterken of verhinderen grotendeels genegeerd gebleven in de literatuur. Nochtans had Allport (1954) zelf al gesuggereerd dat persoonlijke factoren een beslissende invloed kunnen uitoefenen op de mate van succes dat intergroepscontact heeft in het verminderen van vooroordelen. Een centrale onderzoeksvraag in dit doctoraat is daarom: Bij wie leidt intergroepscontact (het meest) tot een daling in vooroordelen?

Een tweede belangrijke tekortkoming in de literatuur betreft het feit dat positief intergroepscontact vooral bestudeerd is in isolatie van zijn sociale context. Dit heeft geleid tot de scherpe kritiek dat de theoretische bevindingen over intergroepscontact dikwijls onbruikbaar of zelfs zinloos zouden zijn in de praktijk. Volgens Dixon, Durrheim en Tredoux (2005) heeft het werk rond intergroepscontact een verbloemd beeld van intergroepsprocessen gecreëerd dat nog weinig te maken heeft met de hardere, dagelijkse interacties tussen groepsleden in de bittere realiteit.

Hoewel deze kritiek de intergroepscontacttheorie niet weerlegt, benadrukt het wel de noodzaak om intergroepscontact in zijn bredere sociale context te bestuderen (zie ook Pettigrew, 2008). Bovendien is de vermindering van racisme door indirect intergroepscontact al één voorbeeld (in positieve zin) van de bredere impact dat direct intergroepscontact mogelijk heeft binnen een sociaal netwerk van vrienden en kennissen. Desalniettemin is er door de traditionele focus op positief intergroepscontact weinig geweten over de simultane invloed van zowel positief als negatief intergroepscontact of over de invloed van intergroepscontact in een reële context die niet voldoet aan Allports (1954) voorwaarden en mogelijk tot een stijging van vooroordelen en conflict leidt.

In het huidige doctoraat willen we een antwoord bieden op bovenstaande problemen en focussen we op het effect van contact met allochtonen op het verminderen van vooroordelen en racisme ten opzichte van allochtonen. Eerst en vooral onderzoeken we de gecombineerde effecten van positief intergroepscontact en individuele verschillen in autoritarisme (Hoofdstukken 2 en 3) en de behoefte aan cognitieve afsluiting (Hoofdstuk 4) op racisme. Daarenboven willen we in dit doctoraat intergroepscontact binnen zijn sociale context onderzoeken. Bijgevolg onderzoeken we, naast de effecten van positief intergroepscontact, ook de effecten van negatief intergroepscontact (Hoofdstukken 2 en 5) en indirect intergroepscontact (Hoofdstukken 3 en 4). Bovendien bestuderen we intergroepscontact in een toegepaste sociale setting (Hoofdstuk 5). Als laatste doel van het doctoraat pakken we enkele methodologische problemen aan die typerend zijn voor de intergroepscontactliteratuur (Hoofdstuk 6).

Empirische studies

De vermindering van racisme bij autoritaire personen

In Hoofdstukken 2 en 3 focussen we op de modererende rol van autoritarisme in de relatie tussen intergroepscontact en de mate van vooroordelen. Voorgaand onderzoek heeft aangetoond dat autoritarisme een zeer goede predictor is van racisme (bv. Altemeyer, 1998; Duckitt, 2001; Duckitt & Sibley, 2007; Van Hiel & Mervielde, 2002; 2005). Bovendien zijn autoritaire personen er van overtuigd dat racisme onoverkomelijk en gerechtvaardigd is en veroorzaakt wordt door factoren buiten hun controle (Esses & Hodson, 2006; Hodson & Esses, 2005).

Een belangrijke vraag die hierbij gesteld kan worden, is of racisme bij autoritaire personen verminderd kan worden door intergroepscontact. Allport (1954) suggereerde dat het positieve effect van intergroepscontact - zelfs onder de meest optimale omstandigheden - het niet altijd kan winnen van de negatieve effecten van persoonlijke factoren. Anderzijds kan gesteld worden dat door het feit dat intergroepscontact in staat is om gepercipieerde dreiging te verminderen, intergroepscontact zeer effectief kan zijn in het verminderen van racisme bij autoritaire personen. De resultaten van Hodson (2008) leverden bovendien al evidentie op voor deze laatste mogelijkheid en toonde aan dat autoritaire personen het meest voordeel halen uit intergroepscontact.

In Hoofdstuk 2 testen we deze twee tegengestelde hypothesen betreffende de simultane effecten van intergroepscontact en autoritarisme op racisme in twee heterogene steekproeven van volwassenen. Beide studies tonen aan dat (positief) intergroepscontact het sterkst racisme verminderd bij hoog autoritaire personen. Deze optimistische boodschap wordt echter getemperd door de bijkomende bevinding dat ook negatief intergroepscontact het sterkste effect heeft bij hoog autoritaire personen.

In Hoofdstuk 3 willen we de bevindingen uit Hoofdstuk 2 repliceren en uitbreiden met data uit een grote, representatieve steekproef van Nederlandse volwassenen. Meer specifiek, gegeven dat indirect contact de sterkste effecten heeft bij mensen met weinig direct contact (Christ et al., 2010) en bij hoog autoritaire personen (Hodson, Harry, & Mitchell, 2009), onderzoeken we of de effecten van indirect contact het meest uitgesproken zijn bij hoog autoritaire personen met lage niveaus van direct contact. Bijgevolg testen we een driewegsinteractie-effect tussen indirect contact, direct contact en autoritarisme op racisme. Bovendien onderzoeken we of de psychologische processen onderliggend aan deze moderatie-effecten verklaard kunnen worden door het vermogen van indirect contact om gepercipieerde dreiging te doen dalen (Pettigrew et al., 2007) en vertrouwen in de uitgroep op te bouwen (Tam, Hewstone, Kenworthy, & Cairns, 2009). De resultaten bevestigen dat het effect van indirect intergroepscontact op racisme het sterkst is bij hoog autoritaire personen met lage niveaus van direct intergroepscontact en demonstreren dat deze moderatie-effecten op racisme opereerden via een daling van gepercipieerde dreiging en een stijgend vertrouwen in de uitgroep.

De gecombineerde effecten van intergroepscontact en gemotiveerde sociale cognitie

In Hoofdstuk 4 richten we onze aandacht op de modererende invloed van de Behoeftte aan Cognitieve Afsluiting (BCA, Kruglanski, 1989; Kruglanski & Webster, 1996) in de relatie tussen intergroepscontact en racisme. BCA duidt op de wens om zekere en definitieve kennis te bezitten, in tegenstelling tot verdere verwarring en ambiguïteit. Een hoge BCA is indicatief voor een voorkeur voor orde en voorspelbaarheid, besluitvaardigheid, enggeestigheid en intolerantie voor ambiguïteit (Webster & Kruglanski, 1994). Opvallend is dat de karakteristieken van een hoge BCA zeer goed overeenkomen met de cognitieve stijl karakteristieken die Allport

(1954) verantwoordelijk achtte voor het ontwikkelen en aanhouden aan bevooroordeelde opvattingen. Bovendien kan vanuit zowel de theorie over BCA alsook op basis van Allports (1954) ideeën verwacht worden dat een hoge BCA een motivationeel-cognitieve barrière vormt tegen situationele invloeden op attitudeverandering waardoor er een weerstand gecreëerd wordt tegen de invloed van intergroepscontact.

Op basis van meer recent onderzoek naar intergroepscontact verwachten we echter dat intergroepscontact tot de sterkste daling in racisme zou leiden bij personen met een hoge BCA, net omdat intergroepscontact de eigenschap heeft om de onzekerheid en angst tegenover uitgroepsleden weg te nemen (Paolini et al., 2004; Pettigrew & Tropp, 2008, Voci & Hewstone, 2003). De resultaten van vier cross-sectionele studies en een experimentele veldstudie tonen consistent aan dat intergroepscontact het sterkst leidt tot een vermindering in racisme bij personen met een hoge BCA in vergelijking met personen met een lage BCA. Het effect wordt aangetoond voor direct en indirect intergroepscontact en in steekproeven van studenten en volwassenen en voor een waaier aan racismematen. Bovendien wordt de daling van intergroepsangst geïdentificeerd als een belangrijke procesvariabele onderliggend aan het moderatie-effect tussen intergroepscontact en BCA op racisme.

Interraciaal contact tussen politie en allochtone burgers

In Hoofdstuk 5 focussen we op een zeer specifieke, reële context waarin intergroepsinteracties plaatsvinden. In een steekproef van politieagenten onderzoeken we positief en negatief contact tussen politieagenten en allochtonen in relatie tot raciale en werkgerelateerde attitudes en zelfgerapporteerde gedragingen van politieagenten.

Gegeven dat de kenmerken van een dergelijke intergroepscontext in tegenstelling zijn met de faciliterende voorwaarden die voorgesteld worden in de

literatuur (Allport, 1954; Pettigrew & Tropp, 2006), is het eerste doel van de studie te achterhalen of positief intergroepscontact ook bij politieagenten een effect heeft op de attitudes en het gedrag tegenover allochtonen. Tegelijkertijd onderzoeken we ook de effecten van negatief intergroepscontact op deze uitkomstvariabelen. De resultaten tonen dat zowel positief en negatief intergroepscontact significant gerelateerd zijn aan de attitudes van politieagenten tegenover allochtonen en op die manier ook aan hun gedrag tegenover allochtonen.

Door intergroepscontact in zijn sociale en organisatiecontext te bestuderen is het ook mogelijk om de relaties te bestuderen met een bredere variatie van variabelen. Gezien de kwaliteit en frequentie van contact met allochtonen wezenlijke onderdelen zijn van het politiewerk, verwachten we dat intergroepscontact gerelateerd is aan belangrijke werkgerelateerde attitudes en gedragingen.

In overeenkomst met onze verwachtingen, tonen de resultaten significante verbanden tussen positief en negatief intergroepscontact en de mate waarin politieagenten hun organisatie als procedureel rechtvaardig beschouwen. Bovendien demonstreren we aan dat zowel positief en negatief intergroepscontact, via de percepties van procedurele rechtvaardigheid, gerelateerd zijn aan de mate waarin politieagenten vrijwillig positieve gedragingen stellen tegenover collega's en superieuren, die niet tot hun taakomschrijving behoren.

Methodologische bijdrage

In Hoofdstukken 2 tot 5 focussen we op belangrijke conceptuele tekortkomingen in de literatuur. Er bestaan echter ook een aantal belangrijke methodologische problemen in de intergroepscontactliteratuur waarvan sommige een ernstige bedreiging kunnen vormen voor de validiteit van vele bevindingen rond intergroepscontact. In Hoofdstuk 6 behandelen we twee van deze problemen.

Het eerste betreft de schaarsheid van longitudinale studies in de intergroepscontactliteratuur. Dit is een opvallend gegeven, niet in het minst omwille van het expliciet causale karakter van de contacthypothese en de mogelijkheid om het verband tussen intergroepscontact en racisme in beide richtingen uit te leggen (intergroepscontact kan vooroordelen doen dalen, maar sterk bevooroordeelde personen zullen intergroepscontact ook vermijden). Een tweede probleem betreft het overmatig gebruik van zelfrapporteringsmaten van intergroepscontact. Eigen aan zelfrapporteringsmaten is dat respondenten een vertekend beeld kunnen geven van het intergroepscontact dat ze werkelijke hebben, bijvoorbeeld door sociaal wenselijk te antwoorden.

Toegegeven, ook de studies gerapporteerd in Hoofdstukken 2 tot 5 kunnen op basis van deze twee problemen bekritiseerd worden. Daarom is het doel van Hoofdstuk 6 een methodologische bijdrage te leveren aan de literatuur door de effecten van intergroepscontact op racisme te onderzoeken binnen een longitudinaal, ‘cross-lagged’ panel opzet. Bovendien trachten we zelfrapporteringsscores van intergroepscontact te valideren aan de hand van observatorscores van intergroepscontact.

Deze studie demonstreert dat de observatorscores sterk overeenkomen met de zelfrapporteringsscores van intergroepscontact. Daarenboven tonen we, met zowel de zelfrapporteringsscores als met de observatorscores, longitudinaal aan dat intergroepscontact leidt tot een daling van racisme.

Een bijkomstig doel van deze studie is om na te gaan of intergroepscontact ook essentialisme doet dalen. Essentialisme duidt op de mate waarin iemand ervan overtuigd is dat leden binnen bepaalde sociale categorieën een vaste onderliggende natuur of essentie delen. De resultaten tonen inderdaad aan dat intergroepscontact essentialistische opvattingen over raciale groepen op termijn doet dalen. Hierdoor verkrijgen we initiële evidentie voor het idee dat intergroepscontact de cognitieve

processen betreffende het categoriseren van mensen in verschillende groepen op basis van ras of etniciteit kan bijsturen.

Algemene discussie en conclusie

De eerste drie empirische hoofdstukken dragen bij aan de contactliteratuur door te demonstreren dat individuele verschillen in autoritarisme en BCA een modererende rol spelen in de relatie tussen intergroepscontact en racisme. Bovendien tonen we de belangrijke rol van verschillende psychologische processen aan, zoals gepercipieerde dreiging, vertrouwen en intergroepsangst, als mediators in deze moderatie-effecten.

Gezien intergroepscontact racisme het sterkst vermindert bij autoritaire personen en cognitief rigide personen die gewoonlijk sterk vasthouden aan hun bestaande opvattingen, kunnen we concluderen dat intergroepscontact het beste werkt bij diegenen die het meest nood hebben aan een verandering van hun attitudes. Bijgevolg zijn we ervan overtuigd dat we één van de belangrijkste vragen hebben opgelost betreffende de functionele waarde van intergroepscontact als interventiestrategie om racisme te doen dalen. Een interventietechniek die enkel zou werken bij diegenen die er het minst nood aan hebben, zou immers zijn toegepaste waarde volledig verliezen.

Verder benadrukt dit doctoraatsproefschrift de waarde van het bestuderen van intergroepscontact in zijn sociale context door betekenisvolle verbanden aan te tonen met werkgerelateerde variabelen. Daarenboven verschaffen we verdere evidentie voor de bredere impact van direct intergroepscontact die duidelijk verdergaat dan enkel de interactiepartners en zich verspreidt binnen hun sociale netwerken via het proces van indirect contact. Anderzijds willen we ook waarschuwen voor het trekken van overoptimistische conclusies over de effecten

van positief intergroepscontact als geen rekening wordt gehouden met het mogelijke voorkomen van negatief intergroepscontact.

Tot slot dragen we bij aan de literatuur door een antwoord te bieden op enkele methodologische problemen die kenmerkend zijn voor de bestaande contactliteratuur. De grote consistentie tussen zelfrapporteringsscores en observatorscores geeft meer vertrouwen in de conclusies die kunnen getrokken worden op basis van de talrijke voorgaande onderzoeken die gebruik maakten van zelfrapporteringsscores van intergroepscontact.

References

- Allport, G. W. (1954). *The nature of prejudice*. Reading, MA: Addison-Wesley.
- Altemeyer, R. (1998). The other “authoritarian personality”. In M. P. Zanna (ed.), *Advances in experimental social psychology*, (Vol. 30, pp. 47-91). San Diego, CA: Academic Press.
- Brown, R., & Hewstone, M. (2005). An integrative theory of intergroup contact. In M. P. Zanna (ed.), *Advances in experimental social psychology*, (Vol. 37, pp. 255-343). San Diego, CA: Academic Press.
- Christ, O., Hewstone, M., Tausch, N., Wagner, U., Voci, A., Hughes, J., & Cairns, E. (2010). Direct contact as a moderator of extended contact effects: Cross-sectional and longitudinal impact on outgroup attitudes, behavioral intentions, and attitude certainty. *Personality and Social Psychology Bulletin*, 36, 1662-1674.
- Dixon, J., Durrheim, K., & Tredoux, C. (2005). Beyond the optimal contact strategy. A reality check for the contact hypothesis. *American Psychologist* 60, 697-711.
- Dovidio, J. F., Gaertner, S. L., & Kawakami, K. (2003). Intergroup contact: The past, present, and the future. *Group Processes and Intergroup Relations*, 6, 5-21.
- Duckitt, J. (2001). A dual-process cognitive-motivational theory of ideology and prejudice. In M. P. Zanna (ed.), *Advances in experimental social psychology*, (Vol. 33, pp. 41-113). San Diego, CA: Academic Press.
- Duckitt, J., & Sibley, C. (2007). Right wing authoritarianism, social dominance orientation and the dimensions of generalized prejudice, *European Journal of Personality*, 21, 113–130.

- Esses, V. M., & Hodson, G. (2006). The role of lay perceptions of ethnic prejudice in the maintenance and perpetuation of ethnic bias. *Journal of Social Issues*, 62, 453-468.
- Esses, V., Jackson, L. M., & Armstrong, T. L. (1998). Intergroup competition and attitudes toward immigrants and immigration: An instrumental model of group conflict. *Journal of Social Issues*, 54, 699-724.
- Hodson, G. (2008). Interracial prison contact: The pros for (social dominant) cons. *British Journal of Social Psychology* 47, 325-351.
- Hodson, G., & Esses, V.M. (2005). Lay perceptions of ethnic prejudice: Causes, solutions, and individual differences. *European Journal of Social Psychology*, 35, 329-344.
- Hodson, G., Harry, H., & Mitchell, A. (2009). Independent benefits of contact and friendship on attitudes toward homosexuals among authoritarians and highly identified heterosexuals. *European Journal of Social Psychology*, 39, 509-525.
- Kruglanski, A. W. (1989). *Lay epistemic and human knowledge: Cognitive and motivational bases*. New York: Plenum.
- Kruglanski, A. W., & Webster, D. M. (1996). Motivated closing of the mind: "Seizing" and "freezing." *Psychological Review*, 103, 263-283.
- Oskamp S. (2000). *Reducing Prejudice and Discrimination*. Mahwah, NJ: Erlbaum.
- Paluck, E. L., & Green, D. P. (2009). Prejudice reduction: What works? A review and assessment of research and practice. *Annual Review of Psychology*, 60, 339-67.
- Paolini, S., Hewstone, M., Cairns, E., & Voci, A. (2004). Effects of direct and indirect cross-group friendships on judgments of Catholics and Protestants in Northern Ireland: The mediating role of an anxiety-reduction mechanism. *Personality Social Psychology Bulletin*, 30, 770-786.

- Pettigrew, T. F. (1998a). Reactions toward the new minorities of western Europe. *Annual Review of Sociology*, 24, 74-103.
- Pettigrew, T. F. (1998b). Intergroup contact theory. *Annual Review of Psychology*, 49, 65-85.
- Pettigrew, T. F. (2008) Future directions for intergroup contact theory and research. *International Journal of Intercultural Relations*, 32, 187-199.
- Pettigrew, T. F., Christ, O., Wagner, U., & Stellmacher, J. (2007). Direct and indirect intergroup contact effects on prejudice: A normative interpretation. *International Journal of Intercultural Relations*, 31, 411-425.
- Pettigrew, T. F., & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*, 90, 751-783.
- Pettigrew, T. F., & Tropp, L. R. (2008). How does intergroup contact reduce prejudice? Meta-analytic tests of three mediators. *European Journal of Social Psychology*, 38, 922-934.
- Semyonov, M., Raijman, R., & Gorodzeisky, A. (2006). The Rise of Anti-Foreigner Sentiment in European Societies, 1988-2000. *American Sociological Review*, 71, 426-449.
- Stephan, W. G., & Stephan, C. W. (2001). Improving intergroup relations. Thousand Oaks, CA: Sage
- Tam, T., Hewstone, M., Kenworthy, J., & Cairns, E. (2009). Intergroup trust in Northern Ireland. *Personality and Social Psychology Bulletin*, 35, 45-59.
- Tausch, N., Hewstone, M., Kenworthy, J. B., Cairns, E., & Christ, O. (2007). Cross-community contact, perceived status differences and intergroup attitudes in Northern Ireland: The mediating roles of individual-level vs. group-level threats and the moderating role of social identification. *Political Psychology*, 28, 53-68.

- Tausch, N., Hewstone, M., & Roy, R. (2009). The relationships between contact, status, and prejudice: An Integrated Threat Theory analysis of Hindu-Muslim relations in India. *Journal of Community and Applied Social Psychology*, 19, 83-94.
- Turner, R. N., Hewstone, M., Voci, A., Paolini, S., & Christ, O. (2007). Reducing prejudice via direct and extended cross-group friendship. In W. Stroebe & M. Hewstone (Eds.), *European review of social psychology* (Vol. 18, pp. 212-255). Hove, UK: Psychology Press.
- Turner, R., Hewstone, M., Voci, A., & Vonofakou, C. (2008). A test of the extended intergroup contact hypothesis: The mediating role of intergroup anxiety, perceived ingroup and outgroup norms, and inclusion of the outgroup in the self. *Journal of Personality and Social Psychology*, 95, 843-860.
- Van Hiel, A., & Mervielde, I. (2002). Explaining conservative beliefs and political preferences: A comparison of social dominance orientation and authoritarianism. *Journal of Applied Social Psychology*, 32, 965-976.
- Van Hiel, A., & Mervielde, I. (2005). Authoritarianism and social dominance orientation: Relationships with various forms of racism. *Journal of Applied Social Psychology* 35, 2323-2344.
- Voci, A., & Hewstone, M. (2003). Intergroup contact and prejudice towards immigrants in Italy: The mediational role of anxiety and the moderational role of group salience. *Group Processes and Intergroup Relations*, 6, 37-54.
- Vonofakou, C., Hewstone, M., Voci, A., Paolini, S., Turner, R. N., Tausch, N. T., et al. (2008). The impact of direct and extended cross-group friendships on improving intergroup relations. In U. Wagner, L. R. Tropp, G. Finchilescu, & C. Tredoux (Eds.), *Improving intergroup relations : Building on the legacy of Thomas F. Pettigrew (pp. 107-123)*. SPSSI Series on Social Issues and Interventions. Malden, MA: Wiley-Blackwell.

- Webster, D. M., & Kruglanski, A. W. (1994). Individual differences in need for cognitive closure. *Journal of Personality and Social Psychology*, 67, 1049-1062.
- Wright, S. C., Aron, A., McLaughlin-Volpe, T., & Ropp, S. A. (1997). The extended contact effect: Knowledge of cross-group friendships and prejudice. *Journal of Personality and Social Psychology*, 73, 73-90.
- Zick, A., Pettigrew, T. F., & Wagner, U. (2008). Ethnic prejudice and discrimination in Europe. *Journal of Social Issues*, 64, 233-251.