

**UNIVERSITY OF OXFORD  
DEPARTMENT OF EXPERIMENTAL  
PSYCHOLOGY**



***Intergroup Contact in Nigeria:  
Nature and Consequences of Close  
Interethnic Relationships***

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Thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy  
(D.Phil.) at the Department of Experimental Psychology, University of Oxford.

January 2014

## ACKNOWLEDGEMENTS

First and foremost, I would like to thank my supervisors Professor Miles Hewstone and Dr. Katharina Schmid. I am very grateful for their excellent guidance and encouragement over the past four years. I am also grateful to my MSc supervisor, Professor Rolf van Dick, who first got me interested in social psychology by giving inspiring lectures at the Goethe-University Frankfurt in Germany. I gratefully acknowledge the financial assistance of the Economic and Social Research Council, the German Academic Exchange Service (DAAD), and New College for my doctoral studies at the University of Oxford.

I would like to thank my collaborators in Nigeria, Professor Helen Osinowo (University of Ibadan) and Professor Kayode Oguntuashe (University of Lagos) for facilitating my research in the field. Thanks are also due to Mrs. Adeola Akinyemi Adeniji, Mr. Akinola Omoladun, Mrs. Monisola Osundiran, Mrs. Omolola Adisa Adeola, and Mr. Quadri Adesokan for their help with data collection. I am grateful to the various secondary schools and universities in Lagos and Ibadan for participating in my research project. I am also indebted to Dr. Olutunde Oni for his support and for hosting me during my stays in Ibadan.

I am most grateful to my family in Nigeria for taking great care of me while I was doing fieldwork. Special thanks go to my grandmother Alhaja Onikepo Afolabi and to my uncles Dr. Bayo Ogunkanmi, Mr. Kunle Afolabi, and Mr. Olaide Afolabi. I am also very grateful for the care and support of the late Alhaja Haola and Alhaji Safiu Adesokan, the two are greatly missed.

I would like to thank my dear colleagues Maria Ioannou, Simon Lolliot, and Huseyin Cakal in the social psychology group for being a great source of support during this journey.

A heartfelt *Thank You* goes to Alice Mbewe-Mvula, Anu Devi, Deborah Oyeyinka, Hege Larsen, Hugh Taylor, Lea Sitkin, Nadiya Figueroa, Natasha Phiri, Patty Sachamitr, Sarah-Ann Burger, and Yasmine El Masri for their friendship and support over the years.

I also want to express my gratitude to Professor Abdul Raufu Mustapha (Department of International Development, University of Oxford) and Drs. Eva and Onuora Nduka-Agwu for their encouragement and support.

Finally, my most special thanks go to my parents Adelayo and Ayinde Adesokan, for their care and loving support, and to my siblings Nike, Kola, and Joke, for always being there when they are needed.

# **Intergroup Contact in Nigeria: Nature and Consequences of Close Interethnic Relationships**

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D.Phil. in Experimental Psychology  
Submitted in January 2014

This thesis studied the nature and consequences of close intergroup contact in Nigeria. Chapter 1 provides a background to intergroup relations between the ethno-religious groups in Nigeria. Chapter 2 provides an introduction to the theoretical framework, which is the intergroup contact hypothesis (Allport, 1954), with special emphasis on the role of friendship in intergroup contact research. The chapter addresses the possibility that negative intergroup contact exacerbates prejudice and outlines the role of indirect forms of intergroup contact, namely extended contact (Wright, Aron, McLaughlin-Volpe, & Ropp, 1997), vicarious contact (Mazziotta, Mummendey, & Wright, 2011), and imagined contact (Crisp & Turner, 2009) in prejudice reduction. Indirect forms of contact have been suggested as alternatives to direct contact, if no or only limited direct contact opportunities are available.

All empirical studies in this thesis were conducted in south-west Nigeria with respondents who belong to the Yoruba majority group. The target groups were Hausas, Edos, and Igbos (minority groups in the area). Chapter 3 consists of two repeated measure studies (Studies 1 and 2) which compare the quality of in-group (Yoruba and Yoruba) and cross-group (Yoruba and Igbo) friendships. The findings showed that, provided the duration of friendship is controlled for, cross-group friendships are rated as largely similar in quality and closeness to in-group friendships, fulfilling key functions of friendship. Chapter 4 consists of two cross-sectional studies (Studies 3 and 4) which tested the secondary transfer effects from direct and extended cross-group friendships. The findings showed that direct and extended cross-group friendship with Igbos was associated with more favourable attitudes towards Hausas. The studies showed for the first time that extended cross-group friendship yields secondary transfer effects. Chapter 5 focuses on the effects of positive and negative intergroup contact with Igbos on out-group attitudes (Study 5). It was shown that negative intergroup contact had an effect on attitudes over and above the effect of positive contact. As expected, positive contact with Igbos was associated with more favourable attitudes towards Igbos, and negative contact with Igbos was associated with less favourable attitudes towards Igbos. Additionally, Study 5 showed secondary transfer effects of negative intergroup contact. Chapter 6 contains a multilevel-study (Study 6) which explores the effects of roommate diversity (i.e., having at least one Igbo roommate) on out-group attitudes. Roommate diversity was linked to more positive attitudes towards Igbos, the roommate's ethnic group. Moreover, it was shown that contact with Igbos was associated with more positive attitudes towards Edos and Hausas on the within-level. On the between-level roommate diversity was associated with more positive attitudes towards Egos. Chapter 7 summarizes the key findings of the studies and discusses theoretical and practical implications of the research.

## DETAILED ABSTRACT

The vast majority of the literature on intergroup relations has focused on Western countries. Overall, the African continent has been largely overlooked in terms of social psychological research on intergroup relations. This is rather surprising given that African countries are very diverse in terms of ethnicity and religion, and experience high incidences of civil wars between groups (see Horowitz, 1985). Nigeria is Africa's most populous country, and like many other African countries Nigeria's population is heterogeneous in terms of ethnicity, religion, and language (Boski, 1983; Horowitz, 1985; Mustapha, 2006). Nigeria is split in terms of population, cultural heritage and social structure with serious socio-political consequences. Therefore, Nigeria serves as an excellent setting for research on intergroup relations. The present research can be regarded as pioneering research on intergroup contact in Nigeria. To my knowledge social psychological research on intergroup contact has not been conducted in Nigeria before. Social psychological research needs, but still relatively lacks, research in a range of non-western cultures, which validates theories tested in multiple western cultures.

The theoretical framework of my research is the contact hypothesis (Allport, 1954; Pettigrew, 1998), which proposes that intergroup contact between members of different social groups leads to reduced prejudice and more positive intergroup relations. Over 500 studies have shown that contact between social groups typically reduces prejudice (see Pettigrew & Tropp, 2006, for a meta-analytic review). Moreover, research has shown that the prejudice-reducing effect of intergroup contact generalizes broadly across situations, to the out-group as a whole, and towards other uninvolved out-groups (*secondary transfer effect*, Pettigrew, 2009) (Pettigrew & Tropp, 2006).

While the vast majority of research suggests that intergroup contact reduces prejudice (e.g., Pettigrew, 1998; Van Laar, Levin, Sinclair, & Sidanius, 2005; Wagner, van Dick, Pettigrew, & Christ, 2003), a small number of studies have shown that intergroup contact can exacerbate prejudice (Pettigrew & Tropp, 2006).

Very recently researchers have tested the idea that indirect forms of contact, beyond face-to-face interactions, may be able to reduce out-group prejudice. The prejudice-reducing effect of extended contact (i.e., learning that an in-group member has close relations with an out-group member), vicarious contact (i.e., observing the interaction between an in-group member and an out-group member), and imagined contact (i.e., imagining an interaction with an out-group member) have received empirical support (Mazziotta, Mummendey, & Wright, 2011; Schiappa, Gregg, & Hewes, 2005; Turner, Crisp, & Lambert, 2007a; Wright, Aron, McLaughlin-Volpe, & Ropp, 1997; see Dovidio, Eller, & Hewstone, 2011, for a review). Indirect forms of intergroup contact are particularly useful in areas where practical obstacles, such as segregation or an ongoing intergroup conflict, prevent direct face-to-face interaction (Dovidio et al., 2011).

A fairly recent development in intergroup contact research is the idea that a specific type of intergroup contact, namely cross-group friendship, may be particularly effective in reducing out-group prejudice (Davies, Tropp, Aron, Pettigrew, & Wright, 2011; see Pettigrew & Tropp, 2006, for a meta-analytic test). Evidence from correlational (e.g., Aberson, Shoemaker, & Tomolillo, 2004; Pettigrew, 1997; Paolini, Hewstone, Cairns, & Voci, 2004), longitudinal (e.g., Binder et al., 2009; Levin, van Laar, & Sidanius, 2003; Swart, Hewstone, Christ, & Voci, 2011), and experimental (e.g., Page-Gould, Mendoza-Denton & Tropp, 2008; Wright et al., 1997) studies showed that cross-group friendship is strongly associated with prejudice reduction. Indeed, research has

shown that cross-group friendship is a stronger predictor of prejudice reduction than general intergroup contact (Pettigrew & Tropp, 2006).

Additionally, research findings indicate that direct and extended forms of cross-group friendship can reduce prejudice. Research has shown that the mere knowledge that an in-group friend has close relations with an out-group member can reduce prejudice (Wright et al., 1997). Direct and extended cross-group friendships, albeit typically correlated, make independent contributions to prejudice reduction (e.g., Paolini, Hewstone, & Cairns, 2007; Paolini et al., 2004; Pettigrew, Christ, Wagner, & Stellmacher, 2007).

The aim was to study the effects of close intergroup relationships in Nigeria. The present research aimed to provide a validation of findings of contact theory in a novel, non-western setting. At the same time this thesis aimed to extend research on intergroup contact. Firstly, given the special role of intergroup friendship the present research aimed to examine the nature of cross-group friendship in comparison to in-group friendships, to test whether in-group and cross-group friendships differ, for example, in fulfilling different functions, or the same functions to different degrees.

Secondly, I aimed to show that virtually any types of intergroup contact effects have the potential to generalize broadly regardless of whether the contact experiences are positive or negative, whether the intergroup contact is face-to-face contact or indirect contact through cross-group friends. Finally, I aimed to explore the effects of cross-group roommate contact on attitudes towards multiple primary and secondary out-groups. All empirical studies of this thesis were conducted in south-west Nigeria with respondents who belong to the Yoruba majority group. The target groups were Hausas, Edos, and Igbos (minority groups in the area).

Chapter 1 provides an introduction to intergroup relations between the ethno-religious groups in Nigeria, starting with a historical background describing the effects that the British rule of Nigeria had on intergroup relations, through to independence from the British administration (1960), and the ethnic war in Nigeria (Biafra War 1967-1970). The chapter closes by describing intergroup relations and conflict in contemporary Nigeria.

Chapter 2 describes the theoretical framework, which is the intergroup contact hypothesis (Allport, 1954), with special emphasis on the role of friendship in intergroup contact research (Pettigrew, 1998). Further the chapter also describes other research paradigms which are important for the research in this thesis, such as negative intergroup contact (Barlow et al., 2012) and extended contact (Wright et al., 1997).

Chapter 3 consists of two repeated measure studies which compare the quality of in-group (Yoruba and Yoruba) and cross-group (Yoruba and Igbo) friendships. The sample of Study 1 ( $N = 96$ ) comprised Yoruba university students, while the sample of Study 2 ( $N = 83$ ) was based on Yoruba secondary schools pupils. Studies 1 and 2 investigated whether nominated cross-group friends are perceived as similar types of friends as nominated in-group friends. Initial analyses showed that in-group friendships were rated more positively than cross-group friendships. However, it was subsequently shown that differences in quality of the two friendship types could largely be explained through differences in the length of friendship. It was revealed that participants had typically been friends with members of their in-group for longer, but, when controlling for the length of friendship, both studies showed that in-group friendships and cross-group friendships fulfil similar functions and are of comparable quality. The findings contradict previous research, which found that cross-group friendships were less intimate than in-group friendships (Aboud, Mendelson, & Purdy, 2003; Kao & Joyner,

2004). However, the earlier studies did not control for the length of friendship. The findings also indicated that the respondents trusted their nominated cross-group friends less than their in-group friends. This may be due to the fact that trust is difficult to build, especially in an intergroup context (Tam, Hewstone, Kenworthy, & Cairns, 2009; Worchel, Cooper, & Goethals, 1991).

Chapter 4 consists of two cross-sectional studies which tested whether direct and extended cross-group friendships yielded secondary transfer effects. Study 3 ( $N = 363$ ) was based on sample of Yoruba university students, while Study 4 ( $N = 227$ ) looked at Yoruba secondary school pupils. Replicating previous findings, Study 3 and 4 suggested that extended cross-group friendship made an independent contribution to the improvement of out-group attitudes, over and above the effect of direct cross-group friendship. As a new addition to the literature, the present research was the first to provide evidence for secondary transfer effects from extended cross-group friendship. Furthermore, attitude generalization was supported as an underlying process of the secondary transfer effect for both direct and extended cross-group friendship. It was expected that direct cross-group friendship, as a particularly effective form of intergroup contact, would yield stronger secondary transfer effects than extended cross-group friendship. However, while this prediction was supported by Study 3, the findings of Study 4 indicated that the effects of direct and extended cross-group friendship were about equally strong.

Chapter 5 comprises a cross-sectional study (Study 5) which tested the effects of positive and negative intergroup contact on out-group attitudes. The sample comprised Yoruba university students ( $N = 325$ ). As expected, positive contact with Igbos was associated with more favourable attitudes towards Igbos, and negative contact with Igbos was associated with less favourable attitudes towards Igbos. It was shown that



negative intergroup contact had an effect on attitudes over and above the effect of positive contact. Largely replicating previous findings (Pettigrew, 2009; Tausch et al., 2010a), the findings indicated that positive intergroup contact yielded secondary transfer effects. The findings indicated that positive contact with Igbos was associated with more positive attitudes towards Edos, but not for Hausas, as secondary out-group. As a novel contribution to the literature, the present study provided the first empirical evidence for a negative secondary transfer effect. The study showed that negative contact with Igbos was associated with less positive attitudes towards both Edos and Hausas, mediated via attitudes towards Igbos (attitude generalization). These studies demonstrated that both positive and negative intergroup contact generalize broadly by reducing and exacerbating prejudice, respectively, towards encountered and non-encountered out-groups.

Chapter 6 contains a multilevel-study which explores the relationship of roommate diversity on out-group attitudes in two halls of residences. The research design yielded a two-level hierarchical model with participants ( $N_{within} = 232$ ) nested in rooms ( $N_{between} = 88$ ). Using a sample of Yoruba university students (Study 6) the study examined whether roommate diversity (i.e., having at least one Igbo roommate) has an effect on out-group attitudes towards the roommate's group as a whole and two uninvolved out-groups, namely Edos and Hausas. On the individual-level of the analysis it was shown that among the Yoruba respondents intergroup contact with Igbos was associated with more positive attitudes towards Edos and Hausas. On the between-level it was shown that roommate diversity was associated with more positive attitudes towards Edos, but not Hausas. The results were in line with the findings of other researchers who linked living with a cross-group roommate to reduced out-group prejudice (e.g., Shook & Fazio, 2011; van Laar et al., 2005). As an extension of previous

research, the present study was the first to show that (roommate) diversity yielded secondary transfer effects mediated via contact with the primary out-group (Igbo) and attitudes towards the primary out-group (Igbo). To my knowledge no previous study has provided evidence of the secondary transfer effect of diversity using sophisticated multilevel (hierarchical) modelling techniques.

In Chapter 7, I summarize the key findings of Studies 1-6 and discuss the findings in relation to theory and research questions. The final chapter highlights the contributions of the findings to research, acknowledges some limitations of the research, identifies topics for future research, and highlights practical implications of the research for improving intergroup relations in Nigeria.

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## **CHAPTER ONE**

### **Intergroup Relations in Nigeria**

#### **Introduction**

Ethnic and religious conflicts are a major challenge in our time, especially in multiethnic and multi-religious countries around the globe. Intergroup conflict is a phenomenon that ranges from prejudice and discrimination to suppression and genocide (Hewstone & Greenland, 2000). Ethnic conflicts in Africa are deeply rooted (see Horowitz, 1985). Although Africa has the highest ethnic diversity and the highest incidence of civil war between ethnic and religious groups of any continent (Osinubi & Osinubi, 2006), research on intergroup relations has mainly focused on western cultures.

With 168.8 million inhabitants (World Bank, 2012), Nigeria is Africa's most populous country, and like many other African countries Nigeria's population is heterogeneous in terms of ethnicity, religion, and language (Boski, 1983; Horowitz, 1985; Mustapha, 2006). Nigeria is a country characterized by intense conflict and ethnic polarization (Mustapha, 2006). Nigeria serves as an interesting 'laboratory' for research on intergroup relations for several reasons. It is one of the regional giants in sub-Saharan Africa in terms of economic, political, and military power. Tribal divisions in Nigeria are very sharply defined. Nigeria is split in terms of population, cultural heritage and social structure with heavy socio-political consequences. Therefore, Nigeria serves as an excellent setting for research on intergroup relations.

## **Ethnicity**

Estimations indicate that Nigeria is home to about 250 different ethnic groups, many of which are very small. Generally there is a distinction between ethnic majority and minority groups (Mustapha, 2000). The numerical and political majority groups are the Hausa-Fulani (29%) who are primarily settled in the North of Nigeria, Yoruba (21%), primarily located in the south-west, and Igbo (18%), located primarily in the south-east of Nigeria. These three groups compose about 68 percent of Nigeria's total population. Larger minority groups include the Ijaw (10%), Kanuri (4%), Ibibio (3.5%), and Tiv (2.5%). Each ethnic group speaks their own language or dialect. The major spoken languages in Nigeria are English (official), Hausa, Igbo, and Yoruba (The World Factbook, 2013).

## **Religion**

The main religions in Nigeria are Islam (50%) and Christianity (40%), and about 10% of the population practices traditional indigenous religions (The World Factbook, 2013). The Hausa are predominantly Muslim, the Igbo are predominantly Christian, while the population of the Yoruba is split into Christians and Muslims (Boski, 1983; Horowitz, 1985).

Islam has a longer history in Nigeria than Christianity. Islam was introduced to Savanna and Sahelian states of northern Nigeria between 1100 and 1400. 1809 marked the beginning of an Islamic revolution when Sokoto Caliphate, an Islamic state, was founded in northern Nigeria. Initially, Islam was only practiced by the ruling classes. However, the Sokoto Caliphate soon spread Islam beyond the ruling classes to the general population. Christianity was first introduced by European and African Christians during the Niger Expedition of 1841. In 1846, the Church Missionary Society

(CMS) established a mission in Abeokuta (Ogun State). Subsequently, Christianity began to spread rapidly in southern Nigeria and a new elite, educated in European mission schools, emerged. Since the 19<sup>th</sup> Century, Christianity and Islam have become the two main religions in Nigeria (Falola & Heaton, 2008).

## **Nigerian Identities**

Nigeria is a deeply divided state with complex ethnic, religious, and regional divisions. Many of the identities are cross-cutting. Ethnic and religious identities are the most salient ones (Osaghae & Suberu, 2005). A survey by Lewis and Bratton (2000) showed that ethnicity is the strongest identity among Nigerians. The findings indicated that Nigerians are likely to define themselves in terms of ethnicity (including linguistic, and local-regional) first, followed by class or occupational identity and religious identity. However, there are regional differences between the predominantly Muslim north and Christian south. Mustapha (2006) points out that in southern Nigeria distinctions between minority and majority groups are more likely to be made based on ethnic group membership, while they are more likely to be based on religious group membership in the northern part of the country.

## **Historical Background**

### **Pre-colonialism**

From approximately 800 BC the Jos plateau was settled by Nok, a Neolithic and Iron Age civilisation (BBC, 2013). From the 11th century onwards, kingdoms and empires were founded, including the Kanem-Borno Empire in the north-east, as well as the kingdoms of Benin, Ife, Oyo, and later the Sokoto caliphate (BBC, 2013; Falola & Heaton, 2008; Mustapha, 2006). The time between 1300 and 1600 was referred to as

the “golden age” of the trans-Saharan trade. Gold, slaves, and other commodities were traded from northern regions of present day Nigeria through the Sahara desert to Europe, North Africa, and the Middle East (Falola & Heaton, 2008). Between 1450 and 1850 contact with Europeans in the coastal areas influenced southern regions of present day Nigeria politically, economically, and socially. The relations between Nigerians and Europeans were enforced through transatlantic trade which was growing at the time. From the 16<sup>th</sup> until the 18<sup>th</sup> century, the slave trade flourished and millions of Nigerians were forcibly brought to North and South America as slaves (BBC, 2013). After the British abolition of the slave trade in 1807, trade relations focused on other commodities (e.g., palm oil) (Falola & Heaton, 2008).

### **British Rule of Nigeria (1861- 1960)**

Nigeria was founded during the late 19<sup>th</sup> century by British colonialists, starting with the Colony of Lagos in 1861. In 1900 the British colonialists established the Colony and Protectorate Southern and the Protectorate of Northern Nigeria (Mustapha, 2006). The Colony and Protectorate Southern and the Protectorate of Northern Nigeria were governed by indirect rule through indigenous leaders (chiefs) (BBC, 2013). In 1914 the British administration joined the two together and founded present day Nigeria (Falola & Heaton, 2008; Mustapha, 2006). However, the British colonialists continued to run the country as two separate halves, with two separate administrations. In 1916 the Nigerian council was established. The council was composed of six Nigerian leaders from the north and the south-west and was founded as national platform for both colonies. However, the council rarely met and the two colonies continued to be ruled separately (Mustapha, 2006).

In 1919, Lord Frederick Lugard, the Governor-General of Nigeria (1914–1919), who constructed the two divided colonies, left Nigeria. His successor, Hugh Clifford (Governor of Nigeria, 1919-1925) had more progressive social ideas and planned to get the Western educated Nigerian elite in Lagos involved in politics. He also intended to rule Nigeria more like one unity, rather than to separate halves of a country. However, not all of his plans were supported by the colonial office in London (Mustapha, 2006). In 1946, during the later colonial era, Nigeria was structured into three regions which were the North, settled by Hausa-Fulani, the East settled by Igbo, and the West, settled by Yoruba. The new tripartite federal structure caused resentment on the side of Nigeria's neglected minority groups (Falola & Heaton, 2008; Mustapha, 2006).

The building of the railway was started in Lagos in 1898, and gradually extended to other parts of the country. By the early 1950's, the railway network transported about five million people each year. The railway increased the mobility of Nigerians and therefore the interaction between people from different regions. By that time between four and five million Nigerians lived in areas other than the ones to which they were indigenous (Eleazu, 1977; Mustapha, 2006). However, the interaction between northerners and southerners was curbed due to the creation of *Sabon gari*, so-called strangers' quarters, which were created in the north to segregate the mostly Christian southern Nigerians from local Muslim people. Sabon gari were subsequently created in the South of Nigeria to segregate Muslim northerners from the Christian local people (Mustapha, 2006).

With the gradual increase in influence of Nigerians in politics, several national political parties were founded during the 1940's and 1950's. The parties were largely divided across ethnic lines. The National Council of Nigerian Citizens (NCNC) in the east of Nigeria was dominated by Igbo. The party was founded in 1944 under the leadership

of Nnamdi Azikiwe. The Hausa-Fulani dominated the Northern People's Congress (NPC) in northern Nigeria, which was founded under the leadership of Sir Ahmadu Bello in 1949. The Action Group (AG) in the south-west of Nigeria was dominated by Yoruba. The party was founded in 1951 under the leadership of Obafemi Awolowo (Falola & Heaton, 2008). As Nigeria was moving towards independence in the 1950's, competition and conflict between the political parties increased with respect to a range of political issues (e.g., the constitutional settlement of independence). Each political party wanted to take over from the colonial authority or have major influence in the building of an independent parliament. For instance, a major point of disagreement between the political parties was the question whether the northern part of Nigeria should be allocated half of the seats in an independent parliament on the grounds that the northern people constituted more than half of the population (Mustapha, 2006).

### **Independence from Britain (1960) and Post-colonialism**

On 1<sup>st</sup> October 1960, Nigeria became independent from the United Kingdom (Falola & Heaton, 2008). An all-Nigerian Executive Council was formed under the leadership of Prime Minister Abubakar Tafawa Balewa, a Muslim of Bageri origin, and the Governor General, Dr. Nnamdi Azikiwe, a Christian of Igbo origin. Independent Nigeria was founded under the motto "Unity in diversity" (Mustapha, 2006). After Nigeria became independent from Britain, there were still conflicts between the main political parties which were mostly related to the allocation of federal projects, economic resources, and parliament seats based on population size (Mustapha, 2006).

In 1962 and 1963 a controversial census fuelled regional and ethnic tensions (BBC, 2013). In 1963 a four-state system was founded. The mid-west region in the South was introduced as home base territory for the country's various minority groups

(Mustapha, 2006). In the same year, the First Nigerian Republic (1963 - 1966), headed by Prime Minister Balewa, was founded (BBC, 2013; Falola & Heaton, 2008). Governor General Azikiwe became Nigerian's first president and replaced Queen Elizabeth II as the symbolic head of state. In January 1966, the Prime Minister was killed in a military coup, and the First Nigerian Republic was overthrown. Major-General Johnson Aguiyi-Ironsi, a Christian of Igbo origin, set up a military rule and became head of state (BBC, 2013). However, in July 1966 Aguiyi-Ironsi was killed in a counter-coup and General Yakubu Gowon, a Christian of Angas origin, was installed as president. In 1967, President Gowon created twelve states out of the existing regions (Falola & Heaton, 2008).

### **The Nigerian Civil War (1967-1970)**

In 1967, three eastern states seceded from the federation. The military governor of the eastern region of Nigeria, Emeka Ojukwu, declared the region sovereign Republic of Biafra, which sparked a gruesome civil war between forces of the Federal Military Government (FMG) and Biafran separatists. The Biafra War (1967-1970) lasted 30 months and left more than one million people dead. The war ended in January 1970 when the Biafran leaders surrendered and Biafra was reintegrated into Nigeria (BBC, 2013; Falola & Heaton, 2008).

### **Political Instability and Democratic Transition**

In July 1975, President Gowon was overthrown and succeeded by General Murtala Mohammed, a Muslim of Hausa origin. In February 1976, President Mohammed was assassinated during an unsuccessful coup attempt. Mohammed's deputy, Lieutenant General Olusegun Obasanjo, a Christian of Yoruba origin, took over as head



of state (BBC, 2013). After the 1979 elections, political power was transferred to a civilian government. Alhaji Shehu Shagari, a Muslim of Fulani origin, was installed as president, which marked the beginning of the Second Nigerian Republic (1979 – 1983) (Falola & Heaton, 2008). In August 1983, Shagari was re-elected for a second term, despite accusations of irregularities during the elections. However, the Second Nigerian Republic was overthrown in December 1983. Muhammad Buhari, a Muslim of Fulani origin, seized political power in a bloodless coup and became head of state. In August 1985, General Ibrahim Badamasi Babangida, a Muslim of Gwari origin, overthrew the Buhari regime in a bloodless coup and was installed as president of Nigeria (BBC, 2013; Falola & Heaton, 2008). In June 1993, Chief Moshood Kashimawo Olawale Abiola, a Christian of Yoruba origin, won the presidential elections. However, shortly afterwards the election results were annulled by the military and the country was thrown into chaos. The Third Nigerian Republic was the planned government under Abiola as head of state. In August 1993, President Babangida handed power over to an Interim Governing Council, which was led by Chief Ernest Shonekan, a Christian of Yoruba origin. In November 1993, the Interim Governing Council was overthrown by General Sani Abacha, a Muslim of Kanuri origin, who then became the new head of state. In 1994, Chief Abiola was arrested and charged with treason after proclaiming himself president. President Abacha died in June 1998 and was succeeded by Major-General Abdulsalami Abubakar, a Muslim of Hausa origin. In July 1998, shortly after the death of President Abacha, Chief Abiola suddenly died in custody. The circumstances of his death were not made public. After his inauguration President Abubakar organized a transition to civilian rule (BBC, 2013; Falola & Heaton, 2008).

In 1999, Olusegun Obasanjo of the People's Democratic Party won the presidential election and was sworn in as president, which marked the beginning of the

Fourth Nigerian Republic (1999 – present). Since 2000, Nigeria has been made up of thirty-six states (Falola & Heaton, 2008). In the same year several states in northern Nigeria adopted Islamic, or Sharia, law which was fiercely opposed by the Christian population. The decision sparked violent clashes between Christians and Muslims and hundreds of people were killed. The presidential election in April 2003 marked the first civilian-run presidential election since end of the military rule. President Olusegun Obasanjo was elected for a second term. European Union poll observers reported serious irregularities during the election. After two-terms of the Obasanjo presidency, Umaru Musa Yar'Adua, a Muslim of Fulani origin, of the People's Democratic Party was announced as winner of the presidential election in April 2007. He was sworn in as president in May 2007. For the first time in Nigerian history power was handed from one civilian president to another (BBC, 2013; Falola & Heaton, 2008). In May 2010, President Umaru Yar'Adua died after a long illness and was succeeded by Vice-president Goodluck Jonathan, a Christian of Ijaw origin. In March 2011, Goodluck Jonathan won the presidential election (BBC, 2013).

## **Intergroup Conflict in Nigeria**

### **Colonialism and Intergroup Conflict**

Animosities between the Nigerian ethnic groups can be traced back to the period of British colonialism in Nigeria. Political scientists and historians commonly agree that colonialism was the major seed of intergroup conflict in Nigeria (e.g., Mustapha, 2006; Nnoli, 1978; Irobi, 2005; Osaghae & Suberu, 2005). The foundation of present day Nigeria meant that previously independent separate African kingdoms and empires were forcefully merged into one entity. The British administration pursued divide-and-rule policies which fostered ethnic competition and conflict which resulted in ethnic

segmentation and polarization (Osaghae & Suberu, 2005). The colony was governed by indirect rule through local chiefs, which heightened localism and enforced tribal loyalties. Despite the merger of the northern and southern regions, the colony remained structurally and psychologically divided (Mustapha, 2006). Rather than promoting unity between the different groups, the British colonial authorities systematically separated and isolated the country's ethnic and religious groups by encouraging regionalisms and the creation of ethnic divisions. The goal was to isolate the different groups in order to weaken the population's potential for resistance against their colonial power (Osinubi & Osinubi, 2006).

Due to the growing economic opportunities in colonial centres, migration within Nigeria increased. Since the Early 20<sup>th</sup> century an increasing number of Nigerians from the Southern regions, predominantly Igbos and Yorubas, immigrated to Northern cities (e.g., Jos, Kaduna, Kano, & Zaria). However, migration did not lead to integration. The British colonial authorities discouraged the mostly Christian immigrants from the south from moving into Muslim areas. The establishment of *sabon gari* and the high emphasis on the distinction between indigenous and non-indigenous people reinforced the discrimination of migrant communities (Osaghae & Suberu, 2005). Non-indigents were deprived of rights (e.g., inflexible land tenure systems) and discriminated against (Mustapha, 2006).

In 1946, the colonial authorities divided Nigeria into three political regions, the northern (Hausa-Fulani), western (Yoruba), and eastern (Igbo) region. While the tripartite federal structure was consistent with historical pattern and ethnic configuration, it caused rebellion from the neglected ethnic minority groups, and fuelled the fight for ethnic dominance in Nigeria (Osaghae, 1991).

During the British rule of Nigeria there were initial major instances of inter-ethnic violence. In 1953, for example, violent clashes between the Hausa and Igbo sparked in Kano over the attempts of Igbo immigrants to hold rallies to support anti-colonial campaigns for Nigerian independence. At least 36 people died and more than 200 people were injured. The majority of casualties were of Igbo ethnicity. The violence reflected the opposition to the independence campaign of some northern politicians at the time, who feared that an end to British rule would result in a domination of the more developed south over the northern regions. The Kano riots marked the beginning of a period of large-scale ethnic violence in Nigeria, including the bloody anti-Igbo massacre in Kano and other northern cities prior to the outbreak of the Nigerian civil war in 1966 (Osaghae & Suberu, 2005; Suberu & Diamond, 2003).

The British administration fostered unequal political and socioeconomic development, sharpened the differences between the groups, and created an atmosphere of conflict. However, there had been an imbalance in Westernization between the north and south of Nigeria prior to the British rule of Nigeria (Osaghae & Suberu, 2005). The southern regions of Nigeria came into contact with western education at an early stage. This was partly due to their early contact with Europeans as trading partners and through Christian missionary work. The Western education system in southern Nigeria was developed systematically during the British rule (e.g., through the foundation of missionary-sponsored schools). However, the administration of northern Nigeria tried to prevent the development of education systems in the North as it might have threatened the control of the British colonial authorities. The foundation of schools was abolished under Governor-General Lugard's education policy during early colonialism, ostensibly to protect Islam in northern Nigeria. This included the abolishment of Christian missionary work and the foundation of missionary-

sponsored schools in the North. The lack of a developed education system in northern Nigeria caused big gaps in levels of formal education between northern and southern Nigeria (Mustapha, 2006).

Intergroup conflicts aggravated during the post-colonial era. There were two major waves of violence during the post-colonial era, firstly between 1960-1970, and secondly since the beginning of the 1980's. In the 1960's the First Nigerian Republic experienced an increase of ethnic violence between groups. Intergroup conflict in Nigeria reached its all-time peak during the Nigerian civil war, when the Igbo in east of Nigeria (Biafra), who felt mistreated and disadvantaged, tried to secede from the federation. Nigeria experienced relative stability and peace in terms of intergroup conflict after the end of the civil war in 1970. However, from the early 1980's until today, violent intergroup clashes have flared up periodically especially in northern Nigeria. In December 1980, violent inter-religious clashes between Muslims and Christians in northern Nigeria killed thousands of people. In October 1982, churches and other property of Christians were destroyed by Muslim rioters in several northern cities (Osaghae & Suberu, 2005).

### **The Nature of Intergroup Conflict in Contemporary Nigeria**

Nigeria remains a nation which is sharply divided along ethnic and religious lines with a high number of instances of intergroup conflict and violence (Osaghae & Suberu, 2005). According to Osaghae and Suberu (2005) intergroup violence in Nigeria is characterised by 1) sharp and often overlapping cultural cleavages, 2) historical (pre-colonial and colonial) conflict legacies, 3) competition for highly valued, but relatively scarce, resources (e.g., land, new administrative boundaries and headquarters, bureaucratic and political placement, infrastructures, trading opportunities, and other

goods), 4) actual and perceived inequalities in access to diverse resources, and 5) state failure or mismanagement of inter-ethnic relations (Osaghae & Suberu, 2005, p. 15).

It has been argued that the majority of intergroup conflicts in Nigeria are identity-based conflicts which can be categorized as either ethno-religious conflicts, inter-ethnic conflicts, intra-ethnic conflicts and/or intra religious conflicts and intergroup economic conflict (Osaghae & Suberu, 2005).

*Ethno-religious conflicts.* Ethno-religious conflicts are usually among the most violent of the clashes in Nigeria. They mainly occur in the Middle-Belt, at the borderline states of Muslim Hausa-Fulani groups and non-Muslim ethnic groups. Ethnic and religious animosities in this area have a long history and flare up periodically.

*Inter-ethnic conflicts.* Inter-ethnic conflicts are often rooted in long term difficulties between the different ethnic groups. Violent conflicts usually heat up periodically, such as the Tiv-Jukun conflict in Benue and Tabara State and the Urhobo-Ijaw-Itsekiri conflict in Warri and Delta State, as well as clashes between Hausa-Fulanis and Igbo in Lagos, Kano, Ogun State, and Oyo State. Conflicts between the Hausa-Fulani and Igbo have a religious component as Hausa-Fulanis are mostly Muslims and Igbo are mostly Christians. Clashes between Hausas-Fulani and Yoruba have mostly taken place during the transition from the northern dominated military rule to civilian administration under Yoruba leadership in 1999 and 2000.

*Intra-ethnic and intra-religious conflicts.* Intra-ethnic violence mostly occurs over land claims (e.g., Ife and Modakeke (Yoruba) in Osun State, Aguleri and Umuleri (Igbo) in Anambra State). Examples of intra-religious violence are clashes between different Muslim brotherhoods (e.g., Quadriyya and Tijanniyya).

*Intergroup economic conflicts.* Intergroup economic conflicts refer to clashes within a community which are triggered through competition for scarce economic goods. Key examples are the conflicts over oil in the Niger Delta.

### **The Current Situation in Nigeria**

Ethnic conflict and violence remain serious problems in Nigeria. A non-exhaustive list of violent intergroup conflicts since 2000 can be found in Appendix 1. Since 2009 many attacks have been carried out by Boko Haram. Boko is a radical Islamist movement group which is based in northern Nigeria. Boko Haram was founded in 2002. Its goal is to overthrow the Nigerian government and create an Islamic state in northern Nigeria. It condemns Muslims' participation in any political or social activity associated with Western society. Boko Haram claimed responsibility for numerous attacks including a suicide attack on the United Nations headquarters in Abuja which killed 23 people in August 2011, as well as attacks on churches on Christmas Day 2011 which left more than 40 people dead. Boko Haram poses a serious threat to Nigerian internal security, and as yet, the Nigerian government has been unable to defeat it (BBC, 2011).

### **Management of Ethnic Diversity and Conflict**

Several measures have been taken by the Nigerian government to manage diversity and reduce intergroup conflict (Mustapha, 2006). These measures include federalism, the creation of regions, states, and local governments, as well as the introduction of quota systems, the prohibition of ethnic political parties, and the promotion of interethnic marriages. Scholars have investigated the impact of several of these pursuits to manage diversity and have found a few favourable outcomes (e.g.,

Horowitz, 1985; Mustapha, 1986; Nnoli, 1995; Oshage, 1998; Suberu, 2001). However, the high level of ethno-religious violence which Nigeria still experiences today indicates that the steps that were taken to resolve intergroup conflict have been of limited success (see also Ukiwo, 2005).

## **Conclusion**

Nigeria remains a deeply divided country with a high number of incidences of ethno-religious violence. Several attempts have been made by the government to resolve intergroup conflict in Nigeria. However, the measures that have been taken so far have been of limited success, which suggests that more emphasis needs to be put on peace building and diversity management. In order to reduce inter-ethnic and inter-religious conflicts in Nigeria a multi-disciplinary approach to conflict resolution is likely to be required (e.g., anthropology, sociology, economics, political sciences, and social psychology). Although many of Nigeria's problems may be related to political and economic issues, social psychological research can play a part in the development of effective conflict management strategies and policies, which may contribute to the improvement of intergroup relations in Nigeria. This thesis seeks to explore whether intergroup contact between the ethnic groups can reduce out-group prejudice in Nigeria and improve intergroup relations.



## **CHAPTER TWO**

### **Intergroup Contact and Friendship**

#### **Intergroup Contact Theory**

The theoretical framework of my research is the contact hypothesis (Allport, 1954), which proposes that positive contact between members of different social groups leads to reduced prejudice and more positive intergroup relations. Over 500 studies have shown that contact between social groups typically reduces prejudice (see Pettigrew & Tropp, 2006, for a meta-analytic review). A fairly recent development in the intergroup contact research is the idea that a certain type of intergroup contact, namely cross-group friendship, may be particularly effective in reducing out-group prejudice (see Davies, Tropp, Aron, Pettigrew, & Wright, 2011, for a meta-analytic review). This chapter reviews the evidence of the effects of intergroup contact in general and cross-group friendship in particular.

#### **The History of the Contact Hypothesis**

Theorists began to speculate about the effects of intergroup contact on race relations a long time before there was scientific evidence for it. The majority of the predictions were rather pessimistic. Mutual hostility and conflict were regarded as natural consequences of intergroup contact (e.g., Sumner, 1906). The relatively new discipline of social psychology of the 1930's and 1940's started to study intergroup relations systematically (Pettigrew, Tropp, Wagner, & Christ, 2011). The majority of the early studies on intergroup contact found that intergroup contact reduces ethnic prejudice among black and white Americans (Pettigrew & Tropp, 2011). Sims and

Patrick (1936) were among the first researchers to study the effect of intergroup contact. They demonstrated that intergroup contact under poor conditions could have negative effects. Their study looked at students from the North of the United States who attended universities in the South of the country. The authors found that the students' anti-Black prejudice increased considerably the longer they stayed in the South. However, an important limitation of the study was that the authors did not assess intergroup contact directly. The students attended a segregated university with white faculty and white fellow students. The amount of intergroup contact they had must have been very limited. At the same time the students from the North were exposed to racist norms in the South, which is a likely explanation for the increase in their anti-Black prejudice (cf. Pettigrew & Tropp, 2011).

The first large-scale scientific tests of the effect of intergroup contact were carried out after the end of the Second World War. Most of these studies were field studies looking at the effects of intergroup contact between black and white Americans (Pettigrew, 1998; Pettigrew & Tropp, 2005). Brophy (1945), for example, studied intergroup relations between black and white Americans during the time of the desegregation of the Merchant Marine. He found that the more voyages white seamen took with Blacks, the more positive their attitudes towards them became. More evidence for the prejudice-reducing effect of intergroup contact was found in the context of the desegregation of the military. While the US Army was still officially segregated during the Second World War, some combat situations required racial desegregation. White soldiers who had fought side-by-side with black soldiers during the Battle of Bulge in Belgium in 1944-1945 showed significantly lower levels of anti-Black prejudice than White soldiers who had not fought with Black soldiers (Stouffer, Schuman, DeVinney, Star, & Williams, Jr., 1949, cf. Pettigrew & Tropp, 2011).

Based on the early field studies on the effects of intergroup contact, the sociologist Robin Williams Jr. carried out an evaluation of the state of the research on intergroup relations at the time. His work „The Reduction of Intergroup Tensions“ (1947) contained an initial formulation of a contact theory. Williams (1947) emphasized that many different variables influence the effect of contact on prejudice. He stated that intergroup contact has beneficial effects under certain conditions, for example, when groups share similar status or when the situation fosters personal and intimate intergroup contact (cf. Pettigrew & Tropp, 2005).

The first strong evidence for the beneficial effect of intergroup contact came from comparative field studies looking at segregated and desegregated public housing projects. Deutsch and Collins (1951) compared a desegregated public housing project in New York City to a similar housing project in Newark where Blacks and Whites were segregated. The white residents in desegregated housing project reported more frequent and more positive contact with Blacks compared to white residents in the segregated housing project. The authors found that intergroup contact diminishes prejudice among black and white residents. In a related study on segregated and mixed housing, Wilner, Walkley, and Cook (1955) showed that the more interactions white housewives had with their black neighbours, the more favourable their attitudes towards them became. White housewives showed especially more positive attitudes towards their black neighbours when their interactions with them were frequent and personal.

### **The Contact Hypothesis**

The most influential statement on the effects of intergroup contact was published in 1954 by Gordon W. Allport in his famous volume „The Nature of Prejudice“.

Influenced by the findings of the housing studies (Deutsch & Collins, 1951; Wilner et al., 1955) and Williams' (1947) initial statement, Allport formulated the contact hypothesis. He dedicated Chapter 16 („The Effects of Contact“) to the question of what happens when groups come into contact (Allport, 1954; cf. Pettigrew & Tropp, 2005).

“Prejudice (unless deeply rooted in the character structure of the individual) may be reduced by equal status contact between majority and minority groups in the pursuit of common goals. The effect is greatly enhanced if this contact is sanctioned by institutional supports (i.e., by law, custom or local atmosphere), and provided it is a sort that leads to the perception of common interests and common humanity between members of the two groups” (Allport, 1954, p. 281). Allport's (1954) contact hypothesis proposes that intergroup contact reduces prejudice, provided that four features of the contact situation are fulfilled: (1) Equal status, (2) common goals, (3) intergroup cooperation, (4) and the support of authorities, law or custom (see Pettigrew, 1998).

### **Central Questions in Intergroup Contact Research**

Allport's (1954) contact hypothesis has inspired an extensive body of research since its formulation more than 50 years ago (Pettigrew, 1998). Over the decades the contact hypothesis has developed into an influential and integrated theory (Hewstone & Swart, 2011). Research on contact theory has mainly focused on the following four questions:

1. Does intergroup contact reduce prejudice?
2. Do the effects of intergroup contact generalize?
3. *When* does intergroup contact reduce prejudice?
4. *How* does intergroup contact reduce prejudice?

In the following paragraphs I will turn to these central questions.

### ***Does intergroup contact reduce prejudice?***

Pettigrew and Tropp (2006) carried out a meta-analytic test of contact theory, which combined the results of 515 studies and 713 independent samples. A total number of 250,089 individuals from 38 nations were included in the analysis. The studies were highly diverse in terms of participants (e.g., age, sex, geographical area), type of study (i.e., survey, quasi-experiment, experiment, field study), contact setting (i.e., educational, residential, laboratory) and target groups beyond ethnic and racial groups (i.e., elderly, homosexuals, physically disabled and the mentally ill). Across these studies the authors found a highly significant negative relationship between intergroup contact and prejudice (mean  $r = -.21$ ). It was revealed that 94% of the studies included showed an inverse relationship between intergroup contact and prejudice. Alternative explanations for the effects, such as participant selection or publication bias, were previously ruled out. Pettigrew and Tropp's (2006) meta-analytic findings provide substantial evidence for the prejudice-reducing effect of intergroup contact across a wide range of samples and contact settings.

### ***Causal sequence problem and participant selection bias***

Due to the cross-sectional nature of the majority of studies in intergroup contact research, the direction of cause and effect is not always clear. There is a possibility that intergroup contact does not reduce prejudice. An alternative explanation may be that highly prejudiced people avoid intergroup contact, whereas tolerant people seek contact with members of out-groups (Pettigrew, 1998). Thus, one of the limitations of Pettigrew and Tropp's (2006) meta-analytic findings is that their database mainly

comprises cross-sectional studies. However, their meta-analytic findings strongly suggest that intergroup contact reduces prejudice for three reasons. Firstly, the database includes studies that severely limited the choice of whether the individuals want to engage in intergroup contact or not. Pettigrew and Tropp (2006) found even larger effect sizes when the individuals did not have the opportunity to avoid intergroup encounters ( $r = -.28$ ) compared to studies where they had a choice ( $r = -.20$ ). Hence, the prejudice-reducing effect of intergroup contact was even stronger in studies where intergroup contact was involuntary. The opposite findings would be expected, if the results were due to participant selection bias. Secondly, in recent years researchers increasingly used statistical methods which allow the comparison of reciprocal paths of studies based on cross-sectional data. These analyses demonstrated that the path from contact to prejudice is typically stronger than the reverse path from prejudice to contact (e.g., Pettigrew, 1997; van Dick et al., 2004, Wagner et al., 2003). Thirdly, longitudinal studies can give insight to the question of the direction of cause and effect (e.g., Sherif, 1966). Since Pettigrew and Tropp's (2006) meta-analysis, which included studies up until December 2000, more longitudinal studies have been conducted. These studies show that intergroup contact reduces prejudice over time (e.g., Eller & Abrams, 2003; Binder et al., 2009; Levin, van Laar, & Sidanius, 2003; Swart, Hewstone, Christ, & Voci, 2011; van Laar et al., 2005).

#### *Allport's optimal conditions*

The prejudice-reducing effect of intergroup contact is even more pronounced when the intergroup encounter is structured following Allport's (1954) optimal conditions. Intergroup contact under Allport's conditions shows significantly higher prejudice reduction ( $r = -.29$ ) compared to intergroup contact where no attempts were made to

structure the contact accordingly ( $r = -.20$ ). Once established in a contact situation the optimal conditions significantly enhance the prejudice-reducing effect of intergroup contact. Allport's prerequisite conditions were found to be facilitating rather than essential for the reduction of prejudice through intergroup contact (Pettigrew & Tropp, 2006).

#### *Minority and majority status groups*

Pettigrew and Tropp's (2006) meta-analytic findings show that intergroup contact reduces prejudice among minority as well as majority status groups. However, the authors found that the prejudice-reducing effect of intergroup contact is weaker for minority group members ( $r = -.18$ ) compared to majority group members ( $r = -.23$ ). In general, Allport's optimal conditions enhance the prejudice-reducing effect of contact, but do not contribute significantly to the strengths of the contact-prejudice relationship for minority group members (Binder et al., 2009; Pettigrew & Tropp, 2006; Tropp & Pettigrew, 2005). It is likely that the history of devaluation of their group may inhibit the prejudice-reducing effect of intergroup contact among minority status groups (Tropp & Pettigrew, 2005).

#### ***Do the effects of intergroup contact generalize?***

The generalization of contact effects is crucial for the wider effectiveness of intergroup contact on prejudice reduction. Intergroup contact would be of limited value as an intervention without any generalization beyond the immediate contact situation. Pettigrew (1998) distinguished three types of generalization, namely the generalization of contact effects to 1.) new situations, 2.) the out-group as a whole, and 3.) other uninvolved out-groups (Pettigrew, 1998, 2009; Pettigrew & Tropp, 2006; Tausch et al.,

2010a). Some authors have questioned whether the effects of intergroup contact would generalize beyond the contact situation (e.g., Amir, 1976), but research has shown that the beneficial effects of contact generalize broadly (e.g., Eller & Abrams, 2004; Pettigrew, 1997; van Laar et al., 2005; see Pettigrew & Tropp, 2006, for a meta-analytic test). While most studies included tested the generalization of contact effects to the entire out-group, generalization across situations and to other uninvolved out-groups has rarely been considered (Pettigrew & Tropp, 2006). However, Pettigrew and Tropp's (2006) meta-analytic findings show substantial evidence that the prejudice-reducing effects of intergroup contact generalize beyond the immediate contact situation. The beneficial effects of intergroup contact were found to generalize across situations ( $r = -.24$ ), to the whole out-group ( $r = -.21$ ) and towards other uninvolved out-groups ( $r = -.19$ ). The findings indicate that intergroup contact is effective in improving intergroup relations on a broad level.

#### *Generalization across situations*

A small amount of research has shown that contact effects generalize across different situations (e.g., school, work, and neighbourhood) (Pettigrew & Tropp, 2006, 2011). Cook (1984), for example, showed in a laboratory setting and non-laboratory setting that the effects of intergroup contact generalize across situations and are stable over time.

#### *Generalization to the out-group as a whole: Changing social categorizations*

Competing approaches make different predictions about the circumstances under which the effects of intergroup contact generalize from specific out-group members in the contact situation to the entire out-group (Pettigrew, 1998). Many of



these are based on *social identity theory* (Tajfel, 1978; Tajfel & Turner, 1979) and *self-categorization theory* (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). The social identity theory of intergroup behaviour presumes that social categorization is the only necessary precondition for perceiving oneself as a group member and engaging in intergroup behaviour, provided that people identify with the category. Self-categorization is the process responsible for psychologically identifying with a group and behaving as a group member (e.g., conformity, in-group solidarity). Social comparison and the need for self-esteem motivate groups to compete in different ways, depending on the nature of intergroup relations, for a relatively positive social identity (Tajfel & Turner, 1979).

Decategorization strategy. According to Brewer and Miller (1984), contact effects generalize best when the salience of the group membership of the individuals is low and when they are perceived as atypical members of their groups. Low intergroup salience will focus the attention to characteristics of the individual and, therefore, less attention will be paid to stereotypical information. The decategorization strategy is characterized by two cognitive processes, which are *differentiation* and *personalization*. Distinctions between out-group members need to be made and when the out-group is perceived in a more differentiated way (differentiation), the perceived variability of the out-group will increase. This may happen by taking opportunities to get to know members of the out-group, and by sharing personal, intimate information (self-disclosure). The uniqueness of the individual out-group member needs to be stressed (personalization), which will lead to the extended use of individual rather than category-based information. The perception that the old categorizations are no longer useful for the classification of members of the out-group completes the decategorization process. The interaction partners are seen as individuals, rather than as group members. A series of laboratory

studies have provided extensive support the decategorization strategy (Bettencourt, Brewer, Croak, & Miller, 1992; Miller, Brewer, & Edwards, 1985).

Categorization strategy (or Mutual Intergroup Differentiation Model). Hewstone and Brown (1986) state that generalization of contact effects is most likely to occur when the group memberships of the individuals are salient. If the salience is low, the situation is considered as interpersonal and contact effects are unlikely to generalize. According to the authors, generalization is most effective when the individuals are seen as typical members of their group. The individuals need to be viewed as representatives of their respective groups for the contact to become an intergroup encounter.

Correlational (e.g., Voci & Hewstone, 2003) and experimental (e.g., Van Oudenhoven, Groenewoud, & Hewstone, 1996; Wilder, 1984) studies support this notion (see Brown & Hewstone, 2005, for a review). However, making group categories salient may reinforce stereotypes and trigger intergroup anxiety. It also bears the risk of the generalization of negative contact effects (Islam & Hewstone, 1993).

Recategorization strategy (or Common In-group Identity Model). Gaertner, Dovidio, Anastasio, Bachmann, and Rust's (1993) strategy derives from a social categorization approach to intergroup behaviour (Tajfel & Turner, 1979). According to the common in-group identity model, intergroup bias and conflict may be reduced by the change of the interactants' cognitive perceptions of group boundaries through positive intergroup contact. The interactants may start to think of themselves in a larger group perspective. Recategorization adopts an inclusive category that highlights similarities between the members of the two groups rather than differences.

Recategorization occurs when the participants adopt an all-encompassing group identification. The redirection of members' perception may cause a change in how group members view group boundaries, altering the representation of "us" and "them"

to an inclusive “we”. Former out-group members will thereby be included in a superordinate group structure and a new common in-group identity at a higher superordinate level is created. Positive feelings towards the in-group should now be directed towards the new more inclusive in-group representation. Extensive empirical evidence supports the common in-group identity model. The creation of superordinate categorizations during intergroup contact was found to be more effective than contact situations in which categorizations are made salient (see Gaertner & Dovidio, 2000, for a review).

### Integrated models

Sequence model. Some attempts have been made to integrate the different categorization models. Pettigrew (1998) suggested a yet to be tested longitudinal three-stage sequence model, which involves a sequence of different aspects of the decategorization, categorization, and recategorization approaches. Although especially the decategorization and the categorization strategies appear conflicting, they may take place consecutively. To decrease intergroup anxiety and increase personal liking the salience of group membership should be low when intergroup contact is initiated. When the contact is well-established the group membership should be made salient for intergroup contact effects to generalize on the intergroup level (Van Oudenhoven et al., 1996). Recategorization should take place at a later point to maximise prejudice reduction (Pettigrew, 1998).

Crossed Categorization. Individuals belong to several social categories which do not mutually exclude each other (Brewer & Gaertner, 2001; see also Tausch, Schmid, & Hewstone, 2010b). In most group conflicts several social categorizations are involved. Some of these are converging categorizations and some categorizations cut across each

other. A member of a certain social group might be classified as out-group on one dimension (e.g., ethnic group membership), but may be in-group on another dimension (e.g., shared religious belief) (see Crisp & Hewstone, 2007). Group categories that cut across each other should be made salient, as it may help to promote positive attitudes among individuals who share at least one dimension. However, at the same time intergroup bias may be increased towards groups which share neither category (Vanbeselaere, 1991). Empirical evidence in support of the crossed categorization reveals lower levels of conflict in societies with cross-cutting structures (Crisp & Hewstone, 1999). It increases trust and supports contact across different group boundaries (Brewer & Gaertner, 2001). However, crossed categorization does not work well as an intervention if one group dimension is very dominant or the perceived threat is particularly high (Hewstone, Rubin, & Willis, 2002; see also Tausch et al., 2010b).

Dual Identity strategy. Gaertner et al. (1996) propose that interactants should keep their original in-group/out-group distinction as well as an additional superordinate identity. This strategy suggests that for an optimal improvement of intergroup relations through intergroup contact individuals need to identify simultaneously with at least two identities with varying levels of inclusiveness. However, findings suggest that it is mainly effective for members of minority status groups, while majority status group members have a tendency to prefer common in-group representations (Gaertner et al., 1996; Gonzales & Brown, 2006; Tausch et al., 2010b; Tausch & Hewstone, 2010).

#### *Generalization to uninvolved out-groups: The secondary transfer effect*

In recent years, researchers have studied the generalization of contact effects to uninvolved out-group. Pettigrew (2009) labelled this type of generalization the

*secondary transfer effect (STE)*. The secondary transfer effect refers to an effect by which intergroup contact with a primary out-group reduces prejudice towards an uninvolved secondary out-group. Research findings provide evidence of for this higher-order generalization (see Pettigrew, 1997, 2009; Tausch et al., 2010a).

Two underlying processes of the secondary transfer effect have been studied. One of the processes involved in the secondary transfer effect is *attitude generalization*. According to the attitude generalization hypothesis intergroup contact with one out-group improves attitudes towards this out-group and subsequently changes attitudes towards other out-groups (Pettigrew, 2009, Tausch et al., 2010a). Pettigrew (1997) proposed that generalization happens through the process of *deprovincialization*. Interactants get insight that their in-group norms, customs, lifestyle are not the only acceptable ways of handling the social world, and become less provincial about their own group (Tausch & Hewstone, 2010). The new view of the in-group makes them more open about accepting other out-groups, including groups they never had contact with. Attitude generalization has received more support as a mediating process of the secondary transfer effect, than deprovincialization has (Tausch et al., 2010a). An in-depth review of the literature on the secondary transfer effect can be found in Chapter 4.

### ***Moderators and mediators in the contact-prejudice relationship***

The findings of an extensive meta-analysis of over 500 studies showed that contact between social groups typically reduces prejudice even in the absence of the optimal conditions outlined by Allport (Pettigrew & Tropp, 2006). Since the prejudice-reducing effect of intergroup contact is now well-established, research has begun to focus on identifying moderating (i.e., *when* does contact reduce prejudice) and

mediating (i.e., *how* does contact reduce prejudice) variables that influence the contact-prejudice relationship (Pettigrew & Tropp, 2006).

*When does intergroup contact reduce prejudice? Moderating variables in the contact-prejudice relationship*

All four of Allport's (1954) optimal conditions (equal status, common goals, cooperation, authority support) are moderating factors in the contact-prejudice relationship as they help explain *when* contact reduces prejudice. Pettigrew and Tropp (2006) distinguished between two types of contact studies in their meta-analysis, studies in which contact was structured to meet Allport's optimal conditions and those in which it was not. The authors found that the mean effect size for studies where contact was structured according to Allport's optimal conditions yielded stronger effects. Allport's optimal conditions were not tested separately as they are likely to be interrelated rather than being independent from each other (Pettigrew & Tropp, 2011).

Allport (1954) also took into consideration that individual difference factors may inhibit the effects of contact. He stated that contact would reduce prejudice "unless [prejudice is] deeply rooted in the character structure of the individual" (Allport, 1954, p. 281). This indicates that, in his opinion, contact effects on prejudice reduction should be weakened by personality factors and social attitudes that predispose people towards being prejudiced. Recently, however, evidence has emerged suggesting that Allport may have been too pessimistic in assessing the robustness of the effects of contact.

Specifically, counterintuitive findings suggest that contact might be especially effective for people high in social dominance orientation (SDO; Dhont & van Hiel, 2009; Hodson, 2008), right-wing authoritarianism (RWA; Dhont & van Hiel, 2009; Hodson, Harry, & Mitchell, 2009), or with a need for cognitive closure (NCC; Dhont, Roets, & van Hiel,

2009), whereas contact effects are weaker or non-significant for people low on these dimensions. These effects are counterintuitive because all of these variables predispose people toward being prejudiced against various out-groups (Cohrs & Stelzl, 2010; Pratto, Sidanius, Stallworth, & Malle, 1994; Van Hiel, Pandelaere, & Duriez, 2004; Webster & Kruglanski, 1997). Allport would likely have predicted the exact opposite pattern of results (Adesokan, Ullrich, van Dick, & Tropp, 2011). However, individuals who are predisposed to higher levels of prejudice have a wider scope for improvement of their attitudes towards out-groups. Data based on these samples is likely to yield stronger relationships between intergroup contact and diminished prejudice (e.g., Adesokan et al., 2011).

*How does intergroup contact reduce prejudice? Mediating mechanisms in the contact-prejudice relationship*

With the goal of specifying the underlying processes of the relationship between intergroup contact and reduced prejudice researchers tested a series of potential mediating variables. The positive effect of contact on prejudice can partly be explained through the *mere-exposure effect*, whereby familiarity, meaning greater exposure to targets, significantly enhances the liking of these targets (Bornstein, 1989; Zajonc, 1968). Pettigrew and Tropp (2008) addressed the question how intergroup contact reduces prejudice. In a meta-analysis, the authors tested the three most studied mediators in the contact-prejudice association, which are enhancing knowledge about the out-group, reducing anxiety about intergroup contact, and increasing empathy and perspective taking.

Enhancing knowledge about the out-group. According to Allport's (1954) original idea negative out-group attitudes and prejudice derive mainly from the lack of

knowledge about the out-group (Pettigrew, 1998). Intergroup contact reduces prejudice by giving the interactants the opportunity to learn about the respective out-group, correct negative views and discover similarities. Increased knowledge about the out-group's history may lead to the recognition of injustice that the out-group had to endure and help improve attitudes towards that group (Pettigrew & Tropp, 2008). Additionally, learning about the out-group's culture and values is likely to reduce insecurities about how to interact with members of that group, which in turn reduces intergroup anxiety (see Stephan & Stephan, 1985).

Reducing anxiety about intergroup contact. Stephan and Stephan (1985) emphasized the role of threat and anxiety in intergroup contact. Intergroup anxiety is a negative affect which stems from the anticipation of negative consequences for oneself, such as embarrassment or rejection, during intergroup encounters. High levels of intergroup anxiety have negative effects on intergroup relations and may lead to the complete avoidance of intergroup contact (Pettigrew, 1998; Pettigrew & Tropp, 2008; Stephan & Stephan, 1985; Voci & Hewstone, 2003). Interactants may also fear negative evaluations by members of the out-group (e.g., being negatively stereotyped) and the in-group (e.g., disapproval for intergroup contact). Intergroup anxiety commonly occurs before and during intergroup contact with people from a different cultures or social groups (e.g., racial and ethnic groups, stigmatized versus non-stigmatized groups).

The degree of anxiety is determined by various factors, including minimal previous intergroup contact, a history of intergroup conflict and the presence of negative stereotypes. Large status differences and a high ratio of out-group compared to in-group members may exacerbate negative arousal and anxiety (Pettigrew & Tropp, 2008). Intergroup anxiety is common in initial intergroup encounters, but research has shown that continued intergroup contact generally reduces anxiety (Stephan & Stephan,



1985). Researchers have found that positive intergroup contact is associated with lower levels of intergroup anxiety in various contexts (e.g., Blascovich, Mendes, Hunter, Lickel, & Kowai-Bell, 2001; Islam & Hewstone, 1993; Page-Gould, Mendoza-Denton & Tropp, 2008). Moreover, decreased intergroup anxiety was a key mediating variable in the contact-prejudice relationship (e.g., Binder et al., 2009; Islam & Hewstone, 1993; Paolini, Hewstone, Cairns, & Voci, 2004; Swart et al., 2011; Voci & Hewstone, 2003; Pettigrew & Tropp, 2008). Binder et al. (2009), for instance, conducted a two-wave longitudinal study with secondary school pupils from minority and majority groups in Belgium, Germany, and England. The authors tested the relationship between intergroup friendship and two different indicators of prejudice, namely negative intergroup emotions and desire for social distance. The effect from intergroup friendship to reduced prejudice was smaller for minority members. However, when out-group contacts were perceived as being typical of their group, contact effects on negative emotions were stronger for majority and minority members. The relationship between intergroup friendship and prejudice was mediated via intergroup anxiety for members of the majority group.

Increasing empathy and perspective taking. In recent years intergroup contact research emphasized the importance of affective processes that influence the link between intergroup contact and out-group prejudice. Empathy is defined as other-oriented emotional response, which comes into play when witnessing or learning about the needs or oppression of an individual or a group of individuals. Empathy arouses feelings of sympathy and compassion. These feelings will be experienced when a person takes the perspective of someone who is in need and starts to imagine how that person is affected by his/her plight (empathic concern) (Batson, 1991; Batson et al., 1997; Batson & Ahmad, 2009). Intergroup contact, especially when it occurs in connection

with a cross-group friendship, enables interactants to take the perspective of members of the other group and empathize with their concerns. Empathy was found to be negatively associated with prejudice and positively associated with prosocial behaviour (Batson et al., 1997; Finlay & Stephan, 2000). Empathy serves as an excellent means of reducing prejudice and intergroup bias. It was found that empathy/ perspective taking partly mediates the contact-prejudice relationship (Pettigrew & Tropp, 2008).

Batson and colleagues (1997) carried out a systematic experimental test of the effects of empathic concern. Their findings showed that empathizing with a member of a stigmatized group can improve attitudes towards the target's group as a whole. The authors induced empathic concern by instructing one group of participants to adopt an imagine-other perspective (perspective taking) (i.e., focus on how the target person must feel) while listening to an interview about the need situation of a person who belongs to a stigmatized group. The other group of participants was asked to remain objective and focus on the interviewee's problems. The authors found that inducing empathy for a member of a stigmatized group, for example a young woman with AIDS or a homeless person, led to more positive attitudes towards victims of AIDS, and homeless people, respectively. In a related study by Finlay and Stephan (2000), white American students read a series of essays ostensibly written by African American students describing their personal experiences with incidents of discrimination (e.g., being falsely accused of wrong-doing, being denied membership in an organization). Participants in the high-empathy condition showed significantly lower levels of in-group bias in favour of Whites, when evaluating black and white Americans.

Swart et al. (2011) provided evidence for mediating effects of intergroup anxiety and empathy in a longitudinal study. The authors conducted a three-wave longitudinal study over the period of one year. The sample comprised minority-status coloured

secondary school children in South Africa. The target group were majority-status White South Africans. The authors tested the relationship between cross-group friendship and different measures of prejudice (i.e., attitudes, perceived out-group variability, and negative action tendencies) mediated via empathy and intergroup anxiety. Swart and colleagues (2011) found that the relationship between cross-group friendship and reduced prejudice was mediated via decreased intergroup anxiety and increased empathy. Cross-group friendship was positively associated with positive out-group attitudes and perceived out-group variability (via intergroup anxiety and affective empathy) and negatively with negative action tendencies (via affective empathy). The effect was bidirectional.

Allport's original notion that intergroup contact leads to increased knowledge about the out-group, which in turn reduces prejudice, received empirical support. However, Pettigrew and Tropp (2008) found that enhanced knowledge about the out-group is a relatively minor mediator in the contact and prejudice relationship. Affective processes such as decreased intergroup anxiety and increased empathy were found to be key mediating variables in the contact-prejudice association. Intergroup contact reduces prejudice effectively because it reduces negative affect (e.g., intergroup anxiety) and enhances positive affect (e.g., empathy). The meta-analytic findings demonstrate that affective processes play a key role in intergroup relations. However, the authors also found that the mediators such as intergroup anxiety and empathy/ perspective taking only explain about half of the variance in the relationship between contact and prejudice, which suggests that other relevant mediators, such as threat and perceived in-group norms, also play a role (Pettigrew & Tropp, 2011; Tausch & Hewstone, 2010).

## **Negative Intergroup Contact**

To date research on intergroup contact has primarily focused on the beneficial, prejudice-reducing effects of positive intergroup contact. Research has largely overlooked the potential of negative contact experiences to exacerbate out-group prejudice (see Barlow et al., 2012; Paolini, Harwood, & Rubin, 2010; Stark, Flache, & Veenstra, 2013, for exceptions) (Pettigrew, 2008; Pettigrew & Tropp, 2011). So far the relatively scarce literature on negative contact has shown that negative intergroup contact is associated with increases in threat and prejudice (Aberson & Gaffney, 2008; Pettigrew & Tropp, 2011; Stephan, Stephan, Demitrakis, Yamada, Clason, 2000; Stephan et al., 2002). Research findings suggest that diversity exposes individuals to both positive and negative intergroup contact. However, it was also shown that positive contact is much more common than negative contact. It has been suggested that positive contact experiences may be able to counter the effects of negative intergroup contact (Pettigrew, 2008; Pettigrew & Tropp, 2011). Chapter 5 of this thesis is specifically dedicated to the effects of negative intergroup contact. An in-depth review of the literature on negative contact can be found there.

## **Indirect Forms of Intergroup Contact**

Research on contact theory has mainly been based on direct face-to-face encounters or retrospective reports about such direct intergroup contact. Under some circumstances, however, opportunities for direct intergroup contact may not be given. Practical obstacles that may prevent direct contact include segregation or an ongoing intergroup conflict (Dovidio, Eller, & Hewstone, 2011; Hewstone & Swart, 2011; Tausch & Hewstone, 2010). In recent years alternative forms of contact that go beyond direct face-to-face interaction with members of the out-group, have been tested. Researchers

have been looking into effects of extended contact (i.e., learning that an in-group member has close relations with an out-group member), vicarious contact (i.e., observing the interaction between an in-group member and an out-group member), and imagined contact (i.e., imagining an interaction with an out-group member) on out-group attitudes (Dovidio et al., 2011).

### ***Extended contact***

The extended contact hypothesis (Wright, Aaron, McLaughlin-Volpe, & Ropp, 1997) predicts that the mere knowledge that an in-group member has a close relationship with an out-group member can reduce prejudice towards that out-group (Tausch, Hewstone, Schmid, Hughes, & Cairns, 2011; see Dovidio et al., 2011, for a review). The effect of extended contact can partly be explained through the change of perceived in-group norms. The knowledge that an in-group friend has close relations to members of an out-group helps to make positive intergroup relations normatively acceptable (Pettigrew et al., 2011). An in-depth review of the literature on extended contact can be found in Chapter 4.

### ***Vicarious contact***

Vicarious contact refers to the observation of positive intergroup contact between an in-group member and an (often) unknown out-group member. The interaction may take place through the media or it may be observed directly (Dovidio et al., 2011). Vicarious contact integrated ideas of extended contact and social-cognitive theory (Bandura, 1986). Studies have linked vicarious contact through to positive intergroup outcomes (e.g., Bilali & Vollhardt, 2013; Schiappa, Gregg, & Hewes, 2005).

Vicarious contact is not as well studied as extended contact; however, initial evidence supported the vicarious contact hypothesis. For example, Mazziotta, Mummendey, and Wright (2011) examined the role of vicarious contact as a means of improving intergroup relations. Integrating ideas from social-cognitive theory (Bandura, 1986), the authors proposed that observing in-group models can lead to learning of how to behave in similar intergroup situations. This in turn is likely to increase the observer's self-efficacy expectancy (i.e., strength of personal belief in one's ability to master a successfully intergroup interaction).

Knowing how to behave during an intergroup encounter is likely to reduce feelings of uncertainty and awkwardness due to insecurity during cross-group interactions. Mazziotta and colleagues (2011) conducted video-based experiments. The findings indicated that vicarious contact predicts more positive attitudes towards the out-group and increases the likelihood that the participants are willing to engage in direct cross-group contact themselves. The authors provided evidence that the relationship between vicarious contact and intergroup attitudes (and willingness to engage in direct contact) is mediated by self-efficacy expectancy, and perceived intergroup uncertainty.

### ***Imagined contact***

Another form of indirect intergroup contact is imagined contact. Imagined contact refers to the mental imagining of intergroup interactions (Crisp & Turner, 2009; Turner, Crisp, & Lambert, 2007a; Desforges et al., 1997). Turner and colleagues (2007a) found that simply imagining positive contact with an out-group member leads to significantly reduced bias against the elderly and gay men. The effectiveness of imagined contact has been shown in several experiments. It has been shown that

imagined contact reduced bias against ethnic out-groups in Cyprus (Husnu & Crisp, 2010), Mexico and the United Kingdom (Stathi & Crisp, 2008) (cf. Dovidio et al., 2011). Research findings suggest that key elements for effectiveness of imagined contact were active engagement in mental contact simulation and the positivity of imagined contact. Similar to other forms of intergroup contact (i.e., direct contact, extended contact), an important mediating mechanism of imagined contact effects was reduced intergroup anxiety (Dovidio et al., 2011). Overall, the prejudice-reducing effect of imagined contact has received considerable empirical support (e.g., Crisp & Turner, 2009; Turner & Crisp, 2010; Turner et al., 2007a; see Crisp, Husnu, Meleady, Stathi, & Turner, 2010, for a review). Additionally, it has been shown that the prejudice-reducing effect of imagined contact generalized to other uninvolved out-groups, which are not involved in the (imagined) intergroup contact (Harwood, Paolini, Joyce, Rubin, & Arroyo, 2011, see Chapter 4).

Harwood and colleagues (2011) provided experimental evidence for the secondary transfer effect of imagined intergroup contact. Participants were instructed to imagine a contact scenario with an out-group member. Participants were instructed to imagine either a positive interaction with an illegal immigrant, a negative interaction with an illegal immigrant or an outdoor scene (control group). Participants in the positive imagined contact condition (as opposed to the negative imagined contact condition or the control condition) showed more positive attitudes towards illegal immigrants and towards a range of uninvolved out-groups (e.g., Mexican-Americans, Asian-Americans, homeless people, political refugees, Black people). No secondary transfer effects were found for the negative contact condition or the control condition.

## The Special Role of Intergroup Friendship

### Intergroup Friendship and Attitudes

A fairly recent development in the intergroup contact research is the idea that a certain type of intergroup contact, namely cross-group friendship, may be particularly effective in reducing out-group prejudice (Pettigrew, 1998). Researchers have previously emphasised the role of intimacy in prejudice reduction (e.g., Amir, 1976; Cook, 1969; Williams, 1947). Amir (1976), for instance, pointed out that superficial or casual contact is less likely to have an effect on prejudice reduction than intimate contact. In Pettigrew's (1998) reformulation of the contact hypothesis, he added 'friendship potential' as a fifth condition to the original list of four optimal contact conditions. According to Pettigrew (1998), intergroup contact needs to have *friendship potential*. In his opinion, an optimal contact situation provides the interacting partners with the opportunity to become friends. As friendship typically involves cooperation, common goals and repeated equal-status contact over an extended period of time and across a variety of settings, cross-group friendships are likely to promote positive intergroup relations (Pettigrew, 1998; Pettigrew & Tropp, 2006).

Pettigrew and Tropp (2006) point out that "There is growing consensus that while intergroup contact typically reduces prejudice, it is most effective for reducing prejudice when it consist of close, high-quality intergroup relationships, such as those afforded by cross-group friendship" (Pettigrew & Tropp, 2006, p. 117). Indeed, a growing number of studies support the notion that cross-group friendship is especially effective in reducing out-group prejudice (e.g., Aberson, Shoemaker, & Tomolillo, 2004; Binder et al., 2009; Eller & Abrams, 2003; Hamberger & Hewstone, 1997; Levin et al., 2003; Page-Gould et al., 2008; Paolini et al., 2004; Pettigrew, 1997, 1998; Pettigrew & Tropp, 2006; Turner, Hewstone, Voci, Paolini, & Christ, 2007c; Swart et al., 2011;



Wagner, Hewstone, & Machleit, 1989; Wagner et al., 2003; see Davies et al., 2011, for a meta-analytic review). Empirical evidence is reviewed in the following paragraphs.

In a pioneering study Pettigrew (1997) provided a test of the relationship between intergroup friendship and attitudes using seven national probability samples from four European countries. The author studied the respondents' contact and attitudes towards members of nationally represented minority groups in France, Great Britain, the Netherlands, and West Germany. Intergroup contact was measured broadly as contact with people of another nationality, race, religion, culture and social class in three different areas (i.e., workplace, neighbourhood, circle of friends). Pettigrew (1997) studied the respondents' attitudes towards a variety of minority target groups (e.g., Turkish immigrants in West Germany, West Indians and Asians in Great Britain).

He found a negative relationship between intergroup friendship and all prejudice measures. The relationship was strongest between intergroup friendship and affective prejudice. Intergroup friendship was more strongly associated with positive out-group attitudes than was intergroup contact with co-workers and neighbours. The results held when controlling for seven key variables, namely, political conservatism, group relative deprivation, political interest, national pride, urbanism, education, and age.

Additionally, using non-recursive structural equation models, Pettigrew (1997) found that the causal path from friendship to reduced prejudice was larger than reverse path from prejudice to fewer intergroup friends. This finding indicates that cross-group friendship reduces prejudice rather than high prejudice predicting fewer cross-group friends.

Levin et al. (2003) conducted a large-scale longitudinal study to test the effects of in-group and out-group college friendships on intergroup anxiety and in-group bias at the University of California at Los Angeles (UCLA). The authors made use of a five-wave

longitudinal design, and the data was collected over a period of four years (1996 to 2000). More than 2000 students participated in the study. Members of the major ethnic groups were included in the analysis, namely White, Asian, Latino, and African American students. Pre-college friendships, prior attitudes, and other background variables (e.g., socioeconomic status, gender, religion, and political conservatism) were controlled for in the analysis.

Levin and colleagues (2003) found that students with higher levels of in-group bias and intergroup anxiety at the end of the first year in college had fewer cross-group friends and more in-group friends during their second and third year. When testing the effect of college in-group and out-group friendships on students' ethnic attitudes at the end of college, they found that students with more cross-group friends during their second and third year of college showed less intergroup anxiety and less in-group bias at the end of their fourth and final year.

The authors found that perceptions of the effect of campus climate had an affect on in-group and out-group friendship choices. Levin et al. (2003) found a strong link between perception of campus climate and the tendency to form in-group friendships. A greater perception of conflict and discrimination on campus increases likelihood of African American students to form in-group friendships. However, African American students still had out-group friends as well. The authors hypothesized that the perception of negative racial climate on campus encourages minority group members to befriend in-group peers. In-group friendships may help minority group members to protect their psychological wellbeing (see also Branscombe et al., 1999).

The effects of cross-group friendships on attitudes were mostly similar between the different ethnic groups. However, one difference was that the close friends of African American students were usually also African Americans, despite the fact that

African Americans only composed 6% of the student population at UCLA. Yet, the authors did not find that friendships with in-group members had independent negative effects above and beyond the positive effects of out-group friendships. The longitudinal nature of the study allowed the authors to make claims about causal directions of the effects. The authors compared the paths from more intergroup friendship to reduced in-group bias and intergroup attitude, with the reverse path from higher in-group bias and intergroup anxiety to fewer cross-group friendships. Levin and colleagues (2003) found that both paths were of about equal magnitude for intergroup anxiety and in-group bias which suggests that friendship predicts lower intergroup anxiety and in-group bias, as much as high levels of intergroup anxiety and in-group bias predict fewer cross-group friendships.

Aberson et al. (2004) examined the relationship between interethnic friendships and implicit and explicit prejudice toward African Americans and Latinos. White respondents who had close friends who were African Americans or Latinos showed lower levels of implicit prejudice than respondents who did not have friends from either of the target groups. Furthermore, the respondents reported lower levels of explicit prejudice. Friendship only had an effect on two out of seven explicit prejudice measures. Aberson and colleagues (2004) hypothesised that the low levels of explicit prejudice may be due to socially desirable responding rather than unprejudiced attitudes. However, the authors' research findings suggest that white students' interethnic friendships with African Americans and Latinos reduce unconscious biases of African Americans and Latinos, respectively.

Hewstone, Cairns, Voci, Hamberger, and Niens (2006) studied the effect of intergroup friendship between Catholics and Protestants in Northern Ireland. Their study provided a test of contact theory in two separate studies. In Study 1 archival data

from two different surveys showed that intergroup contact (measured as contact with out-group friends/ relatives/ neighbours) was associated with positive attitudes towards denominational mixing between Catholics and Protestants. Study 2 explored predictors of intergroup forgiveness. The strongest predictors of forgiveness were out-group trust, perspective taking, and out-group attitudes. In-group identification was a negative predictor of forgiveness for Protestants. Intergroup friendship was a positive predictor of forgiveness for Catholics. Furthermore, the findings indicated that intergroup friendship was positively associated with out-group attitudes, perspective-taking, and trust. Notably, the effects were strongest among those Catholics and Protestants who had suffered personally from sectarian violence.

Page-Gould et al. (2008) provided an experimental test of the effects of cross-group friendship on intergroup anxiety among Latino and White American participants. The authors previously assessed the sensitivity to group-based rejection (ethnic group membership) and measured out-group prejudice using the implicit association test (IAT, Lane, Banaji, Nosek, & Greenwald, 2007). The authors made use of a friendship generating procedure, which induced cross-friendship between Whites and Latinos. The participants were either paired with a same-group or cross-group partner for three friendship meetings. Intergroup anxiety was measured using cortisol reactivity, a physiological indicator of stress. The cortisol activity of participants who scored high in implicit prejudice and on sensitivity about race-based rejection peaked after the first friendship meeting with their cross-group partner, which indicated high levels of anxiety. The stress response diminished by the third friendship meeting in a way that it was comparable to anxiety levels of participants who are less sensitive to race-based rejection or participants who were paired with a same-race partner. During the 10 days after the last friendship meeting, participants were asked to complete a diary to assess

how often the participants initiated cross-group interactions in their daily lives. Page-Gould and colleagues (2008) found that participants with initially high levels of implicit prejudice were more likely to initiate cross-group interactions in their daily lives, if they were paired with cross-group partner during the experiment, compared to participants who were paired with a same-race partner.

### **How Does Cross-group Friendship Improve Attitudes?**

Research has shown that cross-group friendship is uniquely effective in diminishing out-group prejudice (Pettigrew & Tropp, 2011). Researchers have been looking into different variables as mediating mechanisms of the cross-group friendship-prejudice relationships. A range of potential mediators from closeness felt for a friend (McLaughlin-Volpe, Aron, Wright, & Reis, 2000), in-group norms (Davies, Wright, Aron, & Comeau, 2013), intergroup anxiety (Levin et al., 2003; Paolini et al., 2004), and self-disclosure (Turner, Hewstone, & Voci, 2007b) have been tested. Research findings indicate that self-disclosure is a strong mediator, even stronger than intergroup anxiety (Turner et al., 2007b).

### **Direct and Extended Cross-group Friendship**

Intergroup contact in the form of cross-group friendship was found to be an even more effective in reducing prejudice than general intergroup contact (Davies et al., 2011; Pettigrew & Tropp, 2006). A relatively new direction in the research on intergroup relations is the idea that prejudice reduction may also take place through indirect experiences of intergroup contact (Extended contact hypothesis, Wright et al., 1997). Notably, some researchers have specifically studied the effect of extended contact via in-group friends. Some researchers have studied the effect of direct cross-

group friendship and extended cross-group friendship (i.e., extended contact via in-group friends) on prejudice simultaneously (e.g., Paolini, Hewstone, Cairns, & Voci, 2004; Turner et al., 2007b). They found that direct and extended cross-group friendships, albeit correlated, make independent contributions to prejudice reduction (e.g., Paolini et al., 2004, 2007). An in-depth review of the literature on the effects of direct and extended cross-group friendship can be found in Chapter 4.

### **Intergroup Friendship and Attitudes: Meta-analytic Findings**

Pettigrew and Tropp's (2006) meta-analysis of the effects of general contact on prejudice included a sub-analysis on the effects of cross-group friendship on prejudice reduction. Pettigrew and Tropp (2006) found that studies (154 tests) which used cross-group friendship as a predictor of contact showed significantly stronger associations with prejudice reduction (mean  $r = -.25$ ), than the remaining studies (1211 tests) which assessed general intergroup contact (mean  $r = -.21$ ). Pettigrew and Tropp's (2006) meta-analysis included studies up to the end of December 2000. Davies et al.'s (2011) subsequent meta-analysis studied the relationship of cross-group friendship and out-group attitudes with a greatly expanded the database of relevant studies. Davies and colleagues' (2011) meta-analysis included studies up until August 2009. The sample of relevant studies included 501 tests and was three times larger than the meta-analysis focusing on friendship which was carried out by Pettigrew and Tropp (2006). Both meta-analyses yielded similar findings. While Pettigrew and Tropp (2006) tested the negative association between contact and prejudice, Davies et al. (2011) studied the relationship between friendship and positive intergroup attitudes. Davies et al.'s (2011) meta-analysis tested the relationship between cross-group friendship and prejudice and showed a similar effect size ( $r = .24$ ) as to the previous meta-analysis. The authors

carried out a separate analysis for testing the relationship between cross-group friendship and out-group attitudes in longitudinal studies ( $N = 25$ ). The mean effect size was ( $r = .23$ ). A finding similar to the effect size ( $r = .24$ ) yielded by the much bigger sample of cross-sectional studies ( $N = 208$ ). The findings from longitudinal studies indicate a causal direction from cross-group friendship to improved out-group attitudes.

Davies and colleagues (2011) found that racial and ethnic groups yielded significantly smaller effect sizes than target groups based on religion, nationality and sexual orientation. Additionally, experimentally manipulated cross-group friendships yielded lower effect sizes than naturally occurring friendships.

### **Measuring Intergroup Friendship**

In their meta-analytic study, Davies and colleagues (2011) also evaluated operationalizations of cross-group friendship. They found that the operationalizations of friendships varied greatly between studies. The authors found that six different assessments of cross-group friendship dominate, which were (1) number of reported cross-group friends, (2) percentage of out-group members in friendship network, (3) report about feelings of closeness, (4) inclusion of others in the self, (5) self-disclosure to out-group friend, and (6) amount of time spent with out-group friend (Davies et al., 2011).

Davies and colleagues (2011) found that all measures of cross-group friendship yielded significant associations with out-group attitudes. However, the strength of the effect on out-group attitudes varied depended on how friendship was assessed. They found that studies which assessed cross-group friendship as 'time spent' and 'self-disclosure', two behaviourally orientated friendship indicators, yielded the

strongest positive effects on out-group attitudes. This indicated that behavioural aspects of relationship are strong indicators for active and transactional friendship. Closeness to out-group members and inclusion of other in the self, for instance, yielded weaker effects on out-group attitudes. A possible explanation for this is that these variables assess friendship in a more subjective manner. Closeness is subjective and can be interpreted differently by respondents.

### **Obstacles to Cross-group Friendship Formation**

While research has demonstrated that cross-group friendship is a strong predictor of positive out-group attitudes (Davies et al., 2011, Pettigrew & Tropp, 2006), there are often obstacles to friendship formation (Pettigrew & Tropp, 2011). Two main obstacles to friendship formation are segregation and in-group norms. Firstly, the opportunity for cross-group interaction and therefore the opportunity to form cross-group friendship must be given in the first place (Cook, 1962; Davies et al., 2011; Pettigrew, 1998; Wagner et al., 2003, 2006). Obstacles are racial segregation (e.g., Apartheid in South Africa, racial segregation in Southern America) or residential and educational segregation (e.g., Northern Ireland). Research in American schools has shown that children and adolescents are more prone to form friendships with peers of the same race and gender (e.g., DuBois & Hirsch, 1990; Hallinan & Teixeira, 1987). However, research has shown that the likelihood of cross-group friendship formation increases with the ratio of cross-group peers (e.g., Hallinan & Smith, 1985; Joyner & Kao, 2000; see Chapter 3). Secondly, another obstacle to cross-group friendship formation is social norms. Children and adolescents have a tendency to try and fulfil expectations of in-group peers and family. A certain reluctance to form and sustain cross-group friendships is likely if they are not in accordance with social norms of the in-group



(Aboud & Sankar, 2007). According to Pettigrew and Tropp (2011) attempts can be made to reverse this. They argue that the likelihood of cross-group friendship formation can be enhanced by promoting contact, and creating optimal situational features, which promote the development of cross-group friendship and eventually bring about a shift in social norms.

## **Open Questions and Directions for Future Research**

Pettigrew (2008) pointed out three main future directions for intergroup theory and research: (1) specifying the processes of intergroup contact, (2) a greater focus upon intergroup contact that leads to negative effects - increased prejudice, distrust, and conflict, (3) placing intergroup contact in its longitudinal, multilevel social context (Pettigrew, 2008, p. 189). Each of Pettigrew's points will be addressed in the following paragraphs.

### ***Specifying the processes of intergroup contact***

Research has shown that intergroup contact typically reduces prejudice (Pettigrew & Tropp, 2006). However, Pettigrew (2008) argued that more research attention should be paid to the underlying processes of the relationship between intergroup contact and diminished prejudice. So far the most frequently studied mediators are enhancing knowledge about the out-group, reducing anxiety about intergroup contact, and increasing empathy and perspective taking (Pettigrew & Tropp, 2008). Meta-analytic findings have shown that all three variables mediate the relationship between intergroup contact and prejudice. However, enhancing knowledge (cognitive mediator) about the out-group was found to be a less meaningful mediator compared to reducing anxiety or increased empathy and perspective taking (affective

mediators) (Pettigrew & Tropp, 2008). Meta-analytic findings have shown that these mediators jointly explain about half of the variance of the relationship between contact and reduced prejudice. Additional potential mediators, such as intergroup threat and in-group norms, should be identified and studied systematically (Pettigrew, 2008).

***A greater focus on intergroup contact that leads to negative effects—increased prejudice, distrust, and conflict***

The intergroup contact hypothesis as originally formulated by Williams (1947) and Allport (1954) assumed that intergroup contact did not reduce prejudice in all instances. They tried to identify positive factors to maximize the positive effect of intergroup contact. Therefore, intergroup contact research has traditionally focused on positive factors which may enable prejudice reduction through intergroup contact.

According to Pettigrew (2008) the understanding of the effects of intergroup contact is limited by this emphasis on positive contact. Research should put more emphasis on the study of factors which curb contact's effect on prejudice reduction such as intergroup anxiety and authoritarianism.

Meta-analytic findings have shown that contact typically reduces prejudice; however, a small number of studies (about 4%) showed that contact can increase prejudice (Pettigrew & Tropp, 2006). Future research should put more emphasis on the effects of negative intergroup contact in order to get a better understanding of conditions that both increase and decrease the potentially positive effects of intergroup contact (Pettigrew, 2008).

### ***Placing intergroup contact in its longitudinal, multilevel social context***

According to Pettigrew (2008) intergroup contact research literature suffers from the scarcity of both longitudinal and multilevel studies. Pettigrew and Tropp's (2006) meta-analysis revealed that more than 70% of the intergroup contact research until December 2000 involved participants retrospectively reporting prior contact without data on the longitudinal or situational contexts of the intergroup contact. Their meta-analysis uncovered only two longitudinal studies and no multilevel studies at all (Pettigrew, 2008). Longitudinal studies are required to be able to make claims about the direction of cause and effects. Multilevel studies are necessary to place the intergroup contact in its larger social context. However, in recent years more longitudinal (e.g., Binder et al., 2009; Eller & Abrams, 2003, 2004; Levin et al., 2003; Sidanius, Levin, van Laar, & Sears, 2008; Swart et al., 2011; van Laar et al., 2005) and multilevel studies (e.g., Koschate & van Dick, 2011; Schmid, Hewstone, & Al Ramiah, in press) have been published.

### **Summary**

This chapter reviewed evidence for the effects of intergroup contact and cross-group friendship on out-group prejudice. Allport's (1954) contact hypothesis proposes that positive intergroup contact reduces prejudice, provided that four features of the contact situation are fulfilled, namely (1) equal status, (2) common goals, (3) intergroup cooperation, (4) and the support of authorities, law or custom (Pettigrew, 1998). An extensive meta-analytic test of over 500 studies revealed that contact between social groups typically reduces prejudice even when Allport's optimal contact conditions are not fulfilled. Allport's optimal conditions were found to be facilitating rather than essential for the reduction of prejudice through intergroup contact (Pettigrew & Tropp,

2006). Moreover, research has shown that the prejudice-reducing effect of intergroup contact generalizes broadly across situations, to the out-group as a whole and towards other uninvolved out-groups (*secondary transfer effect*, Pettigrew, 2009) (Pettigrew & Tropp, 2006).

After establishing that contact reduces prejudice, researchers have put more emphasis on the study of moderating (i.e., *when* does contact reduce prejudice?) and mediating (i.e., *how* does contact reduce prejudice?) variables in the contact-prejudice relationship. Allport's (1954) contact optimal conditions (authority support, equal status, common goals, cooperation) are moderating factors in the contact-prejudice relationship as they help explain when contact reduces prejudice. The most frequently studied mediators of the contact effect are decreased intergroup anxiety, increased empathy, and increased knowledge about the out-group. All three variables were confirmed as mediators in the contact-prejudice relationship. However, intergroup anxiety and empathy (affective mediators) were more important mediators than knowledge about the out-group (cognitive mediator) (see Pettigrew & Tropp, 2008, for a meta-analytic review).

While the vast majority of research suggests that intergroup contact reduces prejudice (e.g., Pettigrew, 1998; van Laar et al., 2005; Wagner et al., 2003), a small number of studies have shown that intergroup contact can exacerbate prejudice (Pettigrew & Tropp, 2006). However, it was also shown that positive contact is much more common than negative contact. It has been suggested that positive contact experiences may be able to counter the effects of negative intergroup contact (Pettigrew, 2008; Pettigrew & Tropp, 2011).

Very recently researchers have tested the idea that indirect forms of contact, beyond face-to-face interactions, may be able to reduce out-group prejudice. The

prejudice –reducing effect of extended contact (i.e., learning that an in-group member has close relations with an out-group member), vicarious contact (i.e., observing the interaction between an in-group member and an out-group member), and imagined contact (i.e., imagining an interaction with an out-group member) have received empirical support (Mazziotta et al., 2011; Schiappa et al., 2005; Turner et al., 2007a; Wright et al., 1997; see Dovidio et al., 2011, for a review). Indirect forms of intergroup contact are particularly useful in areas where practical obstacles prevent direct face-to-face interaction, such as segregation or an ongoing intergroup conflict (Dovidio et al., 2011). A fairly recent development in the intergroup contact research is the idea that a certain type of intergroup contact, namely cross-group friendship, may be particularly effective in reducing out-group prejudice (Davies et al., 2011; see Pettigrew & Tropp, 2006, for a meta-analytic test). Evidence from correlational (e.g., Aberson et al., 2004; Paolini et al., 2004; Pettigrew, 1997), longitudinal (e.g., Binder et al., 2009; Levin et al., 2003; Swart et al., 2011), and experimental (e.g., Page-Gould et al., 2008; Wright et al., 1997) studies showed that cross-group friendship is strongly associated with prejudice reduction. Indeed, research has shown that cross-group friendship is a stronger predictor of prejudice reduction than general intergroup contact (Pettigrew & Tropp, 2006). Research findings indicate that mutual self-disclosure, intimacy and intergroup anxiety are important mediators of the relationship between cross-group friendship and attitudes (Davies, Wright, Aron, & Comeau, 2013).

Additionally, research findings indicate that direct and extended forms of cross-group friendship can reduce prejudice. Research has shown that the mere knowledge that an in-group friend has close relations with an out-group member can reduce prejudice (Wright et al., 1997). Direct and extended cross-group friendships, albeit

typically correlated, make independent contributions to prejudice reduction (e.g., Paolini et al., 2004, 2007; Pettigrew et al., 2007).

Davies and colleagues' (2011) meta-analysis on the relationship between cross-group friendship and attitudes uncovered a variety of operationalizations of friendship (e.g., number of reported cross-group friends, reported feelings of closeness). Each of them was significantly associated with prejudice reduction. However, meta-analytic findings showed that studies which used 'time spent' and 'mutual self-disclosure', two behavioural indicators of friendship, to assess cross-group friendship yielded the strongest effects on attitudes. According to Davies and colleagues (2011) behavioural aspects of friendship are more reliable, as they indicate active and transactional friendships.

The beneficial effects of cross-group friendships are now well established (see Davies et al., 2011). However, different obstacles may prevent cross-group friendship formation. Two of the main obstacles are (residential) segregation and social norms. Racial and ethnic segregation poses a practical obstacle to intergroup interaction and therefore cross-group friendship formation. Additionally, social norms may discourage cross-group friendship formation (Pettigrew & Tropp, 2011). However, Pettigrew and Tropp (2011) point out that attempts can be made to reverse these effects, establishing optimal contact conditions which may help to promote cross-group friendship formation and prevent ethnic and racial re-segregation.

The aim of this thesis was to study the effects of close intergroup relationships in Nigeria. The present research aimed to provide a validation of findings of contact theory in a novel, non-western setting. At the same time this thesis aimed to extend research on intergroup contact. Firstly, given the special role of intergroup friendship the present research aimed to examine the nature of cross-group friendship in comparison to in-

group friendships, to test whether in-group and cross-group friendships differ, for example, in fulfilling different functions, or the same functions to different degrees.

Secondly, I aimed to show that virtually any type of intergroup contact effects has the potential to generalize broadly regardless of whether the contact experiences are positive or negative, whether the intergroup contact is face-to-face contact or whether it is indirect through cross-group friends. Finally, I aimed to explore the effects of cross-group roommate contact on attitudes towards multiple primary and secondary out-groups. All empirical studies of this thesis were conducted in south-west Nigeria with respondents who belong to the Yoruba majority group. The target groups were Hausas, Edos, and Igbos (i.e., minority groups in the area).

## **CHAPTER THREE**

### **A Comparison of the Quality of In-group and Cross-group Friendships**

#### **Cross-group Friendship**

##### **In-group versus Cross-group Friendships**

So far, research on cross-group friendship has mainly focused on testing the relationship between intergroup friendship contact and out-group attitudes (e.g., Pettigrew, 1997; Pettigrew & Tropp, 2006; see Davies et al., 2011, for a meta-analytic review). Despite the special role of cross-group friendship in intergroup relations, relatively few studies have explored the characteristics of cross-group friendships in comparison to same-group friendships (see Aboud, Mendelson, & Purdy, 2003; Kao & Joyner, 2004, for exceptions). Aboud and colleagues (2003) tested the relationship between cross-group friendship quality and out-group attitudes. The findings indicated that having high-quality cross-group friendships was more strongly related to prejudice reduction than having low-quality cross-group friendships or no cross-group friendships at all (Aboud et al., 2003). These findings suggested that beneficial effects of interracial friendships may not unfold entirely in low-quality friendships. Therefore, it is important to get an understanding of the characteristics of cross-group friendships to promote not only friendships, but high-quality cross-group friendships which are likely to have a much higher impact on prejudice reduction.

Much of the research looking into characteristics of same- versus cross-race friendships was carried out in schools in the United States, following their court ordered desegregation (*Brown versus Board of Education*, 1954). The expected benefits from the desegregation of schools included interracial interaction, reduction of stereotypes, and,



in the long run, a more integrated and equal society (Rude & Herda, 2010). Interracial issues in the school context such as racism and stereotyping needed to be addressed as they were likely to result in a detrimental learning environment. Therefore, school administrators and scholars looked into ways of promoting cross-race friendship and interaction (Rude & Herda, 2010).

### **Friendship Segregation in Schools**

Even formally integrated schools may still be racially divided if pupils mainly interact with same-race peers while at school (Moody, 2001). Research has shown that cross-race friendships are significantly less common than same-race friendships, even when controlling for the proportion of available same- and cross-group peers. Research so far suggests that race is still a strong factor in friendship selection (Clark & Ayers, 1992; DuBois & Hirsch, 1990; Tuma & Hallinan, 1979; Hallinan, 1982; Hallinan & Teixeira, 1987; Joyner & Kao, 2000; Quillian & Campbell, 2003; Way & Chen, 2000).

Different theories of friendship try to explain the bases of interpersonal friendship attraction, including homophily and propinquity (Hallinan & Williams, 1989; Quillian & Campbell, 2003). Homophily refers to the tendency of individuals to form friendships with others who are similar to them (e.g., race, gender) (Hallinan & Williams, 1989; Tuma & Hallinan, 1979). Propinquity refers to the tendency to form friendships with people who share the same social environment (see Festinger, Schachter, & Back, 1950). Both homophily and propinquity tend to increase the likelihood of racial homogeneity in friendship networks (Quillian & Campbell, 2003). Moreover, in a racially integrated setting, homophily in friendship selection contributes to continued racial segregation in friendship networks, while propinquity promotes integration and cross-race friendships (Quillian & Campbell, 2003). Research findings

indicate that homophily, especially in terms of race and gender, is the strongest predictor of friendship formation among adolescents (e.g., Clark & Ayers, 1992; Moody, 2001). A stronger predictive effect of homogeneity, compared to propinquity, on friendship formation may explain why cross-group friendships are relatively rare, even in integrated environments.

However, the likelihood of cross-group friendship formation is also dependent on other friendship dimensions (e.g., socio-economic status, school performance, popularity, gender, delinquency) (Moody, 2001). The number of cross-race friendships tends to decline with age, especially among girls (Hallinan & Taxeira, 1987). This could be due to the fact that the number of friends generally declines with age, as older students tend to be more selective when choosing friends (Aboud et al., 2003).

Clark and Ayers (1992) studied friendship formation pattern in a desegregated junior high school. The authors examined the effects of gender and racial composition of friendship dyads (White, African American, and cross-race) on similarity, proximity and reciprocity. The findings supported the notion that similarity strongly affects the likelihood of friendship formation. The majority of friendship dyads were of the same gender and race. The findings suggested that Whites are less likely to have cross-race friends than African Americans. Additionally, cross-race friendships were found to be less reciprocal than same-race friendships. Overall, similarity and proximity were found to be stronger predictors of adolescent cross-race friendship formation than reciprocity. Tuma and Hallinan (1979) examined the effects of gender, race, and academic achievement on friendship formation. Using data from two predominantly African American schools in the United States, the authors found that pupils were most likely to have friends of the same gender, race and academic achievement, or combination thereof. Hallinan and Teixeira (1987) studied the effect of individual level variables on

cross-race friendship choices, using longitudinal data from African American and White pupils (4<sup>th</sup> to 7<sup>th</sup> grade). They found that the formation of cross-race friendship was influenced by the same characteristics of the individuals as same-race friendships. These characteristics included gender (i.e., elementary school children prefer friends of their own gender), age (i.e., older pupils tend to have fewer cross-race friends), and social status (i.e., preference for friends with same or higher social status).

### **The Effects of Racial Composition**

Characteristics of the context, such as racial composition, also have a strong impact on the likelihood of cross-race friendship formation. The number of available same-race and cross-race individuals in the social environment determines the likelihood of cross-group interaction (Hallinan, 1982; Hallinan & Smith, 1985; Patchen, 1982). Research has shown that the opportunity for intergroup contact is a strong predictor of cross-group friendship (e.g., van Dick et al., 2004; Wagner et al., 2003) and intergroup contact in general (e.g., Pettigrew, Wagner, & Christ, 2010; Schmid, Al Ramiah, & Hewstone, in press; Wagner et al. 2006).

Research suggests that the opportunity for intergroup contact is higher for small minority groups, as the availability of same-race peers is low, while there are many cross-race peers available for interaction (Blau, 1977; Hallinan, 1982; Hallinan & Williams, 1989). Research has found strong positive associations between racial diversity and cross-race friendship (e.g., Schofield, 1978). Research findings show that racial and ethnic diversity in schools are important predictors of the formation of cross-group friendships among children and adolescents (e.g., Damico, Bell-Nathaniel, & Green, 1981; DuBois & Hirsch, 1990; Hallinan, 1982; Joyner & Kao, 2000; Quallian & Campbell, 2003).

Damico and colleagues (1981) studied the effect of organizational structure of schools on interracial friendships and out-group attitudes. Questionnaires were administered to African American and White pupils (7<sup>th</sup> to 9<sup>th</sup> grade) who either attended a team structured (i.e., a programme which increases classroom heterogeneity) or a traditional middle school. The findings indicated that school organization had an impact on the number of cross-race friendships. White students who attended team organized schools reported significantly higher numbers of African American friends than the ones who attended traditionally organized schools. White pupils who had 'some' African American friends held more positive attitudes towards African Americans than pupils who reported having 'almost no' African American friends. Independent of their number of White friends, African American pupils had more positive perceptions of Whites than White pupils had of African Americans. Additionally, African American pupils rated their White and African American friends the same regardless of which school type they attended. Joyner and Kao (2000) studied the likelihood of having intergroup friends among White, African American, Hispanic, Asian, and Native American pupils. They found that the likelihood of cross-race friendship formation was determined by the proportion of same- and cross-race peers available. The authors found that pupils were more likely to form cross-race friendships when the opportunity to interact with same-race peers was limited.

Using a national representative sample, Moody (2001) studied the relationship between racial heterogeneity and friendship segregation in schools. In particular, he tested whether school organization influenced friendship networks among White, African American, Hispanic, and Asian adolescents. He found a non-linear positive relationship between school heterogeneity and friendship segregation. Friendship segregation was found to be highest in moderately heterogeneous schools, and

friendship segregation was lowest in schools high in heterogeneity. The findings indicated that the likelihood that adolescents form friendships with same-race peers was 1.8 times higher than with cross-race peers, even when controlling for opportunity for intergroup contact, socio-economic status, and race.

### **Characteristics of Cross-group Friendships**

Researchers have studied a range of characteristics of same- and cross-group friendships including friendship stability and intimacy. A small number of studies have compared the stability of same- and cross-race friendships over time (e.g., Aboud et al., 2003; Hallinan & Williams, 1987; Rude & Herda, 2010). Hallinan and Williams (1987), for instance, examined the stability of same- versus cross-race friendships of pupils (4<sup>th</sup> to 7<sup>th</sup> grade) over the period of one year. They found that although less common, cross-race friendships were almost as stable as same-race friendships. According to the authors, cross-group friendships tend to be formed only when there is a strong interpersonal attraction between African American and White pupils, in which case the friendships are more likely to sustain over time. Rude and Herda (2010) tested the stability of same- and cross-race friendships among adolescents in a longitudinal study. Race, reciprocity, and closeness were found to be strong predictors of friendship stability. The findings indicated that even when cross-race friendships form, they are less likely to last over time than same-race friendships. The findings were obtained while controlling for various context variables such as school racial composition and similarities between friends (e.g., attitudes, behaviour).

Some studies have considered possible differences between in-group and cross-group friendships in terms of intimacy (e.g., Kao & Joyner, 2004) or friendship quality (e.g., Aboud et al., 2003). DuBois and Hirsch (1990), for instance, examined school and

neighbourhood friendships of African American and White pupils (7<sup>th</sup> to 9<sup>th</sup> grade) at an integrated junior high school. Although the majority of the African American and White respondents reported having cross-group friends at school (80%), only a minority of the respondents reported having a cross-group school friend who they saw regularly outside school (25%). Moreover, the findings indicated that there are racial differences in terms of reported friendship behaviour during early adolescence. African American pupils were twice as likely to report having a close cross-group friend with whom they frequently spend time with outside of school than White pupils. Whites and African Americans did not generally differ in the likelihood of reporting a cross-group school friend. According to the authors, the higher likelihood of African Americans having cross-group friendships outside school could be due to the predominantly white social environment. African American pupils may be more likely to find at least one cross-group peer in school with whom they can build a close friendship which extends beyond the school setting (DuBois & Hirsch, 1990).

Some researchers directly compared specific qualities of same- versus cross-race friendship (e.g., Aboud et al., 2003; Clark & Ayers, 1992; Kao & Joyner, 2004). Using the data of a nationally representative study of adolescents, Kao and Joyner (2004) examined whether friendship activities differed among interracial (i.e., different race, different ethnicity), interethnic (i.e., same race, different ethnicity) and intra-ethnic (i.e., same race, same ethnicity) friendships. Interracial friendships were found to be relatively rare. The data revealed that the respondents' best friends were mostly from the same race, while other friends were more likely to belong to a different ethnic and/or racial group. The authors used the amount of shared activities between friends as indicator of friendship intimacy. They found that the respondents characterised their interracial friendships by fewer shared activities than their intra-racial friends. The

difference was found to be even more pronounced among White respondents. However, only small differences in shared activity were found between interethnic and intra-ethnic friends. In this study, cross-group friendships were characterised by lower levels of shared activities, which indicated greater distance and less intimacy. The findings suggest that even when racial boundaries were crossed and cross-group friendships are formed, they seem to be facing greater challenges than same-group friendships.

Quillian and Campbell (2003) studied the friendship networks among adolescents (7<sup>th</sup> to 12<sup>th</sup> grade) of six racial and ethnic groups including Whites, African Americans, Hispanics, and Asians in a longitudinal study. The authors found that relative to the racial composition of the schools, same-race friendships were overrepresented in the students' friendship networks. Even students who belonged to small racial minorities maintained friendship networks which included several same-race friends. The authors found that race was less of a barrier to friendship formation among combinations of certain groups. Cross-race friendships between African American and White pupils were less common than cross-race friendships between members of some other groups (e.g., Whites and Asians, Whites and Hispanics). Moreover, racial divisions between African American-White pupils were strong. The authors found an especially high level of segregation among African Americans (including Black Hispanics) from the other racial groups.

Aboud et al. (2003) studied cross-group peer relations among primary school pupils in a longitudinal study. The study was conducted in a multiracial, English language elementary school in Canada. The respondents were 5<sup>th</sup> grade pupils, who were asked to rate their friendships status (e.g., best friend, good friend, non-friend) with each of their same-sex classmates. Mutual friends were pairs of pupils who rated each other as best friends. Additionally, the authors assessed the children's interactive

companions, which were assessed separately from friends. Interactive companions referred to “[...] strong or weak associates with whom the child voluntarily spends time with as a member of one or more groups” (Aboud et al., 2003, p. 167). Classmates were given lists of all pupils and were asked to indicate with whom each target student usually spends time.

Friendship quality was assessed using the McGill friendship questionnaire (MFQ, Mendelson & Aboud, 1999). Five items measured six different friendship functions, namely, emotional security, help, intimacy, reliable alliance, self-validation, and stimulating companionship. Friendship functions refer to theoretically distinct qualities of friendship, which can be used to distinguish between friends and non-friends. Friendships are expected to fulfil some, but not necessarily all friendship functions (Mendelson & Aboud, 1999). The study of Aboud and colleagues (2003) revealed that, controlling for availability, cross-race friendships were less common than same-race friendships, but once selected, cross-race friends were rated as largely similar to same-race friends, fulfilling key functions of friendship. However, cross-race friendships were rated lower in intimacy compared to same-race friendships. The findings also revealed that cross-race friendships were less stable over the course of a school year (Aboud et al., 2003). Furthermore, Aboud and colleagues (2003) found links between peer relations and out-group prejudice. Children who scored higher in prejudice were, compared to children who scored low in prejudice, more likely to rate cross-race classmates as non-friends. Children who scored high in prejudice also had fewer cross-race companions. Regular interaction with companions of a different race and having a high-quality cross-race friendship were related to less in-group bias and lower out-group prejudice.



Chan and Birman (2009) studied friendship development among Vietnamese immigrant adolescents in the United States. In particular, the authors tested the impact of school diversity and acculturation on the quality and quantity of cross- and same-race friendships. In terms of school diversity, the initial findings showed that Vietnamese immigrant adolescents who attended schools high in diversity, reported fewer cross-group friendships. However, later findings using the percentage of diversity, instead of a diversity index, found a positive relationship between school diversity and cross-group friendships, as predicted by contact theory. These findings called the validity of the previously used diversity index into question.

For immigrants, the authors define acculturation as a “[...] process by which individuals negotiate between their native culture and host culture and gain competency within these two cultural settings [...] while adapting to the new country” (Chan & Birman, 2009, p. 315). Chan and Birman (2009) assessed acculturation in terms of language, identity, and behaviour. They found that among Vietnamese adolescents a higher degree of American acculturation was related to greater social support from cross-group friends, while a higher degree of Vietnamese acculturation was related to greater support from same-race friends. The findings suggested that American acculturation is associated with the development of cross-race friendships and may help immigrants to communicate and interact with other out-group members (e.g., English language skills, familiarity with American culture). Vietnamese acculturation on the other hand is likely to facilitate friendship formation with members of their own racial group due to similarities in values and experiences. Both school diversity and acculturation were found to influence the development of friendship (Chan & Birman, 2009). The findings suggested that the quantity of cross-race friendships is context related (e.g., degree of diversity at school). Initially the opportunity for intergroup

interaction must be given in order for cross-group friendships to form in the first place. In later friendship development other aspects beyond context and environment (e.g., shared interests) are important.

## **Summary**

The majority of the research studying same- and cross-race friendships has looked at children and adolescents in the context of integrated schools (e.g., Clark & Ayers, 1992; Hallinan, 1982; Hallinan & Williams, 1987). Research findings have shown that cross-race friendships are less common than same-race friendships, even when controlling for the available proportion of same- and cross-race peers (e.g., Clark & Ayers, 1992; DuBois & Hirsch, 1990; Joyner & Kao, 2000; Moody, 2001; Quillian & Campbell, 2003). Research has shown that, amongst other factors, the likelihood of cross-group friendship formation was dependent on the racial composition of the school or neighbourhood, as it determines the opportunity to interact with peers from different ethnic or racial groups (e.g., Hallinan, 1982; Patchen, 1982). A higher proportion of cross-race peers was linked to less friendship segregation (e.g., Moody, 2001). Once cross-group friendships are formed, they tend to be less intimate (Aboud et al., 2003; DuBois & Hirsch, 1990; Kao & Joyner, 2004) and less likely to be sustained over time than in-group friendships (e.g., Aboud et al., 2003; Rude & Herda, 2010). Research indicates that cross-group friendships are likely to face more challenges than same-group friendships (Kao & Joyner, 2004). However, Aboud and colleagues' (2003) findings were more optimistic. They found that cross-race friendships were perceived as similar to same-race friendships and that they fulfilled the same friendships functions.

## **The Present Research**

Research has repeatedly shown that cross-group friendship is particularly effective in reducing out-group prejudice (Pettigrew, 1998; Pettigrew & Tropp, 2006; see Davies et al., 2011, for a meta-analytic review). Research has shown that having high-quality cross-group friendships is more strongly related to prejudice reduction than having low-quality cross-group friendships or no cross-group friendships at all (Aboud et al., 2003). This indicates that high-quality cross-group friendships have a stronger effect of on prejudice reduction.

The present research investigated the quality of interpersonal friendships in the intergroup context. Given the especially important role of cross-group friends in intergroup relations (Davies et al., 2011; Pettigrew, 1998), the present research aimed to study the characteristics of intergroup friendship in more detail. I compared the quality and closeness of specific friendships of members of the same- and different-ethnic groups, rather than studying aggregate friendship data.

In the present research I compared in-group and cross-group friendships among adolescents and young adults in Nigeria. Thus far, findings of comparative studies on same- versus cross-group friendship have drawn a rather pessimistic picture, indicating that cross-group friendships are less intimate (DuBois & Hirsch, 1990), less stable (Rude & Herda, 2010), and generally more problematic than same-group friendships (e.g., Moody, 2001). However, the findings of Aboud and colleagues (2003) were more encouraging. Their study showed that even though cross-race friendships were less common than same-race friendships, once selected, cross-race friends were rated as largely similar to same-race friends in terms of friendship quality. Yet, they also found that cross-race friendships were rated lower in intimacy compared to same-race friendships.

I predicted that generally there would be a difference between the quality of closeness of in-group and cross-group friendships, insofar as same-group friendship would be evaluated more positively. However, I hypothesized that the difference could largely be explained by the longer length of friendship between members of the same groups. When controlling for the length of friendship, the qualitative difference between same-group and cross-group friendships should decrease considerably. Previous research which did not control for the length of friendship found that cross-group friendships were less intimate than in-group friendships (Aboud et al., 2003; Koa & Joyner, 2004). However, research on same-sex friendships has linked the duration of friendship to friendship quality. In their study, Mendelson and Aboud (1999) showed that the duration of being best friends covaried with different measures of friendship quality. Respondents who reported about a long-standing same-sex friendship, as opposed to those reporting a relatively recent friendship, tended to rate the friend more positively (Mendelson & Aboud, 1999). They were significantly more satisfied with the friendship and rated the friendship higher on the majority of measures of friendship functions on the McGill Friendship Questionnaire (MFQ, Mendelson & Aboud, 1999).

I hypothesized that same-group friendships would be evaluated more positively, due to the longer duration of the friendship. As residential areas and local primary schools in Nigeria tend to be ethnically homogeneous, there are few opportunities for the development of cross-group friendship in early life. The opportunities for cross-group friendship increase considerably when students enter higher education. Thus, same-group friendships have more time to develop. To balance this inequality between the two friendship types, I controlled for the length of friendship among same- and cross-group friendships in the present research.

I tested these predictions in two comparative studies. Study 1 investigated friendships among undergraduate and graduate students at university. Study 2 investigated friendships of secondary school pupils in the same region. The questionnaires were adapted to make them appropriate for the age group of the respondents.

The collaborating schools and universities in Nigeria did not keep records of the ethnic group memberships of their students. Therefore, information about the ethnic make-up of the schools and universities cannot be provided here. However, both studies were conducted in the South-West of Nigeria, where the majority of the population belongs to the Yoruba ethnic group. Minority groups include Hausas and Igbos (see Chapter 1).

## **Hypotheses**

Studies 1 and 2 tested two hypotheses:

1. Cross-group friendships will be rated as lower in quality and closeness than in-group friendships (*Studies 1, 2*).
2. Rating differences in the friendship quality between in-group and cross-group friendships can be explained through differences in the duration of in-group versus cross-group friendships. These differences will disappear when the length of friendship is controlled for (*Studies 1, 2*).

## **Study 1**

### ***Method***

#### *Research design and participants*

The present study was set up as a within-subject design. Participants were asked to complete a survey relating to their closest in-group friend and their closest cross-group friend. One hundred and sixty-two Yoruba undergraduate and graduate students from the University of Lagos and the University of Ibadan participated in this study. Participants were asked to nominate their closest in-group friend (of Yoruba background) and their closest cross-group friend who could be of any non-Yoruba background. The nominated cross-group friends came from diverse non-Yoruba backgrounds ( $N = 96$  Igbos,  $N = 8$  Hausas,  $N = 11$  unidentified,  $N = 47$  other Nigerian and non-Nigerian minority groups). The nominated out-group friends formed a heterogeneous group in terms of ethnic group membership. Potential differences between out-group friendships with members of different ethnic groups have to be taken into consideration. Ideally, I would have been able to test the groups separately. However, many of the groups were too small to yield meaningful results. The vast majority of nominated out-group friends were of Igbo origin. Therefore, only the data of participants who nominated an Igbo cross-group friend were included in the analysis. The final sample comprised 96 Yoruba respondents (mean age = 21.91,  $SD = 4.33$ , range: 16-34; gender:  $N = 30$  male,  $N = 63$  female,  $N = 3$  unidentified; religion:  $N = 80$  Christianity,  $N = 12$  Islam,  $N = 2$  no religion,  $N = 2$  unidentified).

## *Measures*

### Instructions and friendship nomination

The instructions at the beginning of the questionnaire read: "Please answer the following questions about a close SAME-SEX friend of yours who belongs to the SAME ETHNIC GROUP / DIFFERENT ETHNIC GROUP as you." Each of the items was assessed for the respondent's in-group and cross-group friends separately. The order of the targets was counterbalanced. The question read: "What is your friend's first name?" (open-ended response). The respondents were then asked to think of these nominated friends while answering each set of questions for the nominated in-group and cross-group friend respectively.

**Length of friendship.** The respondents were asked about their in-group and cross-group friend, "How many years have you been friends for?" (open-ended response).

**Quantity of contact.** A three-item scale measured the quantity of contact with the nominated in-group and cross-group friend. The respondents were asked "How much time do you and this friend spend at your home each week?", "How much time do you and this friend spend at their home each week?" and "How many hours per week would you say you spend with this friend altogether?". Each item was answered on a five-point scale (1 = none; 2 = 1-2 hours, 3 = 3-5 hours, 4 = 5-10 hours, 5 = more than 10 hours). Higher values denoted more contact with the nominated friend. The items, which measured the quantity of contact with the in-group friend ( $\alpha = .85$ ) and with the cross-group friend ( $\alpha = .88$ ) formed reliable scales.

**Inclusion of Other in the Self.** Inclusion of Other in the Self was measured through a single-item, pictorial measure of closeness (Aron, Aron, Tudor, & Nelson, 1991). The item read, "In the pictures below, please imagine that one circle stands for

you and one stands for your friend. Please circle the picture that best describes how close you feel towards this friend.” The participants were asked to rate the closeness of the nominated friend on a seven point pictorial scale (1 = *low closeness*; 7 = *high closeness*). Higher scores denoted higher levels of closeness with the nominated friend.

Friendship quality. Two measures of friendship quality were included in the questionnaire. Firstly, The McGill Friendship Questionnaire–Respondent's Affection (MFQ–RA, Mendelson & Aboud, 1999) assessed the respondents' positive feelings for their friends (9 Items) (e.g., “I am glad that \_\_\_ is my friend.” or “I would miss \_\_\_ if he/she left.”). The respondents were asked to indicate their friendship evaluation on a five-point scale (1 = *strongly disagree*, 2 = *mostly disagree*, 3 = *neither agree nor disagree*, 4 = *mostly agree*, 5 = *strongly agree*). Higher values denoted more positive feelings towards the friend. The items, which measured positive feelings for the in-group friend ( $\alpha = .91$ ) and cross-group friend ( $\alpha = .94$ ) formed reliable scales.

Secondly, an additional measure assessed friendship satisfaction (7 items) with the respective friendship (e.g., “I am happy with my friendship with\_\_\_.” or “I think my friendship with \_\_\_ is strong.”). The respondents were asked to indicate their friendship evaluation on a five-point scale (1 = *strongly disagree*, 2 = *mostly disagree*, 3 = *neither agree nor disagree*, 4 = *mostly agree*, 5 = *strongly agree*). Higher scores denoted higher friendship satisfaction. The reliability for the in-group friend measure was not satisfactory ( $\alpha = .31$ ), but improved considerably after removing one item from the scale ( $\alpha = .87$ ). For reasons of consistency, the same item was removed from the corresponding cross-group friend measure as well. The reliability decreased slightly from ( $\alpha = .95$ ) to ( $\alpha = .93$ ). After shortening the scales from seven to six items, both measures formed reliable scales. The overall measures of scales MFQ–RA for the in-



group friend (15 items) ( $\alpha = .94$ ) and the cross-group friend (15 items) ( $\alpha = .97$ ) formed reliable scales.

The McGill Friendship Questionnaire–Friend's Function (MFQ–FF, Mendelson & Aboud, 1999) was included in the survey to measure respondents' assessments of the degree to which a friend fulfils six friendship functions, namely stimulating companionship (e.g., “\_\_\_ makes me laugh.”), help (e.g., “\_\_\_helps me when I need it.”), intimacy (e.g., “\_\_\_is easy to talk to about private things.”), reliable alliance (e.g., “\_\_\_would still want to be my friend even if we had a fight.”), self-validation (e.g., “\_\_\_makes me feel special.”), and emotional security (e.g., “\_\_\_would make me feel comfortable in a new situation.”). Each subscale comprised five items. All items were answered on a five-point scale (1 = *never*; 5 = *always*). The overall reliabilities for the friendship functions for the in-group friend ( $\alpha = .96$ ) and for the cross-group friend ( $\alpha = .98$ ) were excellent. The reliabilities for each subscale can be found in Appendix A.

## **Results**

### *Preliminary analysis*

Means, standard deviations and inter-scale correlations are displayed in Table 1. Friendship length with the nominated in-group friend was unrelated to contact quantity with nominated in-group friend ( $r = .16, p = .15$ ). Friendship length with the in-group friend was positively associated with Inclusion of Other in the Self of the in-group friend ( $r = .30, p < .01$ ) and friendship quality (Respondent's Affection) with the in-group friend ( $r = .26, p < .01$ ). The relationship between friendship length with the in-group friend and friendship quality (Friend's Functions) fell just short of statistical significance ( $r = .21, p = .05$ ). Quantity of contact with the in-group friend was positively associated with Inclusion of Other in the Self of the in-group friend ( $r = .49, p < .01$ ), friendship quality

Table 1: Means, Standard Deviations and Correlations among Key Variables (Study 1)

|                         | <i>M</i> | <i>SD</i> | 2   | 3     | 4     | 5     | 6    | 7    | 8     | 9     | 10    |
|-------------------------|----------|-----------|-----|-------|-------|-------|------|------|-------|-------|-------|
| 1. Friendship length IG | 5.59     | 4.17      | .16 | .30** | .26** | .21   | -.15 | -.07 | .00   | -.08  | .09   |
| 2. Contact Quantity IG  | 3.59     | 1.17      | -   | .49** | .38** | .50** | -.02 | .02  | -.05  | -.01  | -.03  |
| 3. IOS IG               | 5.55     | 1.53      |     | -     | .45** | .48** | .01  | -.02 | .17   | -.07  | -.04  |
| 4. Friendship-RA IG     | 4.62     | .63       |     |       | -     | .54** | -.01 | .00  | -.04  | .12   | .18   |
| 5. Friendship-FF IG     | 4.49     | .51       |     |       |       | -     | .18  | -.06 | .03   | .14   | .18   |
| 6. Friendship length CG | 4.15     | 3.92      |     |       |       |       | -    | -.09 | .18   | .10   | .07   |
| 7. Contact Quantity CG  | 2.63     | 1.16      |     |       |       |       |      | -    | .53** | .43** | .37** |
| 8. IOS CG               | 3.92     | 1.76      |     |       |       |       |      |      | -     | .58** | .51** |
| 9. Friendship-RA CG     | 4.09     | .77       |     |       |       |       |      |      |       | -     | .81** |
| 10. Friendship-FF CG    | 3.92     | .91       |     |       |       |       |      |      |       |       | -     |

*Note.* \*  $p < .05$ , \*\*  $p < .01$ ,  $N = 96$ , IG = In-group friend, CG = Cross-group friend, IOS = Inclusion of other in the self, friendship-RA = McGill Friendship quality questionnaire–Respondent's Affection, friendship-FF = McGill Friendship Questionnaire–Friend's Function (MFQ–FF).

(Respondent's Affection) with the in-group friend ( $r = .38, p < .01$ ), and friendship quality (Friend's Functions) with the in-group friend ( $r = .50, p < .01$ ). Inclusion of Other in the Self of the in-group friend was positively associated with friendship quality (Respondent's Affection) ( $r = .45, p < .01$ ) and friendship quality (Friend's Functions) with the in-group friend ( $r = .48, p < .01$ ). Friendship quality (Respondent's Affection) with the in-group friend and friendship quality (Friend's Functions) with the in-group friend were positively associated with each other ( $r = .54, p < .01$ ).

The length of friendship with the cross-group friend was unrelated to contact quantity with the cross-group friend ( $r = -.09, p = .39$ ), friendship quality with the cross-group friend (Respondent's Affection) ( $r = .10, p = .35$ ), and friendship quality (Friend's Functions) with the cross-group friend ( $r = .07, p = .55$ ). The relationship between the length of friendship with the Inclusion of Other in the Self of the cross-group friend was marginally significant ( $r = .18, p < .10$ ). Contact quantity with the cross-group friend was positively associated with Inclusion of Other in the Self of the cross-group friend ( $r = .53, p < .01$ ), friendship quality (Respondent's Affection) with the cross-group friend ( $r = .43, p < .01$ ), and friendship quality (Friend's Functions) with the cross-group friend ( $r = .37, p < .01$ ). Inclusion of Other in the Self of the cross-group friend was positively associated with friendship quality (Respondent's Affection) ( $r = .58, p < .01$ ), and friendship quality (Friend's Functions) with the cross-group friend ( $r = .51, p < .01$ ). Friendship quality (Respondent's Affection) with the cross-group friend and friendship quality (Friend's Functions) with the cross-group friend were positively associated with each other ( $r = .81, p < .01$ ).

The length of friendship with the in-group friend was unrelated to the length of friendship with the cross-group friend ( $r = -.15, p = .20$ ), contact quantity with the cross-group friend ( $r = -.07, p = .53$ ), Inclusion of Other in the Self of the cross-group friend ( $r$

= .00,  $p = .99$ ), friendship quality (Respondent's Affection) with the cross-group friend ( $r = -.08$ ,  $p = .45$ ) and friendship quality (Friend's Functions) with the cross-group friend ( $r = -.09$ ,  $p = .42$ ). Quantity of contact with the in-group friend was unrelated to the length of friendship with the cross-group friend ( $r = -.02$ ,  $p = .85$ ), contact quality with the cross-group friend ( $r = .02$ ,  $p = .88$ ), Inclusion of Other in the Self of the cross-group friend ( $r = -.05$ ,  $p = .66$ ), friendship quality (Respondent's Affection) with the cross-group friend ( $r = -.01$ ,  $p = .90$ ) and friendship quality (Friend's Functions) with the cross-group friend ( $r = -.03$ ,  $p = .76$ ). Inclusion of Other in the Self of the in-group friend was unrelated to the length of friendship with the cross-group friend ( $r = .01$ ,  $p = .92$ ), contact quality with the out-group ( $r = -.02$ ,  $p = .87$ ), Inclusion of Other in the Self of the cross-group friend ( $r = .17$ ,  $p = .10$ ), friendship quality (Respondent's Affection) with the cross-group friend ( $r = -.07$ ,  $p = .51$ ) and friendship quality (Friend's Functions) with the cross-group friend ( $r = -.04$ ,  $p = .74$ ). Friendship quality (Respondent's Affection) with the in-group friend was, as expected, not associated with the length of friendship with the cross-group friend ( $r = -.01$ ,  $p = .91$ ), contact quality with the cross-group friend ( $r = .00$ ,  $p = .97$ ), Inclusion of Other in the Self of the cross-group friend ( $r = -.04$ ,  $p = .72$ ), and friendship quality (Respondent's Affection) with the cross-group friend ( $r = .12$ ,  $p = .26$ ). The relationship between friendship quality (Respondent's Affection) with the in-group friend and friendship quality (Friend's Functions) with the cross-group friend was marginally significant ( $r = .18$ ,  $p = .09$ ).

Friendship quality (Friend's Functions) with the nominated in-group friend was unrelated to the length of friendship with the cross-group friend ( $r = .18$ ,  $p = .10$ ), contact quantity with the cross-group friend ( $r = -.06$ ,  $p = .57$ ), Inclusion of Other in the Self of the cross-group friend ( $r = .03$ ,  $p = .76$ ), and friendship quality (Respondent's Affection) with the cross-group friend ( $r = .14$ ,  $p = .20$ ). The relationship between

friendship quality (Friend's Functions) with the nominated in-group friend and friendship quality (Friend's Functions) with the cross-group friend ( $r = .18, p = .08$ ) was marginally significant. All correlations were in the expected direction.

### *Comparisons of means*

The present study focused on the comparison of in-group versus cross-group friendships. I used paired sample t-tests to compare the mean values of various measures of friendship quality and closeness for nominated in-group and cross-group friends (see Table 2). I compared the mean in-group friendship length of 5.85 years ( $SE = .47$ ) with the mean cross-group friendship length of 4.07 years ( $SE = .45$ ). The analyses showed that the respondents had been friends with their nominated in-group friend significantly longer than with their nominated cross-group friend,  $t(79) = 2.57, p < .05$ .

The mean Inclusion of Other in the Self of the nominated in-group friend ( $M = 5.56, SE = .16$ ) was compared to the mean Inclusion of Other in the Self of the nominated cross-group friend ( $M = 3.93, SE = .19$ ). The analysis showed that the respondents felt significantly closer to their in-group friend,  $t(90) = 7.28, p < .001$ . When comparing the mean quantity of contact with the in-group friend ( $M = 3.56, SE = .12$ ) and the mean quantity of contact with the cross-group friend ( $M = 2.63, SE = .12$ ), it showed that the respondents spent significantly more time with their in-group friend,  $t(94) = 5.76, p < .001$ . The comparison of mean friendship quality (Respondent's Affection) with the in-group friend ( $M = 4.63, SE = .07$ ) and the mean friendship quality (Respondent's Affection) with the cross-group friend ( $M = 4.08, SE = .08$ ) showed that the respondents rated the friendship quality (Respondent's Affection) with their in-group friend significantly higher,  $t(93) = 5.70, p < .001$ .

Table 2: *In-group and Cross-group Friendship Quality Comparisons (Study 1)*

|      |                                  | Before controlling for length of friendship |     |          |    |                |    | After controlling for length of friendship |     |          |    |                 |    |
|------|----------------------------------|---------------------------------------------|-----|----------|----|----------------|----|--------------------------------------------|-----|----------|----|-----------------|----|
| Pair | Variable                         | Mean                                        | SE  | <i>t</i> | df | Sign. 2-tailed | N  | Mean                                       | SE  | <i>t</i> | df | Sign. 2-tailed  | N  |
| 1    | IOS IG                           | 5.56                                        | .16 | 7.28     | 90 | $p < .001$     | 91 | .05                                        | .13 | .29      | 75 | $p = .78$ n.s.  | 76 |
|      | IOS CG                           | 3.93                                        | .19 |          |    |                |    | -.01                                       | .15 |          |    |                 |    |
| 2    | Quantity of Contact IG           | 3.56                                        | .12 | 5.76     | 94 | $p < .001$     | 95 | .08                                        | .09 | .44      | 78 | $p = .66$ n.s.  | 79 |
|      | Quantity of Contact CG           | 2.63                                        | .12 |          |    |                |    | -.002                                      | .10 |          |    |                 |    |
| 3    | Friendship-RA IG                 | 4.63                                        | .07 | 5.70     | 93 | $p < .001$     | 94 | .009                                       | .07 | .22      | 77 | $p = .83$ n.s.  | 78 |
|      | Friendship-RA CG                 | 4.08                                        | .08 |          |    |                |    | -.01                                       | .08 |          |    |                 |    |
| 3.1  | Friendship- Positive Feelings IG | 4.57                                        | .05 | 5.70     | 93 | $p < .001$     | 94 | -.002                                      | .06 | .23      | 77 | $p = .82$ n.s.  | 78 |
|      | Friendship- Positive Feelings CG | 4.09                                        | .08 |          |    |                |    | -.002                                      | .08 |          |    |                 |    |
| 3.2  | Friendship Satisfaction IG       | 4.69                                        | .09 | 4.98     | 93 | $p < .001$     | 94 | .02                                        | .11 | .18      | 77 | $p = .86$ n.s.  | 78 |
|      | Friendship Satisfaction CG       | 4.08                                        | .08 |          |    |                |    | -.004                                      | .09 |          |    |                 |    |
| 4    | Friendship-FF IG                 | 4.49                                        | .05 | 5.93     | 94 | $p < .001$     | 95 | .003                                       | .06 | .005     | 78 | $p = 1.00$ n.s. | 79 |
|      | Friendship-FF CG                 | 3.91                                        | .09 |          |    |                |    | .003                                       | .10 |          |    |                 |    |
| 4.1  | Emotional Security IG            | 4.45                                        | .07 | 5.63     | 94 | $p < .001$     | 95 | .008                                       | .07 | .07      | 78 | $p = .94$ n.s.  | 79 |
|      | Emotional Security CG            | 3.80                                        | .11 |          |    |                |    | -.001                                      | .11 |          |    |                 |    |
| 4.2  | Help IG                          | 4.39                                        | .06 | 5.30     | 94 | $p < .001$     | 95 | .01                                        | .07 | -.004    | 78 | $p = 1.00$ n.s. | 79 |
|      | Help CG                          | 3.80                                        | .10 |          |    |                |    | .01                                        | .10 |          |    |                 |    |
| 4.3  | Intimacy IG                      | 4.44                                        | .06 | 6.94     | 94 | $p < .001$     | 95 | -.01                                       | .07 | .000     | 78 | $p = 1.00$ n.s. | 79 |
|      | Intimacy CG                      | 3.63                                        | .11 |          |    |                |    | -.01                                       | .12 |          |    |                 |    |
| 4.4  | Reliable Alliance IG             | 4.65                                        | .05 | 5.85     | 94 | $p < .001$     | 95 | -.001                                      | .06 | -.12     | 78 | $p = .91$ n.s.  | 79 |
|      | Reliable Alliance CG             | 4.06                                        | .10 |          |    |                |    | .01                                        | .11 |          |    |                 |    |
| 4.5  | Self-Validation IG               | 4.45                                        | .06 | 4.55     | 94 | $p < .001$     | 95 | .009                                       | .07 | .03      | 78 | $p = .98$ n.s.  | 79 |
|      | Self-Validation CG               | 3.96                                        | .10 |          |    |                |    | .006                                       | .10 |          |    |                 |    |
| 4.6  | Stimulating Companionship IG     | 4.56                                        | .05 | 3.77     | 94 | $p < .001$     | 95 | .003                                       | .06 | .04      | 78 | $p = .97$ n.s.  | 79 |
|      | Stimulating Companionship CG     | 4.20                                        | .09 |          |    |                |    | -.001                                      | .10 |          |    |                 |    |
| 5    | Friendship length IG             | 5.85                                        | .47 | 2.57     | 79 | $p < .05$      | 80 |                                            |     |          |    |                 |    |
|      | Friendship length CG             | 4.07                                        | .45 |          |    |                |    |                                            |     |          |    |                 |    |

*Note.* Analysis: Paired and residualised paired t-tests [Control variable: friendship length], IG = In-group friendship, CG = Cross-group friendship; Friendship-RA = Friendship quality-Respondent's affection; Friendship-FF = Friendship quality-Friend's functions.

The comparison of the subscales of friendship quality (Respondent's Affection) (i.e., positive feelings, friendship satisfaction) showed that in-group friendships were rated more favourably than cross-group friendships.

When comparing the mean friendship quality (Friend's Functions) with the in-group friend ( $M = 4.49, SE = .05$ ) and the mean friendship quality (Friend's Functions) with the cross-group friend ( $M = 3.91, SE = .09$ ), it showed in-group friendships were rated significantly higher on friendship quality (Friend's Functions),  $t(94) = 5.93, p < .001$ . When looking at the individual subscales of the friendship quality (Friend's Functions) measure (i.e., emotional security, help, intimacy, reliable alliance, self-validation, stimulating companionship) it showed that in-group friendships were evaluated more positively than cross-group friendships on all subscales (see Table 2).

The application of residualized paired t-tests made it possible to compare the different measures of friendship quality and closeness for in-group versus cross-group friends while controlling for the length of friendship with the in-group and cross-group friend respectively. When comparing the mean Inclusion of Other in the Self of the in-group friend ( $M = .05, SE = .13$ ) with the mean Inclusion of Other in the Self of the cross-group friend ( $M = -.01, SE = .15$ ), no significant difference was found,  $t(75) = .29, p = .78$ . The comparison between mean quantity of contact with the in-group friend ( $M = .08, SE = .09$ ) and the cross-group friend ( $M = -.002, SE = .10$ ), did not differ significantly from each other,  $t(78) = .44, p = .66$ . The comparing between friendship quality (Respondent's Affection) with the in-group friend ( $M = .009, SE = .07$ ) and cross-group friend ( $M = -.01, SE = .08$ ) the difference was not significant  $t(77) = .22, p = .83$ .

When looking at the subscales of friendship quality (Respondent's Affection) (i.e., positive feelings, friendship satisfaction) and comparing the ratings between in-group and cross-group friendships, no significant differences were found. The comparison

between friendship quality (Friend's Functions) with the in-group friend ( $M = .003$ ,  $SE = .06$ ) and friendship quality with the cross-group friend ( $M = .003$ ,  $SE = .10$ ) showed no significant difference,  $t(78) = .005$ ,  $p = 1.00$ . When comparing in-group and cross-group friendship using the subscales of friendship quality (FF; i.e., emotional security, help, intimacy, reliable alliance, self-validation, stimulating companionship) no significant differences were found either (Table 2).

Table 2 shows the number of cases included in each t-test. The drop in participants (and degrees of freedom) between the paired t-tests and residualized paired t-tests was due to missing data on the in-group and cross-group friendship length variables. The sample of 96 participants included missing data on the in-group friendship length (9 cases) and cross-group friendships length (8 cases) variables. The relatively high number of missing cases on these variables may be due to the open-ended response format of the items. It is likely that participants forgot to answer (or oversaw) the length of friendship items. As it was the purpose of the residualized paired t-tests to compare the quality and closeness of in-group and cross-group friendships while controlling for the length of friendship, only cases which provided data on in-group and cross-group friendship length variables were included in the analyses.

## ***Discussion***

The following paragraphs summarize the main findings of Study 1 and discuss to what extent the findings supported the hypotheses. Hypothesis 1 predicted that cross-group friendships would be rated as lower in quality and closeness than in-group friendships. Hypothesis 2 predicted that rating differences in the friendship quality between in-group and cross-group friendships can be explained through differences in the duration of in-group versus cross-group friendships. These differences would



disappear when the length of friendship is controlled for. The findings supported the hypotheses. Paired sample t-tests showed that the respondents spent more time with their in-group friends and felt closer to them than to their cross-group friends (Inclusion of Other in the Self).

Further paired sample t-tests looking at friendship quality (Respondents' Affection) showed that the respondents rated their in-group friendships as more satisfying. The findings also indicated that the respondents had more positive feelings for their in-group friend than for their cross-group friend. Paired sample t-tests looking at friendship quality (Friendship Functions) revealed that the respondents rated their in-group friendships significantly higher on a range of individual friendship functions, namely emotional security, help, intimacy, reliable alliance, self-validation, and stimulating companionship. The findings supported Hypothesis 1. However, the findings also showed that the respondents had been friends with their nominated in-group friend for longer than with their nominated cross-group friend. When controlling for the length of friendship, there was no significant difference between the closeness (Inclusion of Other in the Self) or the amount of time spent with the in-group and cross-group friends. When testing the subscales of the measures of friendships quality (Respondent's Affection) (i.e., positive feelings and friendships satisfaction) and friendship quality (Friend's Functions) (i.e., emotional security, help, intimacy, reliable alliance, self-validation, and stimulating companionship) no significant differences were found between the ratings of in-group and cross-group friendships. While other researchers found that cross-group friendships were less intimate than cross-group friendships (Aboud et al., 2003; Kao & Joyner, 2004), the present findings showed that cross-group friendships were rated as similar in terms of intimacy to in-group friendships. Moreover, cross-group friendships were rated as no different from their in-

group friendships, provided that the length of friendship was controlled for. The findings support Hypothesis 2

## **Study 2**

The first comparative study (Study 1) showed that in-group friends and cross-group friends are perceived as similar to each other in terms of friendship quality and closeness, provided that the duration of friendship was controlled for. Study 2 aimed to replicate the findings of Study 1, while using a different sample and different measures, in order to increase confidence in the findings. The questionnaires used different measures, in part, since they were adapted to be appropriate for the age group of the respondents. The same hypotheses as in Study 1 were tested.

## **Method**

### *Research design and participants*

The same within-subject design as in Study 3 was used. One-hundred and eighteen Yoruba pupils participated in the study. The in-group friends were of Yoruba origin, and the cross-group friends were from a variety of Nigerian or non-Nigerian ethnic groups ( $N = 83$  Igbos,  $N = 14$  Hausas,  $N = 4$  Edo,  $N = 15$  other minorities,  $N = 2$  unidentified). The data of participants was who nominated an in-group friend (Yoruba) and a cross-group friend who was of Igbo origin was included. Final sample size comprised  $N = 83$  Yoruba pupils (mean age = 14.70,  $SD = 1.03$ ; range 13-17, gender:  $N = 33$  male,  $N = 47$  female,  $N = 1$  unidentified; religion:  $N = 63$  Christianity,  $N = 19$  Islam,  $N = 1$  unidentified). The data collection took place at three different secondary schools, namely Command Day Secondary School (Ibadan), King's College (Lagos), and Saint Louis Grammar School (Ibadan).

## Measures

General instruction and friendship nomination. The instruction read as follows: "Please think of one of your best friends, but this person should: A. Be SAME sex / gender as you, and B. Belong to the SAME ethnic group as you/ a DIFFERENT ethnic group as you. The following questions concern your feelings for this friend. With this friend in mind, decide how much you agree or disagree with each of the statements. Please circle the number that indicates how much you agree that the statement describes your feelings. There are no right or wrong answers. Just honestly describe your feelings for your friend, and keep this person in mind whilst you answer the following questions." Each of the following items was assessed for their in-group and cross-group friends separately. The order of the targets was counterbalanced. The question read: "What is your friend's first name?" (open-ended response).

Length of friendship (in months). The respondents were asked: "Roughly how many years or months have you been friends for? \_\_\_years \_\_\_months".

Quantity of contact. A three-item scale measured the quantity of contact with the nominated in-group and cross-group friend. The respondents were asked "How much time do you and this friend spend at your home each week?", "How much time do you and this friend spend at their home each week?" and "How many hours per week would you say you spend with this friend altogether?". Each item was to be answered on a five-point scale (1 = *none*, 2 = *1-2 hours*, 3 = *3-5 hours*, 4 = *5-10 hours*, 5 = *more than 10 hours*). Higher values denoted more contact with the nominated friend. The items which measured the quantity of contact with the in-group friend ( $\alpha = .78$ ) and with the cross-group friend ( $\alpha = .84$ ) formed reliable scales.

Inclusion of other in the self. Inclusion of other in the self was measured through a single-item, pictorial measure of closeness (Aron et al., 1991). The item read: "In the

pictures below, please imagine that one circle stands for you and one stands for your friend. Please circle the picture that best describes how close you feel towards this friend." The participants were asked to rate the closeness of the nominated friend on a seven point pictorial scale (1 = low *closeness*; 7 = *high closeness*). Higher scores denoted higher levels of closeness with the nominated friend.

Friendship quality. A comprehensive 25-item friendship quality and closeness measure (Rose, 2002) was used to assess friendship quality for the nominated in-group and cross-group friends. Eight sub-scales tested a variety of friendship functions and qualities, namely companionship (e.g., "When there is free time at school, we are always together."), validation (e.g., "We make each other feel important and special."), conflict (e.g., "We argue a lot" (reverse coded)), conflict resolution (e.g., "We always get over our arguments really quickly."), intimate exchange (e.g., "I can think of lots of secrets we have told each other."), helping (e.g., "We always count on each other for ideas on how to get things done."), affective bond (e.g., "I feel happy when we are together.") with three items each. The final subscale emotional closeness (e.g., "This friend understands what I'm really like.") was measured with four items. All items were answered on a five-point scale (1 = *not at all true*, 2 = *a little true*, 3 = *somewhat true*, 4 = *pretty true*, 5 = *very true*). Higher scores denoted higher friendship quality. Two items were removed from the scale to improve the internal consistency of the measurement. The remaining 23 items which measured friendship quality for the in-group friend ( $\alpha = .87$ ) and the cross-group friend ( $\alpha = .93$ ) formed reliable scales. All items with reliabilities of the subscales can be found in Appendix A.

Trust. The respondents indicated on a four-item scale assessing how much they trusted the nominated in-group and cross-group friends (e.g., "This friend is often only concerned with their own wellbeing" (reverse coded), and "I have learned through

experience that, as much as I like this friend, I cannot really trust them.” (reverse coded). The respondents were asked to indicate their response on a five-point scale (1 = *strongly disagree*, 2 = *mostly disagree*, 3 = *neither agree nor disagree*, 4 = *mostly agree*, 5 = *strongly agree*). One item was removed from the scale to improve the internal consistency of the measurement. The remaining three items measuring trust with the in-group friend ( $\alpha = .67$ ) and the cross-group friend ( $\alpha = .71$ ) formed reliable scales.

## **Results**

### *Preliminary analysis*

Means, standard deviations and inter-scale correlations are displayed in Table 3. The length of the in-group friendship was positively associated with contact quantity with the in-group friend ( $r = .27, p < .05$ ) and trust in the in-group friend ( $r = .28, p < .05$ ). The relationship between length of friendship with the in-group friend and Inclusion of Other in the Self of the in-group friend was marginally significant ( $r = .23, p = .06$ ). The length of friendship with the in-group friend was unrelated to friendship quality with in-group friend ( $r = .13, p = .31$ ). Quantity of contact with the in-group friend was positively associated with Inclusion of Other in the Self of the in-group friend ( $r = .36, p < .01$ ), trust in the in-group friend ( $r = .26, p < .05$ ), friendship quality with the in-group friend ( $r = .27, p < .05$ ). Inclusion of Other in the Self of the in-group friend was positively associated with trust in the in-group friend ( $r = .26, p < .05$ ), and friendship quality with the in-group friend ( $r = .53, p < .01$ ). Trust in the in-group friend was positively associated with friendship quality with the in-group friend ( $r = .35, p < .01$ ).

The length of friendship with the cross-group friend was positively associated with the quantity of contact with the cross-group friend ( $r = .40, p < .01$ ), Inclusion of

Table 3: Means, Standard Deviations and Correlations among Key Variables (Study 2)

|                           | <i>M</i> | <i>SD</i> | 2    | 3     | 4    | 5     | 6     | 7     | 8     | 9     | 10    |
|---------------------------|----------|-----------|------|-------|------|-------|-------|-------|-------|-------|-------|
| 1. Friendship Length IG   | 62.72    | 41.62     | .27* | .23   | .28* | .13   | .53** | .14   | .11   | .08   | .18   |
| 2. Contact Quantity IG    | 3.87     | .94       | -    | .36** | .26* | .27*  | .40** | .53*  | .28** | .19   | .24*  |
| 3. IOS IG                 | 6.01     | 1.23      |      | -     | .26* | .53** | .24   | .17   | .28*  | .06   | .18   |
| 4. Trust IG               | 4.08     | .85       |      |       | -    | .35** | .24   | .16   | .11   | .51** | .23*  |
| 5. Friendship quality IG  | 4.26     | .63       |      |       |      | -     | .20   | .14   | .10   | .10   | .36** |
| 6. Friendship Length CG   | 41.37    | 32.44     |      |       |      |       | -     | .40** | .45** | .26*  | .24   |
| 7. Contact Quantity CG    | 2.57     | 1.04      |      |       |      |       |       | -     | .63** | .32** | .54** |
| 8. IOS CG                 | 4.47     | 1.73      |      |       |      |       |       |       | -     | .39** | .50** |
| 9. Trust CG               | 3.58     | .96       |      |       |      |       |       |       |       | -     | .54** |
| 10. Friendship quality CG | 3.61     | .85       |      |       |      |       |       |       |       |       | -     |

Note. \*  $p < .05$ , \*\*  $p < .01$ ;  $N = 83$ , IG = In-group friend, CG = Cross-group friend; IOS = Inclusion of other in the self.

Other in the Self of the in-group friend ( $r = .45, p < .01$ ) and trust in the in-group friend ( $r = .26, p < .05$ ). The relationship between length of friendship, and quantity of contact with the cross-group friend was marginally significant ( $r = .24, p = .07$ ). Quantity of contact with the cross-group friend was positively associated with Inclusion of Other in the Self of the cross-group friend ( $r = .63, p < .01$ ), trust in the cross-group friend ( $r = .32, p < .01$ ) and friendship quality with the cross-group friend ( $r = .54, p < .01$ ). Inclusion of Other in the Self of the cross-group friend was positively associated with trust in the cross-group friend ( $r = .39, p < .01$ ) and friendship quality with the cross-group friend ( $r = .50, p < .01$ ). Trust in the cross-group friend was positively associated with friendship quality with the cross-group friend ( $r = .54, p < .01$ ).

The length of friendship with the in-group friend was positively associated with length of friendship with the cross-group friend ( $r = .53, p < .01$ ). Length of friendship with the in-group friend was unrelated to contact quantity with the cross-group friend ( $r = .14, p = .28$ ), Inclusion of Other in the Self of the cross-group friend ( $r = .11, p = .38$ ), trust in the cross-group friend ( $r = .08, p = .52$ ), and friendship quality with the cross-group friend ( $r = .18, p = .14$ ). Contact quantity with the nominated in-group friend was positively associated with friendship length ( $r = .40, p < .01$ ), contact quantity ( $r = .53, p < .05$ ), Inclusion of Other in the Self of the cross-group friend ( $r = .28, p < .01$ ), and friendship quality with the cross-group friend ( $r = .24, p < .05$ ). The relationship between contact quantity with the in-group friend and trust in the cross-group friend was marginally significant ( $r = .19, p = .09$ ).

The relationship between Inclusion of Other in the Self of the in-group friend and the length of friendship with the cross-group friend was marginally significant ( $r = .24, p = .08$ ). Inclusion of Other in the Self of the in-group friend was unrelated to contact quantity with the cross-group friend ( $r = .17, p = .12$ ), trust in the cross-group friend ( $r =$

.06,  $p = .60$ ), and friendship quality with the cross-group friend ( $r = .18, p = .10$ ).

Inclusion of Other in the Self of the in-group friend was positively associated with

Inclusion of Other in the Self of the cross-group friend ( $r = .28, p < .05$ ).

The relationship between trust in the in-group friend and friendship length with the cross-group friend was marginally significant ( $r = .24, p = .07$ ). Trust in the in-group friend was unrelated to contact quantity with the cross-group friend ( $r = .16, p = .15$ ) and Inclusion of Other in the Self of the cross-group friend ( $r = .11, p = .35$ ). Trust in the in-group friend was positively associated with trust in the cross-group friend ( $r = .51, p < .01$ ) and friendship quality with the cross-group friend ( $r = .23, p < .05$ ). Friendship quality with the in-group friend was unrelated to friendship length with the cross-group friend ( $r = .20, p = .14$ ), contact quantity with the cross-group friend ( $r = .14, p = .21$ ), Inclusion of Other in the Self of the cross-group friend ( $r = .10, p = .37$ ) and trust in the cross-group friend ( $r = .10, p = .36$ ). Friendship quality with the in-group friend was positively associated with friendship quality with the cross-group friend ( $r = .36, p < .01$ ).

All correlations were in the expected direction. However, in the present study the variables measuring friendship length, contact quantity, Inclusion of Other in the Self, trust, and friendship quality with the in-group friend were significantly correlated with the corresponding cross-group friend measures. This could be due to shared method variance, whereby similar items are answered in a similar way. It is also possible that the respondents genuinely evaluated their in-group and cross-group friends in a similar way (e.g., similar levels of trust, similar friendship quality).



Table 4: *In-group and Cross-group Friendship Quality Comparisons (Study 2)*

| Pair | Variable               | Before controlling for length of friendship |      |          |    |                 |    | After controlling for length of friendship |     |          |    |                |    |
|------|------------------------|---------------------------------------------|------|----------|----|-----------------|----|--------------------------------------------|-----|----------|----|----------------|----|
|      |                        | Mean                                        | SE   | <i>t</i> | df | Sign. 2-tailed  | N  | Mean                                       | SE  | <i>t</i> | df | Sign. 2-tailed | N  |
| 1    | IOS IG                 | 6.01                                        | .14  | 7.55     | 81 | $p < .001$      | 82 | .17                                        | .17 | .67      | 46 | $p = .51$ n.s. | 47 |
|      | IOS CG                 | 4.49                                        | .19  |          |    |                 |    | -.01                                       | .24 |          |    |                |    |
| 2    | Quantity of Contact IG | 3.27                                        | .10  | 6.61     | 82 | $p < .001$      | 83 | .11                                        | .12 | .82      | 46 | $p = .42$ n.s. | 47 |
|      | Quantity of Contact CG | 2.57                                        | .11  |          |    |                 |    | -.01                                       | .14 |          |    |                |    |
| 3    | Friendship IG          | 4.26                                        | .07  | 6.95     | 82 | $p < .001$      | 83 | .01                                        | .09 | .55      | 46 | $p = .59$ n.s. | 47 |
|      | Friendship CG          | 3.61                                        | .09  |          |    |                 |    | -.06                                       | .12 |          |    |                |    |
| 3.1  | Validation IG          | 4.42                                        | .08  | 7.23     | 82 | $p < .001$      | 83 | -.01                                       | .11 | .02      | 46 | $p = .65$ n.s. | 47 |
|      | Validation CG          | 3.63                                        | .12  |          |    |                 |    | -.08                                       | .16 |          |    |                |    |
| 3.2  | Conflict IG            | 1.94                                        | .10  | -1.55    | 82 | $p = .12$ n. s. | 83 | -.06                                       | .12 | -1.39    | 46 | $p = .17$ n.s. | 47 |
|      | Conflict CG            | 2.10                                        | .11  |          |    |                 |    | .12                                        | .13 |          |    |                |    |
| 3.3  | Conflict Resolution IG | 4.08                                        | .12  | 3.56     | 82 | $p < .001$      | 83 | .07                                        | .16 | .29      | 46 | $p = .78$ n.s. | 47 |
|      | Conflict Resolution CG | 3.56                                        | .14  |          |    |                 |    | .02                                        | .19 |          |    |                |    |
| 3.4  | Help IG                | 4.35                                        | .10  | 5.54     | 82 | $p < .001$      | 83 | .00                                        | .14 | .53      | 46 | $p = .60$ n.s. | 47 |
|      | Help CG                | 3.65                                        | .13  |          |    |                 |    | -.09                                       | .16 |          |    |                |    |
| 3.5  | Affective Bond IG      | 4.49                                        | .08  | 5.73     | 82 | $p < .001$      | 83 | -.05                                       | .11 | .52      | 46 | $p = .61$ n.s. | 47 |
|      | Affective Bond CG      | 3.75                                        | .13  |          |    |                 |    | -.05                                       | .18 |          |    |                |    |
| 3.6  | Companionship IG       | 3.71                                        | .11  | 5.31     | 82 | $p < .001$      | 83 | .16                                        | .15 | .98      | 46 | $p = .33$ n.s. | 47 |
|      | Companionship CG       | 2.96                                        | .13  |          |    |                 |    | .01                                        | .16 |          |    |                |    |
| 3.7  | Emotional Closeness IG | 4.56                                        | .08  | 6.34     | 82 | $p < .001$      | 83 | .02                                        | .12 | .71      | 46 | $p = .48$ n.s. | 47 |
|      | Emotional Closeness CG | 3.79                                        | .13  |          |    |                 |    | -.11                                       | .17 |          |    |                |    |
| 3.8  | Intimate Exchange IG   | 3.76                                        | .11  | 5.28     | 82 | $p < .001$      | 83 | .06                                        | .15 | .55      | 46 | $p = .59$ n.s. | 47 |
|      | Intimate Exchange CG   | 3.07                                        | .13  |          |    |                 |    | -.04                                       | .17 |          |    |                |    |
| 4    | Trust IG               | 4.08                                        | .09  | 5.07     | 82 | $p < .001$      | 83 | .16                                        | .11 | 2.15     | 46 | $p < .05$      | 47 |
|      | Trust CG               | 3.58                                        | .11  |          |    |                 |    | -.14                                       | .14 |          |    |                |    |
| 5    | Friendship length IG   | 64.04                                       | 6.26 | 3.95     | 46 | $p < .001$      | 47 |                                            |     |          |    |                |    |
|      | Friendship length CG   | 41.83                                       | 5.11 |          |    |                 |    |                                            |     |          |    |                |    |

Note. Analysis: Paired t-test and residualised paired t-tests [Control variable: friendship length], IG = In-group friendship, CG = Cross-group friendship; IOS = Inclusion of Other in the Self.

### *Comparison of means*

Similar to Study 1, the present study focused on the comparison of in-group versus cross-group friendships. I used paired sample t-tests to compare the mean values of various measures of friendship quality and closeness for nominated in-group and cross-group friends.

The findings showed that on average the respondents were friends with their nominated in-group friend longer ( $M = 64.04$  months,  $SE = 6.26$ ) than with the nominated cross-group friend ( $M = 41.83$  months,  $SE = 5.11$ ) (Table 4). A paired sample t-test revealed that this difference was significant,  $t(46) = 3.95, p < .001$ . Furthermore, the respondents reported higher levels of Inclusion of Other in the Self of the in-group friend ( $M = 6.01, SE = .14$ ) compared to Inclusion of Other in the Self of the cross-group friend ( $M = 4.49, SE = .19$ ). The difference was significant,  $t(81) = 7.55, p < .001$ . When comparing the quantity of contact with the in-group friend ( $M = 3.27, SE = .10$ ) and the quantity of contact with the cross-group friend ( $M = 2.57, SE = .11$ ), the difference was significant,  $t(82) = 6.61, p < .001$ . The respondents reported higher friendship quality with their in-group friend ( $M = 4.26, SE = .07$ ) than with their cross-group friend ( $M = 3.61, SE = .09$ ). The difference was significant,  $t(82) = 6.95, p < .001$ .

Further paired sample t-tests revealed that the respondents rated their in-group friendships significantly higher on all subscales of the friendship quality measure (i.e., validation, conflict resolution, help, affective bond, companionship, emotional closeness, intimate exchange) except for conflict. When comparing conflict with an in-group friend ( $M = 1.94, SE = .10$ ) and conflict with a cross-group friend ( $M = 2.10, SE = .11$ ), no significant difference was found,  $t(82) = -1.55, p = .12$ . Furthermore, the data revealed that the respondents trusted their in-group friend ( $M = 4.08, SE = .09$ ) more than their cross-group friend ( $M = 3.58, SE = .11$ ). The difference was significant,  $t(82) = 5.07,$

$p < .001$ . The findings suggested that in-group friendships were perceived as higher in quality than cross-group friendships. In-group friendships were rated as more favourable than cross-race friendship on all scales except for conflict.

Residualized paired t-tests were used to compare the different measures of friendship quality for in-group versus cross-group friends while controlling for the length of friendship. When comparing Inclusion of Other in the Self of the in-group friend ( $M = .17, SE = .17$ ) and Inclusion of Other in the Self of the cross-group friend ( $M = -.01, SE = .24$ ), no significant difference was found  $t(46) = .67, p = .51$ . The difference between quantity of contact with the in-group friend ( $M = .11, SE = .12$ ) and cross-group friend ( $M = -.01, SE = .14$ ) was not significant,  $t(46) = .82, p = .42$ . When comparing friendship quality with the in-group friend ( $M = .01, SE = .09$ ) and the cross-group friend ( $M = -.06, SE = .12$ ), no significant difference was found,  $t(46) = .55, p = .59$ . Further residualized paired t-tests found no differences for the subscales of friendship quality (i.e., validation, conflict, conflict resolution, help, affective bond, companionship, emotional closeness, and intimate exchange) between in-group and cross-group friendships (see Table 4). The only exception was trust. The respondents trusted their in-group friends more ( $M = .16, SE = .11$ ) than their cross-group friends ( $M = -.14, SE = .14$ ) the difference was significant,  $t(46) = 2.15, p < .05$ .

Table 4 shows the number of cases included in each t-test. The drop in participants between the paired t-tests and residualized paired t-tests was due to missing data on the in-group and cross-group friendship length variables. The sample of 83 participants included missing data on the in-group friendship length (16 cases) and cross-group friendships length (26 cases) variables. As it was the purpose of the residualized paired t-tests to compare the quality and closeness of in-group and cross-group friendships while controlling for the length of friendship, only cases which

provided data on in-group and cross-group friendship length variables were included in the analyses (see Study 1).

## **Discussion**

The following paragraphs summarize the main findings of Study 2 and discuss to what extent the findings supported the hypotheses. The same hypotheses as in Study 1 were tested. Hypothesis 1 predicted that cross-group friendships will be rated as lower in quality and closeness than in-group friendships. Hypothesis 2 predicted that rating differences in the friendship quality between in-group and cross-group friendships could be explained through differences in the duration of in-group versus cross-group friendships. These differences would disappear when the length of friendship was controlled for.

The findings of the present study largely support these hypotheses. The findings revealed that friendships with the nominated cross-group friend were rated significantly lower in quality and closeness than in-group friendships. Paired sample t-tests revealed that the respondents spent more time with their in-group friends compared to their cross-group friends. The findings also showed that the respondents felt closer to their in-group friends than to their cross-group friend (Inclusion of Other in the Self). Paired sample t-tests further revealed that the respondents rated their in-group friendships significantly higher on all subscales of friendship quality (i.e., validation, conflict resolution, help, affective bond, companionship, emotional closeness, and intimate exchange) except conflict, which largely confirms Hypothesis 1. When comparing conflict with an in-group friend and conflict with a cross-group friend, no significant differences were found. The findings indicate that the level of conflict

between friends is similar regardless of whether the friend is an in-group or cross-group friend (or how long they have been friends for).

As predicted, the respondents had been friends with their nominated in-group friend longer than with the nominated cross-group friend. It was found that rating differences of quantity of contact and the closeness between in-group friendships and cross-group friendships disappeared when controlling for the length of friendship. Furthermore, when controlling for the length of friendship, no significant rating differences of friendship quality and its subscales (i.e., validation, conflict resolution, help, affective bond, companionship, emotional closeness, intimate exchange, conflict) were found when comparing in-group friendships to cross-group friendships. This supported the notion that rating differences between in-group friendship and cross-group friends were due to differences in the length of friendship. The findings supported Hypothesis 2.

The subscales affective bond, emotional closeness, and intimate exchange are measures that tap into friendship intimacy. For all three subscales no difference were found between in-group friends and cross-group friends, provided that length of friendship was controlled for. These findings contradict the findings of other authors, who did not control for the length of friendship and found that cross-group friendships were less intimate than in-group friendships (Aboud et al., 2003; Koa & Joyner, 2004).

In this study, however, I additionally compared trust towards the nominated in-group and cross-group friend. The findings showed that even when controlling for the length of friendship, the respondents trusted their in-group friends more, which contradicts Hypothesis 2. This is an interesting finding because intergroup trust is a key aspect in the development of positive intergroup relations. The finding may be explained due to the fact that trust is especially difficult to build in the intergroup

context (Tam, Hewstone, Kenworthy, & Cairns, 2009; Worchel, Cooper, & Goethals, 1991).

In their study on Northern Ireland, Tam and colleagues (2009) found that out-group trust and out-group attitudes were two distinct constructs, with different predictive power. In fact, intergroup trust was found to be a stronger predictor of behavioural tendencies than were positive out-group attitudes. Research findings suggest that trust is a more demanding criterion of intergroup relations than out-group attitudes. Trusting an out-group may potentially have risks for the self or the in-group (i.e., if the trust is betrayed), while this is not the case for positive out-group attitudes (Tam et al., 2009). Regarding the present study, the question is whether it is possible to maintain a close friendship with a person who is not trusted or not trusted entirely. There is a possibility that a lack of trust may put a strain on a friendship, which may cause it to be less close and less stable. This may be one explanation for the findings of some researchers suggesting that cross-group friendships are less close or less stable than in-group friendships (e.g., Aboud et al., 2003; DuBois & Hirsch, 1990; Rude & Herda, 2010).

According to Tam and colleagues (2009), in the intergroup context, liking is possible without trust, and trusting is possible without liking an out-group. I hypothesize that this should also apply for interpersonal relationships (e.g., cross-group friendships). It should therefore be possible to like a cross-group friend and maintain a friendship even without trusting them entirely.

## **General Discussion**

In this chapter, two empirical studies compared the quality of in-group friendships and cross-group friendships. After taking the duration of friendship into

account, both studies showed that overall in-group and cross-group friendships are perceived as similar to each other, fulfilling key functions of friendship.

Studies 1 and 2 investigated whether nominated cross-group friends are perceived as similar type of friends as nominated in-group friends. The findings of the present research showed that respondents had typically been friends with members of their own group for longer. The present study controlled for the length of friendship and showed that rating differences in friendship quality could largely be explained by the longer duration of in-group friendships compared to cross-group friendships.

For instance, Studies 1 and 2 showed that there were no differences in intimacy between in-group and cross-group friends, provided that the length of friendship was controlled for. The findings contradicted previous research, which found that cross-group friendships were less intimate than in-group friendships (Aboud et al., 2003; Kao & Joyner, 2004). However, the earlier studies did not control for the length of friendship.

The findings also revealed that there are significant differences in terms of trust. It was shown that the respondents trusted their in-group friends more than their cross-group friends, regardless of the duration of friendship. This may be due to the fact that intergroup trust is generally difficult to build (Tam et al., 2009). Overall, the present research showed that cross-group friends were rated as similar to in-group friends, each fulfilling key functions of friendship. The findings suggest that once a close friendship with a member of an out-group is built, differences in ethnic group membership play a subordinate role (see Aboud et al., 2003). The present research adds significantly to the work carried out by Aboud and colleagues (2003), who did not control for the length of friendship in their comparative study on same-race and cross-race friendships.

## **Summary**

Two studies looked at the quality of interpersonal friendships in the intergroup context. Initial analyses showed that in-group friendships were rated more positively than cross-group friendships. However, it was subsequently shown that differences in quality of the two friendship types could largely be explained through differences in the length of friendship. It was revealed that participants had been friends with members of their in-group for longer, but, when controlling for the length of friendship, both studies showed that in-group friendships and cross-group friendships fulfil similar functions and are of comparable quality. However, the findings also suggest that the respondents trusted their nominated cross-group friends less than their in-group friends. This may be due to the fact that trust is difficult to build, especially in an intergroup context (Tam et al., 2009; Worchel et al., 1991).



## CHAPTER FOUR

### Secondary Transfer Effects from Direct and Extended Cross- Group Friendships

#### The Secondary Transfer Effect

##### Generalization of Contact Effects

Meta-analytic findings show that intergroup contact typically reduces prejudice (Pettigrew & Tropp, 2006). However, the generalization of contact effects is crucial for the wider effectiveness of intergroup contact on prejudice reduction. Intergroup contact would be of limited value as an intervention without any generalization beyond the immediate contact situation. It is essential that the effects of cross-group friendship generalize beyond the specific contact experience to new situations (cross-situational generalization) and the out-group as a whole (primary transfer effect). Recent research findings have shown that contact effects may even generalize to uninvolved out-groups (Pettigrew, 1998, 2009; Pettigrew & Tropp, 2006; Tausch et al., 2010a). Pettigrew (2009) labelled this higher order generalization the *secondary transfer effect* (STE).

Research has shown that the beneficial effects of contact generalize broadly (Pettigrew & Tropp, 2006). While most studies included in Pettigrew and Tropp's (2006) meta-analysis tested the generalization of contact effects to the entire out-group, generalization across situations and to other uninvolved out-groups have rarely been considered (Pettigrew & Tropp, 2006). Pettigrew and Tropp's (2006) findings show substantial evidence for the prejudice-reducing effects of intergroup contact. The beneficial effects of intergroup contact were found to generalize across situations ( $r = -$

.24), to the whole out-group ( $r = -.21$ ), and towards other uninvolved out-groups ( $r = -.19$ ).

### **The Secondary Transfer Effect**

In recent years, an increasing number of researchers have studied the secondary transfer effect, by which intergroup contact with a primary out-group reduces prejudice towards secondary out-groups which are not involved in the contact (e.g., Pettigrew, 1997, 2009; Tausch et al., 2010a). Two underlying processes of the secondary transfer effect have been studied. One of the processes involved in the secondary transfer effect is *attitude generalization*. According to the attitude generalization hypothesis intergroup contact with one out-group improves attitudes towards this out-group and subsequently changes attitudes towards other out-groups (Pettigrew, 2009; Tausch et al., 2010a). The second process studied is *deprovincialization*. Pettigrew (1997) proposed that individuals engaging in intergroup contact gain insight that their in-group norms, customs, lifestyle are not the only acceptable ways of handling the social world, and become less provincial about their own group (Tausch & Hewstone, 2010). The new view of the in-group makes them more open and accepting about other out-groups, including groups they never had contact with (Tausch et al., 2010a). A growing number of studies provides evidence for a secondary transfer effect of intergroup contact (e.g., Clement et al., 1977; Eller & Abrams, 2004; Harwood et al. 2011; Pettigrew, 1997, 2009; Schmid, Hewstone, Küpper, Zick, & Wagner, 2012; Tausch et al., 2010a; van Laar et al., 2005; Vezzalli & Giovannini, 2011; Weigert, 1976; Wilson, 1996). In the following paragraphs I will review the empirical evidence for the secondary transfer effect to date.

Weigert (1976) provided initial evidence of the secondary transfer effect. The author looked at contact experiences between White and Black United States Army soldiers who were stationed in Germany. Weigert (1976) found that intergroup contact with White soldiers predicted more positive attitudes towards White soldiers and German civilians. There was a significant negative zero-order correlation ( $r = -.18$ ) between Black's contact with white US soldiers and negative attitudes towards Germans. The relationship remained significant even when controlling for previous contact with Germans, ideological orientation, and a range of demographic variables.

Clement et al. (1977) studied the effect of intergroup contact with French Canadians on English-speaking Canadian pupils. The authors studied the relationship of frequency of the pupils' contact with residents of Quebec during an excursion programme and attitudes towards French Canadians. The experimental group was divided into students who reported high and low amounts of contact with French Canadians. The control group consisted of pupils who did not take part in the excursion. The experimental groups and the control group were tested four weeks before and after the trip. Clement et al. (1977) found that pupils who had high levels of contact with the residents of Quebec held more favourable attitudes towards French-speaking Canadians as well as toward European French people. A considerably weaker effect was found for those who reported low levels of intergroup contact. The authors only found minor differences in attitudes between students who had low amounts of contact with French-speaking Canadians and those who did not take part in the excursion. Thus, Clement et al.'s (1977) study provided initial support for the secondary transfer of intergroup contact. However, the authors did not control for contact with the secondary out-group (European French people). It is possible that pupils who had intergroup contact with the primary out-group (French-speaking Canadians) also had contact with European

French people, which may have produced a spurious secondary transfer effect (the so-called 'secondary contact problem', see Tausch et al., 2010a). However, it does seem unlikely that the Canadian students previously had contact with European French people (Clement et al., 1977).

Wilson (1996) conducted a study based on data from the General Social Survey (1990) of the National Opinion Research Centre (NORC). The author examined a probability subsample of white, adult, non-Jewish Americans. Wilson (1996) found that contact with African Americans in different settings (i.e., workplace, church, neighbourhood, home) was associated with reduced stereotyping and reduced social distance from African Americans. Additionally, contact with African Americans predicted more positive attitudes towards Jews, Latinos and Asian Americans. A limitation of the study is that Wilson (1996) did not control for contact with the secondary out-groups.

Pettigrew (1997) provided a test of the secondary transfer effect using seven national probability samples from four European countries. He studied the respondents' contact (especially through friendship) with members of nationally represented minority groups in France, Great Britain, the Netherlands, and West Germany. Intergroup contact was measured broadly as contact with people of another nationality, race, religion, culture or social class. Pettigrew (1997) studied a variety of minority target groups. Turkish immigrants were the target group for West Germany. The target groups for each of the remaining samples were North Africans and Asians (Vietnamese, Cambodians) in France, Surinamese and Turks in the Netherlands, and West Indians and Asians (Pakistanis, Indians) in Great Britain.

Pettigrew (1997) found that intergroup contact was a strong predictor of reduced out-group prejudice. This was even true for a variety of target out-groups,

some of which were only sparsely represented in the country (e.g., Turks in France, West Indians in Germany). The secondary transfer effect was the strongest for immigrant groups (North Africans, Turks, Black Africans, Southeast Asians, Indians and Pakistanis, West Indians) and smallest for non-immigrant groups (Jews, Southern Europeans, and Northern Europeans). The effects were mediated via empathy, identification with out-group, and deprovincialization. The findings remained significant even when controlling for political conservatism, group relative deprivation, political interest, national pride, urbanism, education, and age.

Pettigrew's (1997) findings provided support for the secondary transfer effect. However, there were two important limitations of the study. Firstly, the intergroup contact measure used in this study did not specify the precise out-group involved. Secondly, the author did not control for contact with the various secondary out-groups. However, some out-groups were not or only sparsely represented in the country, which makes it unlikely that the respondents previously had contact with them.

Eller and Abrams (2004) provided the first longitudinal field test of the secondary transfer effect. Based on a sample of 34 British undergraduate students, the authors studied contact between British students and French exchange students. They found that friendship with French exchange students predicted more favourable attitudes towards French people and Algerians six months later. The effect was mediated through affective ties with the French. Eller and Abrams (2004) provided longitudinal support for the secondary transfer effect. However, two limiting factors need to be taken into consideration. Firstly, due to a high attrition rate, the study was based on a very small sample size. Secondly, the authors did not control for contact with the secondary out-group (Algerians). It is possible, though not likely, that the respondents previously had contact with Algerians.

Van Laar et al. (2005) tested prejudice as a function of living with one or more interethnic roommates. The authors conducted a large-scale natural field experimental test of contact theory at the University of California, Los Angeles (UCLA). They made use of a five-wave longitudinal design with data collected over a period of four years (1996 to 2000). Approximately 2000 students participated in the study. The dataset was composed of members of the major ethnic groups in the area, namely Whites, Asians, Latinos, and African Americans. Roommates were randomly assigned in their first year and voluntarily chosen in the students' second and third year of study. The effect of voluntary long-term contact on prejudice was tested while controlling for pre-existing attitudes. Out-group attitudes were assessed using affective (e.g., negative feelings, intergroup anxiety), cognitive (e.g., symbolic racism, social dominance orientation, anti-miscegenation attitudes), and behavioural (e.g., friendship heterogeneity, interethnic dating) indicators of prejudice.

Consistent with contact theory, van Laar et al. (2005) found that students who were randomly assigned to live with out-group roommates at the start of their first year showed improved out-group attitudes by the end of the year. They found that living with a randomly assigned or voluntarily chosen out-group roommate generally reduced prejudice toward the roommate's racial group as a whole. Living with roommates from ethnic out-groups decreased affective, cognitive, and behavioural indicators of prejudice. However, the effect of roommate contact also depended on the ethnic group membership of the roommate. The prejudice reducing effect was especially strong when it came to having an African American roommate. Having an African American roommate increased positive affect towards African Americans; it lowered symbolic racism, and increased ethnic heterogeneity of the respondent's circle of friends.

Additionally, the authors found that these contact effects generalized to other, uninvolved out-groups. Having an African American roommate did not only predict more favourable attitudes towards African Americans, but also towards Latinos and vice versa ('Cross-over effect', van Laar et al., 2005; or 'Secondary transfer effect', Pettigrew, 2009). The effects were obtained while controlling for contact with the other, secondary out-group. The authors explained the strong generalization of contact effects between African American and Latino students due to the similarly low social status of both groups. Additionally, African American students are more likely to be friends with Latinos and vice versa, than having Asian or white friends (see Levin et al., 2003). According to van Laar et al. (2005) more positive feelings towards the non-roommate group can possibly be explained due to contact with roommates' circle of friends (e.g., repeated visits, parties) or the mere knowledge that one's roommate has friends from that specific out-group (i.e., African Americans or Latinos respectively) ('extended contact effects', Wright et al., 1997).

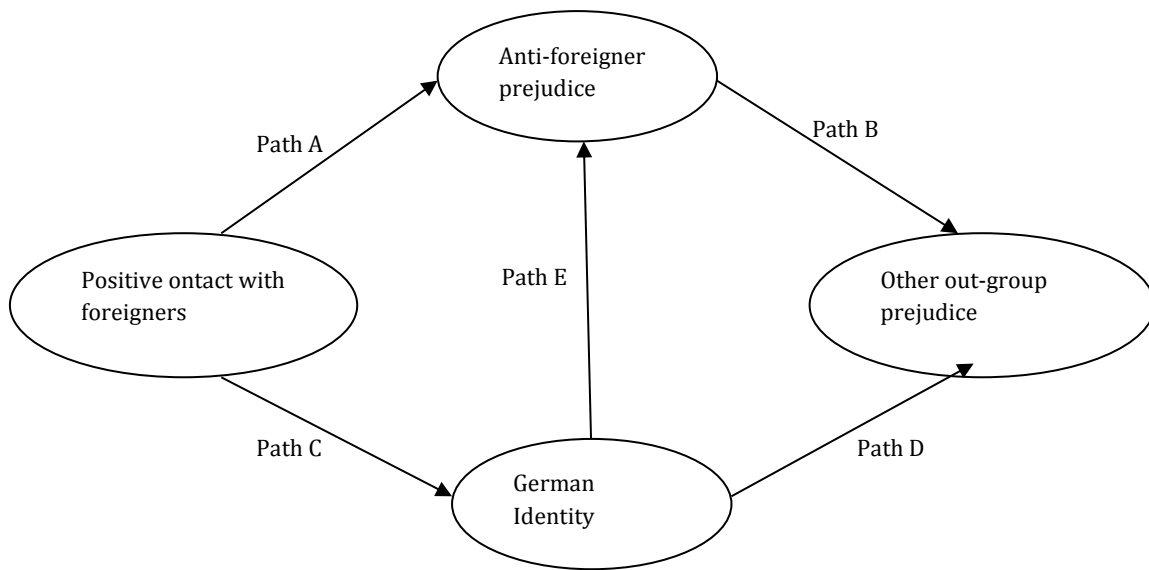
However, the authors also found that contact with Asian American roommates *increased* prejudice among Black and White students. Van Laar and colleagues (2005) considered two possible explanations for this unexpected finding. Firstly, Asian Americans may be perceived as the 'model minority' in the US. There is a relatively high likelihood of a negative social comparison between Asian Americans and other ethnic minorities with lower social status (e.g., African Americans, Latinos). Secondly, these findings may be explained with 'peer socialization', whereby students' attitudes may have converged with those of their highly prejudiced Asian American roommates. In van Laar et al.'s (2005) study Asian American students showed the highest level of out-group prejudice.

Pettigrew (2009) named the generalization of contact effects to non-encountered out-groups a *secondary transfer effect* of intergroup contact (p. 55). He published the first research paper that focused primarily on the secondary transfer effect and its underlying processes. Based on two independent German probability samples, Pettigrew (2009) found that positive contact with foreigners predicted more positive attitudes towards foreigners. He tested whether contact with foreigners also predicted more positive attitudes towards six other out-groups that were not involved in the contact (resident foreigners, Muslims, homeless people, gays, lesbians, non-traditional women). He found support for the secondary transfer effect. Pettigrew (2009) found that the relationship between contact with foreigners and attitudes towards homeless people and homosexuals was mediated via anti-foreigner attitudes. However, one important limitation of the study is that Pettigrew (2009) did not control for contact with the secondary out-group.

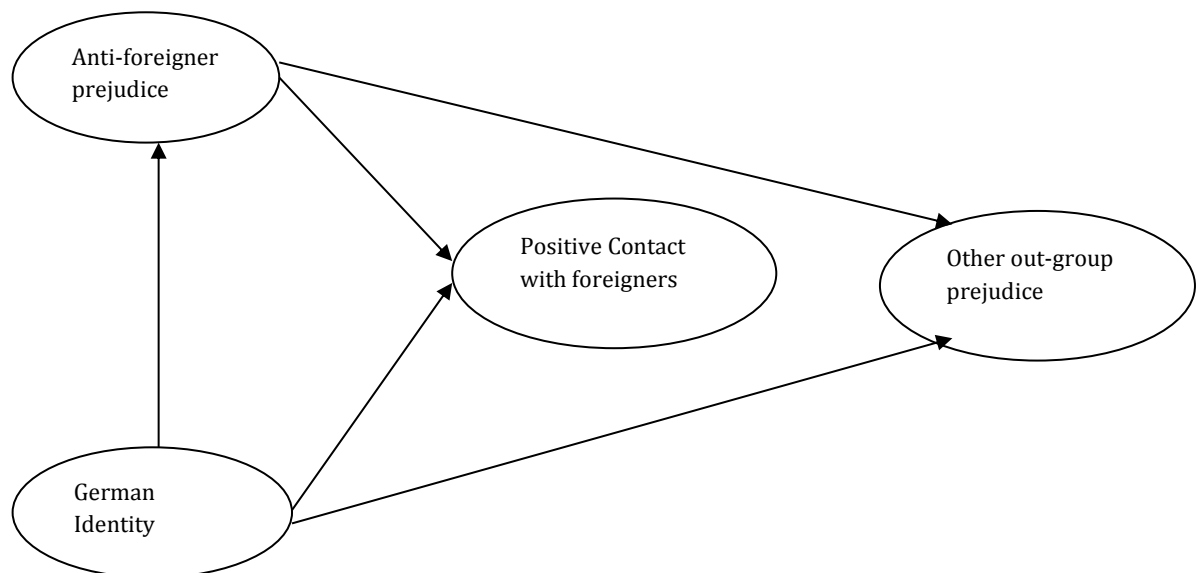
The strength of the secondary transfer effect varied between out-groups. Pettigrew (2009) found the strongest effects for attitudes towards Muslims, homeless people, gays, and lesbians. He found weak and inconsistent effects for attitudes towards Jews. According to Pettigrew (2009), the strength of the secondary transfer effect was determined by a combination of stimulus generalization and intensity of the stigma. Pettigrew (2009) tested two rival structural equation models (SEM) (Figure 1). Two central variables can be found in both models, which are prejudice against primary out-group, and group identity of the respondents.



### Model A Mediated model for Secondary Transfer



### Model B General Prejudice Model



*Figure 1.* Rival Models (A) mediated model for secondary transfer effect versus (B) general prejudice model tested in Pettigrew (2009, p. 59).

Model A is a mediated model for the secondary transfer effect. The model suggests that prejudice reduction towards the primary out-group generalizes to attitudes towards uninvolved secondary out-groups. In this model intergroup contact with foreigners comes first in the sequence. The first mediation hypothesis predicts that intergroup contact reduces anti-foreigner prejudice. Reduced prejudice against foreigners, in turn, generalizes and reduces prejudice against other uninvolved out-groups. The second mediation hypothesis predicts that intergroup contact with foreigners reduces the strength of in-group identity, which leads to a reduction in prejudice against the primary and the secondary out-group ('deprovincialization', Pettigrew, 1997, 1998).

Model B depicts the generalized prejudice model, whereby prejudice against foreigners and German national identity predict both positive contact with foreigners and prejudice against uninvolved out-groups. According to this model, the secondary transfer effect can be explained through a generally higher level of tolerance towards foreigners and diminished national identity both of which occur prior to contact. According to the generalized prejudice model the secondary transfer effect is a direct product of reduced prejudice against foreigners and lowered national identification.

Model A explains the secondary transfer effect as due to positive intergroup contact, while Model B explains the secondary transfer effect in terms of general tolerance for out-groups. There is no direct path from positive contact with the primary out-group, immigrants in Germany, to reduced prejudice towards secondary out-groups in either of the models.

Pettigrew's (2009) data supported the secondary transfer model (Model A). He found that improved attitudes towards immigrants mediated the relationship between contact with foreigners (primary out-group) and attitudes towards homosexuals and

homeless people (secondary out-groups) (attitude generalization). Pettigrew (2009) found that reduced national pride was a partial mediator in the relationship between contact with the primary out-group (foreigners) and the secondary out-groups (homeless people, homosexuals). He found that reduced German identity mediated the relationship between contact with foreigners and attitudes towards homeless people and homosexuals. Pettigrew (2009) found that both attitude generalization and deprovincialization are mediators of the secondary transfer effect. However, he found that the mediation via anti-foreigner prejudice (attitude generalization) was stronger than via German national identity (deprovincialization), indicating that attitude generalization is a stronger mediator of the secondary transfer effect.

Tausch and colleagues (2010a) provided a thorough test of the secondary transfer effect and its underlying processes, while systematically ruling out alternative explanations of the effect. The authors conducted three cross-sectional survey studies in Cyprus (Study 1), Northern Ireland (Study 2), the United States of America (Study 3), and a longitudinal study in Northern Ireland (Study 4). In Study 1, the authors found that contact between Greek and Turkish Cypriots improved attitudes towards mainland Greeks and Turks. The effect was mediated via improved attitudes towards the Cypriot out-group. In Study 2, the authors found that intergroup contact between Catholics and Protestants in Northern Ireland improved attitudes towards racial minorities in Northern Ireland. The authors controlled for intergroup contact with the secondary out-group. The effect was mediated via more positive attitudes towards the ethno-religious out-group. In Study 3, Tausch et al. (2010a) studied White American and Black American students in intergroup friendship with Hispanics. Intergroup friendship with Hispanics predicted more favourable attitudes towards Vietnamese and East Indian immigrants. The relationship was mediated via more positive attitudes towards

Hispanics. The results were obtained while controlling for intergroup friendships with the secondary out-group. The authors also controlled for individual differences in social desirability in this study. In Study 4, Tausch et al. (2010a) conducted a longitudinal test of the secondary transfer effect. The authors found that intergroup contact between Catholics and Protestants predicted more positive attitudes towards racial minorities in Northern Ireland. The relationship was mediated via improved attitudes towards the ethno-religious out-group. The findings were obtained while controlling for contact with the secondary out-group.

Tausch et al. (2010a) also considered reverse secondary transfer effect models for studies 2 to 4. The authors tested whether intergroup contact with the secondary out-group predicts more positive attitudes towards the primary out-group. They found support for a reverse secondary transfer effect in Studies 2 and 3. These findings suggested that the secondary transfer effect was bidirectional. The reverse secondary transfer effect model was not confirmed longitudinally (Study 4).

Tausch et al. (2010a) tested attitude generalization and deprovincialization as potential mediators of the secondary transfer effect of intergroup contact. The attitude generalization hypothesis was supported across all four studies. The relationship between intergroup contact with the primary out-group and attitudes towards the secondary out-group was significantly mediated via improved attitudes towards the primary out-group across all four studies. The results even held when controlling for contact with the secondary out-groups (Studies 2-4). While the attitude generalization hypothesis received substantial support from three cross-sectional studies (Studies 1-3) and one longitudinal study (Study 4), the deprovincialization hypothesis was only confirmed in Study 1. Tausch et al.'s (2010a) findings provided strong evidence for

attitude generalization as a mediator of the secondary transfer effect, but only limited support for in-group reappraisal.

Tausch et al. (2010a) included various control variables to rule out alternative explanations of the secondary transfer effect. Studies 2 to 4 controlled for direct contact with the secondary out-group(s). The results were still significant which indicated that the secondary transfer effect cannot be explained due to the fact that respondents have more contact with other out-groups as well (*secondary contact problem*). Additionally, Study 3 controlled for social desirability, as higher levels of contact and more positive attitudes towards various groups could be due to socially desirable responding (*social desirability problem*). The authors were able to rule out the possible explanation that the secondary transfer effect can be explained through the respondents' response set. Furthermore, most studies examining the secondary transfer effect and intergroup contact in general are based on cross-sectional data. It is possible that contact does not reduce prejudice, but that generally more tolerant people with lower levels of prejudice seek out intergroup contact with members of various out-groups (*causal sequence problem*).

Vezzalli and Giovannini (2011) studied the secondary transfer effect of intergroup contact cross-sectionally using a sample of Italian secondary school pupils. The authors found that intergroup contact with immigrants predicted not only more favourable attitudes towards immigrants, but also towards disabled people and homosexuals, two dissimilar out-groups that were not involved in the contact. The effect of previous contact with the secondary out-groups was controlled for.

Additionally, the authors found evidence for the secondary transfer effect of intergroup anxiety and perspective taking. Intergroup anxiety and perspective taking are two variables, which are known to mediate the contact-prejudice relationship

(Pettigrew & Tropp, 2008). Vezzalli and Giovannini (2011) found that reduced intergroup anxiety with immigrants was indirectly associated with reduced intergroup anxiety with the secondary out-groups. Increased perspective taking with the primary out-group was indirectly associated with increased perspective taking towards the secondary out-groups.

Schmid et al. (2012) tested the secondary transfer effect using data of the general population from eight European countries. The authors found that intergroup contact with immigrants was associated with more favourable attitudes towards homosexuals and Jews. The indirect effect was mediated via more positive attitudes towards immigrants, which provided further support for the attitude generalization hypothesis. Schmid et al. (2012) found that the indirect effect was moderated by social dominance orientation. Social dominance orientation, a personality variable that is known to be linked strongly to prejudice (e.g., Pratto et al, 1994) was tested as moderator in this study. The authors found that the indirect effect of intergroup contact with immigrants on attitudes towards homosexuals and Jews was even more pronounced among individuals who scored low in social dominance orientation. The secondary transfer effect was confirmed in seven out of the eight national samples they tested. The results held even when controlling for demographic variables, such as political orientation. However, a limiting factor is that the authors were not able to control for intergroup contact with the secondary out-groups. There is a possibility that the respondents did not only have contact with immigrants, but also with homosexuals and Jews.

Harwood et al. (2011) provided experimental evidence for the secondary transfer effect of intergroup contact. The authors made use of an imagined contact paradigm. Participants were instructed to imagine either a positive interaction with an illegal immigrant, a negative interaction with an illegal immigrant or an outdoor scene

(control group). Participants in the positive imagined contact condition (as opposed to the negative imagined contact condition or the control condition) showed more positive attitudes towards illegal immigrants as well as Mexican-Americans, legal immigrants, Asian-Americans, homeless people, political refugees, Black people, democrats, and professors. The effect was mediated via more positive attitudes towards illegal immigrants (attitude generalization). No secondary transfer effects were found for the negative contact condition or the control condition. The effects of positive imagined contact were found to generalize to other uninvolved out-groups. This applied especially for groups that were previously rated as similar.

### ***Mediators of the secondary transfer effect***

Two underlying processes of the secondary transfer effect have been studied, namely attitude generalization and deprovincialization (Pettigrew, 1997, 2009; Tausch et al., 2010a). In the following paragraphs, I will review the evidence for both mediators.

#### ***Attitude generalization hypothesis***

Attitude generalization is a process by which attitudes towards one attitude object generalize to other related, but less familiar attitude objects (Tausch et al., 2010a). The effect was shown in different areas of research (e.g., Fazio, Eiser & Shook, 2004; Shook, Fazio & Eiser, 2007; Walther, 2002). The generalization tends to be greater when attitude objects are similar (Fazio et al., 2004). According to the attitude generalization hypothesis, intergroup contact with one out-group improves attitudes towards this out-group and subsequently changes attitudes towards other out-groups (Pettigrew, 2009). Attitudes towards the primary out-group mediate the relationship between contact with the primary out-group and attitudes towards the secondary out-

group (Lolliot et al., 2012; Pettigrew, 2009; Tausch et al., 2010a). Attitude generalization has been tested in several studies as a mediator of the secondary transfer effect. There is empirical support for it as a mediating mechanism of the secondary transfer effect (e.g., Eller & Abrams, 2004; Harwood et al., 2011; Pettigrew, 2009; Schmid et al., 2012; Tausch et al., 2010a). It has been suggested that the secondary transfer effect is stronger when the groups are similar to each other (Tausch et al., 2010a).

One important threat to the validity of previous findings on the attitude generalization hypothesis is the possibility that the effect can be explained due to shared method variance (see e.g., Harwood et al., 2011; Tausch et al., 2010a), as in many cases researchers used identical measures and rating scales to assess intergroup contact with and attitudes towards the multiple out-groups. There is a possibility that similar measures are answered in a similar way, which may inflate the effect between variables (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). However, Pettigrew (2009) used different attitude measures in his study and still found support for the attitude generalization hypothesis. This supports the notion that the findings cannot simply be explained due to shared method variance.

#### *Deprovincialization hypothesis*

Pettigrew (1997) proposed that generalization happens through the process of *deprovincialization*. Individuals engaged in contact get insight that their in-group norms, customs, and lifestyle are not the only acceptable ways of handling the social world, and thereby become less provincial about their own group. The new view of the in-group makes them more accepting of out-groups, including groups they never had contact with. So far research has yielded mixed evidence for this deprovincialization



hypothesis. Some studies support deprovincialization as a mediator of the secondary transfer effect (e.g., Pettigrew, 2009; Tausch et al. 2010a, Study 1) and others do not (e.g., Tausch et al., 2010a, Studies 2-4). Overall, research has yielded strong support for attitude generalization as a mediating mechanism of the secondary transfer effect, while the evidence for deprovincialization as a mediating process is mixed (Tausch et al., 2010a).

### ***Moderator of the secondary transfer effect***

#### *The similarity gradient*

It has been suggested that a similarity gradient may act as moderating variable of the secondary transfer effect (see Lolliot et al., 2012). Pettigrew (2009) found that the secondary transfer effect of intergroup contact works better for some groups than for others. He found that the strength of the secondary transfer effect varies across out-groups. According to Pettigrew (2009) stimulus generalization in combination with intensity of stigma operate in the generalization process. Research has shown repeatedly that the secondary transfer effect is strongest for out-groups that are closely related to the encountered primary out-group (e.g., French-speaking Canadians and French Europeans, White US soldiers and German civilians) or equally stigmatized (e.g., homeless people, homosexuals). According to Pettigrew (2009) the degree of generalization depends on the similarity of stigma, stereotypes or status of the groups. Research has found stronger generalization between groups that are perceived as similar to each other on one or more dimensions. However, similarity has yet to be tested directly as moderator of the secondary transfer effect. Research findings support the notion that attitude generalization is most effective when the groups involved are

either similar to each other, equally stigmatized, or both (e.g., Eller & Abrams, 2004; Harwood et al., 2011; Pettigrew, 2009; van Laar et al., 2005).

Goffman's (1963) typology of social stigma can be applied to the research on the secondary transfer effect (see Lolliot et al., 2012; Schmid et al., 2012). According to Goffman (1963) social stigma falls into one of three categories: 'tribal stigma' (e.g., devalued ethnic, racial or religious groups), 'abominations of the body' (e.g., physical handicapped groups), and 'blemishes of individual character' (e.g., homosexuals, homeless people, drug addicts). Lolliot et al. (2012) relabelled these categories into a more contemporary language as category stigma, physical stigma, and character stigma. Schmid et al. (2012) argued that some research showed generalization for groups within one category, but research has also shown that attitude generalization works between categories. There is a possibility that respondents viewed the groups as related on a different (less obvious) dimension. Generalization may happen between even seemingly 'unrelated' groups. The perceived similarity could be based on a similar stereotype, or prior experiences with the out-groups (Schmid et al., 2012).

Harwood et al. (2011), for instance, tested the 'similarity gradient' in their study. Raters were asked to rate the similarity of 20 different out-groups compared to illegal immigrants (the primary out-group). The authors found stronger secondary transfer effects for out-groups which were rated similar to the primary out-group compared to those which were rated as dissimilar.

## **Summary**

In recent years researchers have tested the secondary transfer effect, by which intergroup contact with a primary out-group reduces prejudice towards secondary out-group, which are not involved in the contact (Pettigrew, 2009). An increasing body of

research has found evidence for the secondary transfer effect comes from cross-sectional (e.g., Pettigrew, 1997, 2009; Tausch et al., 2010a, Studies 1-3; Weigert, 1976), longitudinal (e.g., Eller & Abrams, 2004; van Laar et al., 2005; Tausch et al. 2010a, Study 4), and experimental (e.g., Harwood et al., 2011; van Laar et al., 2005) studies. Harwood et al. (2011) did not only provide experimental evidence for the secondary transfer effect, but also showed that indirect forms of contact (imagined contact) yield secondary transfer effects.

Two main underlying processes have been tested in connection with the secondary transfer effect, namely attitude generalization and deprovincialization. While the evidence for deprovincialization has been mixed (Tausch et al., 2010a), attitude generalization received strong support as a mediating mechanism from several studies (e.g., Pettigrew, 2009; Schmid et al., 2012; Tausch et al., 2010a). Furthermore, research provided evidence for the moderating role of a similarity gradient. There is also evidence that attitude generalization works best when the groups involved are similar to each other (e.g., Harwood et al., 2011; Pettigrew, 2009).

## **Indirect Forms of Intergroup Contact**

Research on contact theory has mainly been based on direct, face-to-face encounters or retrospective reports about such direct intergroup contact. Under some circumstances, however, opportunities for direct intergroup contact may not be given. Practical obstacles may prevent direct contact (e.g., segregation or an ongoing intergroup conflict) (Dovidio et al., 2011; Hewstone & Swart, 2011; Tausch & Hewstone, 2010). In recent years alternative forms of intergroup contact that go beyond direct face-to-face interaction with members of the out-group have been tested.

A new development in intergroup contact research is the idea that prejudice reduction may also take place through indirect experiences of intergroup contact (Dovidio et al., 2011). Researchers have tested the effects of extended contact (i.e., learning that an in-group member has close relations with an out-group member), vicarious contact (i.e., observing the interaction between an in-group member and an out-group member), and imagined contact (i.e., imagining an interaction with an out-group member). The prejudice-reducing effects of the different forms of indirect intergroup contact have received empirical support (Crisp & Turner, 1999; Mazziotta et al., 2011; Schiappa et al., 2005; Tausch et al., 2011; Turner et al., 2007a; Wright et al., 1997; see Dovidio et al., 2011, for a review).

### **The Extended Contact Effect**

The extended contact hypothesis (Wright et al., 1997) predicts that the mere knowledge that an in-group member has a close relationship with an out-group member can reduce prejudice towards that out-group (Tausch et al., 2011; Wright et al., 1997). Among the different forms of indirect intergroup contact, the extended contact hypothesis is the most researched and has received support from correlational and experimental studies (e.g., Cameron, Rutland, Hossain, & Petley, 2011; Dhont & van Hiel, 2011; Eller et al., 2011, 2012; Gómez et al., 2011; Liebkind & McAlister, 1999; Tausch et al., 2011; Turner, Hewstone, Voci, & Vonofakou, 2008; Wright et al., 1997; see Dovidio et al., 2011, for a review).

Wright et al. (1997) formulated the extended contact hypothesis and provided first empirical support for the prejudice-reducing effect of extended contact in two correlational (Studies 1-2) and two experimental (Studies 3-4) studies. Study 1 tested the relationship between knowledge of in-group members' cross-group friendships, and

out-group prejudice. White Americans (majority group) were asked about their cross-group friendships with and attitudes towards three minority target groups, namely Asian Americans, African Americans, and Latinos. The study was designed as a within-subject comparison, with respondents answering questions about all target groups. The authors tested whether respondents showed lower levels of prejudice towards target groups where they knew of cross-group friendships with members of their in-group. The within-subject design (repeated measures) enabled the authors to compare the respondents' extended contact and prejudice across the different out-groups while holding dispositional variables constant (e.g., having out-group friends, prejudice). Wright et al. (1997) tested the predictions of the extended contact hypothesis. White respondents who knew at least one in-group member who had an out-group friend of a particular out-group expressed lower levels of prejudice towards that out-group, compared to respondents who did not. The higher the number of in-group members' friends who had a friend from a particular out-group, the lower the levels of prejudice reported by the respondents. The results were obtained while controlling for the respondents' own cross-group friendship with members of the target groups.

Study 2 replicated and extended the findings of Study 1. In addition to the sample of White Americans, the authors tested a sample of ethnic minority respondents (Asian Americans, African Americans, Latinos). All respondents reported knowing at least one in-group member who had a cross-group friend. The higher the number of in-group members with out-group friendships the lower the level of prejudice. The findings between the minority and majority group sample were largely consistent with each other. The greater the number of in-group members with out-group friendships the lower the level of prejudice. The findings remained significant even after controlling for the respondents' direct cross-group friendships.

Study 3 tested the predictions of the extended contact hypothesis experimentally. Firstly, inspired by the Robbers Cave studies (Sherif, Harvey, White, Hood, & Sherif, 1961) the authors created intergroup conflict between two experimentally created groups. The participants carried out a series of competitive group tasks in order to create group rivalry. Secondly, one participant from each group was randomly selected to take part in a cooperative game. The goal was to create interpersonal closeness between the two selected members of the rival groups. Thereafter, the two participants were reunited with their original groups and reported about their intergroup experience. Next, a final competitive task between the groups was carried out. After the indirect experience of extended intergroup contact, the group members showed less in-group favouritism and perceived the out-group more positively compared to before the intervention.

In Study 4, Wright et al. (1997) provided an experimental test of the extended contact hypothesis using a modified minimal group paradigm (Tajfel, Billig, Bundy, & Flament, 1971). According to Tajfel and colleagues (1971) the mere categorization of individuals to different groups leads to discrimination in favour of the in-group (e.g., allocation of resources, evaluation). In Wright and colleagues' (1997) study, participants were led to believe that they were assigned to one of two groups based on their performance of an estimation task, although group allocation was in fact random. The participants observed an interaction between a member of their group and a member of the out-group, who were confederates of the experimenters. Three experimental conditions were tested. Using verbal and non-verbal cues the participants observed the in-group member interacting either with a close friend (friendly), a stranger (neutral), or a disliked acquaintance (hostile). The authors assessed the participants' in-group bias after the intervention. They found that in the friend condition out-group members

were evaluated more positively (less negative attitudes, less bias towards out-group) than in the neutral or hostile conditions.

Thus, Wright and colleagues (1997) provided initial support for the extended contact hypothesis from correlational and experimental studies. The two correlational studies involved real life groups and the experimental studies used laboratory induced friendship and social identity. While no causal inferences can be drawn from the two studies based on survey data, the experimental nature of the latter studies allowed the authors to draw inferences about the direction of cause and effect. The findings indicated a causal relationship from extended intergroup contact to more positive attitudes.

### ***Mediators of the extended contact effect***

Wright and colleagues (1997) suggested four different mechanisms that may underlie the extended contact effect and provided initial evidence for them, which were positive in-group exemplar (in-group norms), positive out-group exemplar (out-group norms), intergroup anxiety and the inclusion of other in the self. The mediators of extended contact were tested systematically by Turner et al. (2008).

#### ***Positive in-group exemplar (In-group norms)***

The effect of extended cross-group friendships can be partly explained through the change of perceived in-group norms. The mere knowledge that an in-group member has a close relationship with a member of an out-group helps to make positive intergroup relations normatively acceptable (Pettigrew et al., 2011). Positive intergroup interaction between an in-group and an out-group member was associated with tolerant in-group norms and positive intergroup attitudes (Turner et al., 2008; Wright

et al., 1997). The in-group member can serve as point of reference about how to interact with a member of the out-group. Additionally, communication with in-groups members may provide information about the out-group and, thus, reduce ignorance towards them (Eller et al., 2011).

#### *Positive out-group exemplar (Out-group norms)*

Wright et al. (1997) argued that the observation of friendly behaviour of out-group members towards in-group members may lead to the perception that the out-group feels positively about the other group and is interested in harmonious intergroup relations. If there is a perception that out-group members are interested in friendly intergroup relations, then the in-group is more likely to feel the same way (Turner et al., 2008).

This could provide information about the norms and attitudes of the out-group and change negative stereotypes. In extended contact situations group membership is likely to be salient which is important for the generalization of contact effects and prejudice reduction. Attitude generalization is more likely to happen when group membership is salient and when the out-group is perceived as homogeneous. In-group members must be recognized as such and out-group members should be perceived as representative of the out-group in order for the effects to generalize (Brown & Hewstone, 2005; Hewstone & Brown, 1986). If out-group members are seen as representative of their group the perceiver is more likely to gain the impression that their behaviour and attitudes reflect out-group norms in general (Turner et al., 2008; Wright et al., 1997).

#### *Intergroup anxiety*



Intergroup anxiety refers to the arousal that may occur while anticipating, or during, intergroup encounters. It refers to an individual's negative expectation of rejection and discrimination and can lead to the avoidance of intergroup contact (Stephan & Stephan, 1985). Knowing that an in-group member has close relationships with members of the out-group is likely to reduce fear and negative expectations. Intergroup anxiety derives from two different main sources. On the one hand, there is the negative expectation about interaction with the out-group itself and on the other hand there is a negative expectation about how members of the in-group might react in regard to their friendly intergroup behaviour. The display of positive in-group norms reduces anxiety about negative reactions and sanctions from the in-group for friendly intergroup behaviour (Turner et al., 2008). Research findings indicate that reduced intergroup anxiety is an additional mediator of the relationship between extended contact and attitudes similar to the relationship between direct contact and attitudes.

### *Inclusion of Other in the Self*

In-group members are treated as part of the self. We empathize with their problems, take pride in their successes, and are willing to share resources with them (Aron, Aron, Tudor, & Nelson, 1991). Close others are usually spontaneously incorporated in the self (Aron et al., 1992). However, this is not typically the case for members of the out-group. The self is perceived as cognitively overlapping with in-group members. The self of the in-group member overlaps with the self of their out-group friend. As the in-group member who is part of the self has included out-group members as part of their self, the out-group member becomes, to a certain extent, also part of the self. The responses to members of that out-group are then more likely to be

positive. The out-group members would then be likely to receive similar advantages as members of the in-group (Turner et al., 2008; Wright et al., 1997).

### ***Empirical evidence***

The extended contact hypothesis has received empirical support from correlational and experimental studies. Liebkind and McAlister (1999), for example, studied the effects of extended contact through peer modelling in a quasi-experimental study. The sample comprised Finnish secondary school children in three pairs of middle schools, which were matched according to proportion of foreign pupils attending the school. The experimental group took part in an intervention, which involved reading stories about friendships between in-group and out-group members. To prevent subtyping, the typicality of the in-group member (to allow inclusion of others in the self, identification) and the out-group member (to facilitate generalization to the out-group as a whole) were enhanced. The control schools did not take part in the intervention. Out-group attitudes, measured as intergroup tolerance, were assessed before and after the intervention. Liebkind and McAlister (1999) found that in the experimental condition intergroup tolerance stayed at the same level or increased. In the control condition intergroup tolerance stayed the same level or decreased.

Turner et al. (2008) conducted a comprehensive test of the extended contact hypothesis and its underlying mechanisms. The authors tested two independent samples, which comprised White British undergraduate students. The target group were South Asians living in the United Kingdom. They found that extended contact with South Asians was associated with more positive out-group attitudes towards them. Results were obtained while controlling for the respondents' own cross-group friendships with the target group.

The authors found that the effect of extended contact on prejudice was indirectly associated with more positive out-group attitudes. Consistent with Wright et al.'s (1997) model, Turner et al. (2008) found that the relationship between extended contact and reduced prejudice was mediated via perceived in-group norms, perceived out-group norms, intergroup anxiety, and inclusion of the out-group in the self. Turner and colleagues' (2008) research findings indicated that these four variables independently mediated the relationship between extended contact and diminished prejudice.

Gómez, Tropp, and Fernández (2011) tested the effects of extended contact on positive intergroup expectancies and out-group attitudes. The authors tested a sample of Spaniards (majority group) and immigrants in Spain (minority group). They found that the effect of extended contact was equally strong for both groups. The relationship between extended contact and out-group attitudes among minority and majority group members was partly mediated via intergroup anxiety, in-group norms, out-group norms, and inclusion of others in the self. The findings were obtained while controlling for direct intergroup friendship, and both quality and quantity of previous intergroup contact with the out-group. The mediating effect of perceived out-group norms was stronger among members of the minority group. This suggested that minority groups are aware of their devalued status with the majority group and are concerned with how they are perceived by them (Tropp & Pettigrew, 2005).

Eller, Abrams, and Zimmermann (2011) conducted a longitudinal test of the extended contact hypothesis. The sample comprised visiting students from 30 different countries, who attended a British university for one year. Data was collected from visiting students who had actual contact with British people during their study abroad year (direct contact sample) and friends in their home country who experienced

extended contact through them (extended contact sample). This was done under the assumption that international students maintain close contact with home and share their experiences with their friends at home. Direct contact of the visiting students with British people during their study abroad year did influence the out-group attitudes of their friends in their home country. The extended contact sample showed increases in perceived extended contact (i.e., their estimation of how many British friends their friend had) and lower levels of self-perceived ignorance. They also showed a higher degree of inclusion of others in the self and generally more positive out-group attitudes towards British people.

Dhont and van Hiel (2011) carried out a study based on the data of a large representative sample of Dutch adults. Firstly, they tested the moderating role of direct contact and authoritarianism in the relationship between extended contact and diminished prejudice. Secondly, the authors tested whether the relationship was mediated via lower threat and higher trust. The effect of extended contact on out-group attitudes was stronger for participants who scored high on authoritarianism, especially when they only had low levels of direct intergroup contact (see also Christ et al., 2010). As predicted, the relationship was mediated via lower threat and higher trust. The strongest extended contact effects were found among respondents who scored high in authoritarianism and had low levels of direct contact.

Tausch et al. (2011) carried out a survey study among Catholics and Protestants in Northern Ireland. The authors tested the effect of extended contact on out-group trust. Tausch and colleagues (2011) showed that the strength of extended contact effects varied as a function of the closeness of the relationship with the in-group contact. Extended contact via more intimate in-group relationships (i.e., friends and family) was more strongly related to trust than extended contact via less intimate in-

group contacts (i.e., neighbours and work colleagues). The effects remained significant while controlling for direct contact with the ethno-religious out-group. Tausch and colleagues' (2011) findings indicated that extended contact complements the effect of direct contact on out-group attitudes.

Eller, Abrams, and Gómez (2012) tested the effects of direct and extended contact on attitudes in two cross-sectional studies (Studies 1 and 2) and one longitudinal study (Study 3). Study 1 was based on a sample of White American (majority group) participants. The target out-group were Mexicans living in the United States (minority group). Eller and colleagues (2012) found that extended contact with Mexicans was only associated with reduced affective prejudice when direct contact with Mexicans was low. When White Americans had high levels of direct contact with Mexicans the relationship between extended contact and affective prejudice was not significant. Study 2 was based on a sample of White American (minority group) participants in Mexico. The authors tested the effect of direct and extended contact on the respondents' involvement in the out-group culture (e.g., watching Mexican television programmes and movies, listening to Mexican music, learning Spanish). Extended contact only had an effect on involvement in the Mexican culture when respondents had little direct contact with the target group. In Study 3, Eller and colleagues (2012) tested their predictions longitudinally. The sample was composed of English students (majority group). The target out-group were French international students (minority group). Extended contact predicted lower levels of prejudice and a higher degree of voluntary involvement with the out-group culture when the level of direct contact was low. When the respondents had high levels of direct contact, extended contact did not have an impact on either of the outcome variables. Eller et al.'s (2012) study provided support for the extended contact hypothesis in two cross-

sectional and one longitudinal study in different intergroup contexts. Across all studies the authors showed that extended contact had the strongest effect on out-group attitudes when the amount of direct contact was low (see also Christ et al., 2010).

### ***Extended cross-group friendship***

Research has shown that extended contact effects vary as a function of the closeness of the relationship to the in-group contact. Extended contact via close intimate in-group contacts (i.e., friends and family) is more strongly related to positive out-group attitudes than extended contact via less intimate in-group contacts (i.e., neighbours and work colleagues) (Tausch et al., 2011). In recent years, some researchers have specifically studied the effect of extended contact via in-group friends (e.g., Christ et al., 2010; Munniksma, Stark, Verkuyten, Flache, & Veenstra, in press; Pettigrew et al., 2007; Paolini et al. 2004, 2007; Sharp, Voci, & Hewstone, 2011; Vonofakou et al., 2008). While extended contact refers to the awareness that an *in-group member* has a close relationship with an out-group member, extended cross-group friendship refers to the awareness that an *in-group friend* has a close relationship with an out-group member.

Extended cross-group friendship was found to predict more positive out-group attitudes. Some researchers have studied the effect of extended cross-group friendship and direct cross-group friendship on prejudice simultaneously, to test the effects of extended cross-group friendship while controlling for the effect of direct cross-group friendship, and vice versa. Research indicates that direct and extended cross-group friendships, albeit correlated, make independent contributions to prejudice reduction (e.g., Paolini et al., 2004, 2007; Pettigrew et al., 2007).

Paolini et al. (2004), for instance, conducted two studies, using a student sample and a representative sample of adult population in Northern Ireland. They tested the effect of direct and extended intergroup friendship on prejudice and perceived out-group variability. In both studies direct and extended cross-group friendship between Protestants and Catholics was associated with diminished prejudice towards the religious out-group and increased perceived out-group variability. The relationships were partly mediated via reduced intergroup anxiety. The effects remained significant even when controlling for the other type of intergroup friendship contact.

Paolini et al. (2007) studied the moderating role of affective-cognitive bases of prejudice in the relationship between cross-group friendship and attitudes. The authors tested their predictions in three correlational studies, which were conducted in Australia and Northern Ireland. Study 1 showed that the effects of direct cross-group friendship were larger for out-groups generating stronger affective responding (i.e., the elderly, mature-aged students) than for out-groups generating stronger cognitive responding (i.e., engineering students). The effect of extended cross-group friendship, on the other hand, was stronger for out-groups generating stronger cognitive responding compared to out-groups generating stronger affective responding. Study 2 tested cognitive-affective bases of prejudice as an individual difference variable. The effects of direct cross-group friendship were highest for individuals with a tendency to strong affective responding. The effects of indirect cross-group friendships were highest among individuals with a tendency to cognitive responding. Study 3 replicated the findings of Study 2 using two different dependent variables, namely intergroup trust and negative action tendencies. Across three different studies the authors showed that affective-cognitive bases of prejudice moderated the relationship between cross-group friendship and attitudes. They showed that the magnitude of the friendship-prejudice

relationship is dependent on the emotions and thoughts that are relevant to the attitudes towards the group in question.

Feddes, Noack, and Rutland (2009) tested the effect of direct and extended cross-group friendship on out-group attitudes in a longitudinal study. Feddes and colleagues operationalized extended cross-group friendship as indirect cross-group friendship via any close friend of the respondent, regardless of whether the friend was an in-group member or not. German (majority group) and Turkish children (minority group) who attended a multiethnic primary school participated in the study. Data collection took place at the beginning and end of the school year. The authors found that for German but not for Turkish children direct cross-group friendship predicted more positive out-group evaluations over time. The relationship was partly mediated via perceived social norms. However, no longitudinal effects of extended cross-group friendships were found. The findings indicated that direct cross-group friendship was more effective in reducing prejudice than extended cross-group friendship. The findings are in line with previous research, which indicated that contact has differential effects for minority and majority groups (Tropp & Pettigrew, 2005). Feddes and colleagues' (2009) findings suggest that attitudes of minority group members are influenced by other factors, such as social norms.

Christ et al. (2010) studied the effects of direct and extended cross-group friendship on attitudes and attitude certainty in two intergroup contexts (Germany & Northern Ireland). The authors showed in a cross-sectional (Study 1) and a longitudinal (Study 2) study that extended cross-group friendship was most effective for people who live in segregated neighbourhoods with few, or no, direct cross-group friendships.

While one study used out-group attitudes as dependent variable (Study 1), the other one used positive behavioural intentions towards the ethno-religious out-group



(e.g., desire to help an out-group member) (Study 2). The authors tested the wider impact of cross-group friendship by assessing attitude certainty (a dimension of attitude strength) as additional outcome variables in both studies. They tested whether extended cross-group friendships not only predicted more positive, but also stronger attitudes. Study 1 showed that direct cross-group friendship was more strongly associated with attitude certainty than extended contact. However, Study 2 showed that both direct and extended cross-group friendship affected attitude certainty over time.

## **Summary**

An interesting new direction in research on intergroup relations is the idea that prejudice reduction may also take place through indirect experiences of intergroup contact. The extended contact hypothesis predicts that the mere knowledge that an in-group member has a close relationship with an out-group member can reduce prejudice towards that out-group (Tausch et al., 2011; Wright et al., 1997). Empirical evidence from correlational and experimental studies supports the extended contact hypothesis (e.g., Eller et al., 2011; Gómez et al., 2011; Tausch et al., 2011; Turner et al., 2008; Wright et al., 1997; see Dovidio et al., 2011, for a review). Research findings indicate that the relationship between extended contact and improved attitudes was mediated via, in-group norms, out-group norms, intergroup anxiety, and inclusion of others in the self (Gómez et al., 2011; Turner et al., 2008; Wright et al., 1997).

Amongst other findings, research has shown that extended contact effects vary as a function of the closeness of the relationship to the in-group contact. Extended contact via more intimate in-group contacts (i.e., friends and family) was more strongly related to positive out-group attitudes than extended contacts via less intimate in-group contacts (i.e., neighbours and work colleagues) (Tausch et al., 2011). Some researchers

have specifically studied extended cross-group friendship, which refers to extended contact via in-group friends (e.g., Christ et al., 2010; Munniksma et al., in press; Pettigrew et al., 2007; Paolini et al., 2004, 2007; Sharp et al., 2011; Vonofakou et al., 2008).

When testing the effect of extended cross-group friendship and direct cross-group friendship on prejudice simultaneously, it was shown that direct and extended cross-group friendships, albeit correlated, make independent contributions to prejudice reduction (e.g., Paolini et al., 2004, 2007; Pettigrew et al., 2007). Other studies tested direct cross-group friendship as a moderator of the extended cross-group friendship effect. Extended cross-group friendship was found to be most effective for individuals with no, or very few, direct cross-group friendships (Christ et al., 2010; Munniksma et al., in press).

### **The Present Research**

The present research studies the effects of direct and extended cross-group friendship on out-group attitudes. Firstly, as a replication of previous findings, I examined the effect of extended and direct cross-group friendship on prejudice simultaneously (see also Paolini et al., 2004, 2007; Pettigrew et al., 2007). Secondly, as a new addition to the literature, I examined whether direct and extended cross-group friendship yielded secondary transfer effects. While there is evidence for the generalization of direct contact and direct cross-group friendship effects to uninvolved out-groups (e. g., Pettigrew, 1997, 2009; Tausch et al., 2010a), to my knowledge no previous research has investigated whether extended contact or extended cross-group friendship also promotes secondary transfer effects. Similar to the secondary transfer

effect from direct cross-group friendship, I expected the secondary transfer effect from extended cross-group friendship to be mediated via attitude generalization.

Previous research has tested both attitude generalization and deprovincialization as processes underlying the secondary transfer effect (Pettigrew, 1997, 2009; Tausch et al., 2010a). While attitude generalization has received strong empirical support as mediator of the secondary transfer effect (e.g., Eller & Abrams, 2004; Harwood et al., 2011; Pettigrew, 2009; Schmid et al., 2012; Tausch et al., 2010a), some studies support deprovincialization as a mediator of the secondary transfer effect (e.g., Pettigrew, 2009; Tausch et al., 2010a, Study 1) and others do not (e.g., Tausch et al., 2010a, Studies 2-4). Overall, research has yielded strong support for attitude generalization as a mediating mechanism of the secondary transfer effect, while the evidence for deprovincialization as a mediating mechanism has been mixed (Tausch et al., 2010a). Research has shown that attitude generalization is a stronger and more consistent mediator of the secondary transfer effect than deprovincialization, therefore, the present research focuses on attitude generalization as mediating mechanism of the secondary transfer effect.

When testing the secondary transfer effect from direct and extended cross-group friendship with the primary out-group, I controlled for direct and extended cross-group friendship with the secondary out-group, to avoid bogus 'secondary transfer effects' which can be explained due to the fact that respondents had close intergroup contact with the secondary out-group as well (secondary contact problem, Tausch et al., 2010a).

In terms of the primary transfer effect of intergroup contact, previous research has shown that the effect of direct cross-group friendship on attitudes is stronger than the effect from extended cross-group friendship (e.g., Paolini et al., 2004). Similarly, when comparing the secondary transfer effects from direct and extended cross-group

friendship, I expected the effect from direct cross-group friendship to be stronger. Combining two strands of research, the present research provides a simultaneous test of the extended contact hypothesis (Wright et al., 1997) and the secondary transfer effect (Pettigrew, 2009). My research aimed to show that extended cross-group friendship is not only an effective alternative means of reducing prejudice among individuals who have few or no opportunities for direct cross-group friendship, but also that the effect has the potential to generalize broadly by improving attitudes towards uninvolved out-groups. I tested these predictions in two separate studies. Study 3 looked into direct and extended cross-group friendships of undergraduate and graduate students at university. Study 4 looked into direct and extended cross-group friendships of secondary school pupils.

The collaborating schools and universities in Nigeria did not keep records of the ethnic group memberships of their students. Therefore, exact information about the ethnic make-up of the schools and universities cannot be provided here. However, both studies were conducted in the South-West of Nigeria, where the majority of the population belongs to the Yoruba ethnic group. It is for this reason that I focused on this ethnic group in this study, to measure the secondary transfer effects of contact with and attitudes towards, two minority out-groups: Hausas and Igbos.

## **Hypotheses**

These studies tested three hypotheses:

1. Direct cross-group friendship with the primary out-group (Igbos) will predict more positive attitudes towards the secondary out-group (Hausas) (Studies 3, 4).
  - a. The relationship will be mediated via more positive attitudes towards the primary out-group (attitude generalization).

- b. The effect will hold while controlling for direct and extended cross-group friendship with the secondary out-group.
- 2. Extended cross-group friendship with the primary out-group (Igbos) will be positively related to attitudes towards the secondary out-group (Hausas) (Studies 3, 4).
  - a. The relationship will be mediated via more positive attitudes towards the primary out-group (attitude generalization).
  - b. The effect will hold while controlling for direct and extended cross-group friendship with the secondary out-group.
- 3. Direct cross-group friendship will be a stronger predictor of the secondary transfer effect than extended cross-group friendship (Studies 3, 4).

### **Study 3**

#### ***Method***

##### *Procedure*

Participants were randomly selected to participate in the study. Students were approached on their university campuses and invited to participate in a survey study. The questionnaires included measures of direct and extended cross-group friendship and attitudes towards two different ethnic minorities, namely Igbos and Hausas. Each of the measures was assessed for both groups separately. The order in which the measures were presented was counter-balanced.

##### *Participants*

The sample comprised three-hundred sixty-three Yoruba undergraduate and graduate students from the University of Lagos (UNILAG), and the University of Ibadan

(mean age = 21.59,  $SD = 4.16$ , years, age range 16 to 42; gender:  $N = 136$  male,  $N = 201$  female,  $N = 26$  unidentified; religion:  $N = 266$  Christianity,  $N = 91$  Islam,  $N = 3$  no religion,  $N = 3$  unidentified).

### *Measures*

**Direct cross-group friendship.** Direct cross-group friendship with Hausas and Igbos respectively was measured using a standard three-item cross-group friendship measure (e.g., Paolini et al., 2004). The respondents were asked to indicate the proportion of Hausas and Igbos among their friends: “How many of your close friends are HAUSAS/IGBOS?” The respondents were asked to indicate their response on a five-point scale (1 = *none*, 2 = *a few*, 3 = *about half*, 4 = *most*, 5 = *all*). Two additional items referred to the quantity of contact with their out-group friends, “How often do you visit your close HAUSA/IGBO friends at their home?”, and “How often do your close HAUSA/IGBO friends visit you at your home?” The items were answered on a five-point scale (1 = *never*, 2 = *rarely*, 3 = *occasionally*, 4 = *often*, 5 = *very often*). Higher scores denoted higher levels of direct cross-group friendship. The three items measuring direct cross-group friendship with Hausas ( $\alpha = .88$ ) and Igbos ( $\alpha = .80$ ) formed reliable scales.

**Extended cross-group friendship.** Extended cross-group friendship was measured using a single item. The participants were asked: “How many of your close Yoruba friends have close friends who are HAUSAS/IGBOS?” (e.g., Paolini et al., 2004). The respondents were asked to indicate their response on a five-point scale (1 = *none*, 2 = *a few*, 3 = *about half*, 4 = *most*, 5 = *all*). Higher scores denoted higher levels of extended cross-group friendship.

**Out-group attitudes.** Feeling thermometers (Converse & Presser, 1986) were used to measure the participants’ attitudes towards the two minority groups. The item

read: "How do you feel towards the HAUSAS/ IGBOS?". Respondents were asked to indicate how 'cold' or 'warm' they felt towards Igbos and Hausas on a thermometer measure, ranging from 0 to 100 degrees. Higher scores denoted warmer, more positive attitudes towards the target group.

## **Results**

### *Preliminary analysis*

Means, standard deviations and inter-item correlations are displayed in Table 5. Direct cross-group friendship with Hausas was positively associated with direct friendship contact with Igbos ( $r = .16, p < .01$ ). Direct cross-group friendship with Hausas was positively associated with extended cross-group friendship with Hausas ( $r = .47, p < .01$ ), but unrelated to extended cross-group friendship with Igbos ( $r = .04, p = .48$ ).

Direct contact with Hausas was positively associated with attitudes towards Hausas ( $r = .32, p < .01$ ), but unrelated to attitudes towards Igbos ( $r = .07, p = .25$ ). Direct cross-group friendship with Igbos was positively associated with extended cross-group friendship with Igbos ( $r = .44, p < .01$ ). The relationship between direct cross-group friendship and extended cross-group friendship with Hausas fell just short of statistical significance ( $r = .11, p = .05$ ). Direct cross-group friendship with Igbos was positively associated with attitudes towards Igbos ( $r = .36, p < .01$ ), but unrelated to attitudes towards Hausas ( $r = .01, p = .85$ ). Extended cross-group friendship with Hausas

Table 5: Means, Standard Deviations, and Correlations between Predictor, Mediator, and Criterion Variables (Study 3)

| Variable                     | <i>M</i> | <i>SD</i> | 2     | 3     | 4     | 5     | 6     |
|------------------------------|----------|-----------|-------|-------|-------|-------|-------|
| 1. Direct friendship Hausa   | 1.79     | .89       | .16** | .47** | .04   | .32** | .07   |
| 2. Direct friendship Igbo    | 2.49     | .99       | -     | .11   | .44** | .01   | .36** |
| 3. Extended friendship Hausa | 1.99     | .90       |       | -     | .12*  | .30** | .17** |
| 4. Extended friendship Igbo  | 2.42     | .99       |       |       | -     | -.04  | .23** |
| 5. Attitudes Hausa           | 54.14    | 19.84     |       |       |       | -     | .23** |
| 6. Attitudes Igbo            | 56.87    | 20.70     |       |       |       |       | -     |

Note. \*  $p < .05$ , \*\*  $p < .01$ ;  $N = 363$ .



and extended cross-group friendship with Igbos were positively associated with each other ( $r = .12, p < .05$ ). Extended cross-group friendship with Hausas was positively associated with attitudes towards Hausas ( $r = .30, p < .01$ ) and attitudes towards Igbos ( $r = .17, p < .01$ ). Extended cross-group friendship with Igbos was positively associated with attitudes towards Igbos ( $r = .23, p < .01$ ), but unrelated to attitudes towards Hausas ( $r = -.04, p = .49$ ). Finally, attitudes towards Igbos and attitudes towards Hausas were positively associated with each other ( $r = .23, p < .01$ ). All correlations were in the expected direction.

However, the correlation coefficients showed that cross-group friendship with one out-group was positively associated with attitudes towards this out-group, but not (or to a much lesser degree) with the other out-group. The findings contradict the 'generalized prejudice model', which explains the generalization of attitudes to uninvolved out-groups through a generally higher level of tolerance towards various out-groups. Following the generalized prejudice model the link between contact with Hausas and attitudes towards a range of target groups should be of similar magnitude. Any secondary transfer effects based on this data are likely to be explained in terms of the secondary contact problem (Tausch et al., 2010a), whereby contact with and attitudes towards the primary out-group were antecedents of attitudes towards the secondary out-group (i.e., attitude generalization) (see Pettigrew, 2009; Tausch et al., 2010a).

#### *Path model testing the secondary transfer effect of extended contact*

To test my hypotheses, I estimated relationships between cross-group friendship with Igbos and extended cross-group friendship with Igbos (independent variables), attitudes towards Igbos (mediator), and attitudes towards the secondary out-group

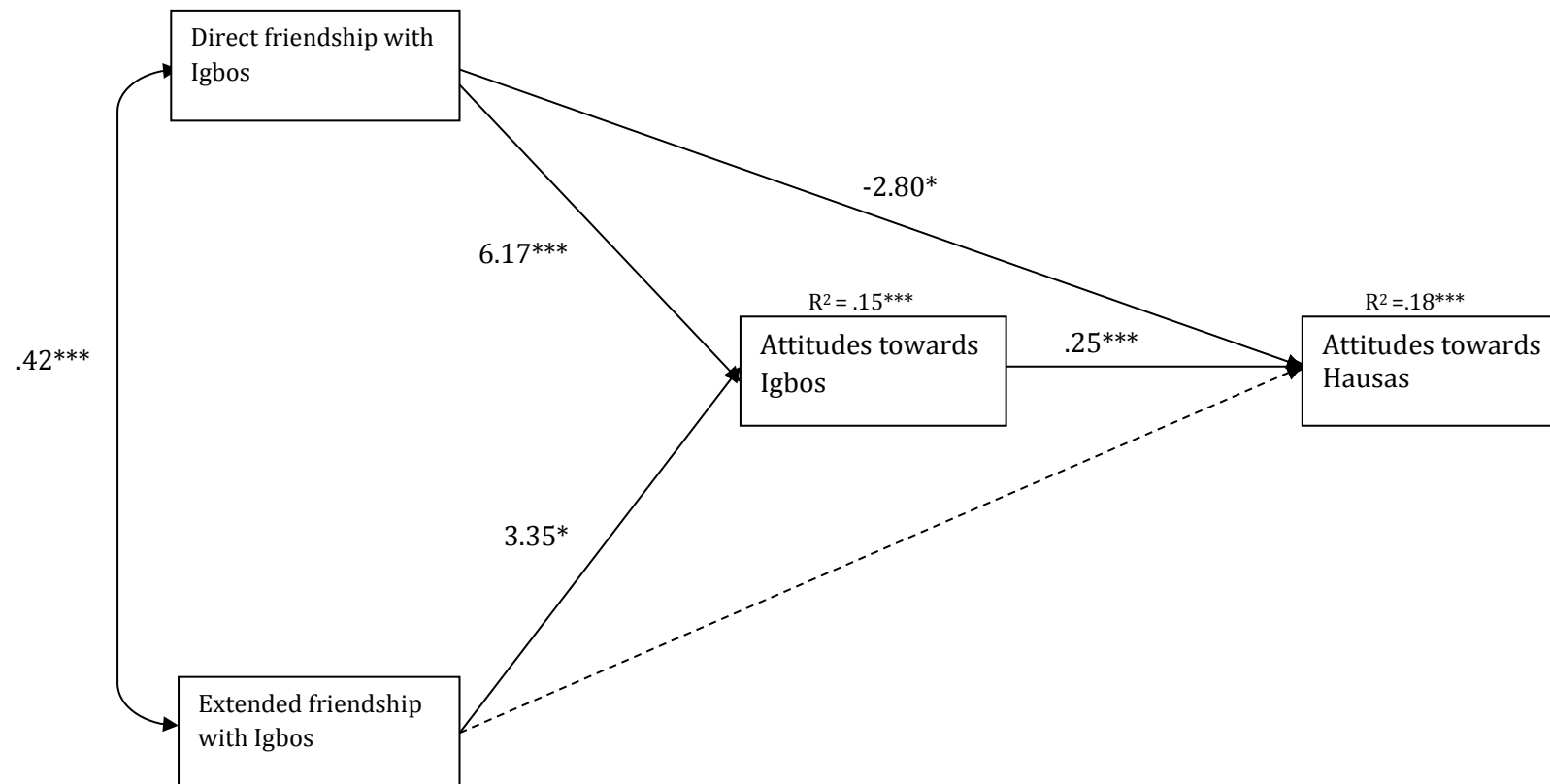


Figure 2. Path model with observed variables: Secondary transfer effect from direct and extended cross-group friendship (Study 3). Note. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .  $N = 363$ . Unstandardized coefficients are shown; curved paths denote correlations between variables; control variables: Direct cross-group friendship with Hausas, extended cross-group friendship with Hausas.

Hausas (dependent variable) (see Figure 2). Due to the small number of items used to assess each variable, I used path analysis with observed variables, instead of structural equation modelling with latent variables, to analyse the data. The model was tested using MPlus, Version 6.1 (Muthen & Muthen, 1998-2010). The goodness-of-fit of the model was assessed using the chi-square test, the chi-square/ degree of freedom ratio, the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR). A satisfactory fit is indicated by a non-significant chi-square, which can rarely be found (Jöreskog & Sörbom, 1993). Jöreskog and Sörbom (1993) suggested using chi-square as a descriptive goodness-of-fit index rather than as a formal test statistic. According to the authors a chi-square/ degree of freedom ratio of 3:1 indicates an acceptable fit, while a ratio of 2:1 indicates a good fit. Further criteria for an acceptable model fit are a CFI close to .95, a RMSEA close to .06, and a SRMR close to .08 (Hu & Bentler, 1999).

The test statistics of the present model revealed a good fit to the data (chi-square test:  $X^2 = 3.72$ ,  $df = 2$ ,  $p = .16$ ,  $X^2/df = 1.86$ ,  $CFI = .98$ ,  $RMSEA = .05$ ,  $SRMR = .02$ ). The model explained 15% and 18% of the variance in attitudes towards Igbos and Hausas respectively. Direct cross-group friendship with Igbos ( $b = 6.17$ ,  $SE = 1.32$ ,  $p < .001$ ) and extended cross-group friendship with Igbos ( $b = 3.35$ ,  $SE = 1.33$ ,  $p < .05$ ) were positively associated with attitudes towards Igbos. Attitudes towards Igbos were positively associated with attitudes towards Hausas ( $b = .25$ ,  $SE = .07$ ,  $p < .001$ ).

The tests of mediation were carried out using bootstrapping analyses. The bootstrap point estimate of the indirect effect of direct cross-group friendship with Igbos on attitudes towards Hausas, via attitudes towards Igbos, was 1.53, with a 99% confidence interval of [.51; 3.20]. The confidence interval excluded zero, which indicated a significant indirect effect (Preacher & Hayes, 2008). The direct path between

direct cross-group friendship with Igbos and attitudes towards Hausas was significant ( $b = -2.80$ ,  $SE = 1.28$ ,  $p < .05$ ), which indicated partial mediation. The negative relationship between direct cross-group friendship with Igbos and attitudes towards Hausas was an unexpected finding, which will be addressed in the 'Discussion' section.

The bootstrap point estimate of the indirect effect of extended cross-group friendship with Igbos on attitudes towards Hausas, via attitudes towards Igbos, was .83, with a 99% confidence interval of [.02; 2.24]. The direct path from extended cross-group friendship with Igbos to attitudes towards Hausas was not significant ( $b = -.21$ ,  $SE = 1.24$ ,  $p = .87$ ), which was consistent with full mediation. All findings were obtained while controlling for direct and extended cross-group friendship with Hausas (i.e., the secondary out-group).

Reverse STE model. The reverse secondary transfer model, whereby cross-group friendship with the secondary out-group predicted attitudes towards the primary out-group was also considered. This provided an additional test of the secondary transfer effect from extended cross-group friendship, based on the same data, with a different focal group (see Lolliot et al., 2012; Tausch et al., 2010a; Vezzali & Giovannini, 2011).

The data was analysed using path analysis with observed variables. The model (Figure 3) fit the data well (*Model fit*:  $X^2 = 1.11$ ,  $df = 2$ ,  $p = .57$ ,  $X^2/df = .06$ ,  $CFI = 1.00$ ,  $RMSEA = .00$ ,  $SRMR = .01$ ) and explained 13% and 22% of the variance in attitudes towards Hausas and Igbos, respectively. Direct cross-group friendship with Hausas was positively associated with attitudes towards Hausas ( $b = 6.25$ ,  $SE = 1.48$ ,  $p < .001$ ). The relationship between extended cross-group friendship and attitudes towards Hausas fell just short of statistical significance ( $b = 3.11$ ,  $SE = 1.60$ ,  $p = .05$ ). Attitudes towards Hausas were positively associated with attitudes towards Igbos ( $b = .26$ ,  $SE = .07$ ,  $p < .001$ ). The bootstrap point estimate of the indirect relationship between direct cross-

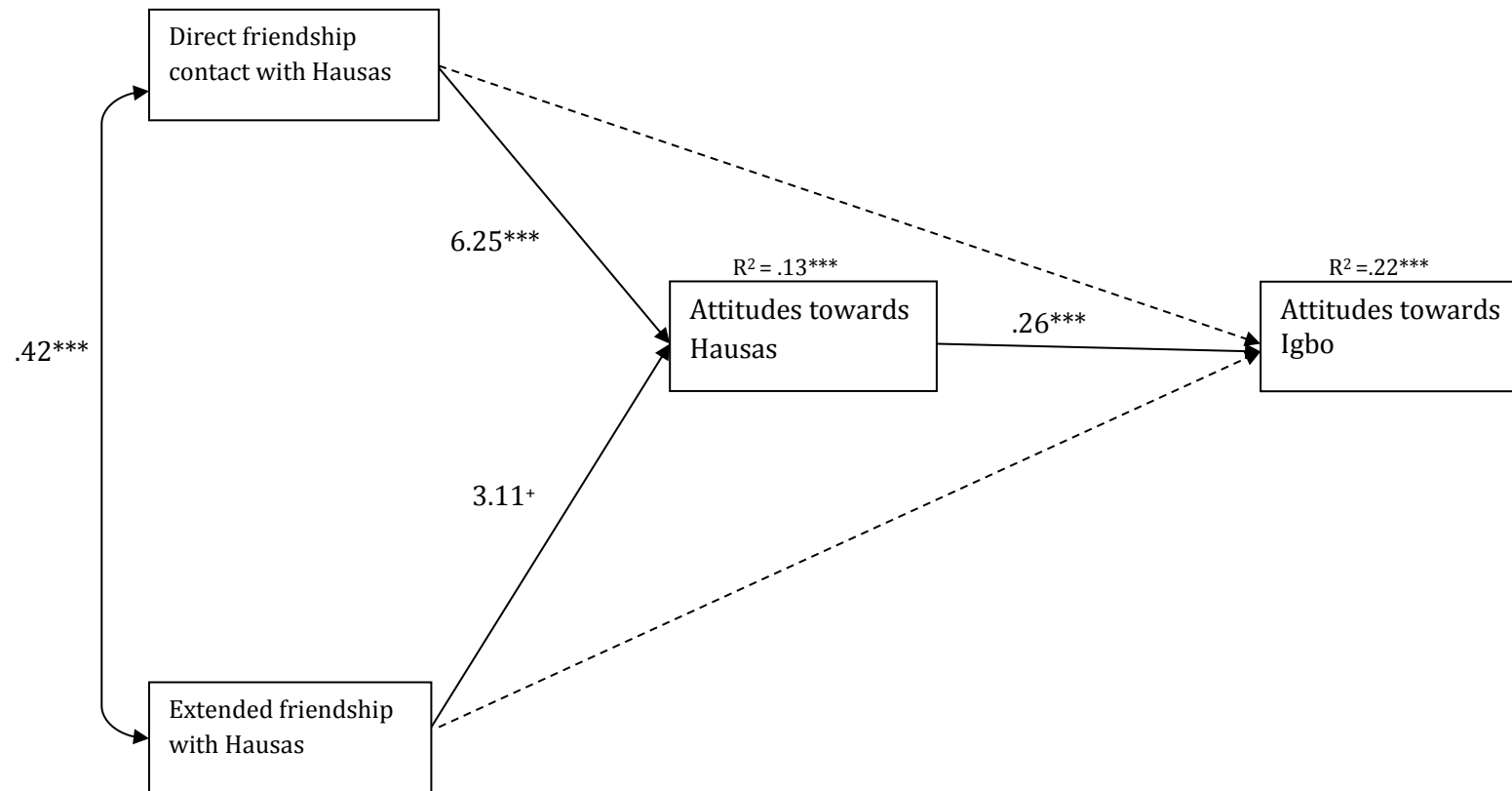


Figure 3. Path model with observed variables: Secondary transfer effect from direct and extended cross-group friendship (Study 3, reverse model).

Note. <sup>+</sup>  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .  $N = 363$ . Unstandardized coefficients are shown; curved paths denote correlations between variables; control variables: Direct cross-group friendship with Igbos, extended cross-group friendship with Igbos.

group friendship with Hausas and attitudes towards Igbos, via attitudes towards Hausas, was 1.61, with a 99% confidence interval of [.46; 3.53]. The direct path between direct cross-group friendship with Hausas and attitudes towards Igbos was not significant ( $b = -2.16$ ,  $SE = 1.74$ ,  $p = .22$ ), which was consistent with full mediation.

The bootstrap point estimate of the indirect relationship between extended cross-group friendship with Hausas and attitudes towards Igbos, via attitudes towards Hausas was .79, with a 95% confidence interval of [.04; 1.95]. The direct path from extended cross-group friendship with Hausas to attitudes towards Igbos was not significant ( $b = 2.35$ ,  $SE = 1.73$ ,  $p = .18$ ), which was consistent with full mediation. All findings were obtained while controlling for direct and extended cross-group friendship with Igbos.

#### *Comparing the strength of direct and extended cross-group friendship effects*

A supplementary analysis was carried out in order to compare the strength of effects from direct and extended cross-group friendship. The analysis was redone using corresponding single items, which assessed direct and extended cross-group friendship. The items read: "How many of your close Yoruba friends have close friends who are HAUSAS/IGBOS?" (direct cross-group friendship). The item assessing extended cross-group friendship read: "How many of your close Yoruba friends have close friends who are HAUSAS/IGBOS?" (extended cross-group friendship).

I estimated relationships between cross-group friendship with Igbos and extended cross-group friendship with Igbos (independent variables), attitudes towards Igbos (mediator), and attitudes towards the secondary out-group Hausas (dependent variable). The model was tested using path analysis with observed variables in MPlus (Version 6.1). The test statistics revealed a good fit to the data ( $X^2 = 4.70$ ,  $df = 2$ ,  $p = .10$ ,

$X^2/df = 2.35$ ,  $CFI = .97$ ,  $RMSEA = .06$ ,  $SRMR = .03$ ). The model (Figure 4) explained 15% and 16% of the variance in attitudes towards Igbos and Hausas, respectively. Direct cross-group friendship with Igbos ( $b = 6.79$ ,  $SE = 1.77$ ,  $p < .001$ ) and extended cross-group friendship with Igbos ( $b = 2.96$ ,  $SE = 1.43$ ,  $p < .05$ ) were positively associated with attitudes towards Igbos. Attitudes towards Igbos were positively associated with attitudes towards Hausas ( $b = .25$ ,  $SE = .07$ ,  $p < .001$ ).

The bootstrap point estimate of the indirect effect of direct cross-group friendship with Igbos on attitudes towards Hausas, via attitudes towards Igbos, was 1.69, with a 99% confidence interval of [.57; 3.51]. The direct path between direct cross-group friendship with Igbos and attitudes towards Hausas was significant ( $b = -3.83$ ,  $SE = 1.48$ ,  $p < .05$ ), which indicated partial mediation. The negative relationship between direct cross-group friendship with Igbos and attitudes towards Hausas was an unexpected finding, which will be addressed in the 'Discussion' section. The bootstrap point estimate of the indirect effect of extended cross-group friendship with Igbos on attitudes towards Hausas, via attitudes towards Igbos, was .74, with a 95% confidence interval of [.09; 2.24]. The direct path from extended cross-group friendship with Igbos to attitudes towards Hausas was not significant ( $b = .34$ ,  $SE = 1.31$ ,  $p = .80$ ), which was consistent with full mediation. All findings were obtained while controlling for direct and extended cross-group friendship with Hausas.

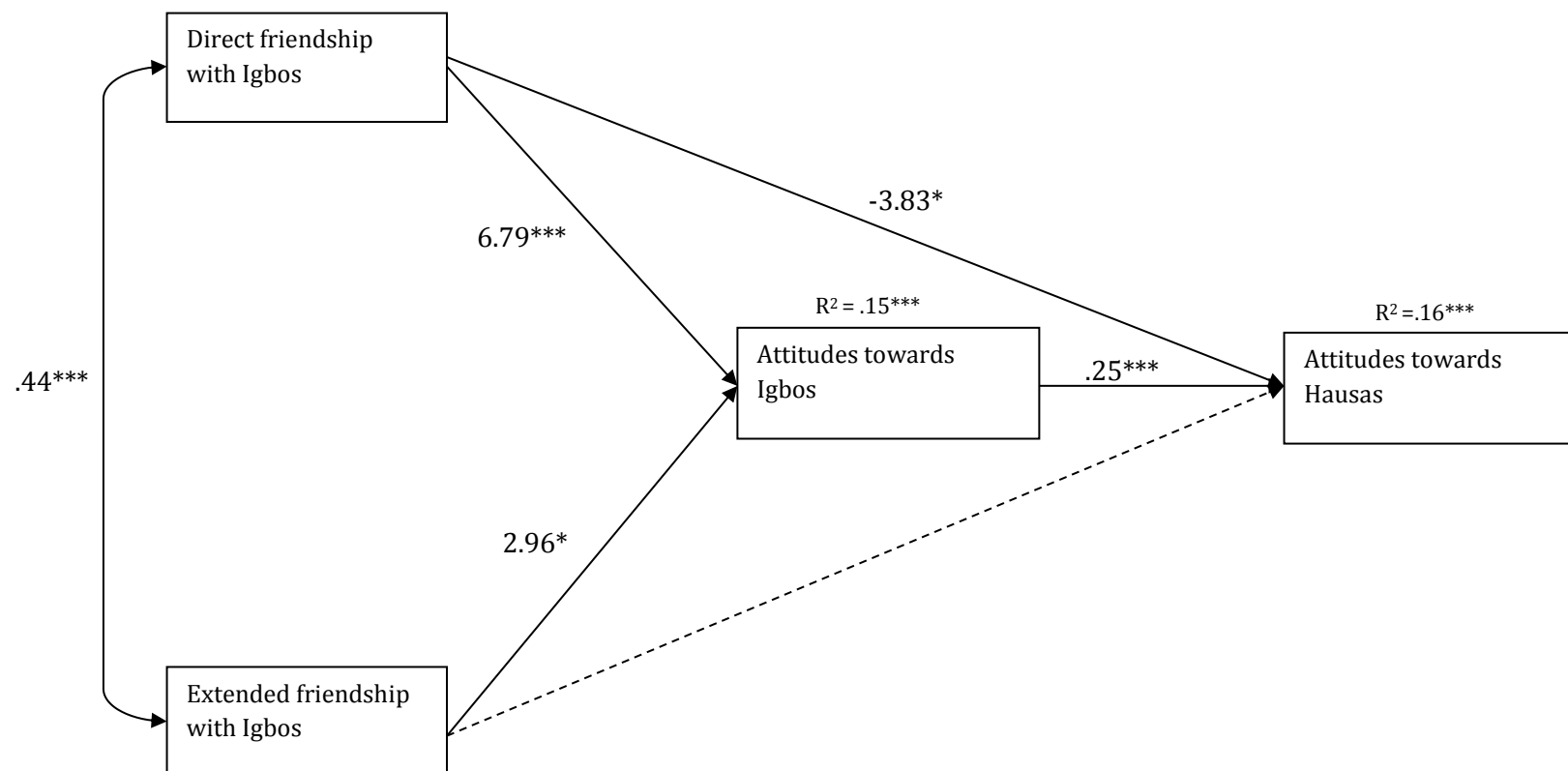


Figure 4. Path model with observed variables: Secondary transfer effect from direct and extended cross-group friendship B (Study 3).  
 Note. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .  $N = 363$ . Unstandardized coefficients are shown; curved paths denote correlations between variables; Control variables: Direct cross-group friendship with Hausas, extended cross-group friendship with Hausas.



## ***Discussion***

The following paragraphs summarize the main findings of Study 3 and discuss hypothesis-confirming and -disconfirming findings. Hypothesis 1 predicted that direct cross-group friendship with the primary out-group (Igbos) would predict more positive attitudes towards the secondary out-group (Hausas). The relationship would be mediated via more positive attitudes towards the primary out-group (attitude generalization) (Hypothesis 1a). The effect would hold while controlling for direct and extended cross-group friendship with the secondary out-group (Hypothesis 1b). Hypothesis 2 predicted that extended cross-group friendship with the primary out-group (Igbos) would be positively related to attitudes towards the secondary out-group (Hausas). The relationship would be mediated via more positive attitudes towards the primary out-group (attitude generalization) (Hypothesis 2a). The effect would hold while controlling for direct and extended cross-group friendship with the secondary out-group (Hypothesis 2b).

Direct cross-group friendship with Igbos was associated with more positive attitudes towards Hausas (Hypothesis 1). The relationship was mediated via more favourable attitudes towards Igbos (Hypothesis 1a). The relationship held while controlling for direct and extended cross-group friendship with Hausas (secondary out-group) (Hypothesis 1b). The findings provided support for Hypothesis 1a and were in line with findings of previous research on the secondary transfer effect (e.g., Pettigrew, 2009; Tausch et al., 2010a).

However, the model also produced a surprising finding, in the form of a negative direct relationship between direct (but not extended) cross-group friendship with Igbos and attitudes towards Hausas. Other authors have found similar counterintuitive findings when testing secondary transfer effects (Tausch et al., 2010a; Vezzali &

Giovannini, 2011). For instance, Tausch and colleagues (2010a, Study 2) tested the secondary transfer effect based on data from Catholic and Protestant respondents in Northern Ireland. They found a significant indirect relationship between contact with racial minorities and attitudes towards the ethno-religious out-group via more favourable attitudes towards racial minorities. Their model yielded a negative direct effect between contact with racial minorities and attitudes towards the ethno-religious out-group.

According to Tausch et al. (2010a) the counterintuitive finding may be explained in terms of a suppression effect. Intergroup contact with racial minorities may have produced two opposing effects on attitudes towards the ethno-religious out-group. On the one hand, there was a generalization effect in line with the predictions of the attitude generalization hypothesis, whereby contact with racial minorities was indirectly associated with attitudes towards the ethno-religious out-group, via attitudes towards racial minorities. On the other hand, there was a negative relationship between contact with racial minorities and attitudes towards the ethno-religious out-group.

In a complex multi-group setting like Northern Ireland, third groups may be viewed as allies in intergroup conflict. Intergroup contact with one group may serve as 'mobilizing effect' against another out-group. Intergroup contact with the ally group could then result in more negative attitudes towards the joint rival group (Tausch et al., 2010a). A similar effect is likely to play a role in Nigeria, especially since the multi-group structure in Nigeria is even more complex than in Northern Ireland. Nigeria's many different groups differ in terms of ethnicity, language and religion (see Chapter 1). However, the explanations to date are based on speculation. Further research is necessary to firmly determine the causes of negative direct effects between intergroup contact with one out-group and attitudes towards another.

Extended cross-group friendship with Igbos was associated with more positive attitudes towards Hausas (Hypothesis 2). The relationship was mediated via more favourable attitudes towards Igbos (Hypothesis 2a). The relationship held while controlling for direct and extended cross-group friendship with Hausas (secondary out-group) (Hypothesis 2b). The findings supported Hypothesis 2a and showed, for the first time, that extended cross-group friendship yields secondary transfer effects.

The reverse secondary transfer effect model, whereby direct and extended cross-group friendship with Hausas (secondary out-group) were associated with more positive attitudes towards Igbos (primary out-group), mediated via more favourable attitudes towards Hausas, was confirmed. The relationships were mediated via more favourable attitudes towards Hausas (attitude generalization). The relationships held while controlling for direct and extended cross-group friendship with Igbos. The findings of the reverse secondary transfer effect also supported the hypotheses, which indicated that the secondary transfer effect was bidirectional.

Measures were taken to rule out alternative accounts for the findings. Firstly, direct and extended cross-group friendships were tested simultaneously. The effect of extended cross-group friendship could therefore be calculated while controlling for the effect of direct cross-group friendship and vice versa. The significant effect from extended cross-group friendship suggested that extended cross-group friendship had an effect on out-group attitudes over and above the effect of direct cross-group friendship. Secondly, direct and extended cross-group friendship with the secondary out-group was controlled for, which indicated that the findings can not merely be explained with the fact that respondents who have direct and extended cross-group friendships with one group have close relationships with members of the secondary out-group as well (secondary contact problem, see Tausch et al., 2010a).

Hypothesis 3 predicted that direct cross-group friendship would be a stronger predictor of the secondary transfer effect than extended cross-group friendship. The hypothesis was tested in a supplementary model, which used single corresponding items to assess direct and extended cross-group friendship. The secondary transfer effect from direct cross-group friendship was stronger than from extended cross-group friendship, which supported Hypothesis 3.

In summary, the findings of Study 3 supported the hypotheses. The study extended previous research, by providing the first evidence for a secondary transfer effect from both direct and extended cross-group friendship. The findings of the reverse secondary transfer model indicated that the secondary transfer effect from direct and extended cross-group friendship were bidirectional. The findings suggested that direct cross-group friendship is a stronger predictor of the secondary transfer effect than extended cross-group friendship.

#### **Study 4**

Study 3 provided the first evidence for a secondary transfer effect from extended cross-group friendship. Study 4 aimed to replicate the findings of Study 3, while using a different sample and different measures. For instance, while a single item (feeling thermometer) was used to assess out-group attitudes in Study 3, a multi-item measure was used in Study 4 (out-group attitudes, Wright et al., 1997) in order to increase confidence in the findings. The questionnaires used different measures, in part, since they were adapted to be appropriate for the age group of the respondents. The same hypotheses as in Study 3 were tested.

## ***Method***

### *Procedure*

The participants were randomly selected to participate in the survey study. Students of class levels SS1 and SS2 (equivalent to Year 10 and 11 in England) were invited to participate in a survey study. The questionnaire was tailored to the age group of the respondents. Similar to Study 3, the questionnaires included measures of direct and extended cross-group friendship and attitudes towards two out-groups, namely Igbos and Hausas. Likewise, each measure of cross-group friendship contact and out-group attitudes was assessed for both out-groups separately. The order of measures was counter-balanced.

### *Participants*

The final sample compromised 227 Yoruba secondary school pupils (mean age = 15.91 years,  $SD = 1.33$ , range 13-20; gender:  $N = 174$  male,  $N = 41$  female,  $N = 12$  unidentified; religion:  $N = 149$  Christianity,  $N = 78$  Islam). The data collection took place at three different secondary schools, namely Command Day Secondary School (Ibadan), Government College (Ibadan), and Okota Senior Grammar School (Lagos).

### *Measures*

**Direct cross-group friendship.** Direct cross-group friendship with Hausas and Igbos respectively was measured using a standard three-item cross-group friendship measure (e.g., Paolini et al., 2004). The respondents were asked to indicate the proportion of Hausas and Igbos among their friends, "How many of your close friends are HAUSAS/IGBOS?" The respondents were asked to indicate their response on a five-point scale (1 = none, 2 = a few, 3 = about half, 4 = most, 5 = all). Two additional items

referred to the quantity of contact with their out-group friends: “How often do you visit your close HAUSA/IGBO friends at their home?”, and “How often do your close HAUSA/IGBO friends visit you at your home?”. The items were answered on a five-point scale (1 = *never*, 2 = *rarely*, 3 = *occasionally*, 4 = *often*, 5 = *very often*). Higher scores denoted higher levels of direct cross-group friendship. The three items measuring direct cross-group friendship with Hausas ( $\alpha = .89$ ) and Igbos ( $\alpha = .76$ ) formed reliable scales.

*Extended cross-group friendship.* Extended cross-group friendship was assessed with one single item. The respondents were asked, “About how many of your friends, who belong to the same ethnic group as you, have friends who are HAUSAS/IGBOS?” (e.g., Paolini et al., 2004). The participants were asked to indicate their response on a five-point scale (1 = *none*, 2 = *a few*, 3 = *about half*, 4 = *most*, 5 = *all*). Higher scores denoted more extended cross-group friendships.

*Out-group attitudes.* Out-group attitudes were assessed using three out of the original six items of a semantic differential scale (Wright et al., 1997). Only three items were selected from the measure in an attempt to keep the questionnaire as short as possible for the young research participants. The item read: “How do you feel towards Hausas/Igbos? Do you feel....?”. Respondents were asked to indicate their response on five point bipolar scales (negative – positive, hostile – friendly, suspicious – trusting). The items that were used to assess attitudes towards Hausas ( $\alpha = .79$ ) and Igbos ( $\alpha = .83$ ) formed reliable scales. Higher scores denoted more positive attitudes towards Hausas and Igbos, respectively.

## **Results**

### *Preliminary analysis*

Means, standard deviations and inter-item correlations are displayed in Table 6. Direct cross-group friendship with Hausas was positively associated with direct cross-group friendship with Igbos ( $r = .29, p < .01$ ). Extended cross-group friendship with Hausas was positively associated with extended cross-group friendship with Igbos ( $r = .30, p < .01$ ). Direct cross-group friendship with Hausas was positively associated with extended cross-group friendship with Hausas ( $r = .51, p < .01$ ) and Igbos ( $r = .23, p < .01$ ). Direct cross-group friendship with Igbos was positively associated with extended cross-group friendship with Igbos ( $r = .43, p < .01$ ) and Hausas ( $r = .26, p < .01$ ).

Direct cross-group friendship with Hausas was positively associated with attitudes towards Hausas ( $r = .35, p < .01$ ), but unrelated to attitudes towards Igbos ( $r = .07, p = .30$ ). Direct cross-group friendship with Igbo was positively associated with attitudes towards Igbos ( $r = .43, p < .01$ ) and less so with Hausas ( $r = .18, p < .01$ ). Extended cross-group friendship with Hausas was positively associated with attitudes towards Hausas ( $r = .33, p < .01$ ) and less so with Igbos ( $r = .20, p < .01$ ). Extended cross-group friendship with Igbos was positively associated with attitudes towards Igbos ( $r = .33, p < .01$ ) and less so with Hausas ( $r = .24, p < .01$ ). Finally, attitudes towards Igbos was positively associated with attitudes towards Hausas ( $r = .34, p < .01$ ). All correlations were in the expected direction and in line with the predictions of contact theory.

However, even more clearly than in Study 3, the correlation coefficients showed that cross-group friendship with one out-group was positively associated with attitudes towards this out-group, but not (or to a much lesser degree) with the other out-group. Even more than in Study 3, the present findings provided preliminary evidence for the

Table 6: Means, Standard Deviations, and Correlations between Predictor, Mediator, and Criterion Variables (Study 4)

|                              | M    | SD   | 2     | 3     | 4     | 5     | 6     |
|------------------------------|------|------|-------|-------|-------|-------|-------|
| 1. Direct friendship Hausa   | 1.54 | .79  | .29** | .51** | .23** | .35** | .07   |
| 2. Direct friendship Igbo    | 2.36 | .97  | -     | .26** | .43** | .18** | .43** |
| 3. Extended friendship Hausa | 1.71 | .83  |       | -     | .30** | .33** | .20** |
| 4. Extended friendship Igbo  | 2.51 | 1.07 |       |       | -     | .24** | .33** |
| 5. Attitudes Hausa           | 3.02 | 1.26 |       |       |       | -     | .34** |
| 6. Attitudes Igbo            | 3.46 | 1.20 |       |       |       |       | -     |

Note. \*  $p < .05$ , \*\*  $p < .01$ ,  $N = 227$



support of a secondary transfer effect rather than a generalized prejudice effect (Pettigrew, 2009; see Study 3).

*Path model testing the secondary transfer effect of extended contact*

To test my hypotheses, I estimated relationships between cross-group friendship with Igbos and extended cross-group friendship with Igbos (independent variables), attitudes towards Igbos (mediator), and attitudes towards the secondary out-group Hausas (dependent variable). Due to the small number of items used to assess each variable, I used path analysis with observed variables, instead of structural equation modelling with latent variables. The model was tested in MPlus (Version 6.1). The model (Figure 5) fit the data well ( $X^2 = 4.87$ ,  $df = 2$ ,  $p = .09$ ,  $X^2/df = 2.44$ ,  $CFI = .96$ ,  $RMSEA = .08$ ,  $SRMR = .02$ ) and explained 15% and 21% of the variance of attitudes towards Igbos and Hausas, respectively. Direct cross-group friendship with Igbos ( $b = .37$ ,  $SE = .09$ ,  $p < .001$ ) and extended cross-group friendship with Igbos ( $b = .18$ ,  $SE = .07$ ,  $p < .05$ ) were both positively associated with attitudes towards Igbos. Attitudes towards Igbos were positively associated with attitudes towards Hausas ( $b = .29$ ,  $SE = .07$ ,  $p < .001$ ).

Again, the tests of mediation were carried out using bootstrapping analyses. The bootstrap point estimate of the indirect effect of direct cross-group friendship with Igbos and attitudes towards Hausas, via attitudes towards Igbos, was .11, with a 99% confidence interval of [.04; .23]. The direct path from direct cross-group friendship with Igbos to attitudes towards Hausas was not significant ( $b = -.10$ ,  $SE = .10$ ,  $p = .32$ ), which indicated full mediation. The bootstrap point estimate of the indirect effect of extended cross-group friendship with Igbos and attitudes towards Hausas, via attitudes towards Igbos, was .05, with a 95% confidence interval of [.01; .11]. The direct path from extended cross-group friendship with Igbos to attitudes towards Hausas was not

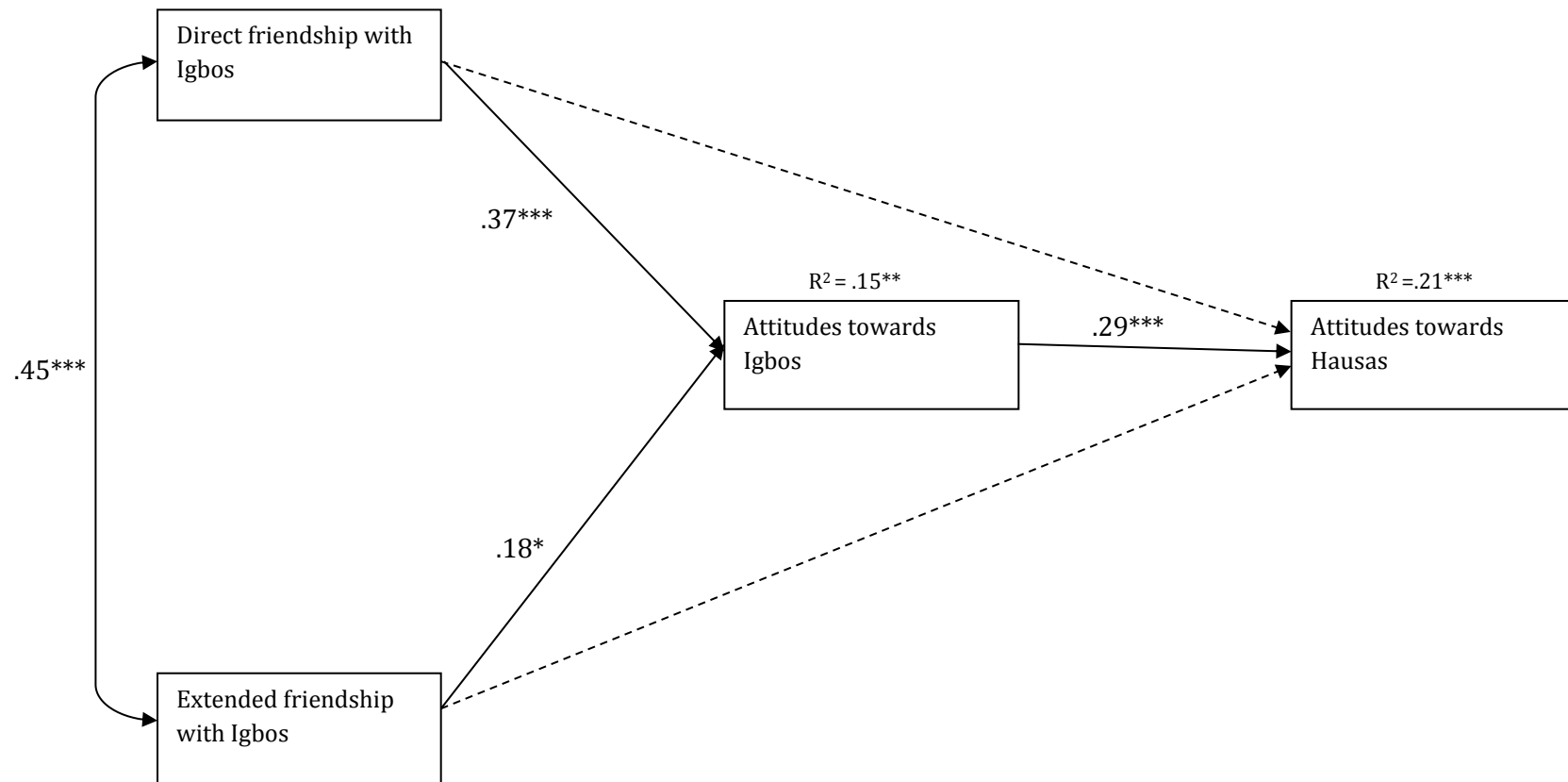


Figure 5. Path model with observed variables: Secondary transfer effect from direct and extended cross-group friendship (Study 4).  
 Note. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .  $N = 227$ . Unstandardized coefficients are shown; curved paths denote correlations between variables; control variables: Direct cross-group friendship with Hausas, extended cross-group friendship with Hausas.

significant ( $b = .09, SE = .08, p = .26$ ), which indicated full mediation. All findings were obtained while controlling for direct and extended cross-group friendship with Hausas.

Reverse STE model. As in Study 3, I also considered the reverse secondary transfer model, whereby contact with the secondary out-group (Hausa) predicted attitudes towards the primary out-group (Igbo). The model (Figure 6) fit the data well ( $X^2 = 3.22, df = 2, p = .20, X^2/df = 1.61, CFI = .98, RMSEA = .05, SRMR = .03$ ) and explained 23% and 12% of the variance of attitudes towards Hausas and Igbos, respectively.

Direct cross-group friendship with Hausas was positively associated with attitudes towards Hausas ( $b = .38, SE = .11, p < .001$ ). The relationship between extended cross-group friendship with Hausas and attitudes towards Hausas was marginally significant ( $b = .21, SE = .12, p = .08$ ). Attitudes towards Hausas were positively associated with attitudes towards Igbos ( $b = .24, SE = .07, p < .001$ ). The bootstrap point estimate of the indirect effect of direct cross-group friendship with Hausas and attitudes towards Igbos, via attitudes towards Hausas, was .10, with a 99% confidence interval of [.02; .25]. Direct cross-group friendship with Hausas was significantly associated with attitudes towards Igbos ( $b = -.31, SE = .10, p = .01$ ), which indicated partial mediation. The counterintuitive negative direct effect between direct cross-group friendship with Hausas and attitudes towards Igbos will be addressed in the 'Discussion' section.

The bootstrap point estimate of the indirect effect of extended cross-group friendship with Hausas and attitudes towards Igbos, via attitudes towards Hausas, was .06, with a 90% confidence interval of [.01; .14]. The direct path from extended cross-group friendship with Hausas and attitudes towards Igbos was not significant ( $b = .18, SE = .12, p = .11$ ), which indicated full mediation.

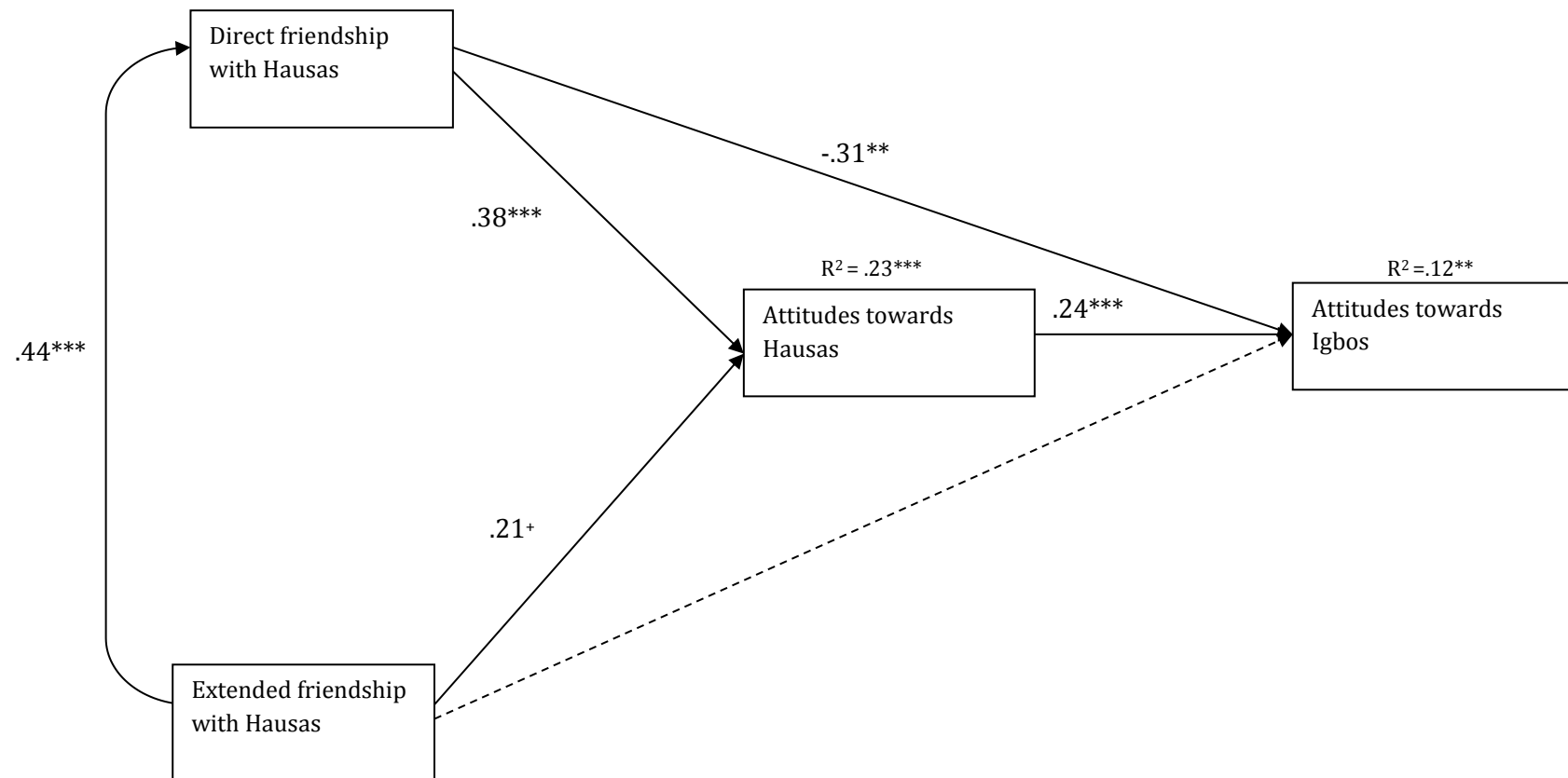


Figure 6. Path model with observed variables: Secondary transfer effect from direct and extended cross-group friendship (Study 4, reverse model).

Note.  $^{+} p < .10$ ,  $^{*} p < .05$ ,  $^{**} p < .01$ ,  $^{***} p < .001$ .  $N = 227$ . Unstandardized coefficients are shown; curved paths denote correlations between variables; control variables: Direct cross-group friendship with Hausas, extended cross-group friendship with Hausas.

All findings were obtained while controlling for direct and extended cross-group friendship with Igbos.

*Comparing the strength of direct and extended cross-group friendship effects*

As in Study 3, the hypothesis was tested in a supplementary model with matching single items assessing direct and extended cross-group friendship. To test my hypotheses, I estimated relationships between cross-group friendship with Igbos and extended cross-group friendship with Igbos (independent variables), attitudes towards Igbos (mediator), and attitudes towards the secondary out-group Hausas (dependent variable). The model was tested using path analysis with observed variables in MPlus (Version 6.1).

The model (Figure 7) fit the data well ( $\chi^2 = 2.82$ ,  $df = 2$ ,  $p = .24$ ,  $\chi^2/df = 2.44$ ,  $CFI = .99$ ,  $RMSEA = .04$ ,  $SRMR = .02$ ) and explained 11% and 17% of the variance of attitudes towards Igbos and Hausas, respectively. Direct cross-group friendship with Igbos ( $b = .22$ ,  $SE = .08$ ,  $p < .01$ ) and extended cross-group friendship with Igbos ( $b = .21$ ,  $SE = .08$ ,  $p < .05$ ) were both positively associated with attitudes towards Igbos. Attitudes towards Igbos were positively associated with attitudes towards Hausas ( $b = .26$ ,  $SE = .07$ ,  $p < .001$ ). The bootstrap point estimate of the indirect effect of direct cross-group friendship with Igbos and attitudes towards Hausas, via attitudes towards Igbos, was .06, with a 99% confidence interval of [.01; .15]. The direct path from direct cross-group friendship with Igbos to attitudes towards Hausas was not significant ( $b = -.02$ ,  $SE = .08$ ,  $p = .79$ ), which indicated full mediation.

The bootstrap point estimate of the indirect effect of extended cross-group friendship with Igbos and attitudes towards Hausas, via attitudes towards Igbos,

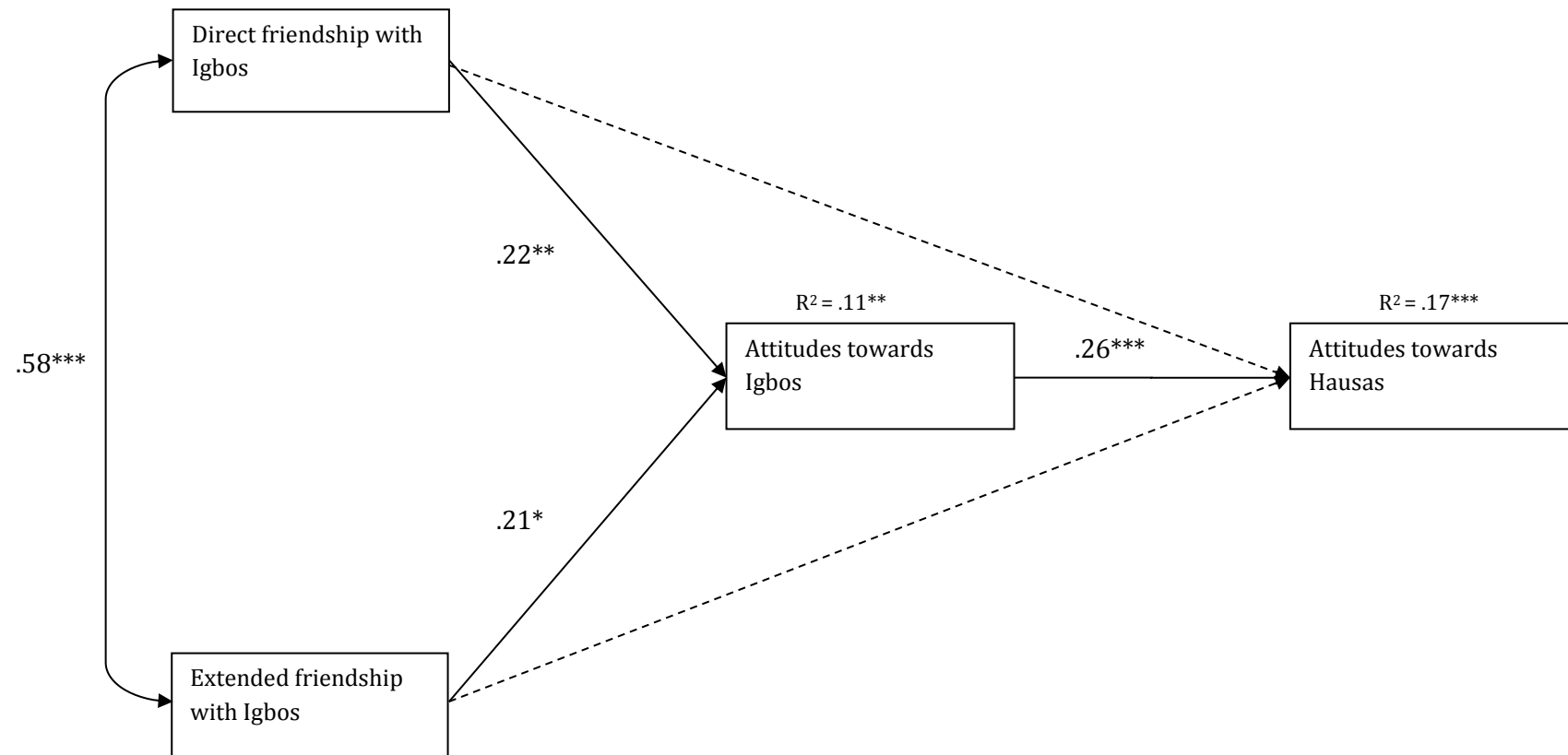


Figure 7. Path model with observed variables: Secondary transfer effect from direct and extended cross-group friendship B (Study 4).  
 Note.  $^{*} p < .05$ ,  $^{**} p < .01$ ,  $^{***} p < .001$ .  $N = 227$ . Unstandardized coefficients are shown; curved paths denote correlations between variables; control variables: Direct cross-group friendship with Hausas, extended cross-group friendship with Hausas.

was .06, with a 95% confidence interval of [.01; .15]. The direct path from extended cross-group friendship with Igbos to attitudes towards Hausas was not significant ( $b = .08$ ,  $SE = .08$ ,  $p = .35$ ), which indicated full mediation. All findings were obtained while controlling for direct and extended cross-group friendship with Hausas.

## ***Discussion***

The following paragraphs summarize the main findings of Study 4 and discuss hypothesis-confirming and -disconfirming findings. Hypothesis 1 predicted that direct cross-group friendship with the primary out-group (Igbos) would predict more positive attitudes towards the secondary out-group (Hausas). The relationship would be mediated via more positive attitudes towards the primary out-group (attitude generalization) (Hypothesis 1a). The effect would hold while controlling for direct and extended cross-group friendship with the secondary out-group (Hypothesis 1b). Hypothesis 2 predicted that extended cross-group friendship with the primary out-group (Igbos) would be positively related to attitudes towards the secondary out-group (Hausas). The relationship would be mediated via more positive attitudes towards the primary out-group (attitude generalization) (Hypothesis 2a). The effect would hold while controlling for direct and extended cross-group friendship with the secondary out-group (Hypothesis 2b).

The findings of Study 4 largely supported the hypotheses. Direct cross-group friendship with Igbos was associated with more positive attitudes towards Hausas. (Hypothesis 1) The relationship was mediated via more favourable attitudes towards Igbos (attitude generalization) (Hypothesis 1a). The relationship held while controlling for direct and extended cross-group friendship with Hausas (secondary out-group)

(Hypothesis 1b). The findings supported the hypothesis and were in line with previous research on the secondary transfer effect (e.g., Pettigrew, 2009; Tausch et al., 2010a).

Extended cross-group friendship with Igbos was associated with more positive attitudes towards Hausas (Hypothesis 2). The relationship was mediated via more favourable attitudes towards Igbos (Hypothesis 2a). The relationship held while controlling for direct and extended cross-group friendship with Hausas (secondary out-group) (Hypothesis 2b). The findings supported the hypotheses and showed that extended cross-group friendship can produce secondary transfer effects, similar to direct cross-group friendship.

The reverse model, whereby direct and extended cross-group friendship with Hausas (secondary out-group) was associated with more positive attitudes towards Igbos (primary out-group), mediated via attitudes towards Hausas, was also confirmed. The results were obtained while controlling for direct and extended cross-group friendship with Igbos (primary out-group). The reverse secondary transfer model held equally well as the regular model, providing further support of the secondary transfer effect (see also Tausch et al., 2010a).

However, as in Study 3, the reverse model produced a negative direct relationship between direct cross-group friendship with Hausas and attitudes towards Igbos. A direct negative effect between contact with one out-group and attitudes towards another out-group is not an unusual finding (see Study 3; Tausch et al., 2010a; Vezzali & Giovannini, 2011). This counterintuitive finding may be explained in terms of a suppression effect. Direct cross-group friendship with Hausas may have two opposing effects on attitudes towards Igbos. On the one hand, it produced an effect in line with the attitude generalization hypothesis, whereby direct cross-group friendship with Hausas predicted more positive attitudes towards Igbos, mediated via more favourable



attitudes towards Hausas. On the other hand, one out-group may be viewed as ally in intergroup conflict. Thus, direct cross-group friendship with the ally group could then induce more negative attitudes towards the rival group (see Study 3; Tausch et al., 2010a). Hypothesis 3 predicted that direct cross-group friendship would be a stronger predictor of the secondary transfer effect than extended cross-group friendship. The analysis showed that the secondary transfer effect from direct cross-group friendship and extended cross-group friendship were of about equal magnitude. The findings did not support Hypothesis 3.

## **General Discussion**

The following paragraphs revisit the findings of Studies 3 and 4 in relation to previous research findings, before drawing conclusions. Studies 3 and 4 found that extended cross-group friendship was associated with improved out-group attitudes, over and above the effect of direct cross-group friendship. The results were in line with the findings of other researchers who found that direct and extended cross-group friendships, albeit correlated, make independent contributions to prejudice reduction (Paolini et al., 2004, 2007; Pettigrew et al., 2007).

As a replication of previous findings, both studies found secondary transfer effects from direct cross-group friendship. However, while there has been support for the secondary transfer effect of direct cross-group friendship and intergroup contact (e.g., Eller & Abrams, 2004; Pettigrew, 1997, 2009; Schmid et al., 2012; Tausch et al., 2010a; Vezzalli & Giovannini, 2011), no research has, to my knowledge, studied secondary transfer effects from extended cross-group friendship or extended contact. As a novel contribution to the literature Studies 3 and 4 showed secondary transfer effects from both direct and extended cross-group friendship.

While there is empirical evidence for attitude generalization as mediating mechanism of the secondary transfer effect from direct contact and direct cross-group friendship (e.g., Pettigrew, 2009; Tausch et al., 2010a), the present research consistently provided evidence for attitude generalization as mediating mechanism of the secondary transfer effect from extended cross-group friendship.

The notion that direct cross-group friendship yields stronger secondary transfer effects than extended cross-group friendship was supported in Study 3 (university), but not in Study 4 (secondary school). In Study 4 the secondary transfer effect from direct and extended cross-group friendship was about equally strong. The correlations between direct and extended cross-group friendship were higher in Study 3 than in Study 4. This difference may be explained in terms of the respondents' younger age (Study 4) It is possible that in this study the line between their own friends and their friends' friends may be less clear. The younger respondents may differentiate less strongly between their own friends and friends' friends, and that they are more likely to belong to one big circle of friends. This may explain why the effects from direct and extended cross-group friendship were about equally strong.

## **Summary**

Replicating previous findings, Study 3 and 4 suggested that extended cross-group friendship made an independent contribution to the improvement of out-group attitudes, over and above the effect of direct cross-group friendship. As a new addition to the literature, the present research was the first to provide evidence for secondary transfer effects from extended cross-group friendship. Furthermore, attitude generalization was supported as an underlying process of the secondary transfer effect for both direct and extended cross-group friendship. The reverse secondary transfer

model held almost equally well, which suggested that the secondary transfer effects from direct and extended cross-group friendship were bidirectional.

It was expected that direct cross-group friendship, as a particularly effective form of intergroup contact, would yield stronger secondary transfer effects than extended cross-group friendship. However, while this prediction was supported in a study with university students (Study 3), the findings indicated that the effects were about equally strong in a study with secondary school pupils (Study 4).

## **CHAPTER FIVE**

### **Secondary Transfer Effects from Negative Intergroup Contact**

#### **Negative Intergroup Contact**

##### **The Effects of Positive and Negative Intergroup Contact**

For several decades research on intergroup contact primarily focused on the beneficial, prejudice-reducing effects of positive intergroup contact and largely overlooked the potential negative effects of intergroup contact (Pettigrew, 2008; Pettigrew & Tropp, 2011). However, in recent years more researchers have considered the potential negative effects of intergroup contact. On the one hand, research findings indicate that positive intergroup contact may undermine disadvantaged groups' support for social change (e.g., Dixon, Tropp, Durrheim, & Tredoux, 2010; Reicher, 2007). Research suggests that positive intergroup contact can produce false perceptions of equality in members of disadvantaged groups (Saguy, Tausch, Dovidio, & Pratto, 2009). On the other hand, research has shown that negative intergroup contact is associated with increased threat perceptions (e.g., Aberson & Gaffney, 2008; Stephan et al., 2000, 2002) and exacerbated prejudice (see Barlow et al., 2012, Stark et al., 2013).

The vast majority of research has shown that intergroup contact is associated with reduced prejudice (e.g., Pettigrew, 1997, 1998; van Laar et al., 2005; see Pettigrew & Tropp, 2006, for meta-analytic review). However, Pettigrew and Tropp's (2006) meta-analytic test of 515 studies found that a small proportion of studies (21 studies or 4%) showed a positive association between intergroup contact and prejudice (mean  $r = +.21$ ). To get an understanding of the conditions which inhibit the prejudice-reducing effect of contact, or even increase prejudice, the effects of negative intergroup contact

need to be studied systematically (Pettigrew, 2008; Pettigrew & Topp, 2011). The initial evidence for the effect of negative intergroup is reviewed in the following paragraphs.

### **Negative Contact and Integrated Threat Theory**

A few studies have tested the effect of negative intergroup contact in the context of integrated threat theory of intergroup attitudes (Stephan & Stephan, 2000). Stephan and Stephan's (2000) basic threat model predicts that four types of threat cause out-group prejudice. The different threats they identified were realistic threat (i.e., perceived threats to the existence of the in-group), symbolic threats (i.e., perceived threats to the in-group's value system), intergroup anxiety, and negative stereotypes. Later versions of the integrated threat model introduced several antecedents of threat, such as the strength of identification with the in-group and negative intergroup contact. According to these models, each antecedent predicts prejudice directly and is mediated via the different threats (e.g., Stephan et al., 2002).

Stephan et al. (2000), for instance, studied predictors of women's attitudes towards men. The authors hypothesized that negative contact increases realistic threat (i.e., threats to women's political and economic power), symbolic threat (i.e., value differences between men and women), intergroup anxiety (i.e., anxiety experienced during social interaction with men), and negative stereotypes of men. The four indicators of threat were in turn expected to predict higher levels of negative attitudes towards men. Negative intergroup contact was measured with a comprehensive 17-item scale, which assessed a wide range of negative contact experiences with men (e.g., being treated as inferior, verbally abused, intimidated). Symbolic threat, intergroup anxiety, and negative contact were found to be the strongest predictors of negative attitudes towards men. Negative contact was a particularly strong predictor of negative

attitudes towards men, as it predicted negative attitudes towards men directly as well as indirectly via some of the threat variables. The findings did not support realistic threat as a significant predictor of women's attitudes towards men.

Stephan et al. (2002) utilized integrated threat theory of intergroup attitudes to study Black and White American students' attitudes towards each other. Negative intergroup contact, strength of in-group identity, negative stereotyping, perceptions of intergroup conflict, and perceived status inequality between the groups were tested as antecedents of threat. Negative intergroup contact was measured using a 14-item scale (Stephan et al., 2000), which assessed a range of negative contact experiences with the other racial group (e.g., being insulted, physically abused). The relationships between the antecedents of threat including negative contact and attitudes towards the other racial group were mediated via threat perceptions. Threat perceptions were found to be highest among White and Black participants who had had negative contact with the other group, held negative stereotypes about them, identified strongly with their own group, perceived Blacks and Whites to be in conflict, and believed there was substantial status difference between the two groups.

Aberson and Gaffney (2008) employed the integrated threat model for the prediction of White Americans' implicit and explicit attitudes towards African Americans. Attitudes towards African Americans were predicted by threat perceptions (realistic threat, symbolic threat, intergroup anxiety) and antecedents of threat (positive and negative intergroup contact, status, in-group identification, negative stereotyping). At large, the findings were in line with the predictions of integrated threat theory. The authors extended integrated threat theory by including negative as well as positive intergroup contact as antecedents of threat. Positive contact was related to a decrease in threat perception while negative contact was related to an increase in

threat perceptions. Positive and negative intergroup contact both predicted perceptions of threat and attitudes towards African Americans. The findings suggested that positive and negative contact are distinct experiences which uniquely predict out-group attitudes.

### **Recent Research Findings on Negative Intergroup Contact**

Pettigrew (2008) and Pettigrew and Tropp (2011) studied German citizens' positive and negative intergroup contact with foreigners living in Germany. Negative contact was found to be much more common among people with high levels of intergroup contact. Respondents who reported negative contact also usually experienced a considerable amount of positive contact, which may counter the effects of negative contact (Pettigrew & Tropp, 2011). Negative contact was found to be more common in involuntary contact situations (e.g., workplace). Pettigrew (2008) found that positive and negative contact are not mutually exclusive.

Building on self-categorization theory (Turner et al., 1997), Paolini et al. (2010) tested a new hypothesis of a valence-salience effect, whereby negative intergroup contact predicts a higher awareness of group membership (i.e., category salience) than positive intergroup contact. Previous research has shown that the generalization of contact effects from one specific out-group member to the out-group as a whole is more effective when category salience is high (Brown & Hewstone, 2005; Hewstone & Brown, 1986).

Paolini et al. (2010) systematically varied contact valence (positive versus negative contact) and tested its effect on category salience in two experimental studies. In a laboratory experiment on direct face-to-face intergroup contact, White Australians interacted with a female confederate of Sri Lankan origin. The confederate's non-verbal

behaviour towards the participant was either cold and detached (negative contact experience), warm and welcoming (positive contact experience), or a mixture of both (neutral contact experience). When describing the interaction afterwards, the participants made earlier and more frequent reference to the ethnicity of their interaction partner when the confederate showed negative (versus neutral or positive) behaviour. In a second study, the authors conducted a two-wave experimental test of intergenerational contact between younger and older Americans. The participants (young Americans) were asked to recall a contact experience with an elderly person, which was either positive or negative, or a mixture of both. As predicted, negative contact (versus positive contact) predicted increased category salience over time. In both studies group membership was found to be most salient in the negative contact condition.

Category salience is likely to be higher when experiencing negative contact, as the negative contact experiences may be more consistent with expectations people hold about negatively perceived out-groups (e.g., Oakes, Haslam, & Turner, 1994). The asymmetrical relationship between positive versus negative contact, and category salience suggested that the effects of negative intergroup contact generalized more readily and have stronger effects on attitudes towards the entire out-group than positive intergroup contact effects. However, Paolini et al.'s (2010) model did not extend to out-group attitudes. The actual relationship between contact valence, category salience and out-group attitudes is yet to be tested.

Barlow and colleagues (2012) tested the moderating role of contact valence (positive versus negative) in the relationship between quantity of contact and out-group prejudice in two studies. In the first study, using a sample of White Australian participants the authors found that contact valence moderated the relationship between



quantity of intergroup contact with and prejudice against Black Australians, Muslim Australians, and asylum seekers. Negative contact was found to be a stronger and more consistent predictor of prejudice than was positive contact. In the second study, using a sample of White Americans, the authors also found that the relationship between quantity of contact and attitudes towards African Americans was moderated by contact valence. Negative intergroup contact was found to be a stronger predictor of racism and avoidance than positive contact. Across both studies, the authors found that the relationship between contact quantity and prejudice was moderated by the valence of contact. Negative contact was more strongly related with an increase in prejudice and racism than was positive contact with its reduction.

Stark and colleagues (2013) tested the generalization of positive (liking) and negative (disliking) attitudes towards individual out-group members to attitudes towards the out-group as a whole. The authors conducted a cross-sectional (Study 1) and a three-wave longitudinal study (Study 2). The samples comprised secondary school pupils in the Netherlands. They tested the attitudes of majority group (Dutch) pupils towards minority group (Turks, Moroccans) pupils and vice versa. The authors found that negative interpersonal attitudes predicted attitudes towards the out-group in general, over and above the effect of positive interpersonal attitudes. When comparing the strength of generalization of positive and negative interpersonal attitudes, the effects were about equally strong, in both studies, which contradicts earlier findings. Previous research has shown that negative intergroup contact is more strongly associated with negative attitudes than positive intergroup contact is with positive attitudes (Barlow et al., 2012). Research findings indicate that the salience of group membership in negative contact situations is higher and therefore negative contact effects are more likely generalize than positive contact effects (Barlow et al.,

2012; Paolini et al., 2010). Research has also shown that contact effects generalize more readily when the encountered out-group member is perceived as typical for their group (Brown & Hewstone, 2005). According to Stark et al. (2013) their findings may be explained by the different time dimension used in their study. Their study used long-term classmates in schools as target groups. Their data was collected over a period of nine months. The long-term exposure to their classmates may have dispersed the information about the out-group over time. The out-group classmates may sometimes be perceived as typical of their out-group and sometimes not (Stark et al., 2013). More research is necessary to conclusively determine whether or not negative intergroup contact has stronger effects on attitudes than positive contact. Overall, Stark et al.'s (2013) study emphasizes the importance of testing the effects of positive and negative contact experiences simultaneously, as they both contribute to out-group attitude formation.

Bekhuis, Ruiter, and Coenders (2013) studied the effects of positive and negative intergroup contact on xenophobic attitudes among majority and minority group elementary school pupils in the Netherlands. The respondents were asked to evaluate their intergroup contact with different out-groups (e.g., Dutch, Surinamese, Turks, Moroccan) on a five point bipolar scale with the end points "very negative" and "very positive". The level of xenophobia was found to be relatively low when pupils perceived their inter-ethnic contact as positive, and relatively high when they perceived their inter-ethnic contact as negative. However, the impact of negative inter-ethnic contact disappeared or reversed when multiculturalism was actively promoted during school lessons. The findings were obtained while controlling for educational level, self-esteem, and perceived economic and cultural threat.

## Summary

To date research on intergroup contact has primarily focused on the beneficial, prejudice-reducing effects of positive intergroup contact. Research has largely overlooked the potential of negative contact experiences to exacerbate out-group prejudice (Pettigrew, 2008; Pettigrew & Tropp, 2011). So far the scarce literature on negative contact has shown that negative intergroup contact is associated with increases in threat and prejudice (Aberson & Gaffney, 2008; Pettigrew & Tropp, 2011; Stephan et al., 2000, 2002). Research findings suggest that diversity exposes individuals to both positive and negative intergroup contact. However, it was also shown that positive contact is much more common than negative contact. It has been suggested that positive contact experiences may be able to counter the effects of negative intergroup contact (Pettigrew, 2008; Pettigrew & Tropp, 2011).

There has been some evidence of a valence-salience effect, whereby negative intergroup contact predicts higher category salience than positive intergroup contact. This suggests that negative contact effects may generalize more readily than positive contact effects (Paolini et al., 2010). On the one hand, subsequent research findings suggested that negative contact is more strongly related with an increase in prejudice than positive contact with its reduction (Barlow et al., 2012). On the other hand, other researchers found that the strength of generalization is the same for positive and negative interpersonal attitudes (Stark et al., 2013). More research is needed in order to obtain a better understanding of the effects of negative contact and its generalization. However, so far the initial studies emphasized the importance of testing the effects of positive and negative contact experiences simultaneously, as they both contribute to out-group attitude formation (see Stark et al., 2013).

## Study 5

### *The present research*

The present research studied effects of positive (cross-group friendship) and negative intergroup contact on attitudes towards contacted and non-contacted out-groups. Firstly, as a replication of previous findings, I tested whether cross-group friendship yielded secondary transfer effects (e.g., Pettigrew, 1997; Chapter 4, in this thesis). Secondly, as a novel addition to the literature, I examined whether negative intergroup contact yielded secondary transfer effects (negative secondary transfer effect, nSTE). Previous research has shown that threat effects can generalize to uninvolved minorities. Researchers found that following the terrorist attacks in Madrid in 2004, prejudice increased not only towards Arabs, but also towards uninvolved out-groups (e.g., Jews) (Echebarria-Echabe & Fernandez-Guede, 2006; cf. Pettigrew & Tropp, 2011). However, no research has to my knowledge provided evidence for a secondary transfer effect from negative intergroup contact. The present study aimed to provide empirical evidence of negative secondary transfer effects (as suggested by Pettigrew & Tropp, 2011). My research aimed to show that negative contact does not only generalize to the out-group as a whole, it also generalizes broadly to other uninvolved out-groups, which may be detrimental for intergroup relations.

In the present study the effects of cross-group friendship and negative contact were tested simultaneously in the same model. On the one hand, I did this under the assumption that both positive and negative contact contribute to attitude formation (Barlow et al., 2012; Bekhuis et al., 2013; Stark et al., 2013). On the other hand, this enabled me to test whether negative contact has predictive power over and above the effect of positive intergroup contact and vice versa. Additionally, when testing negative secondary transfer effects, I controlled for contact with the secondary out-groups. This

was done to prevent the occurrence of spurious ‘secondary transfer effects’ which can merely be explained due to the fact that the respondents who have contact with one out-group have contact with the secondary out-group(s) as well (‘secondary contact problem’, Tausch et al., 2010a).

### ***Hypotheses***

The present study tested two hypotheses:

1. Cross-group friendship with Igbos (primary out-group) will be positively related with attitudes towards Edos and Hausas (secondary out-groups).
  - a. The relationships will be mediated via attitudes towards Igbos (attitude generalization).
  - b. The effects will hold while controlling for cross-group friendship and negative contact with Hausas and Edos.
2. Negative intergroup contact with Igbos (primary out-group) will be negatively related with attitudes towards Edos and Hausas (secondary out-groups).
  - a. The relationships will be mediated via attitudes towards Igbos (attitude generalization).
  - b. The effects will hold while controlling for positive and negative contact with Edos and Hausas.

### ***Method***

#### ***Procedure***

Participants were randomly selected to participate in the survey study. Students were approached in their hall of residence and invited to participate in the study. The

questionnaires included measures of cross-group friendship, negative intergroup contact, and attitudes towards three different groups, namely Edos, Igbos, and Hausas. The different measures were assessed for each target group separately. The order of measures was counter-balanced.

### *Research design and participants*

Four hundred and thirty-seven students participated in the survey (Ethnicity:  $N = 17$  Edo,  $N = 68$  Igbo,  $N = 1$  Hausa,  $N = 325$  Yoruba,  $N = 26$  Other minorities). The responses of 112 participants, who self-identified as members of minority ethnic groups (i.e., the non-Yoruba participants mentioned above), were removed from the dataset. The final sample thus comprised 325 undergraduate and graduate students in 131 different rooms, who were all of Yoruba origin (mean age = 18.81,  $SD = 2.12$ , years, range 16 to 28; gender:  $N = 94$  male,  $N = 231$  female; religion:  $N = 272$  Christianity,  $N = 52$  Islam,  $N = 1$  other religion). The data was collected in two halls of residence at the University of Ibadan in Nigeria.

### *Measures*

Positive contact/ Cross-group friendship. Positive contact was operationalized as cross-group friendship in the present study. Two items measured cross-group friendships with each target group. Respondents were asked “In secondary school, how many of your friends were: a. Edos, b. Hausas, c. Ibos?” and “How many of your friends today are: a. Edos, b. Hausas, c. Ibos?” The respondents were asked to indicate their responses on five-point scales (1 = *none*, 2 = *few*, 3 = *many*, 4 = *most*, 5 = *all*). Higher scores denoted more cross-group friendships. The two items which each measured

cross-group friendship with Edos ( $r = .55, p < .01$ ), Hausas ( $r = .49, p < .01$ ), and Igbos ( $r = .59, p < .01$ ) were positively correlated.

Negative intergroup contact. Respondents were asked, “Have you ever had any bad experiences with Edos/ Hausas/ Igbos?” and “Have you ever been made to feel unwanted by Edos/ Hausas/ Igbos?” The respondents were asked to indicate their responses on five-point scales with two anchors (1 = *never*, 5 = *very often*). Higher scores denoted more negative intergroup contact. The two items which each measured negative intergroup contact with Edos ( $r = .49, p < .01$ ), Hausas ( $r = .67, p < .01$ ), and Igbos ( $r = .64, p < .01$ ) were positively correlated.

To measure out-group attitudes, feeling thermometers (Converse & Presser, 1986) were used. Attitudes towards the three out-groups were measured with the question, “How do you feel towards Edos/ Hausas/ Igbos?”. The respondents were asked to indicate how ‘cold’ or ‘warm’ they felt towards Edos, Hausas, and Igbos on a thermometer measure, ranging from 0 to 100 degrees. Higher scores denoted warmer, more positive attitudes towards the target group.

## **Results**

### *Preliminary analysis*

Means, standard deviations and correlations are displayed in Table 7. Cross-group friendship with Edos was positively associated with attitudes towards Edos ( $r = .25, p < .01$ ) and Igbos ( $r = .16, p < .01$ ), but unrelated with attitudes towards Hausas ( $r = .08, p = .21$ ). Cross-group friendship with Hausas was positively associated with

Table 7: Means, Standard Deviations, and Correlations between Predictor, Mediator, and Criterion Variables (Study 5)

|                            | <i>M</i> | <i>SD</i> | 2     | 3     | 4    | 5     | 6     | 7     | 8     | 9      |
|----------------------------|----------|-----------|-------|-------|------|-------|-------|-------|-------|--------|
| 1. Friendship Edos         | 1.85     | .53       | .29** | .51** | .12* | .17** | .06   | .25** | .08   | .16**  |
| 2. Friendship Hausas       | 1.48     | .68       | -     | .21** | .14* | .15*  | .02   | .10   | .24** | .05    |
| 3. Friendship Igbos        | 2.43     | .67       |       | -     | .12* | .07   | .03   | .09   | -.001 | .11    |
| 4. Negative Contact Edos   | 1.43     | .84       |       |       | -    | .25** | .39** | -.04  | .00   | -.10   |
| 5. Negative Contact Hausas | 1.70     | 1.16      |       |       |      | -     | .31** | .13*  | -.10  | .17**  |
| 6. Negative Contact Igbos  | 1.92     | 1.18      |       |       |      |       | -     | -.01  | .01   | -.19** |
| 7. Attitudes Edos          | 60.40    | 18.65     |       |       |      |       |       | -     | .43** | .47**  |
| 8. Attitudes Hausas        | 47.79    | 22.22     |       |       |      |       |       |       | -     | .22**  |
| 9. Attitudes Igbos         | 64.01    | 19.65     |       |       |      |       |       |       |       | -      |

*Note.* \*  $p < .05$ , \*\*  $p < .01$ ;  $N = 325$ .



attitudes towards Hausas ( $r = .24, p < .01$ ), but unrelated with attitudes towards Igbos ( $r = .05, p = .43$ ). The relationship between cross-group friendship with Hausas and attitudes towards Edos ( $r = .10, p = .09$ ) was marginally significant. The relationship between cross-group friendship with Igbos and attitudes towards Igbos was marginally significant ( $r = .11, p = .08$ ). Cross-group friendship with Igbos was unrelated with attitudes towards Edos ( $r = .09, p = .14$ ) and Hausas ( $r = -.001, p = .99$ ).

The correlation coefficients showed that cross-group friendship with one out-group tends to be positively associated with attitudes towards this out-group, but not (or to a much lesser degree) with other out-groups. The findings contradict the 'generalized prejudice model', which explains the generalization of attitudes to uninvolved out-groups through a generally higher level of tolerance towards various out-groups. Following the generalized prejudice model the link between contact with Hausas and attitudes towards a range of target groups should be of similar magnitude. Any secondary transfer effects based on this data are likely to be explained through a 'secondary contact model' whereby contact with and attitudes towards the primary out-group were antecedents of attitudes towards the secondary out-group (i.e., attitude generalization) (Pettigrew, 2009; Tausch et al., 2010a).

Negative contact with Edos was unrelated with attitudes towards Edos ( $r = -.04, p = .49$ ), Hausas ( $r = .001, p = .98$ ), and Igbos ( $r = -.10, p = .11$ ). Negative contact with Hausas was positively associated with attitudes towards Edos ( $r = .13, p < .05$ ) and Igbos ( $r = .17, p < .01$ ), but unrelated with attitudes towards Hausas ( $r = -.10, p = .11$ ). Negative contact with Igbos was negatively associated with attitudes towards Igbos ( $r = -.19, p < .01$ ), but unrelated with attitudes towards Edos ( $r = -.01, p = .82$ ) and Hausas ( $r = .01, p = .91$ ).

Negative intergroup contact yielded some unexpected correlations with other variables. Firstly, while negative contact with Igbos was associated with less favourable attitudes towards Igbos, negative contact with Edos and Hausas was unrelated with attitudes towards Edos and Hausas respectively. Secondly, negative contact with Hausas was associated with more positive attitudes towards Edos and Igbos. The mostly Christian respondents may view Edos and Igbos, who are also Christians, as allies in the intergroup conflict with Hausas, a predominantly Muslim ethnic group. Conflict and negative contact experiences with Hausas may therefore be associated with more positive attitudes towards Edos and Igbos.

Cross-group friendship with Edos was positively associated with cross-group friendship with Hausas ( $r = .29, p < .01$ ) and Igbos ( $r = .51, p < .01$ ). Cross-group friendship with Hausas was positively associated with cross-group friendship with Igbos ( $r = .21, p < .01$ ). Negative contact with Edos was positively associated with negative contact with Hausas ( $r = .25, p < .01$ ) and Igbos ( $r = .39, p < .01$ ). Negative contact with Hausas was positively associated with negative contact with Igbos ( $r = .31, p < .01$ ).

Cross-group friendship with Edos was positively associated with negative contact with Edos ( $r = .12, p < .05$ ) and Hausas ( $r = .17, p < .01$ ), but unrelated with negative contact with Igbos ( $r = .06, p = .29$ ). Cross-group friendship with Hausas was positively associated with negative contact with Edos ( $r = .14, p < .05$ ) and Hausas ( $r = .15, p < .05$ ). Cross-group friendship with Igbos was positively associated with negative contact with Edos ( $r = .12, p < .05$ ), but unrelated with negative contact with Hausas ( $r = .07, p = .25$ ) and Igbos ( $r = .03, p = .59$ ). The correlations between negative contact and cross-group friendship are mostly positive and significant. This indicated that positive and negative intergroup contact are not mutually exclusive. It is likely that respondents,

who live and study in diverse environments, are exposed to both positive and negative intergroup contact (see Stark et al., 2013).

Attitudes towards Edos were positively associated with attitudes towards Hausas ( $r = .43, p < .01$ ) and Igbos ( $r = .47, p < .01$ ). Finally, attitudes towards Hausas were positively associated with attitudes towards Igbos ( $r = .22, p < .01$ ).

#### *Path model testing the secondary transfer effect of negative contact*

To test my hypotheses, I estimated relationships between cross-group friendship with Igbos and negative contact with Igbos (independent variables), attitudes towards Igbos (mediator), and attitudes towards the secondary out-groups Edos and Hausas (dependent variables). The model was tested using path analysis with observed variables in MPlus, Version 6.1 (Muthen & Muthen, 1998-2010). Due to the small number of items used to assess each variable, I used path analysis with observed variables, instead of structural equation modelling with latent variables, to analyse the data.

A number of respondents who participated in the survey were each other's roommates, which may have introduced dependencies among the responses. Potential non-independence arises when lower level observations (respondents) are nested in higher-level units (rooms). In the present study I did not test any hypotheses about relationships on the room-level; therefore, I used a single level method of data analysis which controls for the nestedness of the data, rather than multilevel modelling. I employed MPlus, complex sample analysis, with maximum likelihood estimation with robust standard errors to analyse the data (MLR, Muthen & Muthen, 1998-2000). MPlus' complex sample analysis provides adjusted standard errors and goodness-of-fit statistics for hierarchical data (Muthen & Sattora, 1995; Stark et al., 2013).

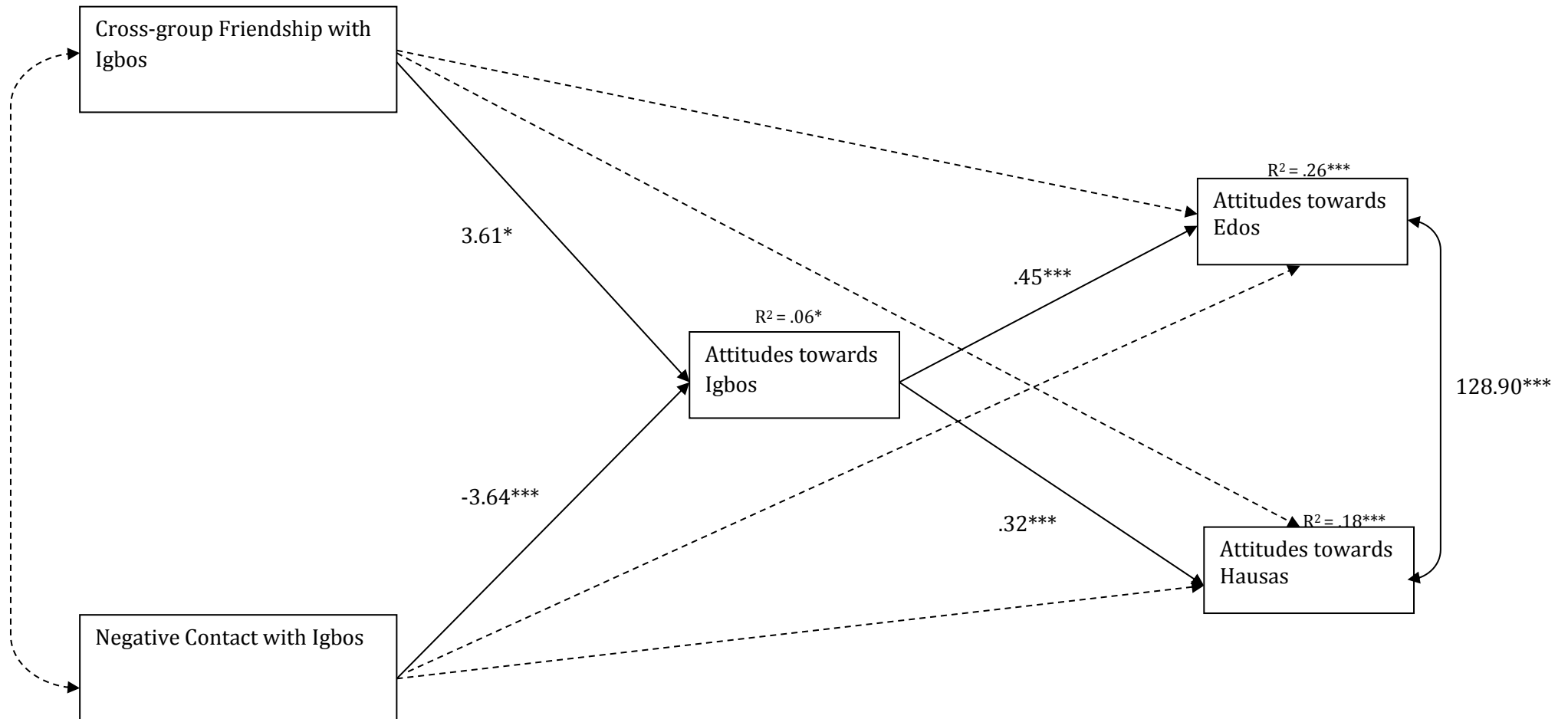


Figure 8. Path model with observed variables: Secondary transfer effect from cross-group friendship and negative contact mediated via attitude generalization.

Note.  $^* p < .05$ ,  $^{**} p < .01$ ,  $^{***} p < .001$ .  $N = 325$ ; unstandardized coefficients; curved paths denote correlations between variables. Dashed paths denote non-significant relationships; control variables: Cross-group friendship with Edos, cross-group friendship with Hausas, negative contact with Edos, negative contact with Hausas.

The model (Figure 8) fit the data well (Model fit:  $X^2 = 22.66$ ,  $df = 8$ ,  $p < .01$ ,  $X^2/df = 2.83$ ,  $CFI = .92$ ,  $RMSEA = .08$ ,  $SRMR = .04$ ) and explained 6% of the variance of attitudes towards Igbos, 26% of the variance of attitudes towards Edos, and 18% of the variance of attitudes towards Hausas. Cross-group friendship with Igbos was positively associated with attitudes towards Igbos ( $b = 3.61$ ,  $SE = 1.68$ ,  $p < .05$ ). The direct path between cross-group friendship with Igbos and attitudes towards Edos was not significant ( $b = -1.82$ ,  $SE = 1.66$ ,  $p = .27$ ). The direct path between cross-group friendship with Igbos and attitudes towards Hausas was not significant ( $b = -2.79$ ,  $SE = 1.97$ ,  $p = .16$ ) either. Negative contact with Igbos was negatively associated with attitudes towards Igbos ( $b = -3.64$ ,  $SE = 1.03$ ,  $p < .001$ ). The direct path between negative contact with Igbos and attitudes towards Edos was not significant ( $b = 1.34$ ,  $SE = .83$ ,  $p = .11$ ). The direct path between negative contact with Igbos and attitudes towards Hausas was not significant ( $b = 1.69$ ,  $SE = 1.16$ ,  $p = .15$ ) either, and attitudes towards Igbos were positively associated with attitudes towards Edos ( $b = .45$ ,  $SE = .06$ ,  $p < .001$ ). Attitudes towards Igbos were positively associated with attitudes towards Hausas ( $b = .32$ ,  $SE = .09$ ,  $p < .001$ ).

Indirect relationships were tested using the Sobel test of mediation (Preacher & Hayes, 2004), as the bootstrapping procedure is not yet available for the analysis of complex data models. The indirect relationship between cross-group friendship with Igbos and attitudes towards Edos via attitudes towards Igbos was significant ( $b = 1.61$ ,  $z = 2.10$ ,  $p < .05$ ). The direct path between cross-group friendship with Igbos and attitudes towards Edos was not significant, which indicated full mediation. The indirect relationship between negative contact with Igbos and attitudes towards Edos via attitudes towards Igbos was significant ( $b = -1.62$ ,  $z = 3.33$ ,  $p < .001$ ). The direct path between negative contact with Igbos and attitudes towards Edos was not significant,

which indicated full mediation. The indirect relationship between cross-group friendship with Igbos and attitudes towards Hausas via attitudes towards Igbos fell just short of reaching statistical significance ( $b = 1.14, z = 1.87, p = .06$ ). The indirect relationship between negative contact with Igbos and attitudes towards Hausas via attitudes towards Igbos was significant ( $b = -1.15, z = -2.38, p < .05$ ). The direct path between negative contact with Igbos and attitudes towards Hausas was not significant, which indicated full mediation. All findings were obtained while controlling for cross-group friendship with Edos and Hausas, and negative contact with Edos and Hausas

#### *Reverse secondary transfer effects*

Two models (one for each secondary out-group) tested the reverse secondary transfer effects. The first reverse secondary transfer model, whereby cross-group friendship and negative contact with the secondary out-group (Edos) predicted attitudes towards the primary out-group (Igbos) was tested (Figure 9). The data was, again, analysed using path analysis with observed variables and MPlus, using complex sample analysis.

The model fit the data well (Model fit:  $X^2 = .51, df = 2, p\text{-value} = p = .78, X^2/df = .26, CFI = 1.00, RMSEA = .00, SRMR = .01$ ) and explained 6% and 29% of the variance of attitudes towards Edos and Igbos, respectively. Cross-group friendship with Edos was positively associated with attitudes towards Edos ( $b = 8.59, SE = 1.81, p < .001$ ). The direct path between cross-group friendship with Edos and attitudes towards Igbos was not significant ( $b = 1.07, SE = 2.53, p = .67$ ). The relationship between negative contact with Edos and attitudes towards Edos was not significant ( $b = -1.94, SE = 1.43, p = .17$ ). The direct path between negative contact with Edos and attitudes towards Igbos was

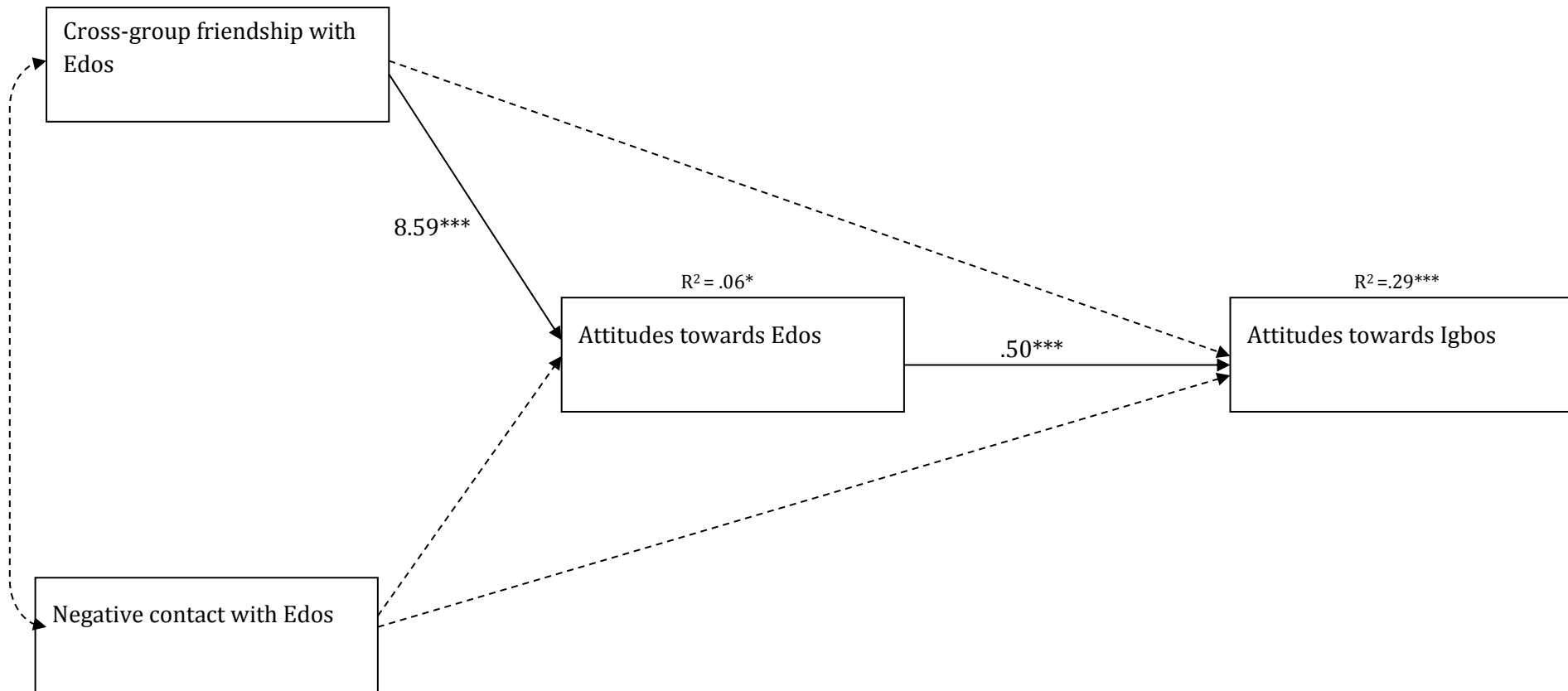


Figure 9: Path model with observed variables: Secondary transfer effect from cross-group friendship and negative contact mediated via attitude generalization (reverse STE 1).  
*Note.* \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .  $N = 325$ ; unstandardized coefficients; curved paths denote correlations between variables. Dashed paths denote non-significant relationships; control variables: Cross-group friendship with Igbos, negative contact with Igbos.

not significant ( $b = -.71, SE = 1.70, p = .68$ ) either. Attitudes towards Edos were positively associated with attitudes towards Igbos ( $b = .50, SE = .08, p < .001$ ).

Indirect relationships were tested using the Sobel test of mediation (Preacher & Hayes, 2004). The indirect relationship between cross-group friendship with Edos and attitudes towards Igbos, via attitudes towards Edos, was significant ( $b = 4.33, z = 1.20, p < .001$ ). The direct path between cross-group friendship with Edos and attitudes towards Igbos was not significant, which indicated full mediation. The indirect relationship between negative contact with Edos and attitudes towards Igbos, via attitudes towards Edos, was not significant ( $b = -.98, z = -1.30, p = .19$ ).

The second reverse secondary transfer model, whereby cross-group friendship and negative contact with the secondary out-group (Hausas) predicted attitudes towards the primary out-group (Igbos), was also considered (Figure 10). Again, the data was analysed using path analysis with observed variables with MPlus' complex sample analysis.

The model fit the data (Model fit:  $X^2 = 1.37, df = 2, p\text{-value} = p = .01, X^2/df = .69, CFI = 1.00, RMSEA = .00, SRMR = .01$ ) and explained 10% and 18% of the variance of attitudes towards Hausas and Igbos, respectively. Cross-group friendship with Hausas was positively associated with attitudes towards Hausas ( $b = 10.52, SE = 2.33, p < .001$ ). The direct path between cross-group friendship with Hausas and attitudes towards Igbos was marginally significant ( $b = -2.79, SE = 1.52, p = .07$ ). The relationship between negative contact with Hausas and attitudes towards Hausas fell just short of statistical significance ( $b = -2.30, SE = 1.23, p = .06$ ). The direct path between negative contact with Hausas and attitudes towards Igbos was positive and significant ( $b = 4.94, z = 1.04, p < .001$ ). The positive relationship between negative contact with Hausas and attitudes



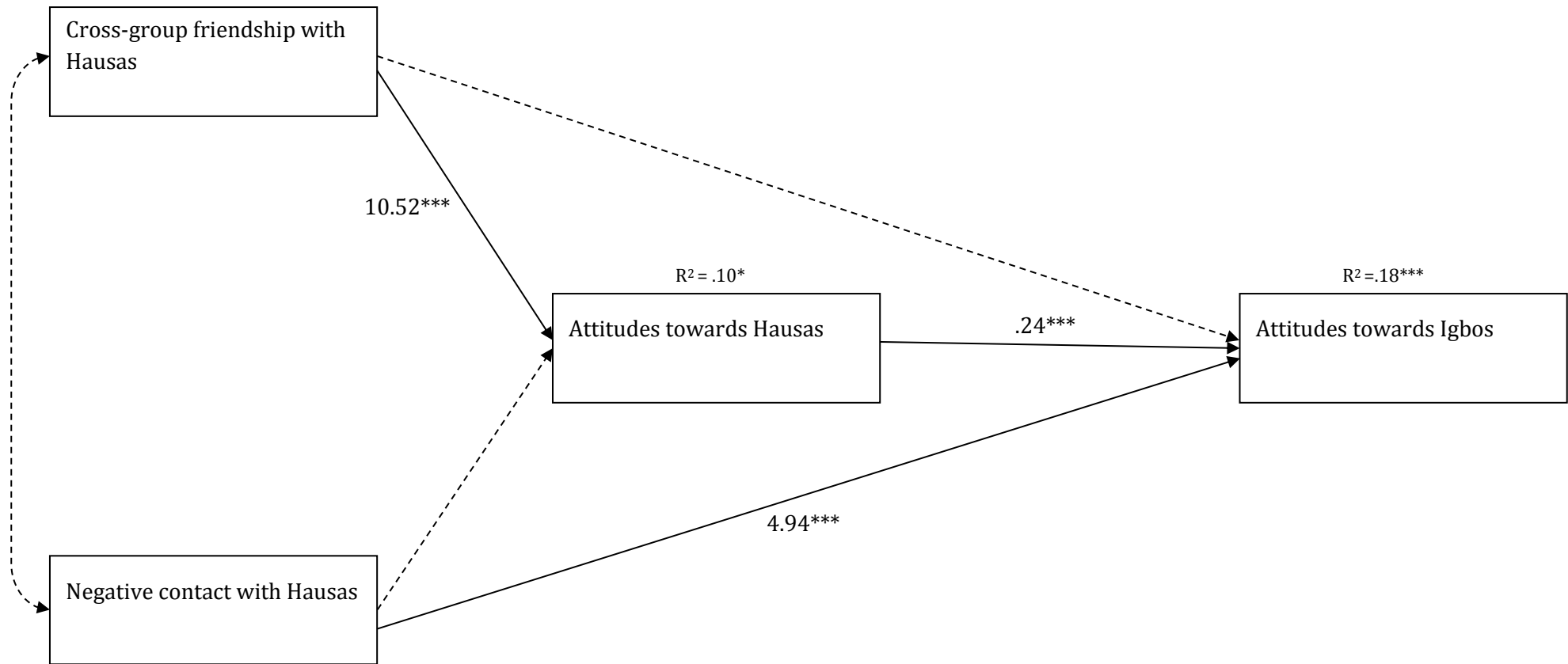


Figure 10. Path model with observed variables: Secondary transfer effect from cross-group friendship and negative contact mediated via attitude generalization (reverse STE 2).

Note. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .  $N = 325$ ; unstandardized coefficients; curved paths denote correlations between variables. Dashed paths denote non-significant relationships; control variables: Cross-group friendship with Igbos, negative contact with Igbos.

towards Igbos was an unexpected finding, which will be addressed in the 'Discussion' section. Attitudes towards Hausas were positively associated with attitudes towards Igbos ( $b = .24, SE = .08, p < .001$ ).

Again, indirect relationships were tested using the Sobel test of mediation (Preacher & Hayes, 2004). The indirect relationship between cross-group friendship with Hausas and attitudes towards Igbos, via attitudes towards Hausas, was significant ( $b = 2.47, z = 3.12, p < .01$ ). The direct path between cross-group friendship with Hausas and attitudes towards Igbos was not significant, which indicated full mediation. The indirect relationship between negative contact with Hausas and attitudes towards Igbos, via attitudes towards Hausas, was marginally significant ( $b = -.54, z = -1.74, p = .08$ ).

## ***Discussion***

The following paragraphs summarise the main findings of the present study and discuss hypothesis-confirming and -disconfirming findings. Hypothesis 1 predicted that cross-group friendship with Igbos (primary out-group) would be positively related to attitudes towards Edos and Hausas (secondary out-groups). More specifically, the relationship would be mediated via attitudes towards Igbos (attitude generalization) (Hypothesis 1a). This hypothesis also predicted that the effect would hold while controlling for cross-group friendship and negative contact with Hausas and Edos (Hypothesis 1b). The findings partly supported Hypothesis 1. Cross-group friendship with Igbos was associated with more positive attitudes towards Edos (Hypothesis 1). The relationship was mediated via more favourable attitudes towards Igbos (Hypothesis 1a). The relationship held while controlling for cross-group friendship with Edos and Hausas, and negative contact with Edos and Hausas (Hypothesis 1b).

However, the relationship between cross-group friendship with Igbos and attitudes towards Hausas, mediated via attitudes towards Igbos, was only marginally significant. The results were obtained while controlling for cross-group friendship with Edos and Hausas, and negative contact with Edos and Hausas.

The findings demonstrated that attitude generalization does not work equally well for all secondary out-groups. When testing the secondary transfer effect with Edos as secondary out-group, the effect was confirmed. However, when testing the secondary transfer effect using Hausas as secondary out-group, the effect was only marginally significant. A likely explanation for this difference is the effect of a 'similarity gradient' (Pettigrew, 2009). Research findings suggest that attitude generalization is most effective when the groups involved are perceived as similar to each other (e.g., Pettigrew, 2009; van Laar et al., 2005). Given the central role of religion in Nigeria, an evident commonality between Edos and Igbos is their shared religious belief. While Igbos and Edos are predominantly Christians, Hausas are predominantly Muslims and may therefore be perceived as dissimilar to the other two groups. This may lead to a less strong attitude generalization, or no attitude generalization at all for Hausas as secondary out-group.

Hypothesis 2 predicted that negative intergroup contact with Igbos (primary out-group) would be associated with less positive attitudes towards Edos and Hausas (secondary out-groups). More specifically, the relationships would be mediated via less positive attitudes towards Igbos (attitude generalization) (Hypothesis 2a). The hypothesis also predicted that the effect would hold while controlling for cross-group friendship and negative contact with Edos and Hausas (Hypothesis 2b).

Negative contact with Igbos was associated with less positive attitudes towards Edos (Hypothesis 2). The relationship was mediated via less positive attitudes towards

Igbos (Hypothesis 2a). The effect held while controlling for cross-group friendship and negative contact with Edos and Hausas (Hypothesis 2b). Negative contact with Igbos was associated with less positive attitudes towards Hausas (Hypothesis 2). The relationship was mediated via less positive attitudes towards Igbos (Hypothesis 2a). The relationship held while controlling for cross-group friendship and negative contact with Edos and Hausas (Hypothesis 2b). The findings supported Hypothesis 2. The negative secondary transfer effect was confirmed for both secondary out-groups. The findings showed that negative contact with Igbos is not only related to less positive attitudes towards Igbos; the effect also generalized to other uninvolved out-groups.

Similar to the secondary transfer effect from cross-group friendship (Hypothesis 1), the negative secondary transfer effect seems to have a stronger effect on Edos than Hausas. Again, a potential explanation can be offered in terms of a similarity gradient effect (Pettigrew, 2009).

#### *Reverse secondary transfer effect models*

Firstly, I tested a reverse secondary transfer effect model, whereby cross-group friendship and negative contact with Edos (secondary out-group) were associated with attitudes towards Igbos (primary out-group), mediated via attitudes towards Edos. The effects were expected to hold while controlling for cross-group friendship and negative contact with Igbos. Indeed, cross-group friendship with Edos was associated with more positive attitudes towards Igbos. The relationship was mediated via more favourable attitudes towards Edos (attitude generalization). The relationship held while controlling for cross-group friendship and negative contact with Igbos. However, the relationship between negative contact with Edos and attitudes towards Igbos, mediated via less

positive attitudes towards Edos, was not significant. The negative secondary transfer effect was not confirmed.

Secondly, I tested a second reverse secondary transfer effect model, whereby cross-group friendship and negative contact with Hausas (secondary out-group) predicted attitudes towards Igbos (primary out-group). More specifically, the effects were expected to be mediated via attitudes towards Hausas. The effects were expected to hold while controlling for cross-group friendship and negative contact with Igbos.

Cross-group friendship with Hausas was associated with more positive attitudes towards Igbos. The relationship was mediated via more favourable attitudes towards Hausas (attitude generalization). The relationship held while controlling for cross-group friendship and negative contact with Igbos. The relationship between negative contact with Hausas and attitudes towards Igbos, mediated via attitudes towards Hausas, fell just short of statistical significance. The findings were obtained while controlling for cross-group friendship and negative contact with Igbos.

Surprisingly, the model produced a positive direct relationship between negative contact with Hausas and attitudes towards Igbos. This counterintuitive finding may be explained with reference to the complex multi-group structure in Nigeria, where some out-groups may be favoured over others. Again, as the majority of the respondents were Christians they may favour Igbos (Christians) over Hausas (Muslims) based on their shared religious belief. It is therefore possible that negative contact experiences with the rival group (Hausas) induced more positive attitudes towards the ally group (Igbos) (see Chapter 4, in this thesis; Tausch et al., 2010a). The lack of support for the negative secondary transfer effect in both reverse models was due to the fact that negative contact with Edos and Hausas did not predict attitudes towards Edos and Hausas respectively. Therefore, no generalization of a negative contact effect could take place.

## Summary

Largely replicating previous findings, this study yielded secondary transfer effects from cross-group friendship (e.g., Pettigrew, 1997). The secondary transfer effect was supported for Edos, but not for Hausas, as secondary out-group. As a novel contribution to the literature, the present study provided the first empirical evidence for a negative secondary transfer effect. The study showed that negative contact with Igbos was associated with less positive attitudes towards both Edos and Hausas, mediated via attitudes towards Igbos. The findings demonstrated that secondary transfer effects from both cross-group friendship and negative contact were mediated via attitude generalization.

The findings of the reverse secondary transfer models were more complex. In line with previous research, secondary transfer effects from cross-group friendship (positive contact) were found (see also Chapter 4 in this thesis). However, neither of the reverse models yielded negative secondary transfer effects. This was due to the fact that negative contact with Hausas and Edos was not significantly associated with attitudes towards Hausas and Edos, respectively, in this study. Thus, no negative contact effects could generalize to any secondary out-group. The present research provided initial evidence for a negative secondary transfer effect. The findings demonstrated that negative contact can generalize broadly by exacerbating prejudice towards encountered and non-encountered out-groups.

## **CHAPTER SIX**

### **Interethnic Roommates: Roommate Diversity and the Secondary Transfer Effect**

#### **Intergroup Roommate Relationships**

##### **Why Study Roommate Relationships?**

Over the past decade, an increasing number of researchers have studied intergroup roommate relationships in university halls of residence, in order to test the effects of close long-term intergroup contact (e.g., Phelps et al., 1998; Shook & Clay, 2012; Shelton, West, & Trail, 2010; Trail, Shelton, & West, 2009; West, Pearson, Dovidio, Shelton, & Trail, 2009; West, Shelton, & Trail, 2009). Halls of residence are comparable to small societies, where people live, work, and socialize within a small geographical area. A certain amount of intergroup contact is unavoidable, as all students make use of shared facilities in the halls of residence (Nesdale & Todd, 1998, 2000).

For example, Nesdale and Todd (1998) found that the ratio of minority versus majority group members predicted the amount of intergroup contact that students had in their halls of residence. They studied intergroup contact as a function of the intergroup ratio in three halls of residence at an Australian university. The study was conducted as a longitudinal study over a period of one academic year. The sample consisted of international (mostly Chinese) and Anglo-Australian students. The students lived in three residence halls, with each group comprising a numerical majority, equal proportion, and a numerical minority in one of the residential halls, respectively. The authors tested the generalization of intergroup contact (i.e., the hall of residence) in one setting to other settings (i.e., the wider university). Students of both groups had no prior

contact with each other. Nesdale and Todd (1998) found that the group ratio of international and Anglo-Australian students had a systematic effect on the amount of the intercultural contact between the two groups. Members of minority groups, regardless of which group considered, had significantly more intergroup contact compared to the numerical majority or in equal sized residential groups. The amount of intergroup contact experienced by the numerical majority and the equal size group did not differ significantly, which suggested that both groups found enough members of their own cultural group to socialize with. The findings suggested that minority group members had a greater opportunity for incidental contact. Additionally, the authors found that the pattern of contact in the residence hall generalized to the wider university environment. Students with more hall of residence contact (i.e., the numerical minority) had more intergroup contact on campus, and were also more culturally knowledgeable and accepting in comparison to students who had less contact (i.e., the numerical majority or equal size groups).

The amount of intergroup contact is especially high when several students with different racial or ethnic backgrounds share a room as roommates. Roommate contact has the potential to meet all of Allport's (1954) optimal conditions for favourable intergroup contact. The students who are staying in a hall of residence have *equal status*. They need to *work cooperatively* in order to reach their *common goal* of maintaining suitable living conditions. Intergroup contact and egalitarian norms are supported by the university (*authority support*) and students have the opportunity to get to know each other in a personal setting, where they may discover commonalities and disconfirm negative stereotypes (Nesdale & Todd, 1998, 2000; van Laar et al., 2005). In surroundings of frequent and intimate intergroup contact, intergroup friendships are likely to develop (*friendship potential*, Pettigrew, 1998).



The main benefits of studying roommate relations derive from the random allocation of students to their roommates (natural field experiment) and the possibility to study roommate relationships longitudinally. This research design rules out selection effects and allows researchers to draw causal inferences (e.g., van Laar et al., 2005; Shook & Fazio, 2008a).

### **In-group versus Cross-group Roommates**

So far, research on the effects of intergroup roommate relations has yielded a mix of positive and negative findings. Overall, cross-group roommate relationships were found to be of poorer quality and more likely to dissolve than same-group roommate relationships (Phelps et al., 1998; Shook & Fazio, 2008a, 2008b; Towles-Schwen & Fazio, 2006; Trail et al., 2009).

Towles-Schwen and Fazio (2006), for instance, studied the quality of roommate relationship as a function of roommate's race. In Study 1, the authors examined predictors of the success of interracial roommate relationships. University freshmen were randomly paired to live together as interracial roommate pairs (White and African American students) or same-race roommate pairs (both students were White). The authors found that interracial roommate pairs showed less extensive joint activity and were more likely to dissolve than the paired white freshmen. The authors focused on the perspective of white students only in their analyses. The findings indicated that white students in interracial pairings were less satisfied with their roommate, spent less time with them outside their room, and less frequently engaged in joint activities with them. Interracial roommate pairs were also less involved in each other's friendship networks.

In Study 2, the authors tested whether automatically activated racial attitudes of white students (freshmen) who were assigned to live with a Black student predicted the stability and duration of their roommate relationship. The racial attitudes of White students, who were assigned to share a room with Black freshmen, were measured using an implicit attitude measure. The authors tested whether their automatically activated attitudes predicted the stability and duration of roommate relationships. Automatically activated prejudice is more likely to become apparent when the opportunity to control prejudiced reactions is low (e.g., tiredness, stress, distraction). It is then more likely that negatively automatically activated racial prejudice inhibits behavioural consequences of that attitude, even though individuals may be motivated to behave in a non-prejudiced manner. The authors found that White students' automatically activated prejudice, but not motivation to control prejudiced reactions, predicted the longevity of roommate relationships.

In a related study, Shook and Fazio (2008a) tested the effect of long-term interracial contact on automatically activated attitudes. The participants were White freshmen who were randomly assigned to a White or an African American roommate. The data was collected at the beginning and at the end of the semester. Interracial roommate relationships were generally rated as less positive than same-race relationships. White students who lived in interracial rooms reported less satisfaction and less involvement with their roommates compared to students who lived with a same-race roommate. However, the authors found that having an interracial roommate was still beneficial. They found that automatically activated racial attitudes and intergroup anxiety improved over time among students who lived in interracial rooms, but not amongst those staying in same-race rooms.

In another study, Shook and Fazio (2008b) studied the effects of same-race versus interracial roommate relationships on roommate relationship dissolution and academic achievement (i.e., grade point average). The study was based on archival data, which covered the span of two academic years. White and African American first-year students were assigned to live either with a White or African American roommate. Same-race roommates were composed of either two White or two Black students, while interracial roommate pairs were composed of a Black and a White student. Students were either randomly allocated to a roommate or they requested a specific roommate. Whether a roommate relationship was successful was determined by whether students still lived together at the end of the term. The authors found that interracial roommate relationships were more likely to dissolve than same-race roommate relationships. Moreover, randomly assigned living situations were less successful than the ones in which a certain roommate was requested. The authors found that African American students did better academically when living in an interracial living situation, while the academic achievement of white students was not affected by their roommate's race.

### **Cross-group Roommates and Out-group Attitudes**

While some studies suggest that intergroup roommate relations are more challenging than same-group roommate relationships (e.g., Shook and Fazio, 2008a; Trail et al., 2009), other studies have shown that having an out-group roommate does have benefits (e.g., Gaither & Sommers, 2013). Living with a cross-group roommate has been linked to reduced out-group prejudice in several studies (e.g., Shook & Clay, 2012; Shook & Fazio, 2008a, 2011; van Laar et al., 2005).

Van Laar et al. (2005), for instance, tested prejudice as a function of living with one or more interethnic roommates. The authors conducted a large-scale natural field

experimental test of contact theory at the University of California at Los Angeles (UCLA). The authors made use of a five-wave longitudinal design with data collected over a period of four years (1996 to 2000). Approximately 2000 students participated in the study. The dataset comprised members of the major ethnic groups in the area, namely Whites, Asians, Latinos, and African Americans. Roommates were randomly assigned in their first year and voluntarily chosen in the students' second and third year of study. The effect of voluntary long-term contact on prejudice was tested while controlling for pre-existing attitudes. Out-group attitudes were assessed using affective (e.g., negative feelings, intergroup anxiety), cognitive (e.g., symbolic racism, social dominance orientation, anti-miscegenation attitudes) and behavioural (e.g., friendship heterogeneity, interethnic dating) indicators of prejudice.

Consistent with contact theory, van Laar et al. (2005) found that students who were randomly assigned to live with out-group roommates at the start of their first year showed improved out-group attitudes by the end of the year. They found that living with a randomly assigned or voluntarily chosen out-group roommate generally reduced prejudice toward the roommate's racial group as a whole. Additionally, the authors found that these contact effects generalized to other, uninvolved out-groups. Having an African American roommate did not only predict more favourable attitudes towards African Americans, but also towards Latinos and vice versa ('Cross-over effect', van Laar et al., 2005; or 'Secondary transfer effect', Pettigrew, 2009). However, the authors also found that contact with Asian American roommates increased prejudice among Black and White students. Van Laar and colleagues (2005) considered two possible explanations for this unexpected finding. Firstly, Asian Americans may be perceived as the 'model minority' in the US. There is a relatively high likelihood of a negative social comparison between Asian Americans and other ethnic minorities with lower social

status (e.g., African Americans, Latinos). Secondly, these findings may be explained with 'peer socialisation', whereby students' attitudes may have converged with those of their highly prejudiced Asian American roommates. In van Laar et al.'s study Asian American students showed the highest level of prejudice against racial out-groups.

In a longitudinal study, Shook and Fazio (2011) studied same-race and interracial roommate relationships, and also compared the students' involvement in their roommates' social networks. White freshmen were randomly assigned to live with an African American or a White freshman roommate. Social network integration was found to be lower among interracial roommate relations compared to same-race roommates. In particular, the authors found that black roommates were less integrated into their white roommate's social network than were white roommates. However, roommate integration also depended on the quality of the roommate relationship and the participants' intergroup anxiety. Roommate relationship quality was a strong predictor of social network integration regardless of the roommate's race. The authors found that social network integration increased with relationship quality.

## **Summary**

To date, research on the effects of intergroup roommate relations has yielded a mix of positive and negative findings. On the one hand, research suggested that cross-group roommate relationships were of lower quality and more likely to dissolve than same-group roommate relationships (e.g., Shook & Fazio, 2008a; Towles-Schwen & Fazio, 2006). On the other hand, studies have found that having an out-group roommate has benefits. Living with a cross-group roommate has been linked to reduced out-group prejudice in several studies (e.g., Shook & Fazio, 2011; van Laar et al., 2005).

Additionally, van Laar and colleagues (2005) found that living with an out-group

roommate predicted not only more positive attitudes towards the roommate's ethnic group but also towards uninvolved out-groups. Their findings provided support for the secondary transfer effect in the context of cross-group roommate relationships (STE, Pettigrew, 2009).

## **Study 6**

### ***The present research***

This study tested the effects of living with cross-group roommates on out-group attitudes. Firstly, as a replication of previous findings, I tested whether intergroup contact with Igbos (primary out-group) predicted more favourable attitudes towards Edos and Hausas (secondary out-groups), mediated via attitudes towards Igbos. Secondly, as a new addition to the literature, I tested whether roommate diversity (i.e., living with one or more Igbo roommates) also yielded secondary transfer effects.

I expected that students who lived with an Igbo roommate would be included in their roommate's friendship network (see Towles-Schwen & Fazio, 2006; Shook & Fazio, 2011). Research findings suggested that relative to the schools' racial compositions same-race friendships were overrepresented in students' friendship networks (Quillian & Campbell, 2003). Even students who belonged to small racial minorities maintained friendship networks, which included several same-race friends. It is likely that Igbos have a number of Igbo friends in their friendship network on campus.

Students living with an Igbo roommate should therefore be more likely to meet other Igbos through their roommates, which should increase their opportunity for intergroup contact with Igbos even further. I predicted that students who lived in an ethnically diverse room had high levels of contact with their Igbo roommates as well as

relatively high levels of intergroup contact with Igbos beyond the roommate relationship. Therefore, I expected the relationship between roommate diversity and attitudes towards Igbos to be partially mediated via increased intergroup contact with Igbos outside the roommate relationship.

Thirdly, the study explored whether the effects of roommate diversity on attitudes towards Igbos generalized to other, uninvolved out-groups (STE, Pettigrew, 2009). Thus, as a novel contribution to the literature, the present study aimed to link diversity (i.e., roommate diversity) to the secondary transfer effect for the first time.

Van Laar et al. (2005) have shown that having a cross-group roommate predicts more favourable attitudes towards the roommate's ethnic group and other uninvolved out-groups. However, they recognized an important limitation of their study. As a large proportion of first year students participated in their study, it is likely that a number of respondents were each other's roommates, which could have introduced dependencies among the responses (see van Laar et al., 2005, p. 343). Non-independence of responses makes it more likely that standard methods of analysis (e.g., regression analysis) produce spuriously significant results (Cohen, Cohen, West & Aiken, 2003; Hox, 2010). While van Laar et al. (2005) analysed their data with standard methods of analysis, I employed multilevel (hierarchical) modelling techniques to account for the potential non-independence of responses.

### ***Hypotheses***

1. Intergroup contact with Igbos (primary out-group) will be related to more positive attitudes towards Edos and Hausas (secondary out-groups).
  - a. The effects will hold while controlling for intergroup contact with both secondary out-groups.

- b. The relationships will be mediated via more positive attitudes towards Igbos (attitude generalization).
- 2. Roommate diversity (i.e., living with at least one Igbo roommate) will be related to more positive attitudes towards Igbos. The effect will be partially mediated via higher levels of intergroup contact with Igbos.
- 3. Roommate diversity will be related to more positive attitudes towards Edos and Hausas (secondary out-groups).
  - a. The relationships will be mediated via higher levels of intergroup contact with Igbos and more positive attitudes towards Igbos (attitude generalization).
  - b. The relationships will hold even when controlling for intergroup contact with Edos and Hausas.

While Hypothesis 1 was tested on the within-level of the model which seeks to explain individual-level effects, Hypotheses 2 and 3 were tested on the between-level part of the model which seeks to explain average room-level effects (i.e., whether diversity of the room predicts higher average levels of contact in rooms, and higher average attitudes in rooms).

## ***Method***

### *Procedure*

The data collection was carried out in one male and one female hall of residence at the University of Ibadan, Nigeria. At the beginning of the academic year students had been randomly assigned to their rooms and roommates by the university's hall of residence administration. At the time of data collection in June and July 2012, students



had lived with their roommates for about 9 months. The students were approached in their halls of residence and invited to participate in the survey study on 'roommate relations'. The questionnaire included questions about the respondents' roommates (e.g., number of roommates, roommates' ethnicity), measures of intergroup contact, and out-attitudes. Each of the measures was assessed for the three out-groups (Edo, Hausa, Igbo) separately. The order of measures was counterbalanced (i.e., roommate questions versus intergroup contact and out-group attitudes).

### *Research design and participants*

The research design yielded a two-level hierarchical data structure, with respondents (within-level) nested within rooms (between-level). Four hundred and forty-one students participated in the survey study. One hundred and sixteen participants self-identified as members of minority ethnic groups (e.g., Igbo, Edo, Hausa and others). The responses of minority group members were removed from the dataset. The final sample thus comprised three hundred and twenty-five Yoruba participants in one hundred and thirty-one rooms. The degree of ethnic diversity varied across rooms. Fifty rooms were segregated rooms, composed of Yoruba (majority group) students only. Seventy-two rooms were to different degrees ethnically mixed (Yorubas & Igbos:  $N = 38$ , Yorubas & others (non-Igbo):  $N = 21$ , Yorubas, Igbos & others (non-Igbo):  $N = 12$ ) (see Figure 11). All segregated rooms were included in the analysis. Among the ethnically mixed rooms, I focused solely on rooms where Igbo and Yoruba students were staying together. The responses of  $N_{\text{within}} = 232$  respondents (gender: 74 male, 158 female; mean age: 18.81,  $SD = 2.14$ , range: 16 – 28), nested in  $N_{\text{between}} = 88$  rooms (50 segregated rooms, 38 mixed rooms; average room (cluster) size: 2.35) were included in the analysis.

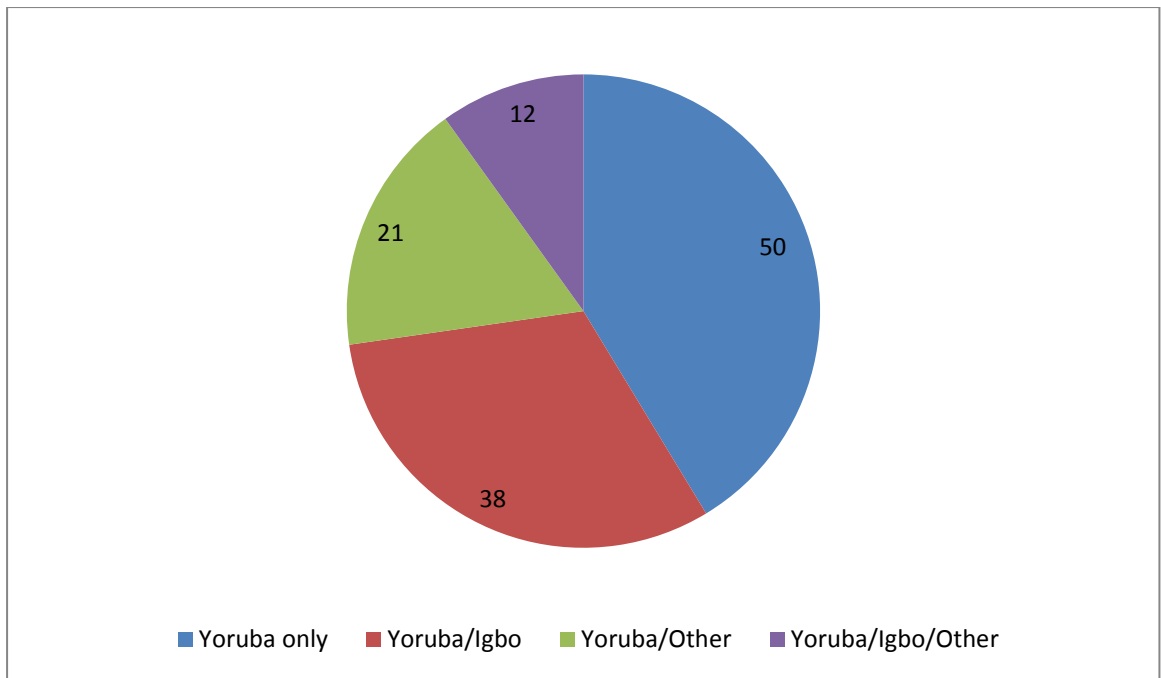


Figure 11. Ethnic composition of student rooms, N = 131 rooms;

## Measures

### Individual-level variables

**Intergroup contact.** Intergroup contact with Edos/ Igbos/ Hausas on the university campus was measured using the following items: “How much time do you spend with Edo/ Hausas/ Igbo in the following situations: a. Doing coursework, b. Social activity/ leisure/ sport, c. In your room?” The participants were instructed to think of their intergroup contact with out-group members who were not their roommates. The respondents were asked to indicate their response on a five-point scale with three anchors (1 = *never*, 3 = *occasionally*, 5 = *frequently*). Higher scores denoted higher levels of intergroup contact on the university campus<sup>1</sup>. The three items which measured intergroup contact with Edos ( $\alpha = .83$ ), Hausas ( $\alpha = .88$ ), and Igbos ( $\alpha = .85$ ), respectively, formed reliable scales.

<sup>1</sup> ‘Intergroup contact on the university campus will subsequently be referred to as ‘intergroup contact’.

Out-group attitudes. Out-group attitudes towards the three out-groups were measured using the following feeling thermometers (Converse & Presser, 1986): “How do you feel towards Edos/ Hausas/ Igbos?” The respondents were asked to indicate how ‘cold’ or ‘warm’ they felt towards Edos, Hausas, and Igbos on a thermometer measure, ranging from 0 to 100 degrees. Higher scores denoted warmer, more positive attitudes towards Edos, Hausas, and Igbos, respectively.

#### Room-level variables

Room size. The respondents were asked to indicate how many roommates they had (open-ended response).

Roommate diversity. Roommate diversity was operationalized as having one or more Igbo roommates. The respondents were asked to indicate the ethnic group membership of each of their roommates, “What is your first (second, third etc.) roommate’s ethnic group (tribe)? a. Edo, b. Hausa-Fulani, c. Igbo, d. Yoruba, e. Other (please specify).” Each room was subsequently categorized as either ethnically segregated (0) or mixed (1).

## **Results**

### *Preliminary analysis*

Means, standard deviations and correlations are displayed in Table 8. Roommate diversity<sup>2</sup> was positively associated with intergroup contact with Igbos ( $r = .26, p < .01$ ), but unrelated to contact with Hausas ( $r = .001, p = .99$ ). The relationship between roommate diversity and intergroup contact with Edos was marginally significant ( $r = -$

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<sup>2</sup> Living with one or more Igbo roommates.

.13,  $p = .06$ ). However, roommate diversity was unrelated to attitudes towards Edos ( $r = .004$ ,  $p = .96$ ), Hausas ( $r = -.01$ ,  $p = .89$ ), and Igbos ( $r = .11$ ,  $p = .11$ ).

Table 8: Means, Standard Deviations, and Correlations between Predictor, Mediator, and Criterion Variables (Study 6)

| Variable              | <i>M</i> | <i>SD</i> | 2    | 3     | 4     | 5     | 6     | 7     |
|-----------------------|----------|-----------|------|-------|-------|-------|-------|-------|
| 1. Roommate Diversity | .38      | .49       | -.13 | .001  | .26** | .004  | -.01  | .11   |
| 2. Contact Edo        | 2.42     | 1.06      | -    | .29** | .35** | .30** | .14   | .15*  |
| 3. Contact Hausas     | 1.78     | 1.01      |      | -     | .16*  | .08   | .29** | .04   |
| 4. Contact Igbos      | 3.32     | 1.11      |      |       | -     | .19** | .03   | .44*  |
| 5. Attitudes Edos     | 59.98    | 18.75     |      |       |       | -     | .43** | .44** |
| 6. Attitudes Hausas   | 42.27    | 22.55     |      |       |       |       | -     | .22*  |
| 7. Attitudes Igbos    | 62.84    | 19.99     |      |       |       |       |       | -     |

\*  $p < .05$ , \*\*  $p < .01$ ;  $N = 232$ .

Intergroup contact with Edos was positively associated with attitudes towards Edos ( $r = .30$ ,  $p < .01$ ) and Igbos ( $r = .15$ ,  $p < .05$ ). The relationship between intergroup contact with Edos and attitudes towards Hausas was marginally significant ( $r = .14$ ,  $p = .06$ ). Intergroup contact with Hausas was positively associated with attitudes towards Hausas ( $r = .29$ ,  $p < .001$ ), but unrelated to attitudes towards Edos ( $r = .08$ ,  $p = .28$ ) and Igbos ( $r = .04$ ,  $p = .58$ ). Intergroup contact with Igbos was positively associated with attitudes towards Igbos ( $r = .44$ ,  $p < .01$ ) and Edos ( $r = .19$ ,  $p < .01$ ), but was unrelated to attitudes towards Hausas ( $r = .03$ ,  $p = .66$ ).

Intergroup contact with Edos was positively associated with intergroup contact with Hausas ( $r = .29$ ,  $p < .01$ ) and Igbos ( $r = .35$ ,  $p < .01$ ). Intergroup contact with Hausas was positively associated with intergroup contact with Igbos ( $r = .16$ ,  $p < .05$ ). Attitudes towards Edos were positively associated with attitudes towards Hausas ( $r = .43$ ,  $p < .01$ )

and Igbos ( $r = .44, p < .01$ ). Finally, attitudes towards Hausas were positively associated with attitudes towards Igbos ( $r = .22, p < .01$ ). All correlations were in the expected direction and in line with the predictions of contact theory.

#### *Multilevel path analysis with observed variables*

Since my data was set up in a two-level hierarchical structure, appropriate statistical analysis techniques needed to be employed to deal with the potential non-independence of responses. Potential non-independence arises when lower level observations (respondents) are nested in higher-level units (rooms). Most standard statistical tests lean heavily on the assumption of independence of responses. A violation of that assumption can lead to the underestimation of standard errors and an increase in Type I errors. However, multilevel (hierarchical) modelling techniques estimate the hypothesised relationships between variables on within- and between-level parts of the model (Hox, 2010; Schmid et al., in press). The variables in the between-level part of the model were aggregated on the context level (see Marsh et al., 2009; Schmid et al., in press).

The data of the present study was analysed in a multilevel (hierarchical) path model in MPlus, Version 6.1 (Muthen & Muthen, 1998-2010), using restricted maximum likelihood estimation (RML). On the within-level part of the model, I estimated the direct relationships between intergroup contact with Igbos (independent variable), attitudes towards Igbos (mediator), and attitudes towards the secondary out-groups Edos and Hausas (dependent variables). On the between-level part of the model, I estimated the direct relationships between roommate diversity (independent variable), intergroup contact with Igbos (first-order mediator), attitudes towards Igbos (second-order mediator), and attitudes towards the secondary out-groups Edos and Hausas

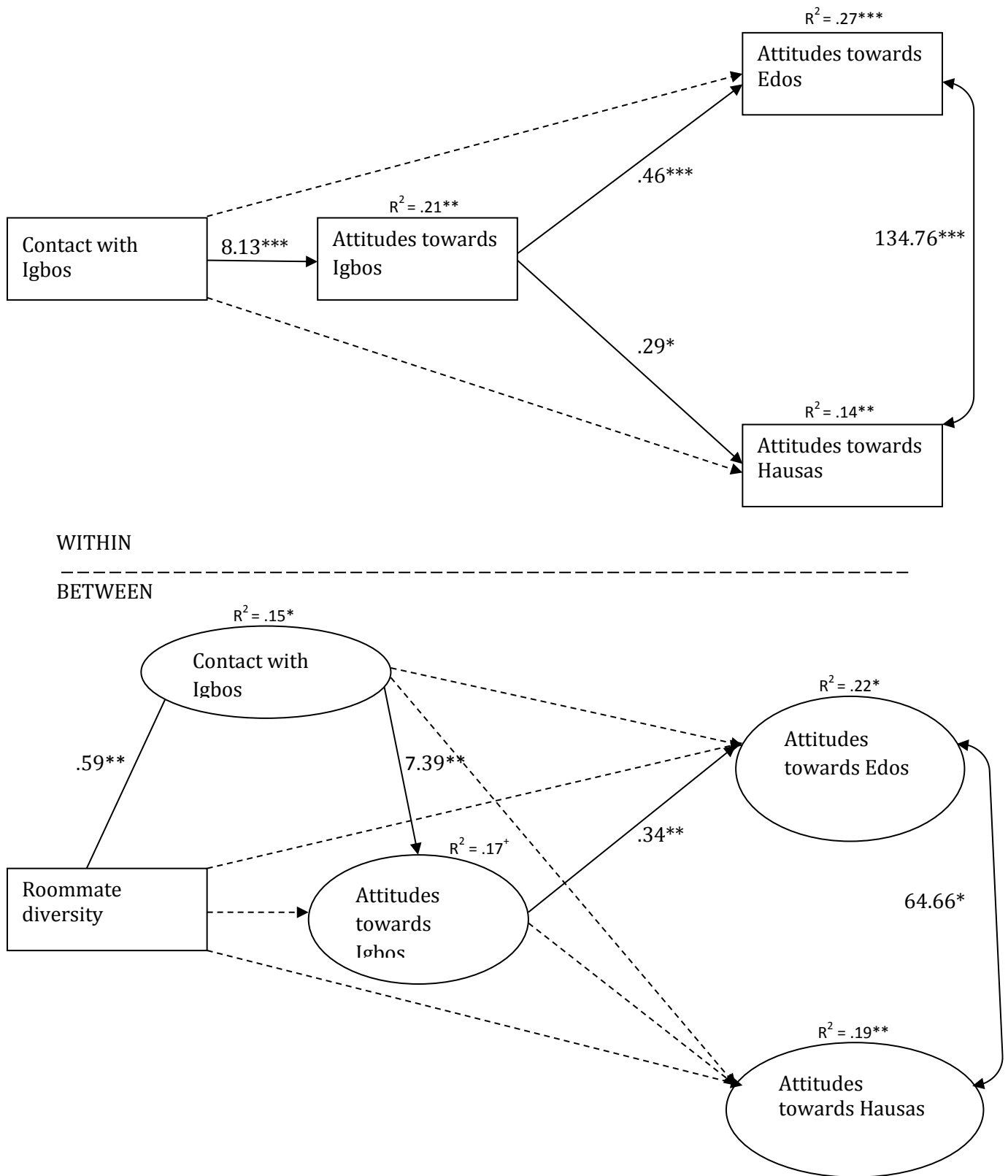


Figure 12. Multilevel path model, showing within-level and between-level relationships between roommate diversity, intergroup contact, and out-group attitudes (Study 6).

Note.  $^+ p = .10$ ,  $^* p < .05$ ,  $^{**} p < .01$ ,  $^{***} p < .001$ ,  $N_{within} = 232$ ,  $N_{between} = 88$ , unstandardized coefficients are shown; control variables: intergroup contact with Edos, intergroup contact with Hausas (within level); intergroup contact with Edos, intergroup contact with Hausas, room size (between level).

(dependent variables). Intergroup contact with the secondary out-groups was controlled for on the within- and between-level parts of the model. The model fit the data well ( $X^2 = 16.22$ ,  $df = 13$ ,  $p\text{-value} = p < .24$ ,  $X^2/df = 1.25$ ,  $CFI = .98$ ,  $RMSEA = .04$ ,  $SRMR = \text{within } .01, \text{between } .05$ ) (Figure 12).

Within-level relationships. Considering the direct within-level relationships first, intergroup contact with Igbos was associated with more positive attitudes towards Igbos ( $b = 8.13$ ,  $SE = 1.50$ ,  $p < .001$ ). The relationships between intergroup contact with Igbos and attitudes towards Edos was marginally significant ( $b = -2.26$ ,  $SE = 1.17$ ,  $p = .05$ ). The relationship between intergroup contact with Igbos and attitudes towards Hausas was not significant ( $b = -2.44$ ,  $SE = 1.67$ ,  $p = .15$ ). More positive attitudes towards Igbos were associated with more positive attitudes towards Edos ( $b = .46$ ,  $SE = .07$ ,  $p < .001$ ) and Hausas ( $b = .29$ ,  $SE = .12$ ,  $p < .05$ ). Indirect relationships were tested using the Sobel test of mediation (Preacher & Hayes, 2004), as the bootstrapping procedure is not yet available for testing multilevel models. The indirect relationship between intergroup contact with Igbos and attitudes towards Edos, via attitudes towards Igbos, was significant ( $b = 3.72$ ,  $z = 4.70$ ,  $p < .001$ ). The direct path from intergroup contact with Igbos and attitudes towards Edos was not significant, which indicated full mediation. The indirect relationship between intergroup contact with Igbos and attitudes towards Hausas, via attitudes towards Igbos, was also significant ( $b = 2.38$ ,  $z = 2.43$ ,  $p < .05$ ). The direct path from intergroup contact with Igbos and attitudes towards Hausas was not significant, which indicated full mediation. The within-level part of the model explained 21% of the variance of attitudes towards Igbos, 27% of the variance of attitudes towards Edos, and 14% of the variance of attitudes towards Hausas.

Between-level relationships. Considering the direct between-level relationships first, roommate diversity was associated with higher levels of intergroup contact with Igbos ( $b = .59, SE = .13, p < .001$ ). The direct relationships between roommate diversity and attitudes towards Igbos ( $b = .09, SE = 3.01, p = .98$ ), Edos ( $b = -.17, SE = 3.68, p = .96$ ), and Hausas ( $b = 2.62, SE = 3.90, p = .50$ ) were not significant. Intergroup contact with Igbos was associated with more positive attitudes towards Igbos ( $b = 7.39, SE = 2.42, p < .01$ ). However, intergroup contact with Igbos was not associated with attitudes towards Edos ( $b = -.95, SE = 2.14, p = .66$ ) and Hausas ( $b = -3.64, SE = 3.49, p = .30$ ). Attitudes towards Igbos were associated with more positive attitudes towards Edos ( $b = .34, SE = .12, p < .01$ ), but not with attitudes towards Hausas ( $b = .14, SE = .19, p = .47$ ).

Again using the Sobel test of mediation, the indirect relationship between roommate diversity and attitudes towards Igbos, via intergroup contact with Igbos, was significant ( $b = 4.37, z = 2.66, p < .01$ ). The direct path from roommate diversity and attitudes towards Igbos was not significant, which indicated full mediation. The indirect relationship between intergroup contact with Igbos and attitudes towards Edos, via intergroup contact with Igbos and attitudes towards Igbos, was significant ( $b = 1.50, z = 2.11, p < .05$ ). The direct relationship between intergroup contact with Igbos and attitudes towards Edos was not significant, which indicated full mediation. The indirect relationship between intergroup contact with Igbos and attitudes towards Hausas, via contact with Igbos and attitudes towards Igbos, did not reach statistical significance ( $b = .60, z = .71, p = .48$ ). The between-level part of the model explained 15% of the variance of intergroup contact with Igbos, 17% of the variance of attitudes towards Igbos, 21% of the variance of attitudes towards Edos, and 19% of the variance of attitudes towards Hausas.



## ***Discussion***

The main aim of this study was to show that living with a cross-group roommate was associated with more positive attitudes towards the roommate's ethnic group as a whole (Igbos) and that the effect generalized to two other uninvolved out-groups (Edos & Hausas). In the following paragraphs I summarize the main findings of this study. I also discuss hypothesis-confirming and -disconfirming findings before drawing conclusions.

Hypothesis 1 predicted that intergroup contact with Igbos (primary out-group) will be related to more positive attitudes towards Edos and Hausas (secondary out-groups). The effects will hold while controlling for intergroup contact with both secondary out-groups (Hypothesis 1a). The relationships will be mediated via more positive attitudes towards Igbos (Hypothesis 1b). The findings supported the hypothesis. In the within-level part of the model (i.e., showing individual-level effects), intergroup contact with Igbos was associated with more positive attitudes towards Edos and Hausas (Hypothesis 1). The relationship between intergroup contact with Igbos and attitudes towards Edos, and the relationship between intergroup contact with Igbos and attitudes towards Hausas were both mediated via more favourable attitudes towards Igbos (Hypothesis 1a). The relationships held while controlling for intergroup contact with Edos and Hausas (Hypothesis 1b). The findings provided support for Hypothesis 1a and were in line with previous findings on the secondary transfer effect (e.g., Pettigrew, 2009; Tausch et al., 2010a).

The findings showed that attitude generalization was stronger for Edos than Hausas, which can be explained in terms of a similarity gradient (see Pettigrew, 2009). It has been argued that the strength of attitude generalization depends on the perceived similarity between the involved out-groups. Research has shown that attitude

generalization is stronger between groups which are perceived as similar to each other (e.g., Tausch et al., 2010a; Pettigrew, 2009; Schmid et al., 2012). The predominantly Christian Igbos and Edos were likely to be perceived as more similar by the respondents, due to the shared religious faith. Hausas are predominantly Muslims and may, therefore, be perceived as dissimilar to Igbos by the respondents (see Chapter 4).

Hypothesis 2 predicted that roommate diversity (i.e., living with at least one Igbo roommate) will be related to more positive attitudes towards Igbos. The effect will be mediated via higher levels of intergroup contact with Igbos (Hypothesis 2a). The findings supported the hypothesis. In the between-level part of the model (i.e., showing average room-level effects), roommate diversity was included as contextual variable. Roommate diversity was associated with more positive attitudes towards Igbos (Hypothesis 2), the effect was mediated via intergroup contact with Igbos (Hypothesis 2a). The findings indicated that on average, diversity of the room predicted higher average levels of intergroup contact of the room and more positive average out-group attitudes of the room as one unit. In this study, intergroup contact with Igbos was defined as intergroup contact that the respondents had outside their roommate relationships. The findings suggested that roommate diversity increased the opportunity for intergroup contact with Igbos, which was in turn related to more favourable attitudes towards Igbos. The direct relationship between roommate diversity and attitudes towards Igbos was not significant. The findings indicated that students who live in an ethnically mixed room hold more favourable attitudes towards Igbos, because they have more intergroup contact with Igbos beyond their roommate relationship. It is likely that students who live with an Igbo roommate do not only have close intergroup contact with their Igbo roommate, but also meet other Igbos who are part of their roommates' circle of friends (see Shook & Fazio, 2011).

Hypothesis 3 predicted that roommate diversity would be related to more positive attitudes towards Edos and Hausas (secondary out-groups). The relationships would be mediated via higher levels of intergroup contact with Igbos and more positive attitudes towards Igbos (Hypothesis 3a). The relationships would hold even when controlling for intergroup contact with Edos and Hausas (Hypothesis 3b). The findings partly supported the hypothesis. The between-level part of the model showed an indirect effect between roommate diversity and attitudes towards Edos (Hypothesis 3). The relationship was mediated via intergroup contact with Igbos and attitudes towards Igbos. The relationship held while controlling for intergroup contact with Edos. The relationship between roommate diversity and attitudes towards Hausas, mediated via intergroup contact with Igbos and attitudes towards Igbos, was not significant. The hypothesis was confirmed when using Edos, but not Hausas as secondary out-group. The present study was the first to show that diversity (i.e., roommate diversity) yields secondary transfer effects.

The present research findings demonstrate that attitude generalization does not work equally well for every secondary out-group. When testing the secondary transfer effect with Edos as secondary out-group, the effect was confirmed on the within- and between-level part of the model. However, when testing the secondary transfer effect using Hausas as secondary out-group, the effect was considerably weaker on the within-level part of the model and not significant on the between level-part of the model.

A likely explanation for this difference is the moderating effect of a 'similarity gradient' (see Pettigrew, 2009). Research findings suggested that attitude generalization is most effective when the groups involved are similar to each other (e.g., Pettigrew, 2009; van Laar et al., 2005). In the context of this research, Igbos and Edos are likely to be perceived as more similar to each other in terms of culture than Igbos

and Hausas. Given the central role of religion in Nigeria, an evident communality between Edos and Igbos is their shared religious belief. While Igbos and Edos are predominantly Christians, Hausas are predominantly Muslims and are therefore dissimilar to the other two groups in terms of religion. It is therefore possible that the secondary transfer effect was more pronounced for Edos than for Hausas due to greater perceived similarity between the groups. Future research can test this explanation by directly measuring the perceived similarity of Igbos with Edos and Hausas. This can be achieved by using a method employed by Harwood et al. (2011). Harwood et al. (2011) asked raters to indicate the similarity of one out-group (illegal immigrants) with 20 different other out-groups. In their test of the secondary transfer effect they subsequently found that attitude generalization was stronger between out-groups which were rated as similar to the primary out-group compared to those which were rated as dissimilar.

### ***Summary***

The findings largely supported the hypotheses and made several novel contributions to the field. The findings were in line with previous research on intergroup roommates, which showed that living with an intergroup roommate was associated with more positive out-group attitudes (e.g., Shook & Fazio, 2008a; van Laar et al., 2005). In line with the findings of van Laar and colleagues (2005) the present study showed that living in an ethnically diverse room was associated with more positive attitudes towards the roommate's ethnic group (Igbos) and another uninvolved out-group (Edos). As an extension of previous research, the present study was the first to show that diversity yielded secondary transfer effects. Moreover, the secondary transfer effect was supported in the within- and between-level parts of the model. To

my knowledge no previous study has provided evidence of the secondary transfer effect of diversity using sophisticated multilevel (hierarchical) modelling techniques.

## **CHAPTER SEVEN**

### **Summary and Conclusions**

The aim of this thesis was to study the nature and consequences of close intergroup relationships in Nigeria. The theoretical framework of my research is the contact hypothesis (Allport, 1954; Pettigrew, 1998), which proposes that positive contact between members of different social groups leads to reduced prejudice and more positive intergroup relations. Over 500 studies have shown that contact between social groups typically reduces prejudice (see Pettigrew & Tropp, 2006, for a meta-analytic review). A fairly recent development in intergroup contact research is the idea that a certain type of intergroup contact, cross-group friendship, may be especially effective in reducing out-group prejudice (see Davies et al. 2011, for a meta-analytic review).

While the vast majority of the literature focused on the study of intergroup relations in Western countries, especially in the United States (e.g., Sidanius et al., 2008) and Europe (e.g., Pettigrew, 1997; Wagner et al., 2003), the present research studied intergroup relations in Nigeria. To my knowledge social psychological research on intergroup contact has not been conducted in Nigeria before. Overall, the African continent has been largely overlooked in terms of social psychological research on intergroup relations (but see Swart et al., 2011, for exceptions in South Africa). This is rather surprising given that African countries are very diverse in terms of ethnicity and religion, and experience high incidences of civil wars between groups (see Horowitz, 1985). The present research can be regarded as pioneering research on intergroup contact in Nigeria.

## **Cultural social psychology**

Smith (2012) points out the importance of cross-cultural social psychological research. If the same study is carried out in different parts of the world, the findings can sometimes differ substantially. Cultural differences can partly explain this. When doing cross-cultural research, salient social behaviours can be taken into consideration when designing and interpreting the studies. Thus far, in mainstream social psychology insufficient research attention has been paid to cultural differences. Testing a phenomenon in different cultural contexts may show that they are either universal or specific to a certain part, or parts, of the world (see Smith, 2012). Social psychological research needs, but still relatively lacks, cross-cultural research, which validates theories tested in multiple cultures. Research in Nigeria and other countries can improve the universal validity of social psychological theories. However, methodological challenges need to be met based on language, cultural differences and others.

One important distinction between cultures is whether the people/ nationals view themselves as independent or interdependent. This refers to whether individuals think of themselves as independent from each other (individualist societies, e.g., Germany, UK, or USA) or as interdependent (collectivist societies, e.g., Japan, India, or Nigeria). In-group norms likely play an even more important role in collectivist societies like Nigeria. In-group norms can encourage or discourage intergroup contact. According to Smith (2012) people in collectivist cultures also tend to give higher priority to long-term in-group relationships.

With no comparable research in this intergroup context available, I opted for a conservative approach when designing the studies (e.g., cross-sectional rather than longitudinal or experimental studies, and generally building on well-used paradigms),

not knowing whether the well-established findings of intergroup contact research would hold in this cultural setting. Additionally, I was unable, for practical and financial reasons, to travel multiple times to Nigeria, in order to carry out detailed pilot work before each new study. I carried out six studies in total during two field research trips to Nigeria in 2010 and 2012.

This thesis makes important contributions to intergroup contact research, while exploring intergroup relations in a different cultural context. Studies 1 and 2 explored the nature of cross-group friendship by comparing the quality and closeness of in-group and cross-group friendships. In Studies 3-6, I examined the effects of intergroup contact in the context of close intergroup relationships (i. e., friendships and roommate relationships) on attitudes towards contacted and non-contacted out-groups in several ways. Studies 3 and 4 tested whether both direct and extended cross-group friendship yielded secondary transfer effects. Study 5 focused on the question whether negative intergroup contact exacerbates prejudice and whether the effect generalized to uninvolved out-groups. Study 6 considered another form of close intergroup relationships, namely the relationships between intergroup roommates. The study explored whether roommate diversity (i.e., living with at least one out-group roommate) would improve attitudes towards the roommate's ethnic group and two secondary out-groups. Studies 3-6 provided tests of the secondary transfer effect in different contexts.

All studies were carried out in Nigeria using Nigerian university students and secondary school pupils. In this final chapter I will firstly, summarize the key findings of Studies 1-6 and outline their empirical and theoretical contributions to the field. Secondly, I will discuss some limitations of the present research and make suggestions for future research avenues. Finally, I will outline the practical implications of my



findings for future applied research, diversity management, and peace-building in Nigeria.

## **Summary of Key Findings**

### **The Nature of Cross-group Friendships (Studies 1 and 2)**

It is now well established that cross-group friendships are particularly effective in reducing out-group prejudice (Pettigrew, 1998; Pettigrew & Tropp, 2006; see Davies et al., 2011, for a meta-analytic review). Despite the central role of cross-group friendship in intergroup relations, relatively few studies have explored the characteristics of cross-group friendships in comparison to same-group friendships (see Aboud, Mendelson, & Purdy, 2003; Kao & Joyner, 2004, for exceptions). The research to date indicates that once cross-group friendships are formed, they tend to be less intimate (Aboud et al., 2003; DuBois & Hirsch, 1990; Kao & Joyner, 2004) and less likely to be sustained over time than in-group friendships (e.g., Aboud et al., 2003; Rude & Herda, 2010). However, Aboud and colleagues' (2003) findings were more encouraging. They found that cross-race friendships were perceived as similar to same-race friendships and that they fulfilled the same friendship functions. Aboud et al. (2003) also showed that having high-quality cross-group friendships was more strongly related to prejudice reduction than having low-quality cross-group friendships or no cross-group friendships at all. This indicated that high-quality cross-group friendships have a stronger effect on prejudice reduction.

Studies 1 and 2 examined the nature of in-group compared to cross-group friendships. The sample comprised Yoruba respondents. The studies provided a direct comparison of the quality and closeness of specific in-group and cross-group friendships in a repeated measures design. Initial analyses showed that in-group

friendships were rated more positively than cross-group friendships. However, it was subsequently shown that differences in quality of the two friendship types could largely be explained through differences in the length of friendship. It was revealed that participants had been friends with members of their in-group for longer, but, when controlling for the length of friendship, both studies showed that in-group friendships and cross-group friendships fulfil similar functions and are of comparable quality.

The findings also suggest that the respondents trusted their nominated cross-group friends less than their in-group friends. This may be due to the fact that trust is difficult to build, especially in an intergroup context (Tam et al., 2009; Worchel et al., 1991). Research has shown that trust plays an important role in intergroup relations. In their study on Northern Ireland, Tam and colleagues (2009) found that out-group trust and out-group attitudes were two distinct constructs, with different predictive power. In fact, intergroup trust was found to be a stronger predictor of behavioural tendencies than were positive out-group attitudes. Research findings suggest that trust is a more demanding criterion of intergroup relations than out-group attitudes. Trusting an out-group may potentially have risks for the self or the in-group (i.e., if the trust is betrayed), while this is not the case for positive out-group attitudes (Tam et al., 2009).

### **The Secondary Transfer Effect. Do All Types of Contact Effects Generalize to Uninvolved Out-groups (Studies 3, 4, 5, 6)?**

A growing body of research has found evidence for the secondary transfer effect (e.g., Eller & Abrams, 2004; Pettigrew, 1997, 2009; Tausch et al., 2010a; van Laar et al., 2005; see Lolliot et al., 2013, for a review). The present research extended previous research on the secondary transfer effect in several ways.

### ***Direct and extended intergroup contact***

Studies 3 and 4 tested the effects of direct and extended cross-group friendship on out-group attitudes. Based on samples using Yoruba respondents, both studies showed that direct and extended contact were associated with more positive out-group attitudes. The results were in line with the findings of other researchers who found that direct and extended cross-group friendships, albeit correlated, make independent contributions to prejudice reduction (Paolini et al., 2004, 2007; Pettigrew et al., 2007). As a novel contribution to the literature, Studies 3 and 4 showed that both direct and extended cross-group friendship yielded secondary transfer effects. However, while there has been support for the secondary transfer effect of direct cross-group friendship and intergroup contact (e.g., Eller & Abrams, 2004; Pettigrew, 1997, 2009; Schmid et al., 2012; Tausch et al., 2010a; Vezzalli & Giovannini, 2011), no research has, to my knowledge, provided evidence for secondary transfer effects from extended cross-group friendship specifically or extended contact in general. As a new addition to the literature, the present research was the first to provide evidence for secondary transfer effects from extended cross-group friendship, while controlling statistically for direct contact.

Studies 3 and 4 showed that for members of the Yoruba ethnic group, direct cross-group friendship with Igbos was associated with more positive attitudes towards Hausas. The relationships were mediated via more favourable attitudes towards Igbos (attitude generalization). The relationships held while controlling for direct and extended cross-group friendship with Hausas (secondary out-group). The findings supported the hypothesis and were in line with previous research on the secondary transfer effect (e.g., Pettigrew, 2009; Tausch et al., 2010a). Extended cross-group friendship with Igbos was associated with more positive attitudes towards Hausas. The

relationship was mediated via more favourable attitudes towards Igbo. The findings supported the hypotheses and showed that extended cross-group friendship can produce secondary transfer effects, similar to direct cross-group friendship. The notion that direct cross-group friendship yields stronger secondary transfer effects than extended cross-group friendship was supported in Study 3 (university sample), but not in Study 4 (secondary school sample).

### ***Negative secondary transfer effects***

The vast majority of research on intergroup contact has investigated the impact of positive intergroup contact, and has shown that intergroup contact is associated with reduced prejudice (e.g., Pettigrew, 1997, 1998; van Laar et al., 2005). However, Pettigrew and Tropp's (2006) meta-analysis found that a small proportion of studies (4%) showed a positive association between negative intergroup contact and prejudice. To date the possibility that intergroup contact may exacerbate prejudice has not received much research attention (see Barlow et al., 2012; Bekhuis et al., 2013; Stark et al., 2013, for exceptions).

Study 5 tested the effects of positive (i.e., via cross-group friendship) and negative intergroup contact on attitudes based on a sample of Yoruba respondents. Negative contact was associated with less favourable attitudes, while positive contact was linked to more favourable attitudes. The effects of positive and negative contact on attitudes were tested simultaneously. The findings indicated that both positive and negative intergroup contact contributed to attitude formation. However, research findings indicate that negative contact is less common than positive contact. It has been suggested that the effects of positive intergroup contact may be able to counter the effects of negative contact (Pettigrew, 2008; Pettigrew & Tropp, 2011).

As a novel contribution to the literature, Study 5 provided the first empirical evidence for a negative secondary transfer effect. The study showed that negative contact with Igbos was associated with less positive attitudes towards both Edos and Hausas, mediated via attitudes towards Igbos. The findings demonstrated that secondary transfer effects from both cross-group friendship and negative contact were mediated via attitude generalization. The findings demonstrated that negative contact generalizes broadly by exacerbating prejudice towards encountered and non-encountered out-groups, indicating that it is even more detrimental for people to have negative contact than previously thought, as the effect generalizes to contacted and non-contacted out-groups.

Studies 3-5 thus demonstrated the far-reaching generalization of intergroup contact effects. While it is important and desirable for the improvement of intergroup relations that the effects of positive contact as well as direct and extended cross-group friendship effects generalize broadly, this is not the case for negative contact effects. The findings indicate that intergroup contact generally has the tendency to generalize, regardless of whether the contact effects are positive or negative.

### ***Roommate diversity and the secondary transfer effect***

Study 6 focused on the effects of living with out-group roommates on out-group attitudes. To date, research on the effects of intergroup roommate relations has yielded a mix of positive and negative findings. On the one hand, research suggested that cross-group roommate relationships were of lower quality and more likely to dissolve than same-group roommate relationships (e.g., Shook & Fazio, 2008a; Towles-Schwen & Fazio, 2006). On the other hand, studies have found that having an out-group roommate has benefits. Living with a cross-group roommate has been linked to reduced out-group

prejudice in several studies (e.g., Shook & Fazio, 2011; van Laar et al., 2005).

Additionally, van Laar and colleagues (2005) found that living with an out-group roommate predicted not only more positive attitudes towards the roommate's ethnic group but also towards uninvolved out-groups. Their findings provided support for the secondary transfer effect in the context of cross-group roommate relationships.

Using a sample of Yoruba students, Study 6 tested the effects of roommate diversity (i.e., living with one or more Igbo roommates) on out-group attitudes in a complex two-level hierarchical model. Within rooms it was found that contact with Igbos was associated with more positive attitudes towards Igbos as well as towards Edos and Hausas, two uninvolved secondary out-groups. Between rooms, it was found that roommate diversity was associated with more positive attitudes towards Igbos as well as towards Edos. The secondary transfer effect could not be confirmed for Hausas as a secondary out-group.

Overall, the findings were in line with previous research on out-group roommates, which showed that living with an out-group roommate was associated with more positive out-group attitudes (e.g., Shook & Fazio, 2008a; van Laar et al., 2005). As an extension of previous research, the present study was the first to show that diversity yielded secondary transfer effects. Moreover, the secondary transfer effect was supported in the within- and between-level parts of the model. To my knowledge no previous study has provided evidence of the secondary transfer effect of diversity using sophisticated multilevel (hierarchical) modelling techniques. Set up as a multi-level study, it follows Pettigrew's (2008) request for more multilevel research, which emphasises the need for contact researchers to study the social context in which contact takes place.

Study 6 advances the research on roommate relationships, demonstrating positive outcomes of having a cross-group roommate. At the same time it complements research on diversity. Some of the research on the effects of diversity has been done in the context of neighbourhoods with particular focus on the effects of neighbourhood diversity and its effect on out-group attitudes (e.g., Wagner et al., 2006) or out-group trust (e.g., Schmid et al., in press). The relationship between the proportion of an ethnic minority population in a geographical area was typically positively associated with majority members' prejudice. This finding is in line with threat theory. However, recent studies have shown that there are exceptions (Wagner et al., 2006). It has also been argued that living in diverse a diverse neighbourhood may have negative effects on trust in general, including in-group and out-group trust (see Putnam, 2007; but see Schmid et al., in press). Based on a German probability sample, Wagner and colleagues (2006) showed that an increase in the ratio of ethnic minority members increases the opportunity for majority group members for intergroup contact and in turn is associated with a reduction in the majority's out-group prejudice. According to Wagner et al. (2006) these findings refute the political argument that an increase in the minority population above a certain threshold worsens intergroup relations.

In a related study, Schmid et al. (in press) tested the relationship between neighborhood diversity and out-group, in-group and neighbourhood trust. In a national survey in the United Kingdom they sampled White British majority and ethnic minority respondents from neighbourhoods of varying degrees of diversity. The authors showed some negative direct effects of diversity for the majority group. However, it was also shown that diversity was indirectly associated with higher levels of trust, via positive intergroup contact and decreased threat. This thesis added to the growing body of work on diversity, by considering a different, understudied context, namely diversity in the

university context, especially in the context of university dormitories. Similar to work by Schmid et al. (in press) and Wagner et al. (2006), the present research also showed that roommate diversity had positive effects on contact, which then had indirect positive effects on attitudes towards the roommate's out-group and two secondary out-groups.

To summarize, all studies in this thesis that tested the secondary transfer effect (Studies 3-6) consistently showed that the relationship between contact with the primary out-group and attitudes towards the secondary out-group occurred via attitude generalization (i.e., primary out-group attitudes mediated the effects). This finding was in line with previous research, which found strong support for attitude generalization as a mediating mechanism of the secondary transfer effect (e.g., Pettigrew, 2009; Schmid et al., 2012; Tausch et al., 2010a). Prior research has, however, also provided initial evidence for the moderating role of a similarity gradient. There has also been evidence that attitude generalization works best when the groups involved are perceived as similar to each other which is in line with what previous research showed (e.g., Harwood et al., 2011; Pettigrew, 2009). The findings demonstrated that attitude generalization does not work equally well for all secondary out-groups. When testing the secondary transfer effect with Edos and Hausas as secondary out-groups, the effects were confirmed. However, the secondary transfer effect using Hausas as secondary out-group was less strong. A likely explanation for this difference is the effect of a similarity gradient (Pettigrew, 2009). In Studies 5 and 6 of this thesis, it was shown that the effect works better for groups, which are perceived as more similar to each other on one level. Given the central role of religion in Nigeria, an evident commonality between Edos and Igbos is their shared religious group membership. While Igbos and Edos are predominantly Christians, Hausas are predominantly Muslims and may therefore be



perceived as dissimilar to the other two groups. This may lead to a less strong attitude generalization, or no attitude generalization at all for Hausas as secondary out-group. Future research should directly test the moderating effect of similarity (e.g., shared religious believe) when studying the secondary transfer effect in this context.

The present research extended prior research especially by testing the secondary transfer effect of indirect intergroup contact, namely in the form of extended contact (Studies 3 and 4), as well as of negative contact (Study 5), and showed that diversity (roommate diversity) also yielded secondary transfer effects (Study 6).

## **Limitations of the Present Research and Directions for Future Research**

### ***Cross-sectional data***

As all studies in this thesis were based on cross-sectional data, inferences about the direction of causality cannot be drawn. However, there are good reasons still to be confident that intergroup contact generally predicts more positive attitudes rather than unfavourable intergroup contact predicting lower levels of intergroup contact. A growing body of research has shown that contact reduces prejudice, rather than highly prejudiced people avoiding contact. Evidence exists from longitudinal studies, based on general intergroup contact and cross-group friendship (e.g., Binder et al., 2009; Eller & Abrams, 2003; Levin et al., 2003; Swart et al., 2011; van Laar et al., 2005). Secondary transfer effects have also been observed in longitudinal studies (e.g., Eller & Abrams, 2004; Tausch et al., 2010a; van Laar et al., 2005), providing stronger evidence for a causal relationship of intergroup contact and reduced prejudice. Van Laar et al. (2005) conducted a study based on longitudinal and experimental data which conclusively demonstrated the direction of causality. Research also indicates that the contact-prejudice relationship is often bidirectional.

In the case of extended contact, respondents do not typically choose their friends' friends, therefore it is not likely that the respondents' attitudes affect their extended contact. Analyses of reverse causal models further indicated that the path from contact to attitudes is typically stronger than the reverse path from prejudice to contact (e.g., Pettigrew, 1997).

### ***Self-report measures***

A further potential limitation of the research presented in this thesis is its reliance on self-report measures. Pettigrew and Tropp's (2006) meta-analysis found that 81% of studies used self-report measures of intergroup contact. They reported that the effect of contact in studies which used self-reports of intergroup contact ( $r = .21$ ) was significantly smaller than in studies which used directly observed measures of intergroup contact ( $r = .25$ ). These findings indicate that self-reports of intergroup contact may be less accurate than direct measures of contact, and may underreport the impact of contact. However, researchers have used observers' ratings to validate the self-report measures of direct intergroup contact. The findings demonstrated that participants' self-reports and observers' ratings of direct intergroup contact were highly correlated (Dhont, van Hiel, De Bolle, & Roets, 2012; Hewstone, Judd & Sharp, 2011). These results show, importantly, that observer reports validate self-reports of contact.

A well-known threat to the validity of self-reports is socially desirable responding (SDR). As self-report measures may be subject to social desirability bias, where respondents try to appear in a positive, non-prejudiced manner, future research should include social desirability measures to control for this type of bias. For example, Tausch et al. (2010a, Study 3) tested the secondary transfer effect of intergroup contact

while controlling for social for individual differences in social desirability. The effects remained significant.

### ***Use of university and secondary school student samples***

A further limitation of the research presented in this thesis is that all studies used either university student samples (Studies 1, 3, 5, 6) or secondary school pupils (Studies 2, 4). This may potentially limit the generalizability of the findings to the general population of Nigeria. During my field work in Nigeria I had access to university student samples and secondary school pupils samples. University students, for instance, differ from the general population because on average they are of younger age, and of a higher educational background. Both variables have been linked to lower out-group prejudice (see Pettigrew & Tropp, 2011). Attending university also increases opportunity for personal intergroup contact with the out-group (Cairns, Dunn, & Gallagher, 1993).

Furthermore, in Nigeria as a researcher working alone I may have put myself in danger by asking members of the general population questions about sensitive topics such as their religious and ethnic group membership as well as their attitudes towards other ethnic or religious groups. People may have questioned whether the information gathered during data collection was solely for research purposes. They may have even suspected ulterior (possibly political) motives. At university, however, students are more accustomed to participating in survey studies. I therefore decided not to collect data from the general population at the time due to safety concerns and for practical reasons as data collection from university student samples and secondary school pupils samples was much easier to obtain and was also less costly. Students could easily be approached on their university campus and invited to participate in the survey.

However, the groundwork for intergroup contact research in Nigeria has been done in the present thesis using university student and secondary school pupil samples. The next step could be to conduct a larger scale study from a sample of the general population. A study based on data from the general population may yield different effects. Older generations may have been contemporary witnesses of the Biafra War and/or the time when Nigeria was under British rule. It is possible that they have lower levels of intergroup contact, or higher levels of prejudice. The effects of intergroup contact may even be more pronounced for the general population. The generalization of the findings based on student samples and samples of secondary school pupils can only be generalized to other demographic groups tentatively. With greater financial resources and a research team, future research could collect data from the general population to test whether the findings of the present thesis also hold for the general population.

### ***Focus on one region***

Overall, the findings of this thesis indicate that the predictions of contact theory hold in this cultural context. The majority of the relationships were in the expected direction and in line with the predictions of contact theory. However, the results may vary when carrying out the studies in a different region of the country. For the studies in this thesis, data was solely collected in the south-west of Nigeria. While the south-west of Nigeria has seen intergroup conflict and violent clashes, the situation is much more tense in northern Nigeria, in particular in the Middle Belt area. Even though I planned to collect data in northern Nigeria, I was unable to do so at the time due to immediate safety concerns (i.e., political unrest, travel warnings). Future research could perhaps carry out research in northern Nigeria if the political situation permits, and see whether

the findings will hold in a different region within Nigeria, which has seen higher levels of intergroup conflict.

### **Implications for Intergroup Relations in Nigeria**

Although Africa has the highest ethnic diversity and the highest incidence of civil war between ethnic or religious groups of any continent (Osinubi & Osinubi, 2006), research on intergroup relations has mainly focused on western cultures. Nigeria is Africa's most populous country and, as with many other African countries, Nigeria's population is heterogeneous in terms of ethnicity, religion, and language. The Hausa, Yoruba and Igbo are the major ethnic groups and compose about 70% percent of the total population. The Hausa, who are primarily settled in the North of Nigeria, are predominantly Muslim. The Igbo are predominantly Christian, and are settled in the Eastern part of the country; while the population of the Yoruba, who live mainly in the West of Nigeria, are split into Christian and Muslim (Boski, 1983; Horowitz, 1985).

The foundation of present-day Nigeria meant that previously independent separate African kingdoms and empires were forcefully merged into one country. The British administration pursued divide-and-rule policies that fostered ethnic competition and conflict, resulting in ethnic segmentation and polarization (Osaghae & Suberu, 2005). The colony was governed by indirect rule through local chiefs, which heightened localism and enforced tribal loyalties. Tribal animosities between Nigerians can be traced back to the period of British colonialism in Nigeria, when colonists systematically separated and isolated the country's various ethnic groups in order to weaken the population's potential for resistance against their colonial power. At the time of independence from Britain in 1960, inter-ethnic conflict had not been resolved. Competition for scarce resources created further tensions between the tribes and

numerous ethnic and religious riots followed. Ethnic conflict in Nigeria reached its all-time peak in a gruesome ethnic war from 1967 to 1970 (Nigerian Civil War) (BBC, 2013; Mustapha, 2006), when the Igbo in east Nigeria (Biafra), who felt mistreated and disadvantaged, tried to secede from the federation. After the military dictatorship and democratic transition, conflict between ethnic groups persisted.

Inter-ethnic conflict in Nigeria has a major psychological component, including fear and insecurity during the transition of the country. The memories of past traumas increased anxiety, distrust and suspicion towards the out-group can lead to ethnic aggression and violence (Irobi, 2005). Obviously, intergroup contact theory is not the sole theory of relevance in this setting. Relative deprivation theory can also be used as an explanatory framework for intergroup conflict in Nigeria, as the conflicts are mainly based on ethnic competition for economic resources and political power (see Gurr, 1970). Although Nigeria is very rich in natural resources such as oil, significant poverty and inequality exist. Relative deprivation derives from the feeling and fear of being disadvantaged in comparison to other ethnic groups. Economic factors are one of the major causes of conflict in Nigeria and very often the competition over scarce resources leads to intergroup aggression and violence between the ethnic groups. At times the ethnic groups compete (at times violently) for political power, political rights, jobs, or education (Irobi, 2005). According to Horowitz (1985), group worth is also based on the results of economic and political competition. Indeed, there is empirical evidence for the link between socio-economic factors and ethnicity in Nigeria (Nnoli, 1978).

According to Osaghae and Suberu (2005) intergroup violence in Nigeria is characterised by 1) sharp and often overlapping cultural cleavages, 2) historical (pre-colonial and colonial) conflict legacies, 3) competition for highly valued, but relatively scarce, resources (e.g., land, new administrative boundaries and headquarters,

bureaucratic and political placement, infrastructures, trading opportunities, and other goods), 4) actual and perceived inequalities in access to diverse resources, and 5) state failure or mismanagement of inter-ethnic relations (Osaghae & Suberu, 2005, p. 15).

While past mistakes in managing intergroup relations in Nigeria cannot be changed, they can provide useful lessons on how to manage diversity in the future. Conflict often derives from intergroup competition and perceived relative deprivation. Improvements in fairness in terms of access to resources need to be addressed by the Nigerian government. However, social psychology can contribute to the improvement of intergroup relations by guiding policies. Several practical implications can be drawn from this thesis. Initial findings on intergroup contact indicate that contact has positive effects on out-group attitudes. Even though the country is largely segregated, due to historical legacies of times when certain groups were assigned to settle in certain areas, there is more inter-ethnic mixing in urban centres, like Lagos, Abuja and Jos.

Findings indicate that diversity has benefits. This should be translated into policies, which encourage inter-ethnic mixing in different areas of life (e.g., schools, universities, residential areas). Another important implication is that intergroup friendship should be promoted. This thesis has shown throughout that friendship was associated with favourable out-group outcomes in this cultural context. This thesis has shown that cross-group friendships in comparison to in-group friendships are perceived as similar to each other. This is an encouraging finding, as research suggests that high-quality friendships are more strongly associated with prejudice reduction. This thesis has also shown that cross-group friendship is related to higher levels of extended cross-group friendship, which is an indirect means of prejudice reduction. Any form of positive intergroup contact, through friendship or roommates, and the generalization of these effects to other groups, is desirable as it contributes to the

improvement of intergroup relations and helps to balance out potential negative effects of intergroup contact. The findings of the thesis indicate that various forms of intergroup contact yield secondary transfer effects. While the broad generalization of the effects of both positive contact and friendship are highly desirable, the generalization of negative contact effects is detrimental for intergroup relations. Negative intergroup contact cannot, however, always be prevented. Nonetheless, promotion of positive contact and cross-group friendship is important as these positive forms of intergroup relations may counter the effects of negative contact, and encourage future cooperation, rather than conflict, in the sensitive, multi-ethnic, multi-religious cauldron of intergroup relations that Nigeria represents.



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## APPENDICES

### Appendix A: Items

#### Study 1

| VARIABLE                                 | NUMBER OF ITEMS | ITEMS                                                                                                                                                                                                                                                                                                                                               |
|------------------------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                          |                 | <b>IN-GROUP FRIEND</b>                                                                                                                                                                                                                                                                                                                              |
| Friendship length IG                     | 1               | <ul style="list-style-type: none"> <li>How many years have you been friends for?</li> </ul>                                                                                                                                                                                                                                                         |
| IOS IG                                   | 1               | <ul style="list-style-type: none"> <li>In the pictures below, please imagine that one circle stands for you and one stands for your friend. Please circle the picture that best describes how close you feel towards this friend.</li> </ul>                                                                                                        |
| Contact Quantity with specific IG friend | 3               | <ul style="list-style-type: none"> <li>How much time do you and this friend spend at your home each week?</li> <li>How much time do you and this friend spend at their home each week?</li> <li>How many hours per week would you say you spend with this friend altogether?</li> </ul>                                                             |
| Friendship-RA IG                         | 15              |                                                                                                                                                                                                                                                                                                                                                     |
| <i>Positive Feelings</i>                 | 9               | P1_ I want to stay friends with ___ for a long time.<br>P2_ I prefer ___ over most people I know.<br>P3_ I feel close to ____.<br>P4_ I am glad that ___ is my friend.<br>P5_ I hope ___ and I will stay friends.<br>P6_ I would miss ___ if he/she left.<br>P7_ I enjoy having ___ as a friend.<br>P8_ I care about ____.<br>P9_ I like ___ a lot. |
| <i>Satisfaction</i>                      | 6               | S1_ I am satisfied with my friendship with ____.<br>S2_ I feel my friendship with ___ is good.                                                                                                                                                                                                                                                      |

|                                      |    |                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                      |    | S3_ I think my friendship with ___ is strong.<br>S4_ I am pleased with my friendship with ____.<br>S5_ I am content with my friendship with ____.<br>S6_ I am happy with my friendship with _____.                                                                                                                                                      |
| Friendship-FF IG                     | 30 |                                                                                                                                                                                                                                                                                                                                                         |
| <i>Emotional Security</i>            | 5  | ES1__ would make me feel comfortable in a new situation.<br>ES2__ would be good to have around if I were frightened.<br>ES3__ would make me feel better if I were worried.<br>ES4__ would make me feel calmer if I were nervous.<br>ES5__ makes me feel better when I'm upset                                                                           |
| <i>Help</i>                          | 5  | H1__ helps me when I need it.<br>H2__ helps me do things.<br>H3__ lends me things that I need.<br>H4__ helps me when I'm trying hard to finish something.<br>H5__ shows me how to do things better.                                                                                                                                                     |
| <i>Intimacy</i>                      | 5  | I1__ is someone I can tell private things to.<br>I2__ knows when I'm upset.<br>I3__ is someone I can tell secrets to.<br>I4__ knows when something bothers me.<br>I5__ is easy to talk to about private things.                                                                                                                                         |
| <i>Reliable Alliance</i>             | 5  | RA1__ would want to stay my friend if we didn't see each other for a few months.<br>RA2__ would still want to be my friend even if we had a fight.<br>RA3__ would stay my friend even if other people criticized me.<br>RA4__ would stay my friend even if other people did not like me.<br>RA5__ would still want to stay my friend even if we argued. |
| <i>Stimulating<br/>Companionship</i> | 5  | SC1__ has good ideas about entertaining things to do.<br>SC2__ makes me laugh.<br>SC3__ is exciting to talk to.<br>SC4__ is exciting to be with.<br>SC5__ is fun to sit and talk with.                                                                                                                                                                  |
| <i>Self-Validation</i>               | 5  | SV1__ makes me feel smart.                                                                                                                                                                                                                                                                                                                              |

|  |  |                                                                                                                                                                            |
|--|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  | SV2__points out things that I am good at.<br>SV3__compliments me when I do something well.<br>SV4__makes me feel special.<br>SV5__makes me feel that I can do things well. |
|--|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| VARIABLE                                 | NUMBER OF ITEMS | ITEMS                                                                                                                                                                                                                                                                                                                                               |
|------------------------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                          |                 | <b>CROSS-GROUP FRIEND</b>                                                                                                                                                                                                                                                                                                                           |
| Friendship length OG                     | 1               | <ul style="list-style-type: none"> <li>How many years have you been friends for?</li> </ul>                                                                                                                                                                                                                                                         |
| IOS OG                                   | 1               | <ul style="list-style-type: none"> <li>In the pictures below, please imagine that one circle stands for you and one stands for your friend. Please circle the picture that best describes how close you feel towards this friend.</li> </ul>                                                                                                        |
| Contact quantity with specific OG friend | 3               | <ul style="list-style-type: none"> <li>How much time do you and this friend spend at your home each week?</li> <li>How much time do you and this friend spend at their home each week?</li> <li>How many hours per week would you say you spend with this friend altogether?</li> </ul>                                                             |
| Friendship-RA OG                         | 15              |                                                                                                                                                                                                                                                                                                                                                     |
| <i>Positive Feelings</i>                 | 9               | P1_ I want to stay friends with ___ for a long time.<br>P2_ I prefer ___ over most people I know.<br>P3_ I feel close to ____.<br>P4_ I am glad that ___ is my friend.<br>P5_ I hope ___ and I will stay friends.<br>P6_ I would miss ___ if he/she left.<br>P7_ I enjoy having ___ as a friend.<br>P8_ I care about ____.<br>P9_ I like ___ a lot. |
| <i>Satisfaction</i>                      | 6               | S1_ I am satisfied with my friendship with ____.<br>S2_ I feel my friendship with ___ is good.<br>S3_ I think my friendship with ___ is strong.<br>S4_ I am pleased with my friendship with ____.<br>S5_ I am content with my friendship with ____.<br>S6_ I am happy with my friendship with _____.                                                |
| Friendship-FF OG                         | 30              |                                                                                                                                                                                                                                                                                                                                                     |
| <i>Emotional Security</i>                | 5               | ES1__ would make me feel comfortable in a new situation.<br>ES2__ would be good to have around if I were frightened.<br>ES3__ would make me feel better if I were worried.<br>ES4__ would make me feel calmer if I were nervous.<br>ES5__ makes me feel better when I'm upset.                                                                      |

|                                  |   |                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Help</i>                      | 5 | H1__helps me when I need it.<br>H2__helps me do things.<br>H3__lends me things that I need.<br>H4__helps me when I'm trying hard to finish something.<br>H5__shows me how to do things better.                                                                                                                                                     |
| <i>Intimacy</i>                  | 5 | I1__is someone I can tell private things to.<br>I2__knows when I'm upset.<br>I3__is someone I can tell secrets to.<br>I4__knows when something bothers me.<br>I5__is easy to talk to about private things.                                                                                                                                         |
| <i>Reliable Alliance</i>         | 5 | RA1__would want to stay my friend if we didn't see each other for a few months.<br>RA2__would still want to be my friend even if we had a fight.<br>RA3__would stay my friend even if other people criticized me.<br>RA4__would stay my friend even if other people did not like me.<br>RA5__would still want to stay my friend even if we argued. |
| <i>Self-Validation</i>           | 5 | SC1__has good ideas about entertaining things to do.<br>SC2__makes me laugh.<br>SC3__is exciting to talk to.<br>SC4__is exciting to be with.<br>SC5__is fun to sit and talk with.                                                                                                                                                                  |
| <i>Stimulating Companionship</i> | 5 | SV1__makes me feel smart.<br>SV2__points out things that I am good at.<br>SV3__compliments me when I do something well.<br>SV4__makes me feel special.<br>SV5__makes me feel that I can do things well.                                                                                                                                            |

## Study 2

| VARIABLE                                    | NUMBER OF ITEMS | ITEMS                                                                                                                                                                                                                                                                                   |
|---------------------------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                             |                 | <b>IN-GROUP FRIEND</b>                                                                                                                                                                                                                                                                  |
| Friendship length IG                        | 1               | Roughly how many years or months have you been friends for? ___years ___months                                                                                                                                                                                                          |
| IOS IG                                      | 1               | <ul style="list-style-type: none"> <li>In the pictures below, please imagine that one circle stands for you and one stands for your friend. Please circle the picture that best describes how close you feel towards this friend.....</li> </ul>                                        |
| Quantity of contact with specific IG friend | 3               | <ul style="list-style-type: none"> <li>How much time do you and this friend spend at your home each week?</li> <li>How much time do you and this friend spend at their home each week?</li> <li>How many hours per week would you say you spend with this friend altogether?</li> </ul> |
| Friendship quality and closeness IG         | 23              |                                                                                                                                                                                                                                                                                         |
| <i>Companionship</i>                        | 2               | When there is free time at school, we are always together.<br>We do fun things together a lot.                                                                                                                                                                                          |
| <i>Validation</i>                           | 3               | We tell each other that we're good at things.<br>We make each other feel important and special.<br>We make each other feel good about ideas that one of us has.                                                                                                                         |
| <i>Conflict</i>                             | 3               | We get mad at each other a lot. (-)<br>We argue a lot. (-)<br>We fight. (-)                                                                                                                                                                                                             |
| <i>Conflict resolution</i>                  | 2               | We always make up easily when we have a fight.<br>We always get over our arguments really quickly.                                                                                                                                                                                      |
| <i>Intimate exchange</i>                    | 2               | When we are mad about something that has happened to us, we can always talk to each other about it.<br>I can think of lots of secrets we have told each other.                                                                                                                          |
| <i>Helping</i>                              | 3               | When we are having trouble figuring out something, we usually ask each other for help and advice.<br>We often help each other with things so we can get done quicker.                                                                                                                   |



|                            |   |                                                                                                                                                                                                                                                                                                                             |
|----------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                            |   | We always count on each other for ideas on how to get things done.                                                                                                                                                                                                                                                          |
| <i>Affective Bond</i>      | 3 | <p>If one of us had to move away, I would be sad.</p> <p>I feel happy when we are together.</p> <p>I think about this friend even when we are not together.</p>                                                                                                                                                             |
| <i>Emotional Closeness</i> | 4 | <p>This friend accepts me no matter what I do.</p> <p>This friend understands what I'm really like.</p> <p>This friend is important to me.</p> <p>I am satisfied with my relationship with this friend.</p>                                                                                                                 |
| Trust IG friend            | 3 | <ul style="list-style-type: none"> <li>• This friend is often only concerned with their own wellbeing. (-)</li> <li>• This friend cannot be relied upon to look out for my best interests. (-)</li> <li>• I have learned through experience that, as much as I like this friend, I cannot really trust them. (-)</li> </ul> |

| VARIABLE                            | NUMBER OF ITEMS | ITEMS                                                                                                                                                                                                                                                                                         |
|-------------------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                     |                 | <b>CROSS-GROUP FRIEND</b>                                                                                                                                                                                                                                                                     |
| Friendship length OG                | 1               | Roughly how many years or months have you been friends for? ____ years ____ months                                                                                                                                                                                                            |
| Quantity of contact OG              | 3               | <ul style="list-style-type: none"> <li>• How much time do you and this friend spend at your home each week?</li> <li>• How much time do you and this friend spend at their home each week?</li> <li>• How many hours per week would you say you spend with this friend altogether?</li> </ul> |
| Friendship quality and closeness OG | 23              |                                                                                                                                                                                                                                                                                               |
| <i>Companionship</i>                | 2               | When there is free time at school, we are always together.<br>We do fun things together a lot.                                                                                                                                                                                                |
| <i>Validation</i>                   | 3               | We tell each other that we're good at things.<br>We make each other feel important and special.<br>We make each other feel good about ideas that one of us has.                                                                                                                               |
| <i>Conflict</i>                     | 3               | We get mad at each other a lot. (-)<br>We argue a lot. (-)<br>We fight. (-)                                                                                                                                                                                                                   |
| <i>Conflict Resolution</i>          | 2               | We always make up easily when we have a fight.<br>We always get over our arguments really quickly.                                                                                                                                                                                            |
| <i>Intimate Exchange</i>            | 2               | We talk about the things that make us sad.<br>When we are mad about something that has happened to us, we can always talk to each other about it.<br>I can think of lots of secrets we have told each other.                                                                                  |
| <i>Helping</i>                      | 3               | When we are having trouble figuring out something, we usually ask each other for help and advice.<br>We often help each other with things so we can get done quicker.<br>We always count on each other for ideas on how to get things done.                                                   |
| <i>Affective Bond</i>               | 3               | If one of us had to move away, I would be sad.<br>I feel happy when we are together.<br>I think about this friend even when we are not together.                                                                                                                                              |
| <i>Emotional Closeness</i>          | 4               | This friend accepts me no matter what I do.                                                                                                                                                                                                                                                   |

|                 |   |                                                                                                                                                                                                                                                                                                                             |
|-----------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 |   | <p>This friend understands what I'm really like.</p> <p>This friend is important to me.</p> <p>I am satisfied with my relationship with this friend.</p>                                                                                                                                                                    |
| Trust OG friend | 3 | <ul style="list-style-type: none"> <li>• This friend is often only concerned with their own wellbeing. (-)</li> <li>• This friend cannot be relied upon to look out for my best interests. (-)</li> <li>• I have learned through experience that, as much as I like this friend, I cannot really trust them. (-)</li> </ul> |

## Appendix B: Violent clashed between ethno-religious groups in Nigeria since 2000

| Date                    | Location                                | Casualties<br>(approximately) | Background/ Parties involved                                                                                                                                                                              |
|-------------------------|-----------------------------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2001                    | Benue State<br>(mid-east)               |                               | Tribal war in Benue state, in eastern-central Nigeria, displaces thousands of people.                                                                                                                     |
| February 2002           | Lagos                                   | 100 deaths                    | Some 100 people are killed in Lagos in clashes between Hausas from mainly-Islamic north and ethnic Yorubas from predominantly-Christian southwest.                                                        |
| November 2002           | Kaduna                                  | 200 deaths                    | More than 200 people die in four days of rioting stoked by Muslim fury over the planned Miss World beauty pageant in Kaduna in December. The event is relocated to Britain.                               |
| August 2003             | Niger Delta<br>(south)                  | 100 deaths,<br>1000 injured   | Inter-communal violence in the Niger Delta town of Warri kills about 100 people, injures 1,000.                                                                                                           |
| May 2004                | Kano                                    | 200 deaths                    | State of emergency is declared in the central Plateau State after more than 200 Muslims are killed in Yelwa in attacks by Christian militia; revenge attacks are launched by Muslim youths in Kano.       |
| August – September 2004 | Port Harcourt                           | 500 deaths                    | Deadly clashes between gangs in oil city of Port Harcourt prompts strong crackdown by troops. Rights group Amnesty International cites death toll of 500, authorities say about 20 died.                  |
| February 2006           | Northern Nigeria,<br>Onitsha<br>(South) | 100 deaths                    | More than 100 people are killed when religious violence flares in mainly-Muslim towns in the north and in the southern city of Onitsha.                                                                   |
| September 2008          | Niger Delta                             |                               | Militants in the Niger Delta step up their attacks on oil installations, in response to what they describe as unprovoked attacks by the military on their bases.                                          |
| November 2008           | Jos                                     | 200 deaths                    | At least 200 people are killed during clashes between Christians and Muslims in the central Nigerian town of Jos.                                                                                         |
| July 2009               | North-eastern Nigeria                   | Several hundred deaths        | Hundreds die in northeastern Nigeria after the Boko Haram Islamist movement launches a campaign of violence in a bid to have Sharia law imposed on the entire country. Security forces storm Boko Haram's |

|               |                         |                                             |                                                                                                                                                                                                                                                                            |
|---------------|-------------------------|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               |                         |                                             | stronghold and kill the movement's leader.                                                                                                                                                                                                                                 |
| January 2010  | Jos                     | 149 deaths                                  | At least 149 people are killed during two days of violence between Christian and Muslim gangs in the central city of Jos.                                                                                                                                                  |
| March 2010    | Jos                     | 120 deaths                                  | More than 120 people are killed in clashes between Muslims and Christians in the flashpoint city of Jos.                                                                                                                                                                   |
| October 2010  | Abuja                   |                                             | Nigeria marks 50 years of independence. Celebrations in Abuja marred by deadly bomb blasts. The Islamist group Boko Haram is loosely modelled on the Taliban movement in Afghanistan and has claimed responsibility for numerous attacks.                                  |
| December 2010 | Jos                     | 80 deaths<br>200 deaths in reprisal attacks | Christmas Eve bomb attacks near central city of Jos kill at least 80 people. Attacks claimed by Islamist sect Boko Haram spark clashes between Christians and Muslims. Some 200 killed in reprisal attacks.                                                                |
| August 2011   | Abuja                   | 23 deaths                                   | Suicide bomb attack on UN headquarters in Abuja kills 23 people. Radical Islamist group Boko Haram claims responsibility.                                                                                                                                                  |
| November 2011 | Damaturu (North-East)   | 63 deaths                                   | At least 63 people are killed in bomb and gun attacks in north-eastern town of Damaturu. Boko Haram claims responsibility.                                                                                                                                                 |
| December 2011 | Yobe State, Borno State | 70 deaths                                   | Nearly 70 people are killed in days of fighting between security forces and Boko Haram militants in north-eastern states of Yobe and Borno. Christmas Day bomb attacks kill about 40 people. Boko Haram claims responsibility.                                             |
|               |                         |                                             | President Jonathan declares state of emergency to contain violence by Boko Haram.                                                                                                                                                                                          |
| January 2012  | Kano                    | 100 deaths                                  | Fuel price strike causes major disruption. Unions suspend action when government reverses decision to drop fuel subsidies. More than 100 killed in single day of co-ordinated bombings and shootings in Kano, shortly after Boko Haram tells Christians to quit the north. |
| April 2012    |                         |                                             | Chadian President Idriss Deby calls on countries neighbouring northern Nigeria to set up a joint military force to tackle Boko Haram militants as they continue their attacks. He warns of the danger of the Islamist group destabilising the whole Lake Chad basin area.  |
| June 2012     | Jos, Borno State        | 1 death, dozens injured; 6 deaths           | Boko Haram claims responsibility for attacks on two churches in Jos city and Borno state, in which one person died and dozens of others were injured. An                                                                                                                   |

|                |                                    |                     |                                                                                                                                                                                                                                                                      |
|----------------|------------------------------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                |                                    | retaliation attacks | angry crowd kills six Muslims in Jos in retaliation.                                                                                                                                                                                                                 |
| August 2012    | Maiduguri (north-east)             | 20 deaths           | The army kills 20 Boko Haram fighters in a shootout in the northeastern city of Maiduguri. The government says it has started informal talks through "backroom channels" with Boko Haram to try to end attacks. Boko Haram ruled out peace talks shortly beforehand. |
| October 2012   | Maiduguri (north-east)             | 24 deaths           | Boko Haram bomb army bases in Maiduguri. The army says it kills 24 Boko Haram fighters in subsequent clashes.                                                                                                                                                        |
| November 2012  |                                    |                     | At least 100 people are charged with treason after a march supporting independence for Biafra in the region's main town, Enugu.                                                                                                                                      |
| December 2012  | Yobe State, Borno State            | 20 deaths           | At least 20 Christians are killed in attacks by suspected Islamist militants in the northern states of Yobe and Borno over the Christmas/New Year period.                                                                                                            |
| May 2013       | States of Yobe, Borno, and Adamawa |                     | Government declares state of emergency in three northern states of Yobe, Borno and Adamawa and sends in troops to combat the Boko Haram Islamist militants.                                                                                                          |
| July 2013      | Yobe State                         | 22 deaths           | Secondary schools close in Yobe state after a massacre of 22 pupils at a boarding school, which the government attributes to Boko Haram. The Islamist group has burned down several schools since 2010.                                                              |
| September 2013 | Abuja                              | 150 deaths          | Boko Haram Islamists murder more than 150 people in roadside attacks in the northeast. Separately, security forces fight Boko Haram armed insurgents in the capital Abuja.                                                                                           |

(Source: adapted from BBC, 2013)