Dissertation

Allard Rienk Feddes
Group Membership Matters?

Effects of Direct and Extended Cross-Ethnic Friendship on Minority and Majority Children’s Intergroup Attitudes

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von Dipl.-Psych. Allard Rienk Feddes
geboren am 17.01.1980 in Hardenberg, die Niederlande
Gutachter

1. Prof. Dr. Peter Noack

2. Prof. Dr. Adam Rutland

On September 25, 1957, soldiers escort nine black students into the former all-white Little Rock Central High School in Little Rock, AK, United States of America (NZZ, 2007)

Differences within groups are almost always greater than differences between groups.

Gordon W. Allport, 1954
The international character of the IGC, as indicated by overseas cooperations, IGC-Fellows and Faculty of several nationalities, and numerous visiting international experts in the area of intergroup relations, ensured the past three years to be a stimulating and rich experience. I owe gratitude to many individuals and organizations who contributed to this.

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1 Introduction

If, therefore, gradualism is permitted, it would seem wiser to start the process of integrating with elementary schools rather than with high schools.

Gordon W. Allport, 1958

Gordon Allport made this comment in the preface to the 1958 edition of the classic social psychological book “The Nature of Prejudice”. This was four years after the United States Supreme Court, in May 1954, ruled segregation in public schools based on ethnicity to be unconstitutional. It was also in 1954 that the first edition of “The Nature of Prejudice” was published in which Allport proposed the so-called intergroup contact hypothesis: interaction/contact between individual members of different groups can, under a proscribed set of conditions, lead to a reduction in prejudice toward another group. Based on the contact hypothesis one would expect desegregation in schools to lead to more positive intergroup attitudes among children and, consequently, in adults over time. However, studies on consequences of desegregation for children’s intergroup attitudes show mixed results (Schofield, 1991, 1995; Schofield & Eurich-Fulcer, 2001). Allport (1954) already pointed out that the proposed association between cross-group contact and positive intergroup attitudes is complex and influenced by many factors. Cross-ethnic friendship, which is the focus of the present research, has been proposed to meet the optimal conditions under which contact is expected to lead to positive intergroup attitudes (Allport, 1954; Aboud, Mendelson, & Purdy, 2003; Pettigrew, 1997, 1998; Pettigrew & Tropp, 2000; Wright, Brody, & Aron, 2005).

1.1 Ethnic diversity in western societies

Understanding consequences associated with interethnic contact is of great importance for the increasingly ethnically diverse western societies. As depicted in Figure 1.1, since the year 2000 more than three-quarter of the population growth in the European Union has been due to immigration (Eurostat, 2007). In the school context, this change in demography is becoming
**Figure 1.1** Population change, net migration and natural population change, EU-25 (Eurostat, 2007)

- **Population change**: The difference between the size of the population at the end and the beginning of a period; it is equal to the sum of natural increase and net migration; there is negative change when both of these components are negative or when one is negative and has a higher absolute value than the other.

- **Net migration**: The difference between immigration into and emigration from the area during the year (net migration is therefore negative when the number of emigrants exceeds the number of immigrants).

- **Natural population change**: The difference between the number of live births and the number of deaths during the year; the natural increase is negative when the number of deaths exceeds the number of births.

Clearly visible. For example, in Germany, the context of the present study, more than a quarter of the children under 16 years old (age 0-6: 32.5%; age 6-10: 29.2%; and age 10-16: 26.7%) have an immigration background (Statistisches Bundesamt Deutschland, 2006a).
Compared to other settings, it is at school where children who differ in ethnical background have most contact with each other, form friendships, and gather experiences and impressions that can have consequences for their intergroup attitudes in adulthood (Ellison & Powers, 1994; Schofield, 1995). This ethnically diverse student population challenges schools with issues like language problems and cultural diversity, but also offers unique opportunities; it is, after all, the school context that potentially can provide optimal conditions for cultural exchanges and can lend itself for interventions aimed at improving intergroup relations. Ultimately, this could lead to better integration of minorities and more positive intergroup relations in society as a whole.

1.2 Intergroup friendship and children’s intergroup attitudes

Prejudiced feelings toward other groups, negative out-group stereotypes, and in-group favoritism, are by no means exceptions among children. Prejudice and stereotyping has been found among children as young as 3 years old (see Aboud, 1988; Aboud & Amato, 2001; Brown, 1995; Cameron, Alvarez, Ruble, & Fuligni, 2001; Nesdale, 2001). Evidence derived from areas of conflict (i.e., the Middle East) indicates that children as young as 2 years old can already show feelings of fear when images of out-group members are presented (Bar-Tal & Teichman, 2005). It seems, therefore, that to improve intergroup relations in ethnically diverse societies, interventions need to be made from childhood onwards.

A significant number of interventions aimed at improving intergroup attitudes in both children and adults, either directly or indirectly uses the notion of intergroup contact (Aboud & Amato, 2001; Aboud & Fenwick, 1999; Maras & Brown, 2000; Stephan, 1999). As stated before, cross-ethnic friendship is thought to be especially effective in changing intergroup attitudes and has been considered to be a key factor related to attitude development in childhood (Aboud et al., 2003). Moreover, having cross-ethnic friendships in childhood has been associated with positive intergroup attitudes in adolescence and adulthood (Ellison & Powers, 1994; Jackman & Crane, 1986). Even though direct cross-ethnic friendship seems to be a promising notion in improving intergroup attitudes, it does have several flaws. Research examining direct cross-ethnic friendships among children has shown that, compared to same-ethnic friendships, cross-ethnic friendships are less numerous, less stable, and decline with age (Aboud et al., 2003).

Recently, Wright, Aron, McGlothlin-Volpe, and Ropp (1997) proposed a notion that could overcome these shortcomings of direct friendship. They argued that mere knowledge of
a fellow group member (an in-group member) having a close relationship with a member of another group (an out-group member) can already lead to more positive intergroup attitudes. This is called the extended contact hypothesis.¹ One great implication of this notion is that intergroup attitudes can be improved on a large scale without the requirement that all group members have a direct cross-group friendship. In addition, Wright et al. argued that observation of in-group members interacting positively with out-group members can also reduce intergroup anxiety. As a consequence the observer is expected to form more positive impressions of the out-group as a whole and is more likely to initiate direct interaction with out-group members allowing direct contact effects to operate.

Considering the importance, it is striking that relatively little is known about when and how direct friendship and extended cross-ethnic friendship can influence development of intergroup attitudes. In particular, little is known about when and how direct cross-ethnic friendship and knowledge about cross-ethnic friendship can influence attitude formation in childhood (Aboud et al., 2003; Cameron, Rutland, Brown, & Douch, 2006). The present research aims to contribute to what is known about cross-ethnic friendship relations and attitude formation in childhood by simultaneously addressing several main issues.

First, besides direct friendship effects on children’s intergroup attitudes, the present research focuses on the question whether and how knowledge about friends having a cross-ethnic friendship can influence children’s intergroup attitudes; that is extended friendship effects. Hardly any research exists that has examined extended friendship effects within children (see Cameron et al., 2006; Cameron & Rutland, 2006; Cameron, Rutland, & Brown, 2007, for exceptions).²

Second, very little is known about possible different effects of cross-ethnic friendship for minority children compared to majority children. Increasingly, theorists from both the fields of developmental and social psychology stress the importance of distinguishing between minority and majority group membership in studying development of intergroup attitudes (Aboud et al., 2003; Tropp & Pettigrew, 2005; Verkuyten, 2002).

Third, the present research is concerned with possible underlying processes through which direct and extended friendship can result in positive attitudes among minority and majority children. Several mediators have been proposed (i.e., Brown & Hewstone, 2005;

¹ There is a lively discussion going on whether to name this form of contact indirect or extended. In the present research, the term extended is used in agreement with the original term as proposed by Wright and colleagues (1997).
² As discussed in greater detail in Chapter 7, a distinction can be made between the concepts extended contact and extended friendship. Throughout this dissertation, however, these terms are used interchangeably.
Wright et al., 1997), but also this field is largely unexplored, especially among children. The focus will be on two mediators that have been proposed to be critical with respect to the association between direct and extended friendship and intergroup attitudes: intergroup anxiety and perceived social norms about cross-ethnic friendships.

Finally, very little longitudinal research exists examining the friendship-attitude association within elementary school children. Longitudinal designs are considered to be suitable for examining issues of causality (Pettigrew, 1998; Brown & Hewstone, 2005). The present research examines longitudinally effects of direct and extended friendship on intergroup attitudes as well as mediation effects of intergroup anxiety and social norms. Previous cross-sectional research has provided evidence for intergroup anxiety to mediate the friendship-attitude association (e.g., Paolini, Hewstone, Cairns, & Voci, 2004; Turner, Hewstone, & Voci, 2007), however, neither the anxiety mediation hypothesis nor the social norms mediation hypothesis has been tested longitudinally before.

1.3 Organization of the dissertation

The dissertation is structured as follows. In Chapter 2, an overview will be given about what is known about development of intergroup attitudes in childhood. In addition, key concepts will be defined like stereotyping, prejudice, and intergroup attitudes. Furthermore, an overview will be given of the early and more contemporary methodological and theoretical approaches that have been developed to examine children’s intergroup attitudes. In Chapter 3, the intergroup contact approach will be discussed, which is the theoretical framework used in the present research. Previous research on the associations between direct contact and extended contact and intergroup attitudes will be reviewed emphasizing the role of cross-group friendship. In addition, limitations of previous research on direct and extended friendship effects will be outlined. In Chapters 4-6, the longitudinal field study will be presented addressing key issues related to associations between minority and majority children’s cross-ethnic friendships and their intergroup attitudes. In Chapter 4, the hypotheses will be given as well as the theoretical models that were tested. The method is outlined in Chapter 5. In Chapter 6 the results are presented which are discussed in Chapter 7. In addition, limitations of the study are addressed as well as theoretical and practical implications. Finally, in Chapter 8, several concluding remarks are made.
2 Development of Children’s Intergroup Attitudes

In this chapter, early and contemporary theoretical and methodological approaches toward development of intergroup attitudes in childhood will be outlined. In the first section, the concepts prejudice, stereotyping, and intergroup attitudes will be defined and measurement issues will be discussed. Following, a general overview will be given of early and more contemporary theoretical approaches toward development of intergroup attitudes in childhood.

2.1 Defining and measuring children’s intergroup attitudes

Stereotyping, prejudice, and intergroup attitudes have been studied over a considerable time by social and developmental psychologists starting in the 1920s and 1930s (see Fiske, 2000; Aboud, 1988) and have been defined in different ways (see Brown, 1995; Hilton & Von Hippel, 1996; Wright & Taylor, 2003). Methods for measurement of these concepts within children have developed with time as well (see Aboud, 1988; Cameron et al., 2001; and Nesdale, 2001, for reviews). Before an overview will be given of the theoretical approaches, a closer description of these terms and how they have been measured is in place.

2.1.1 Conceptual issues

Stereotypes were first described as ‘pictures in our heads’ by a political journalist called Lippmann (1922, p. 4). A more recent definition of stereotypes is that they are “beliefs about the characteristics, attributes, and behaviors of members of certain groups” (Hilton & Von Hippel, 1996, p. 240). Stereotypes might be targeted at any social group and the content of stereotypes may change over time or across regions. Stereotyping is often, but not always, associated with prejudice. Prejudice has been defined as “the holding of derogatory social attitudes or cognitive beliefs, the expression of negative affect, or the display of hostile or discriminatory behavior towards members of a group on account of their membership of that group” (Brown, 1995, p. 8). As pointed out by Wright and Taylor (2003, p. 433), these two concepts are distinct but also related and can together be considered as associated components
of a more overriding orientation or predisposition towards a group that is labeled *intergroup attitudes*. A distinction can be made between *implicit* and *explicit* attitudes depending on whether they are conscious or not (Greenwald & Banaji, 1995). Implicit attitudes involve processes an individual cannot control and are therefore considered to be unconscious. In contrast, explicit attitudes involve controllable processes and are considered to be conscious. Implicit and explicit attitudes do not necessarily comply with each other. An individual can express positive explicit attitudes toward a certain social group while implicitly holding negative attitudes toward that same group. Over time, negative intergroup attitudes may eventually result in unfair behavior toward members of other groups based on their group membership; in other words, *discrimination* (Pettigrew, 1985, 1998; Wright & Taylor, 2003).

### 2.1.2 Measurement issues

The measurement of children’s intergroup attitudes started with work by Horowitz and Horowitz (1936, 1938) and Clark and Clark (1947) who investigated Black and White children’s preferences for their own and other groups. These researchers provided first evidence that young children (1) show prejudice toward other groups; (2) are able to identify with their own group; and (3) can even feel negatively toward their own group (in case of black children). Horowitz and Horowitz (1936, 1938) used photos of Black and White children which were shown to the children of both ethnic groups after which their preferences were measured. Instead of photo’s, Clark and Clark (1947) used actual Black and White dolls which were chosen to represent different ethnic groups. In the Doll-task, children are asked to give the experimenter the doll they would like to play with most, or to give the experimenter the doll that looks bad.

The main criticism on these early studies has focused on the feature of forced-choice questioning format (i.e., Cameron et al., 2001). This format makes it impossible to determine whether the bias is due to a preference for the in-group or derogation of the out-group. As different processes seem to be associated with aspects of in-group and out-group differentiation (i.e., Brewer, 1999; Mummendey & Otten, 1998), it is critical to make a distinction between in-group and out-group evaluations when investigating development of children’s intergroup attitudes. Nevertheless, a great deal of developmental research on intergroup attitudes has relied and still relies on forced-choice measures (c.f., Cameron et al., 2001). Other examples of tests using a forced-choice format are the Preschool Racial Attitude Measure (PRAM/PRAM II; Williams, Best, & Boswell, 1975; Williams, Best, Boswell,
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Mattson, & Graves, 1975) and the Projective Prejudice Test by Katz and Zalk (1978). Both tasks require children to assign positive and negative attributes to either the in-group or the out-group. Another more recent example is the Multi-response Racial Attitude (MRA) measure. This measure, designed by Doyle and Aboud (1995), measures separately children’s in-group and out-group attitudes. The MRA allows children to assign ten negative and ten positive attributes to three ethnic groups: Black, White, and Native Indian. Following, positivity and negativity scores are calculated with a possible range of 0-10. However, as argued by Cameron and colleagues (2001), the design of this procedure still confounds between in-group favoritism and out-group derogation as the child is forced to choose a group and does not have the option of saying that neither group has the attribute.

To avoid this confound, attitudes toward both the in-group and the out-group can be measured by using Likert scales or semantic differential items. An example of the former can be found in a study by Kinket and Verkuyten (1999) who used Likert scales by asking Dutch and Turkish children how many Dutch and Turkish children were friendly, honest, and smart, on five-point scales ranging from ‘none’ to ‘all’. Higher scores indicated a more positive evaluation of the group. Mean evaluation scores were computed separately for in-group as well as the out-group. Similar procedures have been successfully used over the last years (i.e., Abrams, Rutland, & Cameron, 2003; Verkuyten, 2001; Cameron et al., 2006).

Research on children’s intergroup attitudes typically made use of measures focusing on explicit attitudes (see Rutland, Cameron, Milne, & McGeorge, 2005). The disadvantage of these measures is that children are likely to respond in such a way that they think is social desirable (Brown, 1995; Nesdale, 2001). Recently, several techniques have been developed minimizing so-called social desirability effects by measuring children’s implicit intergroup attitudes. One example is using a computer-based measure of implicit attitudes called Implicit Association Test (IAT, Greenwald, McGhee, & Schwarz, 1998). This task measures the relative strength of associations between a target concept (i.e., ethnicity: pictures of German and Turkish children’s faces) and an attribute concept (i.e., evaluation: positive words and negative words). The assumption is that strongly related target-attribute pairs are easier to classify than weakly associated target-attribute pairs. Rutland and colleagues (2005) as well as Baron and Banaji (2006) used an adapted version suitable for children in which they found implicit in-group bias in children as young as 5 years old.

McGlothlin and colleagues (McGlothlin, Killen, & Edmonds, 2005; McGlothlin & Killen, 2006) use an alternative approach toward measurement of intergroup attitudes among
children. They measure attitudes *indirectly* by using picture cards depicting ambiguous situations. In the so-called Ambiguous Situations Task, McGlothlin et al. use pictures of pairs of children of either different or same ethnicity whose behavioral intentions toward each other can be interpreted as either negative or neutral (i.e., two children of either different or same ethnicity next to a swing; one child seemingly having fallen off the swing, another child standing beside him/her). Interpretations are assessed by measuring children’s attributions of negative intent (either the child pushed the other child off the swing or the child fell on his/her own), and about potential friendship between the characters on the pictures.

Finally, as pointed out by Nesdale (2001) and Cameron et al. (2001), it is critical to distinguish between ethnic *preference* and ethnic *prejudice* when examining children’s intergroup attitudes. It seems that children are more likely to express ‘less liking’ than clear out-group derogation. It is therefore the question whether attitudes as measured thus far really entail ethnic prejudice as defined by (Brown, 1995) or merely indicate a preference for the in-group.

To conclude, the number of methods available to researchers investigating development of children’s intergroup attitudes is steadily increasing. Using multiple techniques like structured interviews, observations, as well as implicit and explicit attitude measures can lead to more insight how intergroup attitudes develop in childhood.

### 2.2 Theories on development of children’s intergroup attitudes

Over the past 75 years, a great amount of research has focused on development of intergroup attitudes in childhood. Awareness of ethnic groups, stereotyping, as well as a preference for the in-group have been found to arise at the early age of 3 years old (Aboud, 1988). The formation of intergroup attitudes continues with age through elementary school, high school, into adulthood, being influenced by many factors: developmental, social, as well as contextual. Several lines of research have now identified middle childhood (age 5-12 years) as a critical period for development of intergroup attitudes (see Aboud, 1988; Brown, 1995; Cameron et al., 2001; and Nesdale, 2001, for reviews). This section will provide an overview of the early work as well as more contemporary theoretical approaches toward development of intergroup attitudes.
2.2.1 Early approaches toward development of intergroup attitudes

Initial research on children’s intergroup attitudes focused on preferences for the own and other groups (Horowitz & Horowitz, 1936, 1938; Clark & Clark 1947). These studies were not based on a specific theoretical approach. In the 1950s, however, two theoretical approaches emerged: The inner state approach and the social reflection approach.

**Inner state approach**

The inner state approach was much influenced by psychoanalytic, Freudian thinking. Inner state theorists attribute prejudice to development of personality. The best example is the theory of authoritarian personality (Adorno, Frenkel-Brunswik, Levinson, & Sanford, 1950) which states that prejudice comes forth out of child-rearing practices. Adorno et al. argued that development of a child’s personality is a continuous process characterized by repression and redirection of a child’s needs by social agents (i.e., their parents). By preventing children to do what they want to do, feelings of frustration and disagreement will arise, eventually leading into feelings of anxiety and hostility. The theory states that when parents are over-anxious about the child conforming to the social rules and use harsh treatment to punish antisocial behavior of the child, the child will not learn to deal with these feelings of anxiety and hostility in a correct manner. Instead of focusing these negative feelings toward people in authority (i.e., the parents), the child will focus on people lacking in authority and power; that is, minority groups.

Even though this approach does account for individual differences in prejudice (Aboud, 1988), it has several shortcomings. For example, it underestimates the importance of the immediate social situation in shaping attitudes and behaviors. Social norms, for example, have been shown to have a powerful effect on the formation of attitudes and to influence behavior (Jetten, Spears, & Manstead, 1996; Nesdale, Maass, Durkin, & Griffiths, 2005; Pettigrew, 1991; Rutland et al., 2005). The inner state approach can also not account for the uniformity of prejudice across groups in particular places and times (c.f., Brown, 1995).

**Social reflection approach**

The social reflection approach suggests that attitudes are simply the product of their social environment and that young children are unprejudiced (Allport, 1954). According to this approach, children develop prejudice that reflects status differences between groups in their social context. Children are suggested to adopt attitudes of significant others, typically their parents. Bandura’s (1977) social learning theory is an example of this approach. By
observing and imitating their parent’s verbal and non-verbal behavior, children learn attitudes towards other groups and how to respond to members of other groups.

A strong point of this theory is that it explains why certain groups are more derogated than others (Aboud, 1988). Groups that are lower in status and power, or that are in competition with the in-group, are the focus of the child’s prejudice. Also, research findings indicate that the parental style in child rearing can directly affect children’s intergroup attitudes (Klein-Allermann, Wild, Hofer, Noack, & Kracke, 1995; Kracke, Noack, Hofer, & Klein-Allermann, 1993; Rohan & Zanna, 1996). However, other research has shown that correlations between parental explicit attitudes and children’s attitudes are typically low, between .15 and .50, or even non-existent (i.e., Aboud & Doyle, 1996; Branch & Newcombe, 1986; Fishbein, 2002; Geißler, 1996; Hadjar & Baier, 2002; Noack, 2001; Oswald, Kuhn, Rebenstorf & Schmid, 1999; Tenenbaum & Leaper, 2002). Furthermore, young children have been shown to be prejudiced despite existing status differences between groups in their environment (see Aboud, 1988; Aboud & Amato, 2001; Nesdale, 2001).

In sum, even though early work on development of children’s intergroup attitudes has provided a useful theoretical framework as well as testable hypotheses, it cannot explain several critical research findings as pointed out above. In the following paragraph, more contemporary theoretical approaches toward development of intergroup attitudes in children will be discussed.

### 2.2.2 Contemporary approaches toward development of intergroup attitudes

Several theories of development of intergroup attitudes within children have been proposed over the past two decades. In this section four main theoretical approaches will be discussed that currently guide the literature: (1) social-cognitive developmental approach; (2) social-identity developmental approach; (3) integrative developmental-contextual approach; and (4) social and moral reasoning approach.

**Social-cognitive developmental approach**

Social-cognitive developmental theories of prejudice and stereotyping (Aboud, 1988; Aboud & Amato, 2001; Bigler & Liben, 2006) have provided the most complete theoretical account for development of children’s intergroup attitudes (Nesdale, 2001). These theories resulted out of dissatisfaction concerning the developmental aspect within the two classical theories on intergroup attitudes as were described in the previous section. The social-cognitive developmental approach proposes that prejudice and stereotyping are due to information-
processing errors. Because young children lack certain perceptual cognitive skills, like conservation skills (Clark, Hocevar, & Dembo, 1980), classification skills (Bigler & Liben, 1993; Piaget, 1965, 1970), and perspective taking (Piaget & Inhelder, 1956; Aboud, 1981, Black-Gutman & Hickson, 1996; Doyle & Aboud, 1995), they are prone to prejudice and stereotyping.

Based on the earlier work of Katz and Piaget (Katz, 1976; Piaget, 1965, 1970), Aboud (1988) proposed the social-cognitive developmental theory of prejudice. According to Aboud, children’s prejudice develops from the age of 9 to 12 months till the age of about 10 years in three subsequent phases. In the first phase, children’s attitudes are mainly based on affect. Attitudes are determined by feelings of fear and happiness. In the second phase, perceptual processes take over as children start to perceive people around them in terms of similarity and dissimilarity based primarily on physical characteristics (i.e., skin color, clothing, hair texture). In the third phase, around 7 years of age, cognitive processes start to dominate as the child reaches the concrete operational stage of cognitive development and, later, the formal operational stage of thinking (see Flavell, 1977).

Parallel to these changes, Aboud (1988) argues, a child’s focus of attention changes. Young children, below the age of 7 years, are considered to be egocentric, to focus mainly on themselves, and to assume people to see the world around them as they see it. From 7 years onwards, children’s prejudice is based on their preoccupation with groups, and their bipolar judgments of members of out-groups based on similarities and differences to their in-group. Still later, children start to become aware of interindividual differences and their judgments of out-group members are not merely based on group membership but also on personal characteristics.

These two parallel sequences of development led Aboud (1988) to predict that ethnic prejudice starts to develop around 3 years old. Prejudice is then expected to increase, ‘peaking’ around 7 years of age as children are then most ‘sociocentric’ (see also Piaget & Weil, 1951). Around 7/8 years old, prejudice starts to decrease as children acquire the capability to judge people in terms of internal qualities and not group membership alone. This development is depicted in Figure 2.1.

Research has provided evidence supporting the social-cognitive approach. High levels of ethnic prejudice have been found in young children and several studies found ethnic prejudice to decrease with age (see Aboud, 1988, and Aboud & Amato, 2001, for reviews). Also, studies have shown that development of cognitive abilities coincide with a decrease in
prejudice (Doyle & Aboud, 1995). Another example is that classification skills, the ability to categorize others consistently along a particular dimension, have been shown to be related to ethnic stereotyping and prejudice within children (Bigler & Liben, 1993; Cameron et al., 2006). However, there are also several shortcomings associated with this approach. It can not explain the high levels of national prejudice, in-group favoritism, and self-stereotyping that have been found to develop only in children aged over 10 years (Rutland, 1999). In addition, like the inner state approach, the social-cognitive approach does not consider the importance of the direct social context which has been shown to have an effect on children’s intergroup attitudes (Bar-Tal & Teichman, 2005; Rutland et al., 2005). Furthermore, it does not consider motivational issues and cannot explain strong prejudices towards particular national or religious groups (see also Nesdale, 2001). Finally, the cognitive approach can not explain differences in intergroup attitudes depending on group membership (see Aboud, 1988; Aboud & Amato, 2001; Cameron et al., 2001). For example, regardless of age, majority, high status children show in-group favoritism. However, it is a common finding that among minority, low status children, in-group favoritism is found to appear not until middle childhood. In early childhood, minority children have been found to actually prefer the majority, high status out-group (Aboud, 1988; Aboud & Amato, 2001).
Social-identity developmental approach

Bennett and Sani (2004, p. 2) recently pointed out that whereas social psychologists have neglected development of self, developmental psychologists mainly focused on development of the personal self. The social-identity developmental approach offers an explanation of development of intergroup attitudes in childhood by focusing on development of the social self, that is, the self in terms of membership of social groups (i.e., ethnicity, nationality). Two social psychological theories provided the framework for this approach: social identity theory (SIT; Tajfel & Turner, 1986) and self-categorization theory (SCT; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). These theories have received wide support and have been reviewed extensively elsewhere (Brown, 1995; Turner, 1999; Turner & Reynolds, 2001).

SIT has three basic concepts which are interrelated to each other: social identity, social categorization, and social comparison. Social identity – which can be distinguished from personal identity as outlined in SCT (Turner & Reynolds, 2001) – was defined as “that part of an individual’s self-concept which derives from his knowledge of his membership of a social group (or groups) together with the value and emotional significance attached to that membership” (Tajfel, 1981, p. 255). In order to identify with a group, an individual needs to have an idea about positions of groups in the social environment (i.e., in terms of social status). A process called social categorization, the cognitive segmentation of the social context in social categories, provides this structure. Social comparison, in turn, is related to the other two concepts as social groups are compared on relevant dimensions (i.e., social status). According to SIT, people are motivated to have a positive self-concept to maintain or enhance their self-esteem. One way to reach this goal is by identifying oneself with those groups (in-groups) that are superior over other groups (out-groups) in terms of, for example, social status. The key hypothesis in SIT is that the in-group will be perceived as positively distinctive from out-groups eventually leading to in-group favoritism and out-group derogation.

Social-identity developmental theory (SIDT; Nesdale, 1999, 2004), which was based on SIT and SCT, predicts that development of prejudice in childhood runs parallel to development of children’s social identity. It describes four developmental phases. In the undifferentiated phase, prior to 2-3 years of age, racial cues are not salient to children. In the second phase, around 3 years of age, children become more aware of categories like ethnicity, especially in multi-ethnic contexts. In the third phase, ethnic preference for the in-group
develops. Importantly, in contrast to SIT and SCT, which predict both in-group favoritism and out-group derogation responses, SIDT only predicts in-group favoritism. In the fourth phase ethnic prejudice arises.

In contrast to Aboud’s (1988) social cognitive theory of prejudice, which predicts a decline in prejudice around 7 years old, SIDT predicts prejudice to actually emerge around this age or later on. It is important to note that, according to SIDT, it could be possible that prejudice does not arise. This depends on a child’s knowledge of the social context, the need for membership in a high-status group, and whether or not a child identifies with a group which has negative attitudes toward an out-group. In addition, SIDT emphasizes that social conditions (i.e., social norms, group status) can influence intergroup comparisons and evaluations.

The strength of SIDT is that, in contrast to social-cognitive theories, it can account for differences in status with respect to attitude development and it takes into account the social context. Several studies provided support for SIDT. A study by Nesdale and Flesser (2001) showed 5-year old children to be sensitive to the status of their social group. They liked their in-group more than a comparative out-group and reported greater desire to remain a group-member in case of a high-status compared to a low-status group. In line with SIDT, they found in-group favoritism but not out-group derogation. In addition, a series of studies by Nesdale and colleagues (2004, 2005) showed that in-group norms and threat by out-groups determines whether or not children show ethnic prejudice towards out-groups. A study by Rutland and colleagues (2005) provided additional evidence that norms can influence children’s expression of intergroup attitudes. The presented studies, however, mainly focused on the ethnic preference phase, little research investigated the other three phases as proposed in SIDT. An additional limitation is that the social-identity approach, like the social-cognitive approach, does not provide predictions about development of attitudes in pre-adolescence and adolescence.

**Integrative developmental-contextual approach**

In their integrative developmental-contextual theory (IDCT, see Figure 2.2), Bar-Tal and Teichman (2005; Teichman & Bar-Tal, in press) argue that development of ethnic stereotyping and prejudice is influenced by multiple factors including affect, cognitive development, and social identity development. These aspects are interrelated but differ in importance depending on the developmental stage. In addition, Bar-Tal and Teichman stress importance of the social context in attitude development in each developmental stage. They
make a distinction between conflict and non-conflict areas with respect to development and expression of in-group bias in childhood.

IDCT acknowledges importance of cognitive development as an influential factor in attitude development, but stresses that not all findings can be solely explained by cognition. One example is the finding of in-group bias in very young children (i.e., 3 to 4 years) which, according to Bar-Tal and Teichman (2005), can be mainly attributed to emotions. In middle childhood, Bar-Tal and Teichman argue, cognitive development plays a key role as children acquire cognitive skills that allow for social tolerance. Like the social-cognitive approach, IDCT predicts a decrease in ethnic prejudice and stereotyping around age 7/8. From 10 years onwards, identity development is considered to be the main factor influencing attitude development as identity formation becomes the main development task. In the pre-adolescence and early adolescence phase (age 10-13) processes as described in SIT become relevant. The need for self-enhancement arises, children start to identify with their group, status differences become relevant, and intergroup comparisons are made.
According to the integrative developmental-contextual approach, the sequence and onset of affective, cognitive, and identity influences on attitude development and expression depends on the contextual conditions. As stressed by Bar-Tal and Teichman (2005, p. 253), the context determines not only formation of intergroup attitudes but also the way attitudes are expressed. In conflict areas, where negative emotions are frequently associated with the out-group, both affect as well as cognition are likely to influence children’s attitude formation at a very early age. In these contexts, children as young as 2 years old associate negative emotions with out-group members resulting in in-group positivity and out-group negativity. In multiethnic, nonviolent contexts, in-group favoritism is apparent already around age 3-4 years whereas out-group negativity appears not until age 7 (Cameron et al., 2001; Nesdale, 2001).

The strength of the integrative developmental-contextual approach toward attitude development in childhood is that it takes into account factors identified by the social-cognitive approach as well as the social-identity approach. In addition, it stresses the importance of contextual conditions. ICDT makes predictions for attitude development within children in neutral, non-violent multi-ethnic contexts, as well as within children in areas characterized by enduring conflict. Initial evidence derived from a conflict area (Bar-Tal & Teichman, 2005; Teichman & Bar-Tal, in press) supports ICDT as in-group favoritism as well as out-group negativity was found in 2-3 year old children. In addition, ICDT accounts for status differences as well (Teichman & Bar-Tal, in press; Teichman, Bar-Tal, & Abdolrazeq, 2007). However, although ICDT makes predictions about attitude development in non-violent areas, it has, till thus far, only been tested in areas characterized by social conflict.

Social-cognitive domain approach

A different approach toward studying development of children’s intergroup attitudes is taken by researchers using a social-cognitive domain model. Instead of directly examining intergroup attitudes, this approach focuses on development of children’s social and moral reasoning about a wide range of social events which reflects their intergroup attitudes. An example is how children judge exclusion of a child from a group because of his or her group membership (i.e., ethnicity or gender). Children could reason it is unfair to exclude a girl from the soccer team because she is a girl, but could also approve exclusion when group functioning is taken into consideration (i.e., the girl is not so good in playing soccer).

Social-cognitive domain theory (SCDT; Turiel, 1983, 1998, 2002) is the most contemporary cognitive-developmental theory regarding development of moral reasoning in context of intergroup relationships (see Killen, Margie, & Sinno, 2004). SCDT proposes that
children use different forms (or combinations) of reasoning when evaluating social events: (1) *moral reasoning*, based on fairness, justice, and rights; (2) *social conventional reasoning*, based on traditions, customs, expectations, and social norms; and (3) *psychological reasoning*, based on individual autonomy and personal choice. This is in contrast to the traditional approaches by Piaget (1932) and Kohlberg (1984) who proposed that children in a particular developmental stage apply the same form of reasoning across situations and that, with age, there is a qualitative improvement of moral reasoning (the so-called stage-models, see Helwig & Turiel, 2002). SCDT predicts that it depends on the so-called *domain* of the child (i.e., age, gender, nationality), the *social context* (i.e., family, friends, peer group, or school), and the *target* (i.e., gender or ethnicity) which form of reasoning is given priority. It further postulates that social and moral judgment and intergroup attitudes are facilitated through intergroup contact and personal experiences with discrimination.

Killen and colleagues (see Killen et al., 2004, and Killen, 2007, for reviews) applied SCDT to the context of intergroup relations by investigating issues like social inclusion, social exclusion, and distribution of resources (see Figure 2.3). In their research on social reasoning about exclusion, Killen et al. focused on conditions under which children apply certain forms of reasoning when evaluating social dilemmas and interactions. In several studies, evidence was found supporting SCDT. For example, Killen and Stangor (2001) showed that, independent of age, children use moral reasoning rejecting exclusion when it was based on stereotypical grounds (i.e., it is unfair to exclude a girl from the basketball team because she is a girl). However, when exclusion was based on group functioning, older children (age 12) were more likely to approve exclusion based on social conventional reasoning (i.e., the team will play better) than younger children (age 6 and 9).

In addition, Killen, Lee-Kim, McGlothlin, and Stangor (2002) report a series of findings showing that children use multiple forms of reasoning about exclusion depending on the social context. Children and adolescents (age 10 to 16) considered exclusion based on group membership as unfair in the school context. In the context of friendship relations, however, personal and psychological reasons were used to justify exclusion (i.e., people can choose for themselves whom they want to befriend). Finally, in a peer group context social-conventional reasoning was used (i.e., group functioning).
Figure 2.3  A representation of social-cognitive domain theory (SCDT) applied to intergroup relationships (Killen, Margie, & Sinno, 2004)
Furthermore, McGlothlin and Killen (2006; McGlothlin et al., 2005) report evidence suggesting that intergroup contact can have an effect on how children reason about cross-ethnic friendships and on their intergroup attitudes. Compared to children in heterogeneous schools, majority children in ethnically homogeneous schools were found to be more biased toward minority children and rated cross-ethnic friendships to be less likely than same-ethnic friendships.

Another interesting finding is that group status may influence how children reason about exclusion. Killen, Henning, Kelly, Crystal, and Ruck (2007) found that both minority and majority children in ethnically heterogeneous schools mainly use moral reasoning (i.e., fairness) when judging exclusion based on ethnicity. However, minority, low status children thought exclusion as more unacceptable compared to majority, high status children. Especially interesting considering the role of social context was the finding that most majority children considered parent’s discomfort with having a minority sleepover as legitimate whereas this was the case for only half of the minority children.

The strength of social-cognitive domain approach toward attitude development is that it provides key information about the nature and development of intergroup attitudes taking into account individual, interpersonal, intergroup, as well as contextual factors. Social-cognitive domain approach proposes that the child does not merely comply with societal rules and standards as proposed by social reflection theories, but is active in trying to understand social relationships while constructing concepts about what is right and wrong. SCDT complements existing research on intergroup attitude development by focusing on how children reason about issues related to prejudice and stereotyping. In addition, SCDT focuses not only on early, middle, and late childhood; it also provides a theoretical framework for studying attitude development in adolescence.

2.3 Conclusions

The existing body of research dealing with development of intergroup attitudes is diverse in terms of methodology as well as theoretical approaches. There is now wide agreement on the notion that ethnic intergroup bias arises at a very young age. Several lines of research have identified middle childhood (age 5-12 years) as a critical period for development of intergroup attitudes emphasizing the importance of developmental, social, and contextual factors. With respect to possible interventions aimed at improving intergroup attitudes, the reviewed theories provide a useful guideline what approach to take in a certain developmental stage.
For example, the theories that have been revised in this chapter generally agree that in very young children (below 5 years old), interventions should focus on children’s affective attitudes toward different groups. In middle childhood, it is commonly agreed upon that the child becomes more cognitively capable and interventions should focus on cognitive skills, for example by training perspective-taking skills (i.e., empathy). Finally, in late childhood and adolescence, interventions should focus more on children’s development of personal and social identity. However, based on the integrative developmental-contextual approach as well as the social-cognitive domain approach, it can be argued that the social context should be taken into account as well. In the next chapter, the theoretical framework of the present research will be discussed; the intergroup contact approach.
3 Cross-Group Friendship and Intergroup Attitudes

In this chapter, the intergroup contact approach toward development of intergroup attitudes will be discussed. The main theories and studies on direct and extended contact effects will be explored, emphasizing the work focusing on cross-group friendship. In addition, the role of group status, possible underlying psychological processes, and causality issues will be discussed.

3.1 Direct and extended contact hypothesis

3.1.1 Direct contact hypothesis

The intergroup contact hypothesis proposes that mere contact between members of social groups will result in more positive intergroup attitudes (Allport, 1954; Williams, 1947). Over the last 50 years, this connotation has been extensively examined among adolescents and adults (see Brown & Hewstone, 2005, for a review) as well as among children (e.g., Aboud et al., 2003; McGlothlin & Killen, 2006; McGlothlin et al., 2005). Peer relations have been associated with the development of morality, social and cognitive skills, and with pro-social behavior (see Rubin, Bukowski, & Parker, 2006). McGlothlin and colleagues (in press) argued that intergroup contact is a key variable influencing how children reason about inter-ethnic interactions reflecting their intergroup attitudes. A recent meta-analysis by Pettigrew and Tropp (2006) examined more than 500 independent studies on contact effects indicating that, overall, contact does reduce prejudice (mean Pearson’s $r = -.20$). In addition, Tropp and Prenovost (in press) reported a positive relation between intergroup contact and intergroup attitudes in a meta-analysis including more than 100 studies focusing on contact effects within children.

However, as already pointed out by Allport (1954), mere cross-group contact will not necessarily result in more positive intergroup attitudes. Allport identified four key conditions under which contact effects are likely to occur: equal status within the situation, common goals, intergroup cooperation, and authority support. Pettigrew and Tropp (2006) provided empirical support for these so-called optimal contact conditions as the association between
contact and prejudice was significantly stronger in samples with optimal contact conditions (mean Pearson’s $r = -.29$) compared to other samples (mean Pearson’s $r = -.20$).

**Generalization of contact experiences**

A central issue in research on contact effects is when and how positive interpersonal contact is generalized to the out-group (and possibly to other out-groups) as a whole. During the 1980s, three theoretical models were proposed focusing on this issue: the *decategorization model* (Brewer & Miller, 1984), the *intergroup contact model* (Hewstone & Brown, 1986), and the *common in-group identity model* (Gaertner, Mann, Murrell, & Dovidio, 1989). The decategorization model by Brewer and Miller (1984) argues that for contact effects to occur, the salience of the social group should be decreased while salience of the interpersonal relationship should be increased. According to Brewer and Miller, the optimal contact conditions as proposed by Allport (1954) foster this process. They predicted that this process should eventually result in greater out-group differentiation (i.e., reduced out-group homogeneity) and more personalization. As a consequence, more positive intergroup attitudes and behavior is expected as individuals will be less likely to ‘categorize’ same or other out-group members in future encounters.

However, as argued by Brown and Hewstone (1986, 2005), a minimal level of group salience is necessary to allow for generalization from individual group members to groups as whole. The decategorization approach might, therefore, not be the optimal approach to improve intergroup attitudes. Their intergroup contact model proposes that the groups involved need to be kept salient while members interact under Allport’s optimal contact conditions. This should heighten the likelihood that positive experiences with out-group members are generalized to groups as a whole. This approach may also not be optimal; when the intergroup context is made salient, intergroup anxiety may arise which has been shown to be associated with stereotyping and prejudice toward other ethnic groups (Brown & Hewstone, 2005; Paolini et al., 2004; Stephan & Stephan, 1985; Wilder & Simon, 2001; Wright et al., 1997). Both approaches, therefore, could prevent contact effects to occur.

An alternative model, the common in-group identity model, was proposed by Gaertner and colleagues (1989; see Gaertner & Dovidio, 2000, for a review). Instead of losing group salience as proposed in the decategorization model, Gaertner and colleagues argued that a situation should be created in which the former in-group and out-group members categorize themselves in a new common superordinate entity: the common in-group identity. Gaertner and Dovidio (2000) extended this approach suggesting that a dual identity (i.e., attachment to
both the sub-group and the superordinate category) would be especially likely to result in positive intergroup attitudes.

However, the model proposed by Gaertner and colleagues (2000) may also have its draw-backs. For example, Brown and Hewstone (2005) argued that generalization to out-group members outside of the common in-group situation is not likely to happen. Pettigrew (1997, 1998) proposed a longitudinal intergroup contact theory combining the three theories. In the first phase of initial contact, the focus should be on *de-categorization*, minimizing intergroup anxiety and optimizing the likelihood that affective ties are created. In the second phase, when contact is established, the *group categories should be made salient* so that positive experiences are generalized to the out-group as a whole. Finally, in the third and final phase, a common in-group identity should be created through *re-categorization*. In this phase, an optimal situation is created leading to maximal reduction in prejudice. This model is depicted in Figure 3.1. This three-stage model seems to unify the strength of the previously discussed models. An especially interesting element of Pettigrew’s model, however, is the importance of cross-group friendship.

*The direct friendship hypothesis*

Several researchers have now emphasized that the positive effects of contact on intergroup attitudes may be more due to changes in affect toward the out-group than due to changes in stereotypes (c.f., Wright et al., 2005). Pettigrew (1997, 1998) emphasizes that friendship between members of different groups provides the basis on which the three stages in his model can unfold. Because cross-group friendship entails close interactions with out-group members and extensive and repeated contact across a variety of contexts over time, it provides an optimal ground for contact effects to occur. Pettigrew (1998) argued, therefore, that opportunity for friendship should be an additional condition beside the four optimal contact conditions that were mentioned before. This is in line with Cook (1962, 1984) who emphasized that *acquaintance potential* is an important factor for successful intergroup contact.

In line with Pettigrew’s (1997) *direct friendship hypothesis*, cross-ethnic friendship has been shown in many studies among adults to play a powerful role in development of positive intergroup attitudes (e.g., Hamberger & Hewstone, 1997; Paolini et al., 2004; Phinney, Ferguson, & Tate, 1997; Stephan, 1999; Turner, et al., 2007). However, intergroup friendship also seems to play a key role in attitude development in childhood (Aboud et al., 2003; Aboud & Levy, 2000; Aboud & Amato, 2001; Schofield & Eurich-Fulcer, 2001; Turner...
et al., 2007). For example, Aboud and colleagues (2003) could show that children who had more cross-ethnic friends held more positive intergroup attitudes, whereas children who excluded cross-ethnic classmates held more negative intergroup attitudes. In a recent field study, Turner et al. (2007) found a positive association between direct cross-ethnic friendship and majority elementary school children’s attitudes toward South Asians in the United Kingdom. Moreover, having cross-ethnic friendships in childhood was associated with more positive intergroup attitudes in adolescence and adulthood (Ellison & Powers, 1994; Jackman & Crane, 1986).

### 3.1.2 Extended contact hypothesis

Even though direct cross-group friendship seems to be a promising tool for improving intergroup relations, it has important shortcomings. Research in several countries (i.e., United States, Canada, the Netherlands) has shown that direct cross-ethnic friendship relations in childhood decline in number with age and, compared to same ethnic friendships, seem to be relatively rare and less stable (Aboud et al., 2003; Dubois & Hirsch, 1990; Finkelstein & Haskins, 1983; Graham & Cohen, 1997; Hallinan & Teixeira, 1987; Howes & Wu, 1990; Stephan, 1985; Verkuyten, 2001).
Recently, Wright and colleagues (1997) proposed that it is not necessary for each person to have a friend in the other group for positive intergroup relations to occur. Mere knowledge of cross-ethnic friendships could already result in more positive intergroup attitudes. This is called the extended contact hypothesis. By observing in-group members interacting positively with out-group members, intergroup anxiety is predicted to decrease, resulting in less stereotyping and prejudice. This is a promising notion as it implies friendship effects to be able to work on a larger scale than in case of mere direct friendship.

A number of studies among adolescents, students, and adults have now shown extended friendship to be associated with more positive out-group attitudes (i.e., Liebkind & McAlister, 1999; Paolini et al., 2004; Turner et al., 2007; Wright et al., 1997). Little research, however, has focused on the question whether and how extended friendship could work among young children. Exceptions are a series of recent studies by Cameron and colleagues (2006; Cameron & Rutland, 2006; Cameron et al., 2007), which showed the possibly powerful implications of extended friendship by using it in interventions aimed at improving intergroup attitudes among children. The intervention consisted of reading stories to White British children (age 5-11 years) featuring in-group children (White British children) interacting positively with out-group children (refugees). Cameron et al. (2006) showed that intergroup attitudes became significantly more positive in the extended friendship condition compared to a control condition. In a second study, Cameron & Rutland (2006) replicated these findings by showing non-disabled children’s attitudes toward the disabled to improve after learning about cross-group friendships between non-disabled and disabled children.

In two additional studies, Cameron and Rutland (2007) compared the extended friendship intervention to an alternative intervention involving training of classification skills. Higher classification skills have been associated with reduced stereotyping in previous research (see Bigler & Liben, 1993, 2006). In both studies, the extended friendship intervention was shown to be more effective in creating positive intergroup attitudes compared to the classification intervention as well as a control condition.

3.2 Limitations of previous research on friendship effects

The existing body of research on the association between direct and extended friendship effects and intergroup attitudes is convincing and provides us with an optimistic note with respect to possible implementation in practice through interventions (see also Aboud & Amato, 2001; Aboud & Fenwick, 1999; Maras & Brown, 2000; Stephan, 1999). However,
previous research on the association between cross-ethnic friendship and development of children’s intergroup attitudes is characterized by several limitations.

### 3.2.1 Group membership and friendship effects

In a recent meta-analysis, Tropp and Pettigrew (2005) showed that, in general, effects of direct contact on intergroup attitudes are smaller for minorities compared to majorities. Until now it is not clear to what extent and why there are differences in contact effects based on group membership. An explanation may be found in one of the optimal contact conditions as outlined by Allport (1954). For contact to work optimally, it is important that both groups expect and perceive to have equal status. Tropp and Pettigrew (2005) provided first evidence that group status might play a role by showing that the association between contact and prejudice was significantly weaker for low status groups (mean Pearson’s $r = -.18$) than for high status groups (Pearson’s $r = -.24$).

Researchers from both the fields of social and developmental psychology have stressed the importance of distinguishing between minority and majority group membership when studying issues related to intergroup attitudes (Aboud & Amato, 2001; Abrams, Frings, & Randsley de Moura, 2005; Nesdale, Durkin, Maass, & Griffiths, 2004; Rutland, Abrams, & Levy, 2007). Previous research with White, Black, Hispanic, Native Indian, and Asian children, has shown that ethnic attitudes arise already around the age of 3. Intergroup bias among majority children reaches high levels around 7 years, after which it seems to decline (Aboud, 1988; Brown, 1995). Minority children, however, seem to become more favorable toward the majority out-group around age 5 (Aboud, 1988). This out-group bias seems to have disappeared around age 7, when only in-group bias is expressed (Doyle & Aboud, 1995; Verkuyten, 2002).

Taken together, it seems critical to distinguish between minority and majority group membership when studying associations between children’s cross-ethnic friendship and intergroup attitudes. The greater part of research on the association between intergroup contact and attitudes focused on majority (high status) children’s attitudes toward minority (low status) groups (Tropp & Prenovost, in press). As far as known, possible effects of group membership on the strength of the associations between direct and extended cross-ethnic friendship and majority and minority children’s intergroup attitudes have not been examined before in the same study.
3.2.2 Underlying psychological mechanisms

In the last decade, there has been a growing interest in which psychological mechanisms could underlie direct and extended friendship effects (Pettigrew, 1998; Paolini et al., 2004; Turner et al., 2007). Not much research exists, however, that focuses on the possible psychological mechanisms underlying associations between direct and extended cross-group friendship and attitude formation in childhood. Two mediators that have been proposed in previous research carried out with adults and, to a lesser extent, children, are intergroup anxiety and perceived social norms about having cross-ethnic friendships.

**Intergroup anxiety**

Intergroup anxiety was proposed to be one of the key mediators to be associated with direct and extended friendship effects due to its association with stereotyping and prejudice via an anxiety reduction mechanism (Brown & Hewstone, 2005; Islam & Hewstone, 1993; Stephan & Stephan, 1985; Wright et al., 1997). As proposed by Stephan and Stephan (1985), mere anticipation of contact with members of out-groups can result in feelings of anxiety due to expectations of rejection or discrimination, or due to the fear that oneself or the other might behave in an inappropriate manner. Several studies have now provided evidence supporting the notion of intergroup anxiety as a mediator of the contact-attitudes association (e.g., Greenland & Brown, 1999; Islam & Hewstone, 1993; Voci & Hewstone, 2003; see Brown & Hewstone, for a review).

A series of studies by Paolini and colleagues (2004), and Turner and colleagues (2007), focusing specifically on cross-ethnic friendship, showed that intergroup anxiety mediated both direct as well as extended friendship effects. In two cross-sectional survey studies in Northern Ireland, Paolini et al. (2004) found both direct and extended cross-ethnic friendship between Catholics and Protestants to be associated with reduced prejudice via an anxiety-reduction mechanism. Turner et al. (2007, Studies 2 and 3) reported similar findings in that direct and extended friendship among White and South Asians was related to more positive out-group attitudes with anxiety as a mediator.

However, the previously described studies all focused on adolescents, students, or adults. Little evidence exists regarding the role of intergroup anxiety as a mediator in the friendship-attitude association among young children. An exception is a study by Turner and colleagues (2007, Study 1), who showed intergroup anxiety to mediate the association between cross-ethnic friendship of White elementary school children (aged 8-11 years) and
their attitudes toward Asian people. None of these studies, however, examined intergroup anxiety as a possible mediator in the extended friendship-attitudes association.

Social norms

A second mediator proposed to be associated with direct and extended friendship effects is social norms (Wright et al., 1997). Social norms prescribe which attitudes and values are (in)appropriate and which behavior is deemed (in)appropriate in a specific situation. Several studies with adults have shown social norms to have a strong impact on intergroup attitudes and behavior (Jetten, Spears, & Manstead, 1996; Pettigrew, 1991), and on contact effects (Johnston & Hewstone, 1990). Recent studies with children have provided evidence that norms can influence children’s expression of intergroup attitudes (Rutland, Cameron, Milne, & McGeorge, 2005) and can directly affect children’s intergroup attitudes (Nesdale, Durkin, Maass, & Griffiths, 2005). It is, therefore, likely that both direct and extended friendship influence how children perceive social norms about having cross-ethnic friends. Having a direct friend in the other group can be either approved or disapproved by peers in the own and the other group. The experience of having a cross-group friend in the other group going unsanctioned by other group members over time is likely to lead to positive perceived social norms with respect to having cross-ethnic friendships. In addition, as argued by Wright and colleagues (1997), learning that other in-group children have cross-ethnic friendships is likely to positively affect a child’s social norms about whether or not it is okay to have cross-ethnic friendship relations. Consequently, following findings by Rutland and colleagues (2005) and Nesdale and colleagues (2005), a positive change in perceived social norms is expected to alter children’s out-group attitudes.

3.2.3 The issue of causality

Another main issue in research on contact effects is the question whether cross-ethnic contact results in more positive intergroup attitudes or whether people with positive intergroup attitudes are more likely to engage in contact with out-group members. The greater part of research on direct and extended contact effects has used a correlational or cross-sectional design (c.f., Brown & Hewstone, 2005; Pettigrew & Tropp, 2006). These designs, however, cannot provide convincing evidence of directional predictions. It is widely agreed upon that longitudinal designs are best used for studying causality issues (Brown & Hewstone, 2005, Pettigrew, 1998). Several studies have been performed using a longitudinal design in studying contact effects on intergroup attitudes and the findings support the contact hypothesis as direct
contact is generally found to have a positive effect on out-group attitudes (Brown, Eller, Leeds, & Stace, 2007; Eller & Abrams, 2003, 2004; Maras & Brown, 1996).

In addition, there exists a relatively rich literature dealing with school desegregation. This is an interesting phenomenon as school desegregation is expected to be accompanied by an increase in interethnic contact. However, longitudinal research in this field shows inconclusive results with respect to effects of desegregation on intergroup relations (Schofield, 1991; 1995; Schofield & Eurich-Fulcer, 2001). For example, Stephan and Rosenfield (1978) performed a 2-year study on white American school children’s attitudes toward ethnic minority groups, finding higher levels of cross-ethnic contact predicting more positive out-group attitudes. Two longitudinal studies by Schofield (1979) and Gerard and Miller (1975), however, did not find a beneficial effect of desegregation on attitudes.

The reviewed longitudinal studies are limited in several aspects. First of all, they all tested longitudinally effects of contact on majority group member’s attitudes toward members of minority groups. Longitudinal contact effects on minority group member’s attitudes toward the majority group were not examined. In addition, these studies tested effects of mere contact on attitudes; the friendship hypothesis was not tested longitudinally. Furthermore, the extended contact hypothesis has not yet been tested longitudinally. Finally, no research has longitudinally tested the mediation hypotheses with respect to the friendship-attitude association.

### 3.3 Conclusions

The research reviewed in this chapter convincingly shows that both direct cross-group contact and extended cross-group contact are positively associated with intergroup attitudes. Cross-ethnic friendship seems to play a key role in formation intergroup attitudes. However, several issues regarding associations between children’s direct friendship and extended friendship and their intergroup attitudes remain unclear and are addressed in the present research.
4 The Present Research

4.1 Hypotheses

The aim of the present study is to examine several core issues regarding associations between cross-ethnic friendship and attitude formation in middle childhood. The focus will be on: (1) The role of direct friendship as well as extended friendship regarding children’s intergroup attitudes; (2) the role of group status (i.e., high versus low status) regarding direct and extended friendship effects; (3) two variables are examined that have been proposed to mediate associations between direct and extended friendship and intergroup attitudes: intergroup anxiety and perceived social norms about cross-ethnic friendship relations; (4) these issues are investigated using a longitudinal design which allows causal predictions to be tested. Based on the theoretical background as presented in Chapters 2 and 3, the following hypotheses are tested:

Hypothesis 1: Direct and extended friendship effects

a) Having a friend in the out-group is expected to be associated with positive out-group evaluations at each measurement point, and is expected to predict more positive out-group evaluations over time (direct friendship hypothesis).

b) Knowledge that friends have friends in the out-group is expected to be associated with positive out-group evaluations at each measurement point, and is expected to predict more positive out-group evaluations over time (extended friendship hypothesis).

Hypothesis 2: Mediation effects

a) Direct and extended friendship effects are expected to be cross-sectionally as well as longitudinally mediated by intergroup anxiety.

b) Direct and extended friendship effects are expected to be cross-sectionally as well as longitudinally mediated by perceived social norms about cross-ethnic friendship.

Hypothesis 3: Status effects

a) Direct friendship effects are expected to be generally stronger for higher status (majority) children than for lower status (minority) children.

b) Extended friendship effects are expected to be generally stronger for higher status (majority) children than for lower status (minority) children.
4.2 Models

Cross-sectional model

The cross-sectional model that will be tested is presented in Figure 4.1. As depicted, at both measurement points, positive associations are expected between direct friendship and extended friendship, respectively, and out-group evaluations. In addition, direct and extended friendship are predicted to be negatively associated to intergroup anxiety and positive to perceived social norms about cross-ethnic friendship. Intergroup anxiety, in turn, is expected to be negatively related to out-group evaluations. Social norms about cross-ethnic friendship are predicted to be positively related to out-group evaluations.

Longitudinal model

The longitudinal model is presented in Figure 4.2. By using cross-lagged panel analysis, one can identify directions of causality (Bijleveld & van der Kamp, 1998; Taris, 2000). For example, a causal effect of cross-ethnic friendship on out-group evaluations is said to exist if cross-ethnic friendship at Time 1 predicts out-group evaluations at Time 2, controlling for out-group evaluations at Time 1. Likewise, a causal effect of out-group evaluations is indicated if out-group evaluations at Time 1 predict cross-ethnic friendship at Time 2, controlling for cross-ethnic friendship at Time 1. For longitudinal data, this is considered to be the best approach to identify a causal relationship (Cohen, Cohen, West, & Aiken, 2003; Taris, 2000).

Following recommendations of Cole and Maxwell (2003), cross-lagged paneling is also used to examine whether the proposed mediators, intergroup anxiety and social norms, have an effect over time. According to this approach, a longitudinal mediation exists when both of the following assumptions are met: (1) the predictor variable at Time 1 predicts the mediator variable at Time 2 without the mediator variable at Time 1 predicting the predictor variable at Time 2; and (2) the mediator variable at Time 1 predicts the outcome variable at Time 2 without the outcome variable at Time 1 predicting the mediator variable at Time 2.

There exists a partial longitudinal mediation when both assumptions are met and the predictor variable at Time 1 predicts the outcome variable at Time 2 without the outcome variable at Time 1 predicting the predictor variable at Time 2. This situation is depicted in Figure 4.2. A full longitudinal mediation exists when both assumptions are met but the predictor variable at Time 1 does not predict the outcome variable at Time 2.
Figure 4.1  The cross-sectional model showing the predicted associations between direct and extended friendship as predictor variables, intergroup anxiety and social norms as mediators, and out-group evaluations as outcome variable.
Figure 4.2  The cross-lagged panel model including at Time 1 and Time 2 the predictor variables direct and extended friendship, the respective mediator variable, and out-group evaluations as outcome variable.
4.3 **Overview of the field study**

A longitudinal field study was performed to test the models and the hypotheses. The focus is on German and Turkish children in three elementary schools in Germany. The Turkish population is the largest ethnic minority group in Germany (Statistisches Bundesamt Deutschland, 2006a, 2006b) facing high levels of discrimination and rejection (e.g., Dagevos, Euwals, Gijsberts & Roodenburg, 2007). About 7% of the 6-to-10-year-old children in Germany have a Turkish migration background (Konsortium Bildungsberichterstattung, 2006). Already in elementary school, children with a Turkish migration background have been shown to perform worse than their German peers (c.f., Krohne, Meier & Tillmann, 2004). It can, therefore, be assumed that Turkish children hold a lower social status position compared to German children. Survey data collected in the beginning and end of the school year was analyzed to examine developmental associations between the participating German and Turkish children’s direct and extended cross-ethnic friendships and their intergroup evaluations.
5 Method

5.1 Respondents

In total 202 children (104 German, 98 Turkish) in the third and fourth grade of three primary schools in Nuremberg, Germany, participated at either one or both time points. One-hundred-forty-nine children (76 German and 73 Turkish; 78 males and 71 females) participated at both time-points and were included in the analyses (drop-out: 26%). The mean age of these children was 9.67 years ($SD = 0.68$). The three participating schools were comparable with respect to social-economic background as well as to proportions of German versus Turkish children. In each school, Turkish children formed the largest minority group consisting of about 20% of the total school population. German children were the majority group and consisted of about 40% of the school population. The remaining 40% were of different nationalities (i.e., Italian, Russian, Serbian).

5.2 Procedure

The data was collected at the beginning (November 2005) and end (June 2006) of the school year (time lag: 7 months). The Turkish and German children completed the questionnaire in mixed groups (sized 10 to 15 children). There were four versions of the questionnaire based on gender and counterbalancing of items. Turkish and German children received identical questionnaires with items stated both with respect to their own group (in-group) and the other group (out-group). Pilot tests showed no differences between the German and Turkish children with respect to reading abilities and understanding the content of the questions. A graphical format was used to make it easier for the children to answer the questions (see Appendix); this format was shown to work well with young children (age 5 to 12 years) in previous research (e.g., Cameron et al., 2006). All items were in multiple choice format, except for a question that asked children to write down the names of their three best friends. Children took about 30 minutes to complete the questionnaire.
5.3 Measures

5.3.1 Predictor variables

Direct friendship

Direct friendship was measured by asking children to write down the first name of their three best friends (these could be within and outside the school). Children could then choose whether each friend was German, Turkish, Both German and Turkish, or Neither German nor Turkish (see Appendix for all the measures used in the present study).

Extended friendship

Extended friendship was measured by asking how many friends of each of the children’s three best friends were German and how many were Turkish. Scales ranged from 1 (None) to 4 (All). The items measuring the number of extended friendships of each friend were averaged to get an index of extended friendship (Chronbach’s alpha was .74 for German and .75 for Turkish children).

5.3.2 Mediator variables

Intergroup anxiety

This measure was based on Stephan and Stephan’s (1985) intergroup anxiety scale which was adapted and shown to be suitable for young children by Turner and colleagues (2007). In our questionnaire, drawn pictures were used of a German child and a Turkish child. Children were asked to imagine that the German / Turkish child in the picture was new in the class and wanted to play with them. Children then indicated how they thought they would feel on a 5-point semantic scale with four items: Relaxed-Nervous, Pleased-Worried, Comfortable-Tense, and Fine-Scared. Each point was presented by a circular ‘feeling face’. The faces on the scale had the mouth in a large smile position (= 1), through horizontal (= 3), to a downward position (= 5). Higher scores on these items reflect more intergroup anxiety. The scale had good reliabilities for both German ($\alpha = .92$) and Turkish children ($\alpha = .94$).

---

3 Closer examination of the friendship data indicated that the participating children used the category “Both” only for their friends who have a Turkish ethnical background. For the analyses these friends were therefore included in the category “Turkish”. Friends who were identified as “Neither German nor Turkish” were omitted from the analyses.
Social norms

Perceived social norms about playing with a member of the other group were measured with two items asking children what (1) other German children and (2) other Turkish children would think about them playing with an out-group member. Answers could be given on a 5-point scale ranging from 1 (= not good at all, depicted with a feeling face with a downward position) to 5 (= very good, depicted with a feeling face with a large smile position). The correlations between both items were significant for both German, $r = .71, p < .001$, and Turkish participants, $r = .71, p < .001$.

5.3.3 Outcome variable

The outcome variable was children’s evaluations of the other ethnical group. Three items measured evaluations of the out-group. German and Turkish children were asked to indicate how many Turkish (or German, respectively) children were Friendly, Polite, and Smart on scales ranging from 1 (= None) to 4 (= All). The scales were found to be reliable for both German ($\alpha = .84$) and Turkish ($\alpha = .67$) children.
6  Results

6.1  Preliminary analysis

6.1.1 Checking for selective attrition
To check for selective attrition, matched and unmatched participants were compared on all model variables at Time 1. A MANOVA was performed using a 2 (matched vs. unmatched) x 2 (majority vs. minority) between-participants design. No significant effects were found for the matching factor (all \( F_s < .71, \text{ns} \)) or for the interaction (all \( F_s < 3.00, \text{ns} \)). It was therefore concluded that selective attrition played no significant role for subsequent findings.

6.1.2 Construct validity
Factor analysis with PCA extraction and Varimax rotation were performed to examine whether scales actually represented different constructs. Three factors emerged with an eigenvalue > .8. These factors corresponded respectively to intergroup anxiety, out-group evaluations, and social norms. Every item showed its highest loading on the factor representing its construct. All items showed a loading higher than .69. These results support the assumption of distinct underlying constructs.

6.1.3 Mean scores and correlations
Univariate analyses were performed to examine differences in means scores across groups at both time points (see Table 6.1). To examine changes over time, 2 (majority status vs. minority status) x 2 (Time 1 vs. Time 2) ANOVAs were performed with repeated measurements on the second factor for all variables (see Table 6.2). No interaction effects were found between Time and Status (all \( F_s < .54 \)) indicating that effects of group membership on all variables were independent of time of measurement.
Table 6.1  Univariate tests: Means (and Standard Deviations), Test Statistics $F$ and Effect Sizes ($\eta^2$) for German children (majority status group, $N = 76$) and Turkish children (minority status group, $N = 73$) on the model variables at Time 1 and Time 2

<table>
<thead>
<tr>
<th></th>
<th>Time 1</th>
<th></th>
<th>Time 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>German children</td>
<td>Turkish children</td>
<td>$F$-value ($\eta^2$)</td>
<td>German children</td>
</tr>
<tr>
<td>Direct friendship</td>
<td>1.71 (.89)</td>
<td>1.96 (.98)</td>
<td>2.63 (.018)</td>
<td>1.59 (.90)</td>
</tr>
<tr>
<td>Extended friendship</td>
<td>1.80 (.61)</td>
<td>2.38 (.64)</td>
<td>32.67*** (.182)</td>
<td>2.18 (.66)</td>
</tr>
<tr>
<td>Intergroup anxiety</td>
<td>2.28 (1.02)</td>
<td>1.55 (1.02)</td>
<td>18.89*** (.114)</td>
<td>2.56 (1.15)</td>
</tr>
<tr>
<td>Social norms</td>
<td>3.48 (1.15)</td>
<td>4.23 (.94)</td>
<td>18.76*** (.113)</td>
<td>3.31 (1.09)</td>
</tr>
<tr>
<td>Out-group evaluations</td>
<td>2.21 (.50)</td>
<td>2.71 (.55)</td>
<td>34.45*** (.190)</td>
<td>2.38 (.66)</td>
</tr>
</tbody>
</table>

Note  *** $p < .001$; ** $p < .01$; * $p < .05$; $p < .10$
Table 6.2  Test statistics $F$ and effect sizes ($\eta^2$) for ANOVAs on all model variables over time

<table>
<thead>
<tr>
<th></th>
<th>Direct friendship</th>
<th>Extended friendship</th>
<th>Intergroup anxiety</th>
<th>Social norms</th>
<th>Out-group evaluations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$F$</td>
<td>$F$</td>
<td>$F$</td>
<td>$F$</td>
<td>$F$</td>
</tr>
<tr>
<td></td>
<td>($\eta^2$)</td>
<td>($\eta^2$)</td>
<td>($\eta^2$)</td>
<td>($\eta^2$)</td>
<td>($\eta^2$)</td>
</tr>
<tr>
<td>Time of measurement</td>
<td>4.35*</td>
<td>37.28***</td>
<td>8.14**</td>
<td>5.44*</td>
<td>8.11**</td>
</tr>
<tr>
<td></td>
<td>(.029)</td>
<td>(.202)</td>
<td>(.052)</td>
<td>(.036)</td>
<td>(.052)</td>
</tr>
<tr>
<td>Status</td>
<td>$ns$</td>
<td>51.70***</td>
<td>23.11***</td>
<td>22.23***</td>
<td>49.50***</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>(.260)</td>
<td>(.136)</td>
<td>(.131)</td>
<td>(.252)</td>
</tr>
<tr>
<td>$df_{error}$</td>
<td>147</td>
<td>147</td>
<td>147</td>
<td>147</td>
<td>147</td>
</tr>
</tbody>
</table>

Notes  All the interaction effects between Time and Status were non-significant (all $F$s < .54)

*** $p < .001$; ** $p < .01$; * $p < .05$; † $p < .10$
As depicted in Figure 6.1, similar percentages of German and Turkish children reported to have at least one direct friend in the other group at Time 1 (57.4% and 60.3%, respectively; t(147) = 1.58, ns) and at Time 2 (48.2% and 49.3%, respectively; t(147) = 1.37, ns). The number of children reporting to have at least one extended friendship differed across groups at Time 1 with more Turkish children reporting extended friendship than German children (94.4% and 78.9%, respectively; t(147) = 2.84, p < .01). At Time 2, the percentages of German and Turkish children who indicated to have extended friendships was comparable (93.4% and 97.3%, t(147) = 1.10, ns). As expected, paired samples t-tests indicated that, in both ethnic groups, more children reported to have extended cross-ethnic friendship than direct cross-ethnic friendships in the beginning (Time 1 German children: t(75) = 5.56, p < .001; Time 1 Turkish children: t(72) = 5.78, p < .001) and at the end of the school year (Time 2 German children: t(75) = 9.63, p < .001; Time 2 Turkish children: t(72) = 8.14, p < .001).

As shown in Table 6.1, German and Turkish children reported, on average, equal numbers of direct friends at both time points. In addition, as depicted in Figure 6.1, in both groups, the percentage of children reporting to have at least one direct cross-ethnic friend did not differ across measurement point (German children: t(75) = 1.62, ns; Turkish children: t(72) = 1.65, ns). Compared to German children, Turkish children reported a greater number of extended friendships both in the beginning and at the end of the year. For both groups the average number of extended friendships increased over time (see Table 6.1). The percentage of children reporting extended friendship also increased in both ethnic groups (see Figure 6.1). This increase was only significant among German children (t(75) = 2.98, p < .01); the percentage of Turkish children reporting to have extended friendships increased as well, although this was not significant (t(72) = .82, ns). However, at both measurement points, more than 90% of the Turkish children reported to have extended friendships.

With respect to intergroup anxiety, lower levels were found among Turkish children compared to German children at both time points. In both groups, levels of intergroup anxiety increased over time. Concerning social norms about having cross-ethnic friendship, Turkish children were found to report more positive social norms at both time points compared to German children. For both groups, levels of perceived positive social norms with respect to cross-ethnic friendships declined over time. Nevertheless, in general, perceived social norms about cross-ethnic friendship were quite positive in both groups (above midpoint of the scale). Finally, more positive out-group evaluations were found among Turkish children compared to German children. Out-group evaluations became more positive over time in both groups.
On the whole, these results provide quite a mixed view of the intergroup relations in the schools. Positive findings were that intergroup anxiety was found to be relatively low and perceived social norms regarding cross-ethnic friendship were found to be quite high in both groups. In addition, German and Turkish children evaluated each other quite positively at both time points and attitudes became more positive with time. Another positive finding was that the average number of reported extended friends increased with time in both groups. More negative findings were that, in both groups, levels of intergroup anxiety became higher over time and perceived social norms about cross-ethnic friendship became less positive.

**Intercorrelations**

Intercorrelations between the model variables at each time point across groups are presented in Table 6.3. In Table 6.4 correlations between the model variables over time are given for both groups. Cross-sectionally, it is interesting to note that, at both time points, extended friendship was significantly related to positive out-group evaluations for both
### Table 6.3
Intercorrelations for German children (majority group, \(N = 76\), below diagonal) and Turkish children (minority group, \(N = 73\), above diagonal) between the model variables at Time 1 and Time 2 (in italics)

<table>
<thead>
<tr>
<th></th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Direct friendship</td>
<td>(-)</td>
<td>(.43^{**<em>} / .29^{</em>})</td>
<td>(-.05 / -.06)</td>
<td>(-.06 / .06)</td>
<td>(.13 / .02)</td>
</tr>
<tr>
<td>2. Extended friendship</td>
<td>(.56^{<em><strong>} / .56^{</strong></em>})</td>
<td>(-)</td>
<td>(-.05 / -.05)</td>
<td>(.11 / .18)</td>
<td>(.31^{<strong>} / .37^{</strong>})</td>
</tr>
<tr>
<td>3. Intergroup anxiety</td>
<td>(-.14 / -.28^{*})</td>
<td>(-.13 / -.26^{*})</td>
<td>(-)</td>
<td>(-.40^{<strong>} / -.56^{</strong>*})</td>
<td>(-.15 / -.13)</td>
</tr>
<tr>
<td>4. Social norms</td>
<td>(.03 / .33^{**})</td>
<td>(.13 / .28^{*})</td>
<td>(-.43^{<em><strong>} / -.53^{</strong></em>})</td>
<td>(-)</td>
<td>(.22^{†} / .31^{**})</td>
</tr>
<tr>
<td>5. Out-group evaluations</td>
<td>(.11 / .39^{***})</td>
<td>(.36^{<em>} / .50^{</em>**})</td>
<td>(-.23^{<em>} / -.51^{</em>**})</td>
<td>(.17 / .59^{***})</td>
<td>(-)</td>
</tr>
</tbody>
</table>

*Note*  ***\(p < .001\); **\(p < .01\); *\(p < .05\); †\(p < .10\)
### Table 6.4  Intercorrelations between Time 1 and Time 2 for German children and Turkish children (in italics) on the model variables

<table>
<thead>
<tr>
<th></th>
<th>Direct friendship T2</th>
<th>Extended friendship T2</th>
<th>Intergroup anxiety T2</th>
<th>Social norms T2</th>
<th>Out-group evaluations T2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct friendship T1</td>
<td>( .65^{<em><strong>} / .50^{</strong></em>} )</td>
<td>( .41^{***} / -.04 )</td>
<td>-.23* / .10</td>
<td>.28* / -.10</td>
<td>.38** / -.13</td>
</tr>
<tr>
<td>Extended friendship T1</td>
<td>( .38^{**} / .23^{*} )</td>
<td>( .42^{**} / .08 )</td>
<td>-.27* / -.04</td>
<td>.22( ^\dagger ) / -.09</td>
<td>.25* / -.02</td>
</tr>
<tr>
<td>Intergroup anxiety T1</td>
<td>-.03 / -.04</td>
<td>-.10 / -.08</td>
<td>.37** / .58***</td>
<td>-.15 / -.58***</td>
<td>-.23* / -.15</td>
</tr>
<tr>
<td>Social norms T1</td>
<td>.06 / .03</td>
<td>.21( ^\dagger ) / -.05</td>
<td>-.15 / -.50***</td>
<td>.19 / .38**</td>
<td>-.03 / .07</td>
</tr>
<tr>
<td>Out-group evaluation T1</td>
<td>.14 / .01</td>
<td>.14 / -.13</td>
<td>-.51*** / -.15</td>
<td>.35** / -.05</td>
<td>.41*** / -.07</td>
</tr>
</tbody>
</table>

**Note**  
\( *** p < .001; ** p < .01; * p < .05; \( ^\dagger \) p < .10 \)
German and Turkish children. Direct friendship, however, was only positively related to out-group evaluations at the end of the school year among German children. For Turkish children this association was not significant. Comparing correlations between the variables at Time 1 and the variables at Time 2 it can be seen that, in accordance to the predictions, the model seems to fit the data better for majority children compared to minority children. Direct as well as extended friendship was found to be positively related to out-group evaluations over time among German children only. Furthermore, the correlations indicate direct and extended friendship to be negatively related to intergroup anxiety and positively related to social norms over time, but again only among German children. Nevertheless, structural analyses are required to get more insight into how the variables are related to each other across groups, both cross-sectionally and longitudinally.

6.2 Structural analyses

The cross-sectional results at Time 1 and Time 2 are presented separately in order in which the hypotheses were stated. At each time point, a model was examined that included direct cross-ethnic friendship and extended cross-ethnic friendship as predictors, intergroup anxiety and social norms as mediators, and out-group evaluations as outcome variable for all participants. Following, this model was compared across the German and Turkish groups.

6.2.1 Cross-sectional analysis for Time 1

First, the relations between direct and extended cross-ethnic friendship and out-group evaluations were examined for all participants together \((N = 149)\) with intergroup anxiety and social norms as proposed mediators. For the analyses structural equation modeling was used using the program AMOS 6.0.0 (Arbuckle, 2005). Single items were used for direct and extended friendship. Latent variables with single items were used for intergroup anxiety, social norms, and out-group evaluations. Residual correlations of the mediators and both direct and mediated paths of direct and extended friendship on out-group evaluations were included resulting in a saturated structural model. Model fit was assessed using the chi-square test, the Comparative Fit Index (CFI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR). A reasonably fit is indicated by a nonsignificant chi-square, a CFI value greater than .95, an RMSEA smaller than .06, and a SRMR smaller than .08 (see Hu & Bentler, 1999; Kline, 2005).
Results are depicted in Figure 6.2. The various statistical indexes show that, overall, the model fits the data well. A comparison of the standardized path weights shows that the direct path of extended friendship to more positive out-group evaluations ($\beta = .50, p < .001$) is stronger than that of direct friendship ($\beta = -.10, \text{ns}$). Sobel-tests were performed to test the mediation predictions. No mediation effects of intergroup anxiety ($z = .63, \text{ns}$) or social norms ($z = .49, \text{ns}$) were found concerning the association between direct friendship and out-group evaluations. In addition, no mediation effects of intergroup anxiety ($z = 1.20, \text{ns}$) or social norms ($z = .81, \text{ns}$) were found concerning the association between extended friendship and out-group evaluations. The results indicate that at Time 1, compared to direct friendship, extended friendship influenced out-group evaluations more strongly.

**Multiple-sample path analyses**

It was hypothesized that, overall, friendship effects would work better for the German (majority and higher status) group than for the Turkish (minority and lower status) group. To compare the results between German and Turkish children, multiple-sample path analysis was used (see Kline, 2005). With this method values of model parameters are compared to see whether or not they are equal across groups. By specifying cross-group equality constraints, group differences in specific model parameters, like specific paths in the model, can be tested. The fit of the model with constrained paths is then compared with that of the unrestricted model without equality constraints (which is assumed to fit the data well). When the fit of the constrained model is significantly lower than the fit of the unconstrained model, it can be concluded that the parameters are not equal across the populations from which the samples were drawn, in the case of the present study the German and Turkish samples.

There are several indicators that can be used for model comparison (see Kline, 2005, for an overview). One is using the chi-square difference statistic ($\Delta \chi^2$). If the chi-square of the constrained model is significantly larger than the chi-square of the unconstrained model, it can be concluded that the unconstrained model fits the data better (note that a chi-square of zero indicates optimal fit). Another indicator for comparing models estimated with the same data is the Akaike Information Criterion (AIC). The model with the smallest AIC can be considered to fit the data best. So if the constrained model has a lower AIC than the unconstrained model, this model is preferred and it can be concluded that the groups do not differ in the constrained parameters.
Figure 6.2  Maximum likelihood estimation of the direct and indirect effects of direct and extended cross-group friendship on out-group evaluations via intergroup anxiety and social norms for German and Turkish participants together (N = 149) at Time 1

Notes  Path values are standardized beta weights. Model fit indices: $\chi^2(36, N = 149) = 49.13$, $p = .071$, CFI = .98, RMSEA = .050 with the 90% confidence interval .000-.082, SRMR = .045

*** $p < .001$; ** $p < .01$; * $p < .05$; † $p < .10$
A hierarchical set of multiple-sample analyses was performed using AMOS 6.0.0 (Arbuckle, 2005). Gradually, constraints were added by setting parameters to be equal across groups. This resulted in three models; an unconstrained model (which fitted the data well: $\chi^2(72, N_{\text{Germans}} = 76, N_{\text{Turkish}} = 73) = 86.50, p = .117, \text{CFI} = .98, \text{RMSEA} = .037$ with the 90% confidence interval .000-.063, SRMR = .072) and two additional nested models constraining measurement weights (Model 1) and structural weights (Model 2). The results for Model 1 (with the measurement weights set to be equal) are depicted in Figure 6.3 for both German and Turkish children.

A first observation is that the proportions explained variance for intergroup anxiety, social norms, and out-group evaluations did not seem to differ across groups (German sample .02, .01, and .24, respectively, compared to the Turkish sample .01, .04, and .20). This is an initial indication that the model held greater predictive power for German than for Turkish children.

A comparison between the unconstrained model and the measurement model revealed no significant drop in overall fit (Model 1 in comparison to the unconstrained model: $\Delta\chi^2(6) = 6.04, ns$). In addition, no significant drop in model fit was found when comparing the measurement model with the structural weights model (Model 2 in comparison to Model 1: $\Delta\chi^2(8) = 8.87, ns$). The AIC indices showed that the measurement model (AIC = 200.54) was preferred over the unconstrained model (AIC = 206.50). The structural weights model (AIC = 193.42), in turn, was preferred over both the unconstrained and measurement weights model. Taken together, these results indicate that there were no differences across groups at Time 1.

With respect to the hypotheses, it can be concluded that early in the school year, among both German and Turkish children, extended friendship was strongly related to positive out-group evaluations (Hypothesis 1a). In contrast to the predictions, no association was found between direct friendship and evaluations of the out-group (Hypothesis 1b). In addition, no evidence was found for intergroup anxiety (Hypothesis 2a) or social norms (Hypothesis 2b) to be a mediator. Finally, these results were consistent across groups; no differences were found related to group membership (Hypotheses 3a and 3b).
**Figure 6.3** Multiple-sample analysis using maximum likelihood estimation of the direct and indirect effects of direct and extended cross-group friendship on out-group evaluations via intergroup anxiety and social norms for German children (majority group) and Turkish children (minority group, values depicted in italics) at Time 1

**Notes** Path values are standardized beta weights. Measurement weights were set to be equal. Model fit indices: \( \chi^2(78, N_{\text{Germans}} = 76, N_{\text{Turkish}} = 73) = 92.54, p = .125, \text{CFI} = .98, \text{RMSEA} = .036 \) with the 90% confidence interval .000-.061, \( \text{SRMR} = .085 \)

*** \( p < .001 \); ** \( p < .01 \); * \( p < .05 \); † \( p < .10 \)
6.2.2 Cross-sectional analysis for Time 2

Next, the relations between direct and extended cross-ethnic friendships and out-group evaluations were examined for all participants together ($N = 149$) at Time 2 with intergroup anxiety and social norms as proposed mediators. Results are depicted in Figure 6.4. The various statistical indexes show that, overall, the model fits the data well. A comparison of the standardized path weights shows that the direct path of extended friendship to out-group evaluations ($\beta = .43, p < .001$) is stronger than that of direct friendship ($\beta = -.04, ns$). The Sobel-test indicated an indirect effect of extended friendship on outgroup evaluations via social norms ($z = 2.48, p < .05$). No mediation or indirect effects were found for intergroup anxiety ($z = .29, ns$). In addition, no mediation effects were found for the relation between direct cross-ethnic friendship and out-group evaluations for social norms ($z = 1.31, ns$), neither for intergroup anxiety ($z = .80, ns$). These results indicate that compared to direct friendship, extended friendship influences out-group evaluations more strongly. In addition, it seems that social norms about cross-ethnic friendships play a more important role in this association than intergroup anxiety.

Multiple-sample path analyses

It was hypothesized that, overall, friendship effects would work better for the majority (high status) group than for the minority (low status) group. Like for the analyses at Time 1, multiple-sample path analyses were used to compare the results between German and Turkish children. A hierarchical set of multiple-sample analyses was performed. Constraints were gradually added by setting parameters to be equal across groups. This resulted in three models; the unconstrained model (which fitted the data well: $\chi^2(72, N_{Germans} = 76, N_{Turkish} = 73) = 85.28, p = .136, CFI = .99, RMSEA = .035$ with the 90% confidence interval $.000-.062, SRMR = .034$) and two additional nested models constraining measurement weights (Model 1) and structural weights (Model 2). The results for Model 1 (with the measurement weights set to be equal) are depicted in Figure 6.5 for both German and Turkish (in italics) children. A first observation is that the proportions explained variance for intergroup anxiety, social norms, and out-group evaluations were all higher for the German sample (.09, .18, and .64, respectively) than for the Turkish sample (.01, .05, and .29, respectively). This is an initial indication that the model has greater predictive power for German than for Turkish children.
Figure 6.4 Maximum likelihood estimation of the direct and indirect effects of direct and extended cross-group friendship on out-group evaluations via intergroup anxiety and social norms for German and Turkish participants together \((N = 149)\) at Time 2

Notes Path values are standardized beta weights. Model fit indices: \(\chi^2(36, N = 149) = 41.21, p = .253, \text{CFI} = 1.00, \text{RMSEA} = .031\) with the 90% confidence interval .003-.069, SRMR = .028

*** \(p < .001\); ** \(p < .01\); * \(p < .05\); † \(p < .10\)
**Figure 6.5** Multiple-sample analysis using maximum likelihood estimation of the direct and indirect effects of direct and extended cross-group friendship on out-group evaluations via intergroup anxiety and social norms for German children (majority group) and Turkish children (minority group, values depicted in italics) at Time 2

Notes Path values are standardized beta weights. Measurement weights were set to be equal. Model fit indices: $\chi^2(78, N_{\text{German}} = 76, N_{\text{Turkish}} = 73) = 90.68, p = .154, CFI = .99, RMSEA = .033$ with the 90% confidence interval .000-.059, SRMR = .035

*** $p < .001$; ** $p < .01$; * $p < .05$; † $p < .10$
Comparing the unconstrained model with the measurement model revealed no significant drop in overall fit. (Model 1 in comparison to the unconstrained model: \( \Delta \chi^2 (6) = 5.40, ns \)). A marginally significant drop in model fit was found when the measurement model was compared with the structural weights model (Model 2 in comparison to Model 1: \( \Delta \chi^2 (8) = 13.87, p < .1 \)). The AIC indices showed the measurement model (AIC = 198.68) to be preferred over the unconstrained model (AIC = 205.28). The structural weights model (AIC = 196.55), however, was preferred over both the unconstrained and measurement weights model. These results indicate that there may be specific differences in structural weights across groups. Closer examination of the path coefficient supports this notion. As can be seen in Figure 6.5, there were differences across the groups. For example, the association between direct friendship and social norms was found to be significant for German (\( \beta = .30, p < .05 \)) but not for Turkish children (\( \beta = .03, ns \)).

To examine these differences more closely, the measurement model (Model 1, see Figure 6.4) was compared with a set of models in which the specific path coefficients were constrained to be equal across groups in accordance to the predictions. First, the paths from direct and extended friendship to out-group evaluations were examined to see whether they were equal across groups. Second, the indirect effects of respectively direct and extended friendship via the mediator variables were examined.

**Direct and extended friendship.** Model 1 was first compared with a model in which the two paths between direct and extended friendship to out-group evaluations were constrained to be equal across groups (Model 2). The results showed no significant decrease in model fit (\( \Delta \chi^2 (2) = .557, ns \)). In addition, the AIC indices indicated Model 2 (AIC = 196.55) to be preferred over Model 1 (AIC = 201.94). These outcomes indicate no difference across groups with respect to the direct paths between direct cross-group friendship and extended cross-group friendship and out-group evaluations; extended friendship was more strongly related to positive out-group evaluations for both German (\( \beta = .34, p < .01 \)) and Turkish children (\( \beta = .35, p < .05 \)) compared to direct friendship (\( \beta = .00, ns \), and \( \beta = -.09, ns \), respectively).

**Indirect effects.** Next, the indirect effects of direct and extended friendship on out-group evaluations via the mediators were examined separately. Model 1 was compared consecutively with two models. First, the paths from direct friendship to intergroup anxiety and social norms, as well as the paths from intergroup anxiety and social norms to out-group evaluations, were set to be equal across groups (Model 2). The results showed a significant decrease in model fit: \( \Delta \chi^2 (4) = 10.55, p < .05 \). In addition, the AIC indices showed that
Model 1 was to be preferred over Model 2 (198.68 and 201.23, respectively). Second, similar analyses were performed for extended friendship instead of direct friendship. The paths from extended friendship to intergroup anxiety and social norms, as well as the paths from both the mediators to out-group evaluations were set to be equal across groups (Model 3). A marginally significant drop in model fit was found: $\Delta \chi^2 (4) = 8.81, p < .1$. The AIC indices were comparable for Model 1 and Model 3 (198.68 and 199.49, respectively). In sum, these results indicate clear differences across groups with respect to the indirect effect of direct friendship on out-group evaluations via intergroup anxiety and social norms. For extended friendship the marginal difference indicated that there may be specific differences across groups.

Additional multiple-sample analyses were performed for each predictor variable separately to examine more closely the effects of direct and extended cross-ethnic friendship on out-group evaluations via intergroup anxiety and social norms. The results of the model with direct friendship as predictor are depicted in Figure 6.6 for both the German and Turkish (in italics) children. The model received good model fit ($\chi^2(66, N_{Germans} = 76, N_{Turkish} = 73) = 80.13, p = .113, CFI = .98, RMSEA = .038$ with the 90% confidence interval $0.000-.065, SRMR = .031$).

Comparison of the baseline model (Model 1) with the model in which the structural weights were set to be equal across groups (Model 2) resulted in a significant decrease in model fit: $\Delta \chi^2 = 15.96, df = 5, p < .01$. In addition, the AIC indices showed Model 1 to be preferred (AIC = 168.13) over Model 2 (AIC = 174.09). It can be concluded that the model differed across groups. Following, Sobel tests were performed to examine mediation effects of intergroup anxiety and social norms for both groups. Social norms were found to mediate the association between direct cross-ethnic friendship and more positive out-group evaluations for German children ($z = 2.41, p < .05$) but not for Turkish children ($z = .67, ns$). No mediation effects were found for intergroup anxiety for German children ($z = 1.33, ns$) nor for Turkish children ($z = -0.41, ns$). Taken together, these results indicate that only for German children direct cross-ethnic friendship was related to more positive out-group evaluations with perceived social norms, but not intergroup anxiety, as underlying process.

In Figure 6.7, the results for both groups (Turkish results are in italics) are given for the model which included only extended friendship as a predictor (Model 1). The model fitted the data well ($\chi^2(66, N_{Germans} = 76, N_{Turkish} = 73) = 84.90, p = .059, CFI = .98, RMSEA = .044$ with the 90% confidence interval $0.000-.069, SRMR = .034$). Model 1 was then compared to
Figure 6.6  Multiple-sample analysis using maximum likelihood estimation of the direct and indirect effects of direct cross-group friendship on out-group evaluations via intergroup anxiety and social norms for German children (majority group) and Turkish children (minority group, values depicted in italics) at Time 2

Notes  Path values are standardized beta weights. Measurement weights were set to be equal. Model fit indices: $\chi^2(66, N_{German} = 76, N_{Turkish} = 73) = 80.13, p = .113, CFI = .98, RMSEA = .038$ with the 90% confidence interval .000-.065, SRMR = .031

*** $p < .001$; ** $p < .01$; * $p < .05$; † $p < .10$
Figure 6.7  Multiple-sample analysis using maximum likelihood estimation of the direct and indirect effects of extended cross-group friendship on out-group evaluations via intergroup anxiety and social norms for German children (majority group) and Turkish children (minority group, values depicted in italics) at Time 2

Notes  Path values are standardized beta weights. Measurement weights were set to be equal. Model fit indices: $\chi^2(66, N_{\text{Germans}} = 76, N_{\text{Turkish}} = 73) = 84.90, p = .059$, CFI = .98, RMSEA = .044 with the 90% confidence interval .000-.069, SRMR = .034

*** $p < .001$; ** $p < .01$; * $p < .05$; † $p < .10$
an alternative model in which the structural weights were set to be equal across groups (Model 2). Model fit did not decrease significantly ($\Delta \chi^2(5) = 2.87, ns$, AIC indices for Model 1 and Model 2 were 172.90 and 171.77, respectively). Sobel tests were performed to examine the proposed mediation effects of intergroup anxiety and social norms for both groups. Social norms were found to mediate the association between extended cross-ethnic friendship and more positive out-group evaluations for German children ($z = 2.23, p < .05$) but not for Turkish children ($z = 1.33, ns$). No mediation effects were found for intergroup anxiety for German children ($z = 1.23, ns$) nor for Turkish children ($z = -0.38, ns$).

Taken together, these results indicate that only for German children both direct and extended cross-ethnic friendship was related to more positive out-group evaluations (Hypotheses 1a and 1b) with perceived social norms (Hypothesis 2b) but not intergroup anxiety (Hypothesis 2a) as underlying process. For Turkish children, only extended friendship was found to be related to positive out-group evaluations (Hypothesis 1b). However, no evidence was found for intergroup anxiety (Hypothesis 2a) or social norms (Hypothesis 2b) to mediate the positive relation between extended cross-ethnic friendship and Turkish children’s out-group evaluations. No relation was found between direct friendship and Turkish children’s out-group evaluations (Hypothesis 1a). These results support our prediction that direct friendship effects are stronger among German children compared to Turkish children (Hypothesis 3a). Against the expectations, extended friendship effects were found to be equally strong across groups (Hypothesis 3b).

6.2.3 Longitudinal analyses

Multiple-sample path analysis

It was hypothesized that, overall, friendship effects would work better for the majority (higher status) group compared to the minority (lower status) group. To compare the model between German and Turkish children, a similar procedure was used as for the cross-sectional analyses. By means of multiple-sample path analyses (see Kline, 2005) model parameters were compared to see whether they were equal or different across groups. By specifying cross-group equality constraints, group differences were examined. First, the results of the longitudinal model with intergroup anxiety as a potential mediator will be presented, followed by the model including social norms as a mediator. For both models a similar approach was used. First, analyses including all participants were performed followed by multiple sample analyses.
Intergroup anxiety. The basic model that was tested included both direct and extended friendship as predictors, intergroup anxiety as proposed mediator, and out-group evaluations as outcome variable. First, the model was tested including all participants. The basic model did not fit the data well \((\chi^2(7, N = 149) = 22.66, p = .002, CFI = .91, RMSEA = .173\) with the 90% confidence interval \(.096 - .136, SRMR = .255\)), thus the model needed modification. In order to improve fit, a two-step procedure was followed. First, non-significant paths were removed from the model. Second, paths suggested by significant modification indices were added to the model. The non-significant paths from direct friendship at Time 1 to intergroup anxiety at Time 2 were removed, as well as the non-significant paths from extended friendship at Time 1 to respectively intergroup anxiety and out-group evaluations at Time 2. Following modification indices, the path from intergroup anxiety at Time 1 to out-group evaluations at Time 2 was replaced by a path from out-group evaluations at Time 1 to intergroup anxiety at Time 2. The resulting model fitted the data well \((\chi^2(10, N = 149) = 10.38, p = .408, CFI = 1.00, RMSEA = .023\) with the 90% confidence interval \(.000 - .128, SRMR = .062\)).

Following, multiple-sample analyses were performed to examine differences across groups. Again, a similar procedure was used as in the cross-sectional analyses. First, a hierarchical set of multiple-sample analyses was performed resulting in two models; an unconstrained model comparing the German (majority) and Turkish (minority) children. Then path weights were constrained to be equal across groups. In Figure 6.8 the unconstrained model of the multiple-sample analyses is depicted with values for both German and Turkish (in Italics) children. It fitted the data well \((\chi^2(20, N_{German} = 76, N_{Turkish} = 73) = 17.59, p = .614, CFI = 1.00, RMSEA = .000\) with the 90% confidence interval \(.000 - .062, SRMR = .062\) and there were no modification indices indicating possibilities to improve model fit for either group. Thus, the requirement of a fitting unconstrained model was met. Comparing the unconstrained model with the constrained model revealed a significant change in the overall fit \((\Delta \chi^2(6) = 28.37, p < .001\)). In addition, the AIC values indicated the unconstrained model \((AIC = 121.593)\) to fit the data better than the constrained model \((AIC = 137.962)\). This clearly shows that there were differences between groups. Following, we tested each of the six paths separately for equality.

The group comparisons indicated that there were many differences across groups. With respect to the stabilities of the variables over time, only direct friendship was found to be comparable across groups; there was no change in overall model fit when comparing the
Figure 6.8  Multiple-sample analysis using maximum likelihood estimation of direct and extended friendship effects on out-group evaluations over time for German children (majority group) and Turkish children (minority group, values depicted in italics) with intergroup anxiety included.

Notes  Path values are standardized beta weights. Model fit indices: $\chi^2(20, N_{\text{Germans}} = 76, N_{\text{Turkish}} = 73 ) = 17.59$, $p = .614$, CFI = 1.00, RMSEA = .000 with the 90% confidence interval .000-.062, SRMR = .062.

*** $p < .001$; ** $p < .01$; * $p < .05$; † $p < .10$
model with this path set to be equal across groups with the unconstrained model ($\Delta \chi^2 (1) = .54, \ ns$). The multiple sample indices indicated that there were differences across groups for the stabilities of extended friendship ($\Delta \chi^2 (1) = 6.31, \ p < .05; \text{AIC}_{\text{unconstrained}} = 121.41 < \text{AIC}_{\text{constrained}} = 125.72$), intergroup anxiety ($\Delta \chi^2 (1) = 5.13, \ p < .05; \text{AIC}_{\text{unconstrained}} = 121.41 < \text{AIC}_{\text{constrained}} = 124.54$), and out-group evaluations ($\Delta \chi^2 (1) = 10.08, \ p < .001; \text{AIC}_{\text{unconstrained}} = 121.41 < \text{AIC}_{\text{constrained}} = 129.50$) were found to lead to significant changes in model fit. It can therefore be concluded that these paths differed across groups.

When comparing the standardized beta weights across groups it was found that for Turkish participants extended cross-ethnic friendships as well as out-group evaluations were very unstable over time (respectively: $\beta = .07, \ ns$, and $\beta = .00, \ ns$, respectively). Also, the data showed that direct friendship positively predicted out-group evaluations over time for German participants ($\beta = .23, \ p < .05$), but not for Turkish participants ($\beta = -.10, \ ns$). Setting this path equal across groups confirmed that this path differed across group as it resulted in a significant change in model fit ($\Delta \chi^2 (1) = 5.84, \ p < .05; \text{AIC}_{\text{unconstrained}} = 121.41 < \text{AIC}_{\text{constrained}} = 125.25$).

No significant causal effect of German children’s out-group evaluations on their cross-ethnic friendship relations was found. This finding is in line with our hypothesis that direct friendship causally predicts positive out-group evaluations over time (Hypothesis 1a). In addition, this finding is in line with our prediction that direct cross-ethnic friendship relations affect majority (higher status) children’s out-group evaluations more strongly than minority (lower status) children (Hypothesis 3a).

Against our predictions, intergroup anxiety was not found to mediate the relation between direct friendship and out-group evaluations over time (Hypothesis 2a) as direct friendship did not predict intergroup anxiety over time, nor did intergroup anxiety predict out-group evaluations. No causal effects over time on either intergroup anxiety or out-group evaluations were found for extended friendship (Hypotheses 1b and 2a). Instead, we found positive out-group evaluations in the beginning of the school year to strongly predict low levels of intergroup anxiety at the end of the school year, but again only among German participants ($\beta = -.45, \ p < .001$; Turkish children: $\beta = -.08, \ ns$). Multiple sample analyses confirmed that the path from out-group evaluations to intergroup anxiety differed across the groups ($\Delta \chi^2 (1) = 8.36, \ p < .01; \text{AIC}_{\text{unconstrained}} = 121.41 < \text{AIC}_{\text{constrained}} = 127.77$).

Social norms. We again first tested the model for all participants together. The base model did not fit the data well ($\chi^2(7, N = 149) = 16.04, \ p = .025$, CFI = .95, RMSEA = .131
with the 90% confidence interval .044 -.217, SRMR = .075). We removed the non-significant paths from extended friendship at Time 1 to social norms and out-group evaluations at Time 2, as well as the path from social norms at Time 1 to out-group evaluations at Time 2. In addition, based on the modification indices, we added a path from social norms at Time 1 to extended contact at Time 2 as well as a path from out-group evaluations at Time 1 to social norms at Time 2. These alterations resulted in a model that fitted the data well ($\chi^2(8, N = 149) = 8.08, p = .426$, CFI = 1.00, RMSEA = .012 with the 90% confidence interval .000 -.136, SRMR = .053).

To examine whether there existed differences across groups, multiple-sample analysis were performed using the same procedure as described before. The model with the unstandardized estimates for both German and Turkish (in italics) children is given in Figure 6.9. Again, there were no additional significant paths for the German or the Turkish group. Comparing the unconstrained model (which fitted the data well; $\chi^2(16, N_{Germans} = 76, N_{Turkish} = 73 ) = 12.20, p = .730$, CFI = 1.00, RMSEA = .000 with the 90% confidence interval .000-.057, SRMR = .053) with the constrained model revealed a significant change in the overall fit ($\Delta \chi^2 (8) = 30.58, p < .001$). In addition, the AIC indices showed the unconstrained model to fit the data better than the constrained model (AICs = 124.202 and 138.786 respectively).

It can therefore be concluded that also in this model there were differences across groups. As was shown above, direct friendship was found to be stable over time with no significant differences across groups. In contrast, extended friendship and out-group evaluations differed across groups with low stabilities for Turkish participants. Perceived social norms about cross-ethnic friendship relations were found to be significantly stable over time for both groups. However, multiple sample analyses showed that the path differed across groups with higher stability for Turkish ($\beta = .38, p < .001$) compared to German ($\beta = .19, p < .05$) children ($\Delta \chi^2 (1) = 3.15, p < .1; \text{AIC}_{\text{unconstrained}} = 124.06 < \text{AIC}_{\text{constrained}} = 125.21$). Direct friendship at the beginning of the school year was found to predict perceived positive social norms at the end of the school year among German ($\beta = .21, p < .05$) but not Turkish ($\beta = -.05, ns$) children. Multiple sample analyses indicated that this path moderately differed across groups ($\Delta \chi^2 (1) = 3.10, p < .1; \text{AIC}_{\text{unconstrained}} = 124.06 < \text{AIC}_{\text{constrained}} = 125.16$).

Social norms did not predict positive out-group evaluations at the end of the school year. This suggests that the causal effect of German children’s direct cross-ethnic friendship relations on their out-group evaluations was not mediated by their perceived social norms (Hypothesis 2b). In addition, out-group evaluations at Time 1 were found to positively predict
Figure 6.9  Multiple-sample analysis using maximum likelihood estimation of direct and extended friendship effects on out-group evaluations over time for German children (majority group) and Turkish children (minority group, values depicted in cursive) with social norms included

Notes  Path values are standardized beta weights. Model fit indices: $\chi^2(16, N_{\text{Germans}} = 76, N_{\text{Turkish}} = 73) = 12.20$, $p = .730$, CFI = 1.00, RMSEA = .000 with the 90% confidence interval .000-.057, SRMR = .053

*** $p < .001$; ** $p < .01$; * $p < .05$; $^\dagger$ $p < .10$
social norms at Time 2 among German children ($\beta = .28, p < .01$) but not among Turkish children ($\beta = -.10, ns$). Multiple sample analyses confirmed that this path differed significantly across groups ($\Delta \chi^2 (1) = 6.37, p < .05; AIC_{unconstrained} = 124.06 < AIC_{constrained} = 128.43$). Finally, perceived social norms at the beginning of the school year were found to predict extended friendship at the end of the school year, but again only for German children ($\beta = .25, p < .01$) but not Turkish children ($\beta = -.10, ns$). This path was also found to differ significantly across groups ($\Delta \chi^2 (1) = 4.61, p < .01; AIC_{unconstrained} = 124.06 < AIC_{constrained} = 126.66$).
7 Discussion

In this chapter, the main findings of the present study will be summarized and discussed. Furthermore, theoretical and practical implications, the limitations of the present study, as well as future directions, will be outlined.

7.1 Summary of the present study

The present research addressed several key issues regarding the association between cross-ethnic friendship and intergroup attitudes in middle childhood: (1) the role of direct friendship as well as extended friendship (i.e., knowledge that a fellow group member has a friend in the out-group) with respect to children’s intergroup attitudes; (2) the role of group membership (i.e., social status) regarding strength of direct and extended friendship effects among minority and majority children; (3) the role of intergroup anxiety and perceived social norms about cross-ethnic friendships as possible underlying psychological processes; and (4) causality issues (i.e., whether friendship leads to more positive intergroup attitudes or vice versa).

The following hypotheses were tested: Direct cross-ethnic friendship as well as extended cross-ethnic friendship was expected to lead to more positive out-group evaluations among both German and Turkish children (Hypotheses 1a and 1b, respectively). This association was expected to be cross-sectionally as well as longitudinally mediated by intergroup anxiety (Hypothesis 2a) and by perceived social norms about cross-group friendship (Hypothesis 2b). Finally, direct as well as extended friendship effects were expected to be generally stronger for German (higher status and majority) children compared to Turkish (lower status and minority) children (Hypothesis 3a and 3b, respectively). The main results will be outlined first. Following, the results are discussed with respect to the key issues as mentioned above.

A first main finding was that, at both measurement points, clear differences were found across groups on all model variables except for direct cross-ethnic friendship. The numbers of direct cross-ethnic friendships were found to be the same among German and Turkish children. However, Turkish children reported more extended friendships than German children. Turkish children also reported significant lower levels of intergroup anxiety and more positive social norms about cross-ethnic friendship relations than German children.
Finally, Turkish children’s evaluations of German children were significantly more positive than German children’s evaluations of Turkish children.

Second, even though the number of direct cross-ethnic friends was comparable across groups, unique effects of direct cross-ethnic friendship on out-group evaluations were found depending on group membership. For German children, having a Turkish friend at the beginning of the year predicted more positive evaluations of Turkish children at the end of the school year. As German children’s out-group evaluations at the beginning of the school year did not predict more cross-ethnic friendships at the end of the school year, it can be concluded that cross-ethnic friendship causally predicted more positive out-group evaluations among German children. In contrast, for Turkish children, no causal effects of direct friendship on out-group evaluations were found. Hypotheses 1a and 3a were, therefore, partly confirmed as associations between direct cross-ethnic friendship and positive intergroup attitudes were found only among German (majority, higher status) children.

Third, extended friendship and out-group evaluations were found to be strongly associated among both German and Turkish children. However, no longitudinal effects were found of extended friendship on out-group evaluations. Hypothesis 1b was, therefore, partly confirmed. Against the predictions, multiple sample analyses indicated no differences across groups regarding strength of the association between extended cross-ethnic friendship and out-group evaluations (Hypothesis 3b).

Fourth, regarding mediation effects it was found that intergroup anxiety did not mediate any longitudinal or cross-sectional effects in the present study (Hypothesis 2a). However, for German children only, having positive out-group evaluations early in the school year strongly predicted lower levels of intergroup anxiety at the end of the school year. As the reverse association was not found, it can be concluded that positive out-group evaluations causally predicted lower levels of intergroup anxiety among majority, higher status children but not among minority, low status children.

Regarding perceived social norms about having cross-ethnic friendships, these were found to mediate the association between direct friendship and positive out-group evaluations, as well as the association between extended friendship and positive out-group evaluations. However, these mediation effects were only found among German children at the end of the school year. These results, therefore, partly support Hypothesis 2b. Social norms were not found to longitudinally mediate direct friendship effects on German children’s out-group evaluations. Unexpectedly, positive perceived social norms about cross-ethnic friendship at
the beginning of the school year were found to causally predict greater numbers of extended friendships among German children at the end of the school year. In turn, both direct cross-ethnic friendship as well as positive out-group evaluations early in the school year causally predicted more positive perceived social norms at the end of the school year, but again only among German children.

### 7.1.1 Development of cross-ethnic friendship and intergroup attitudes

A main finding of the present study was that cross-ethnic friendship at the beginning of the school year predicted positive out-group evaluations among German children at the end of the school year. This finding is in line with previous research on contact effects (see Pettigrew & Tropp, for a meta-analysis, and Brown & Hewstone, 2005, for a review) and provides longitudinal evidence for the notion that direct friendship can have a positive effect on development of intergroup attitudes in middle childhood. In contrast to direct friendship, no causal effects of extended friendship on out-group evaluations were found. Nevertheless, for both German and Turkish children, strong associations were found between extended friendship and positive out-group evaluations at both measurement points. As will be outlined in greater detail below, these findings have several practical and theoretical implications.

In line with previous findings among children (Aboud et al., 2003; Dubois & Hirsch, 1990; Finkelstein & Haskins, 1983; Graham & Cohen, 1997; Hallinan & Teixeira, 1987; Howes & Wu, 1990; Stephan, 1985; Verkuyten, 2001), the average number of direct cross-ethnic friendships, as well as the percentage of children reporting to have at least one out-group friend, was found to decline over time. In contrast, the average number of extended cross-ethnic friendship relations, as well as the percentages of children reporting to have extended contact, increased in both ethnic groups. It is especially noteworthy that at both time points more than 90% of the Turkish children reported that at least one of their friends had a friend in the out-group. For German children, this percentage strongly increased from around 78% at Time 1, to 93% at Time 2. Direct cross-ethnic friendship relations, however, were found among only half of the German and Turkish children. Combined with the findings that extended friendship was more strongly related to children’s positive out-group evaluations than direct friendship, these findings support the argument that extended friendship effects work on a larger scale than direct friendship effects as they are more wide-spread (c.f., Cameron et al., 2006; Paolini et al., 2004; Wright et al., 1997).
7.1.2 Group membership and friendship effects

Another main issue in the present research was to examine possible differences in associations between direct and extended friendship and intergroup attitudes based on children’s ethnic group membership. In line with the predictions, it was found that direct friendship was related to positive out-group evaluations only among German (majority, higher status) children. For Turkish (minority, lower status) children, no significant association was found between having a direct German friend and having positive out-group evaluations. These findings concur with previous findings on the association between cross-ethnic contact and intergroup attitudes, showing that minority and majority group members respond differently to intergroup contact (Tropp & Pettigrew, 2005). The present study extends previous research by showing that ethnic group membership can also influence the strength of cross-ethnic friendship effects on intergroup attitudes in middle childhood. An additional novel finding was that, in contrast to direct friendship, extended friendship was found to be equally strong associated to positive intergroup attitudes among majority and minority children.

Differences in social status can explain differences in direct friendship effects among German and Turkish children. Members of minority and majority groups have been shown to conceive their intergroup relations differently partly because majority group members are less likely to see themselves in terms of their group membership. In contrast, minority group members tend to be very aware of their lower-status position (Jones et al., 1984). In addition, previous research has shown that lower status group members are concerned about becoming the target of prejudice from higher status individuals (Plant, 2004; Plant & Devine, 2003; Stephan & Stephan, 1985) and that minority group members’ intergroup attitudes often depend on anticipation of prejudice of the majority group (Livingston, Brewer, & Alexander, 2004; Monteith & Spicer, 2000). In Germany, Turkish children are in a lower status position compared to their German peers and developmental research has shown that children are very much aware of these differences in status, and that this can affect their out-group evaluations (Aboud, 1988; Aboud & Amato, 2001; Killen & Stangor, 2001; Killen et al., 2002).

Subtyping might also explain why having direct out-group friends was not related to positive out-group evaluations among Turkish children. Experiencing an out-group member acting against the expectations based on the nature of the intergroup relations can result in creation of subcategories which allow attitudes toward the out-group to remain unaffected (Allport, 1954). For the lower status Turkish children, having a higher status German friend
may not have affected their out-group evaluations because the German child may have been seen as an exception. Consequently, their positive experiences were not generalized towards the out-group as a whole (see also Rothbart & John, 1985).

The finding that there were no differences across groups regarding the association between extended friendship and positive out-group evaluations is promising as it suggests that extended friendship may work equally effective among minority as well as majority group members. As further outlined below, this finding has some important implications for interventions aimed at improving intergroup relations among minority and majority group members.

7.1.3 Underlying psychological mechanisms

Intergroup anxiety

The largest positive effects of intergroup contact on intergroup attitudes have been suggested to involve a change in affect (Pettigrew, 1998; Wright et al., 2005). One of the mechanisms through which cross-group friendship is supposed to improve intergroup attitudes, is through its ability to reduce intergroup anxiety. However, in contrast to previous research investigating the role of intergroup anxiety in direct and extended friendship effects (Paolini et al., 2004; Turner et al., 2007), in the present research no mediation effects of intergroup anxiety were found. Intergroup anxiety did not mediate the cross-sectional and longitudinal associations between direct friendship and German children’s out-group evaluations. In addition, intergroup anxiety did not mediate the positive associations between German and Turkish children’s extended friendship and their out-group evaluations.

An explanation for these findings can be derived from the context in which the present study was performed. Stephan and Stephan (1985) argued that intergroup anxiety is especially likely to be present in those situations where there has been little opportunity for direct contact. This was obviously not the case in the present study. Children already had been in contact with each other for several years. The general low levels of intergroup anxiety that were found among both German and Turkish children support this explanation.

Nevertheless, several findings did indicate intergroup anxiety to be related to out-group evaluations. For German children, whose levels of intergroup anxiety were significantly higher than those of the Turkish children, intergroup anxiety was found to be negatively correlated with out-group evaluations at both measurement points. This is in line with previous research that reported negative correlations between anxiety and attitudes (e.g.,
Paolini et al., 2004; Turner et al., 2007). In addition, longitudinal analyses indicated that there was a causal relation between anxiety and out-group evaluations, however, not in the predicted direction. For German children, having positive out-group evaluations in the beginning of the school year, strongly predicted lower levels of intergroup anxiety at the end of the school year. Even though this finding was contrary to the expectation that low levels of intergroup anxiety predict more positive intergroup attitudes, it is in line with the notion that intergroup attitudes and intergroup anxiety are associated. It may be that intergroup anxiety is associated in a dynamic way with intergroup attitudes; that is, intergroup anxiety may play a different role in the friendship-attitude association depending on contextual and temporal conditions. The absence of intergroup anxiety effects in the present study (where children already spent at least two years together) may, in this view, be simply explained by the fact that levels of intergroup anxiety had already decreased during previous years or plays a more important role in younger children.

These explanations are in line with several theoretical approaches toward attitude development. For example, the integrative developmental contextual theory (IDCT; Teichman & Bar-Tal, in press) emphasizes that affect is especially likely to play an important role in attitude formation in early childhood (below 7 years of age). From 7 years onwards, IDCT predicts cognitive development and identity development to play a larger role in attitude formation compared to affect. In addition, Pettigrew’s intergroup friendship theory (1997, 1998) predicts that intergroup anxiety exists when initial contact occurs. Over time, Pettigrew argues, intergroup anxiety is likely to reduce when members of different groups repeatedly have contact with each other. This is especially likely to happen under optimal contact conditions. The elementary school context is likely to meet at least several of the criteria for positive context effects to occur. For example, intergroup interaction is supported and children of different ethnic backgrounds cooperate together on school tasks. These theoretical approaches, therefore, provide further explanations for the low anxiety levels among the German and Turkish children in the present study, as well as for the finding that intergroup anxiety did not mediate direct and extended friendship effects.

Social norms

In addition to intergroup anxiety, the mediation hypothesis of social norms was tested. Based on previous research (Jetten et al., 1996; Pettigrew, 1991; Wright et al., 1997) it was expected that direct and extended friendship would lead to more positive intergroup attitudes with perceived social norms about cross-ethnic friendship as an underlying mechanism. As
predicted, social norms were found to mediate the association between children’s direct cross-ethnic friendship as well as extended cross-ethnic friendship and their out-group evaluations. However, this was found only among the German children and only at the end of the school year. The finding that social norms mediate contact effects on intergroup attitudes is in line with previous findings addressing the norm-attitude relationship in adults (Jetten et al., 1996; Pettigrew, 1991; Johnston & Hewstone, 1990) and in children (Rutland et al., 2005; Nesdale et al., 2005).

The present research is unique in showing social norms about having cross-ethnic friendships to mediate associations between both direct and extended friendship and out-group evaluations in young German children. However, this was only found at the end of the school year. A possible explanation for this is that social norms, like intergroup anxiety, may interact in a dynamic way with development of children’s out-group evaluations. Social norms have been argued to “characterize the perception of what most people approve or disapprove” (Cialdini, Kallgren, & Reno, 1991, p.203). This notion may have applied to development of the German children’s cross-ethnic friendship relations. Thus, when a German child formed a direct friendship with a Turkish child early in the school year, he or she consequently was evaluated by his or her German and Turkish peers. Approval of the friendship by the environment may, in time, have positively reinforced German children’s attitudes toward Turkish children as a whole. Causal analyses support this notion as German children who had direct cross-ethnic friendship relations early in the school year were likely to report more positive social norms as well as more positive out-group evaluations at the end of the school year.

Yet, this interpretation does not explain that no mediation effects or causal effects of social norms with respect to the friendship-attitudes association were found for Turkish children. An explanation might be that for Turkish children it is more normal to have an out-group friend compared to German children. This argument is supported by the finding that at both time points Turkish children reported significantly higher positive social norms about cross-ethnic friendship relations compared to their German peers. The sheer numbers of out-group members could explain these findings; for Turkish children (the minority group) there are more out-group members available than for German children (the majority group). This was reflected in the finding that Turkish children reported more extended cross-ethnic friendships compared to German children.
7.1.4 The issue of causality

Previous research focusing on extended contact effects (Cameron & Rutland, 2006; Cameron et al., 2006, 2007; Liebkind & McAlister, 1999, Wright et al., 1997) as well as studies including both direct and extended friendship (Paolini et al., 1994; Turner et al., 2007) used either correlational or experimental designs. As argued by Pettigrew (1998), these methodological approaches do not allow for a convincing test of causality predictions. The longitudinal findings which were reported in the previous sections provide more insight in the role of direct and extended friendship, intergroup anxiety, and social norms regarding development of intergroup attitudes in middle childhood.

The most important finding is that there are clear differences across groups with respect to longitudinal direct friendship effects on out-group evaluations; only for German (majority, higher status) children was direct friendship found to positively predict out-group evaluations over time. Furthermore, longitudinal findings suggest social norms rather than intergroup anxiety to play a significant role in this association. However, the causal effect of friendship on attitudes was not found to be longitudinally mediated by social norms, nor by intergroup anxiety.

Interestingly, for German children, having positive out-group evaluations at the beginning of the year strongly predicted more positive social norms about cross-group friendships and lower levels of intergroup anxiety. The reverse associations were not found and it can therefore be concluded that out-group evaluations causally affected these variables. These findings are in line with previous research showing that intergroup anxiety and social norms are related to children’s intergroup attitudes (Nesdale et al., 2005; Paolini et al., 2004; Rutland et al., 2005; Turner et al., 2007).

Concerning intergroup anxiety, the finding that positive out-group evaluations at the beginning of the year predicted lower levels of anxiety at the end of the school year is, even though unpredicted, not surprising. It indicates that those German children who were positive about Turkish children in the beginning of the year became, over time, even more positive in the sense that their anxiety for Turkish children decreased.

The causal effect of German children’s perceived social norms at the beginning of the school year on reported numbers of extended friendships at the end of the school year goes against the predictions by Wright et al. (1997). Wright and colleagues proposed that perceived cross-group friendship can influence the observer’s attitudes through social norms. However, the present results indicate that social norms influence the perception of cross-group
friendship relations. An alternative explanation is that this effect indirectly reflects intergroup attitudes. It can be argued that, although one cannot choose the friends of friends, one can choose with whom to befriend with. In this view, the German children who held positive norms about cross-ethnic friendships early in the year were more likely to befriend children having those friendships.

Furthermore, the finding that out-group evaluations predicted perceived social norms among German children was somewhat surprising. However, an explanation for this effect is projection. Processes of projection have been shown to be an important factor contributing to young children’s construction of a representation of intergroup attitudes among parents and peers (Gniewosz & Noack, 2006; Gniewosz, Noack, Wentura, & Funke, 2003). This would imply that German children who held positive attitudes toward Turkish children early in the school year became more positive about cross-ethnic friendships. In turn, these children then projected their norms about cross-ethnic friendship onto their peers.

### 7.2 Theoretical and practical implications

#### 7.2.1 Theoretical implications of the present research

A key finding in the present research was that already in middle childhood, direct friendship causally predicts more positive out-group evaluations; however, only among majority, higher status children. Longitudinal research on the role of cross-ethnic friendship regarding attitude formation is rare, especially among children. The causal effect of cross-ethnic friendship on intergroup attitudes is therefore theoretically important. In addition, this finding combines several theoretical propositions: It shows that cross-ethnic friendship causally predicts more positive attitudes (see Pettigrew 1997, 1998; Wright et al., 2005), however, this association seems to be stronger among majority group members compared to minority group members (Tropp & Pettigrew, 2005) and these notions can already be observed in middle childhood (Aboud et al., 2003).

Another theoretically novel finding was that extended friendship was related to more positive intergroup attitudes among both majority and minority children. In addition, this was only found cross-sectionally; extended friendship did not causally predict more positive intergroup attitudes. These findings extend previous research in several ways. First, the present research was the first study showing positive associations between extended friendship and intergroup attitudes among children in middle childhood. Previous research
investigating extended friendship focused either on adolescents (Turner et al., 2007, Studies 2 and 3) or on students and adults (Paolini et al., 2004).

In addition, the present research tested the effect of extended friendship on intergroup attitudes both cross-sectionally as well as longitudinally. Extended friendship effects have not been investigated longitudinally before. The present findings, therefore, shed more light on the nature of the association between extended friendship and intergroup attitudes. Both concepts seem to be closely related as they correlated highly at both measurement points among both minority and majority children. However, no causal effects were found between extended friendship and intergroup attitudes. These findings indicate that extended friendship might be effective in short-term, but not in the long run. This is in contrast to direct friendship effects which were found to have a positive effect on attitudes over a period of seven months.

A possible explanation for these different findings may be found in the fact that direct cross-ethnic friendship entails direct close interactions with out-group members and extensive and repeated contact across a variety of contexts over time. As argued by Pettigrew (1997, 1998), this form of contact is, therefore, likely to have long-lasting effect on intergroup attitudes. In contrast, extended friendship implies indirect interaction with out-group members and is, therefore, by definition less intensive. Findings of previous studies by Cameron and colleagues (2006, 2007) have shown that repeated use of extended friendship in interventions is associated with more positive intergroup attitudes. Cameron et al. measured children’s attitudes one to two weeks after the implementation, however, did not examine whether these effects of extended contact lasted over a longer period of time. The present results are in line with findings of Cameron et al. that extended friendship has a positive effect on children’s attitudes at the moment of implementation and shortly afterwards. However, the lack of causality effects of extended friendship in the present research suggests that, in the long term, extended contact does not affect intergroup attitudes. Theoretically, these findings imply that extended friendship may be differently associated with children’s intergroup attitudes than direct friendship in terms of strength and dynamics.

This proposition is in line with the finding that extended friendship was more strongly associated with out-group evaluations than direct friendship. Both in the beginning and at the end of the school year, associations between direct friendship and out-group evaluations became non-significant for German and Turkish children when extended friendship was included in the model. Previous research by Paolini and colleagues (2004) and Turner and colleagues (2007) did not compare the relative importance of direct and extended friendship
with respect to out-group evaluations. The present findings suggest that extended friendship is, at specific time intervals, closely related to positive out-group evaluations for both minority and majority group members. Direct friendship, in contrast, was found to be positively associated to out-group evaluations only among majority children; however, this association was less strong compared to extended friendship.

Regarding underlying social processes, previous research has shown that social norms can influence how children express their intergroup attitudes (Rutland et al., 2005) and can directly affect children’s intergroup attitudes (Nesdale et al., 2005). The present research has provided initial evidence that perceived social norms can mediate associations between direct cross-ethnic friendship and positive intergroup attitudes among children in middle childhood. The present research also provided first support among young children for the proposition of Wright and colleagues (1997) that social norms mediate associations between extended friendship and intergroup attitudes.

An additional theoretical implication is that differences in contact effects (as reported by Tropp & Pettigrew, 2005) and differences in friendship effects (as found in the present study) across majority and minority groups may be explained by perceptions of social norms about cross-ethnic friendships. Only among majority (higher status) children, social norms were found to mediate the association between direct friendship and intergroup attitudes. It may be that majority group members differ in perceptions of social norms about cross-ethnic friendships. This notion is in line with the findings that, at both measurement points, minority children reported significantly more positive social norms about cross-ethnic friendships than majority children.

The finding that intergroup anxiety did not mediate any effects in the present research underlines the argument of several theorists (i.e., Bar-Tal & Teichman, 2005; Teichman & Bar-Tal, in press; Killen et al., 2004; Killen, 2007) that issues associated with attitude development in childhood should be examined taking into account the social context. The present findings suggest that in ethnically heterogeneous contexts, the role of intergroup anxiety with respect to friendship effects is only moderate to non-existing. Especially in contexts where there are low opportunities for cross-ethnic contact, intergroup anxiety may play a crucial role (see also Stephan & Stephan, 1985).

Finally, the present research provided a first longitudinal test of the mediation hypotheses of social norms and intergroup anxiety. It is noteworthy that previous longitudinal studies on contact effects did not focus on the role of underlying psychological processes over
Discussion

This is especially striking considering the requirement that in order to speak of causal processes, effects should be observable at any temporal interval (c.f., Taris, 2000). The present study provides an example of how these issues can be approached.

7.2.2 Practical implications of the present research

A first observation is that when designing interventions aimed at improving intergroup relations, one should take into account the target group. As was shown in the present research, direct friendship may not be as effective for minority, low status children as for majority, high status children. Instead, the results convincingly showed extended friendship to be strongly related to out-group evaluations among both minority and majority children. Interventions that aim to increase the number of extended friendships, therefore, seem to be effective irrespective of group membership. In contrast, interventions that aim to foster cross-ethnic friendship are especially likely to be effective in changing majority, high status children’s intergroup attitudes.

With respect to interventions based on extended friendship, the present results suggest that these should be implemented over a longer period of time. As discussed in the previous section, extended friendship effects may be only lasting for a short period. When introduced frequently, however, and over a longer period of time, positive effects of extended contact can be expected. A practical example would be by implementing the intervention used by Cameron et al. (2006, 2007) in the curriculum of schools (i.e., a weekly reading hour in which stories are read about in-group members interacting positively with out-group members).

In addition, based on the finding that social norms mediated both the associations between direct as well as extended cross-ethnic friendship and German, majority children’s intergroup attitudes, it is proposed that interventions aimed at changing majority children’s intergroup attitudes should focus on changing the norms about cross-ethnic friendship. For example, in a class-room the intervention could focus on teaching children that it is allowed to have a cross-ethnic friend. One way this could be done is by using the procedure as designed by Cameron and colleagues (2006, 2007); by reading out stories about other children forming cross-group friendship relations. In addition, when a child is new in a class-room, he or she should learn that there exist positive social norms in the class about making cross-ethnic friendships.

Furthermore, in the participating schools, low levels of intergroup anxiety were found. This was thought to be due to the fact that children already had spent a considerable amount
of time together. Interventions focusing on reducing intergroup anxiety would, therefore, be unlikely to be effective in creating more positive intergroup attitudes. However, it may be that these interventions could be useful in the early school years, for example, reducing intergroup anxiety by using extended friendship interventions.

Finally, the present study showed that overall, in all three investigated schools, levels of intergroup anxiety were generally low, children perceived it to be okay to have a cross-group friends, and both German and Turkish children evaluated each other quite positively. These findings support the argument already made by Allport (1954) that an ethnically mixed student population could have a positive effect on intergroup attitudes and therefore speak in favor for desegregation of schools.

### 7.3 Limitations and future directions

Care should be taken in generalizing these findings across other age ranges, social and ethnical groups, as well as other social contexts. However, although participants in the present study were young children, this population is considered to be instructive with respect to the existing literature on contact effects as children in this age range have already developed the basic cognitive skills that are associated with prejudice and stereotyping (Aboud & Amato, 2001; Bigler & Liben, 2006). In addition, children in this age range start to use social and moral reasoning about issues like inclusion and exclusion that are closely related with development of cross-ethnic relations and formation of intergroup attitudes (see Killen, 2007, for an overview).

When interpreting the results of the present study, the social context in which it was performed needs to be taken into account as well. All three participating schools had a highly ethnically diverse population and no comparison could be made with more homogeneous contexts. Previous research has shown that the proportion of minority/majority children can be of influence on children’s intergroup attitudes (Killen, Richardson, Kelly, Crystal, & Ruck, 2006; Kinket & Verkuyten, 1999; McGlothlin & Killen, 2006; McGlothlin, Killen, & Edmonds, 2005). Future research should take ethnic diversity into account to control for these effects. In addition, by comparing settings differing in ethnical diversity, several issues raised in the present research could be answered; for example, whether intergroup anxiety would function as a mediator in the friendship-attitudes relation in more ethnically homogeneous contexts.
Besides contextual conditions, more research is needed that focuses on how direct and extended friendship affect development of intergroup attitudes over time. For example, the moderate role of intergroup anxiety in the present study (where children already had spent at least two years together) may be simply explained by the fact that levels of intergroup anxiety had already decreased in the previous years. It is very likely that intergroup anxiety plays an important role in contact effects on attitudes in the first school year when school classes are formed. In other words, direct and extended friendship could already have reduced intergroup anxiety before the present data was collected. To gather more insight in the possible role of underlying mechanisms over time, associations between direct and extended friendship and intergroup attitudes should be examined over longer time spans. This approach toward studying contact effects is in line with Pettigrew’s (1998) suggestion that contact effects should be studied longitudinally.

Another point concerns the concept of extended contact. In the present research, the terms extended friendship and extended contact were used interchangeably. However, it can be argued that there exist different forms of extended contact. For example, in the present study, knowledge that friends have friends in the out-group was examined. In contrast, previous research by Cameron and colleagues (2006, 2007) focused on knowledge that other in-group members have friends in the out-group. In the extended contact intervention used by Cameron et al. the children did not have actual contact with the in-group members having out-group friends. In the present research children did have direct contact in the form of a friendship relation. In addition, a third form can be distinguished which is called vicarious contact. Vicarious contact describes even more distanced cross-group interactions with in-group members interacting positively with out-group members but not necessarily having a close relationship with each other (i.e., a soccer match on television). It is likely that these three forms of contact are distinct and have different effects on intergroup attitudes. In order to realize the full potential of contact effects it is necessary to get a clearer understanding of when and how these three forms of contact influence formation of intergroup attitudes.

Finally, several findings in the present research suggest that direct cross-ethnic friendship and extended cross-ethnic friendship are differently related to intergroup attitudes. For example, whereas causal relations were found for direct friendship (i.e., predicting over time more positive social norms and out-group evaluations among German children) no causal relations were found for extended friendship. In addition, whereas direct friendship was only positively related to out-group evaluations among German children at the end of the
school year, strong positive associations were found at each measurement point between both German and Turkish children’s out-group evaluations and the number of extended friendships. More research is needed to determine when and how these two forms of friendship influence development of intergroup attitudes.
8 Conclusion

From the age of five, children are exposed to the problems. Not mixing with people from the other side of the community becomes the norm. It’s just not the thing to do.

A Protestant from Belfast, Northern Ireland


This quote reflects several issues that were dealt with in the present dissertation. First, children are not immune to their social environment; groups certainly do matter to children. From a very young age onwards, children form impressions about their social environment, start to identify with their (ethnical or religious) group, show a preference for their group, and, under certain circumstances, are found to be prejudiced toward members of other groups. The theoretical overview that was given in the present research showed that many factors influence development of intergroup attitudes in childhood: developmental, social, as well as contextual.

Second, the quotation refers to a key aspect regarding attitude formation in childhood, namely intergroup contact. The present research focused on cross-group friendship, which is thought to be the most effective form of contact leading to positive intergroup attitudes. The findings of the present study indicated that having a friend in the other group (direct cross-group friendship), as well as knowing that a friend has friends in the other group (extended cross-group friendship) is associated to more positive intergroup attitudes among children. But group membership also seems to matter regarding friendship effects; direct cross-ethnic friendship was found to predict over time more positive intergroup attitudes, but only among the majority German children, not among the minority Turkish children.

Third, the present research showed that perceived social norms about cross-ethnic friendship can positively influence the association between direct and extended cross-ethnic friendship and children’s intergroup attitudes. It seems that creating a positive social norm regarding cross-ethnic friendship can have positive consequences about how children think about other groups in terms of attitudes and friendship. The message should be that starting cross-ethnic friendships *is* the thing to do.
Fourth, regarding possible interventions, it seems that mixing with members of the other community, under the right circumstances, does lead to more positive intergroup relations, also among children. This supports the notion of Gordon Allport (1958) that the process of integrating should start with elementary schools, rather than with high schools.

To conclude, the present research used an interdisciplinary approach toward development of intergroup attitudes in childhood. Increasingly, researchers benefit from knowledge and experience derived from educational settings, the field of developmental psychology, as well as the field of social psychology (e.g., Bennett & Sani, 2004; Killen & McKown, 2005; Levy & Killen, in press; Rutland, Abrams, & Levy, 2007). It is anticipated that future research regarding development of intergroup attitudes, as well as interventions aimed at improving intergroup relations from childhood onwards, will benefit from this development.
9 Literature


Appendix

Predictor variables

Direct friendship

* The three children with whom I play most often are called:

Friend 1: ____________________
Friend 2: ____________________
Friend 3: ____________________

Think of your friend 1!

* Please write down the name of your friend 1: ____________

* My Friend 1 is

- [ ] German
- [ ] Both German and Turkish
- [ ] Turkish
- [ ] Neither German nor Turkish

Extended friendship

* How many friends of your friend 1 are German?

- [ ] None
- [ ] A few
- [ ] Many
- [ ] All

* How many friends of your friend 1 are Turkish?

- [ ] None
- [ ] A few
- [ ] Many
- [ ] All
Mediator variables: Female version, German child

Imagine you get to know other children!

This is Lisa. Lisa is German.
Imagine, Lisa is new in your class.

How would you feel about it,
when Lisa wanted to play with you?

Lisa

Intergroup anxiety

* I would feel:

<table>
<thead>
<tr>
<th>Relaxed</th>
<th>Nervous</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Smiley" /></td>
<td><img src="image" alt="Sad" /></td>
</tr>
</tbody>
</table>

* I would feel:

<table>
<thead>
<tr>
<th>Pleased</th>
<th>Worried</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Smiley" /></td>
<td><img src="image" alt="Sad" /></td>
</tr>
</tbody>
</table>

* I would feel:

<table>
<thead>
<tr>
<th>Comfortable</th>
<th>Tense</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Smiley" /></td>
<td><img src="image" alt="Sad" /></td>
</tr>
</tbody>
</table>

* I would feel:

<table>
<thead>
<tr>
<th>Fine</th>
<th>Scared</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Smiley" /></td>
<td><img src="image" alt="Sad" /></td>
</tr>
</tbody>
</table>
Social norms

How would other German children in your class feel about you and Lisa playing together?

* They would think it to be:

How would other Turkish children in your class feel about you and Lisa playing together?

* They would think it to be:
Mediator variables: Female version, Turkish child

Imagine you get to know other children!

This is Aylin. Aylin is Turkish.
Imagine, Aylin is new in your class.

How would you feel about it,
when Aylin wanted to play with you?

Aylin

Intergroup anxiety

* I would feel:

Relaxed  Nervous

Pleased  Worried

Comfortable  Tense

Fine  Scared
Social norms

How would other German children in your class feel about you and Aylin playing together?

* They would think it to be:

How would other Turkish children in your class feel about you and Aylin playing together?

* They would think it to be:
Mediator variables: Male version, German child

Imagine you get to know other children!

This is Karl. Karl is German.
Imagine, Karl is new in your class.

How would you feel about it,
when Karl wanted to play with you?

Intergroup anxiety

* I would feel:

- Relaxed
- Nervous

* I would feel:

- Pleased
- Worried

* I would feel:

- Comfortable
- Tense

* I would feel:

- Fine
- Scared
**Social norms**

How would other German children in your class feel about you and Karl playing together?

* They would think it to be:

![Rating Scale](image)

How would other Turkish children in your class feel about you and Karl playing together?

* They would think it to be:

![Rating Scale](image)
Mediator variables: Male version, Turkish child

Imagine you get to know other children!

This is Murat. Murat is Turkish.
Imagine, Murat is new in your class.

How would you feel about it,
when Murat wanted to play with you?

* I would feel:

- Relaxed
- Nervous

* I would feel:

- Pleased
- Worried

* I would feel:

- Comfortable
- Tense

* I would feel:

- Fine
- Scared
Social norms

How would other German children in your class feel about you and Murat playing together?

* They would think it to be:

![Not good at all (0) to Very good (5) scale]

How would other Turkish children in your class feel about you and Murat playing together?

* They would think it to be:

![Not good at all (0) to Very good (5) scale]
Outcome variable

How do you feel about German and Turkish children?

* How many German children are friendly?

* How many Turkish children are friendly?

* How many German children are polite?
* How many Turkish children are polite?

* How many German children are smart?

* How many Turkish children are smart?
Zusammenfassung


Die vorliegende Dissertation befasst sich mit einigen zentralen Aspekten der Freundschafts-Einstellungs-Assoziation, in dem folgende Aspekte untersucht werden: (1) Sowohl der Einfluss von direkter als auch von indirekter Freundschaft auf die Entwicklung von Intergruppeneinstellungen in der mittleren Kindheit; (2) die Rolle von Gruppenmitgliedschaft (z.B. sozialer Status) im Hinblick auf sowohl die Stärke von direkten als auch erweiterten Freundschaftseffekten; (3) Intergruppenangst und soziale Normen in Bezug auf Freundschaften zwischen Mitgliedern verschiedener ethnischer Gruppen als mögliche Mediatoren; und (4) Fragen der Kausalität. Folgende Hypothesen wurden getestet: Es wurde erwartet, dass sowohl direkte Freundschaft zwischen Mitgliedern verschiedener ethnischer Gruppen als auch erweiterte Freundschaften zwischen Mitgliedern verschiedener ethnischer Gruppen unter deutschen und türkischen Kindern zu positiveren Evaluationen der Fremdgruppe führen (Hypothese 1a beziehungsweise 1b). Zudem wurde erwartet, dass diese Assoziation sowohl querschnittlich als auch längsschnittlich durch Intergruppenangst (Hypothese 2a) und durch wahrgenommene soziale Normen über Freundschaften zwischen Mitgliedern verschiedener ethnischer Gruppen (Hypothese 2b) mediiert wird. Darüber hinaus

Im Folgenden werden die zentralen Ergebnisse zusammengefasst: Nur bei deutschen Kindern sagt das Vorhandensein von Freundschaften zwischen Mitgliedern verschiedener ethnischer Gruppen zu Beginn des Schuljahres kausal positive Evaluationen der Fremdgruppe zum Ende des Schuljahres vorher. Die Hypothesen 1a und 3a konnten daher teilweise bestätigt werden in dem Sinne, dass die Assoziation zwischen Freundschaften zwischen Mitgliedern verschiedener ethnischer Gruppen und positiver Intergruppeneinstellung nur für die deutschen Kindern gefunden wurde.

Es zeigten sich zu beiden Messzeitpunkten starke positive Assoziationen zwischen deutschen und türkischen erweiterten Freundschaften und Fremdgruppenevaluationen. Jedoch zeigten sich keine kausalen Effekte von erweiterten Freundschaften auf Fremdgruppenevaluationen. Hypothese 1b wurde daher nur teilweise bestätigt. Entgegen den Vorhersagen zeigten gruppenvergleichende Strukturgleichungsmodelle keine Unterschiede zwischen Gruppen in Hinsicht auf die Stärke der Assoziationen zwischen erweiterten Freundschaften und Fremdgruppenevaluationen (Hypothese 3b).

Im Gegensatz zu den Vorhersagen medierte Intergruppenangst weder die längs- noch die querschnittlichen Effekte in der vorliegenden Studie (Hypothese 2a). Stattdessen zeigte sich, jedoch nur für deutsche Kinder, dass das Vorhandensein von positiven Fremdgruppenevaluationen zu Beginn des Schuljahres deutlich niedriges Angstempfinden am Ende des Schuljahres vorhersagt.


Summary

In 1954, Gordon Allport proposed the intergroup contact hypothesis stating that interaction/contact between individual members of different groups can lead, under the right circumstances, to a reduction in prejudice toward the other group. The positive effect of contact on intergroup attitudes is thought to be mainly due to a change in affect toward the out-group (Wright, Brody, & Aron, 2005). Pettigrew (1997, 1998) suggested, therefore, that opportunity for friendship is one of the key conditions for positive contact effects to occur. However, research on cross-ethnic friendships in childhood has shown that these friendships are relatively rare compared to same-ethnic friendships and decline in number with age (Aboud, Mendelson, & Purdy, 2003). Wright, Aron, McLaughlin-Volpe, and Ropp (1997) proposed that it is not necessary for each individual to have a friend in the out-group; mere knowledge that fellow group members have friends in another group can already lead to more positive intergroup attitudes. This is called the extended contact hypothesis.

The present dissertation addresses several key issues regarding the friendship-attitude association by examining: (1) Both direct and extended friendship effects on development of intergroup attitudes in middle childhood; (2) the role of group membership (i.e., social status) with respect to the strength of direct and extended friendship effects; (3) intergroup anxiety and social norms about cross-ethnic friendship as possible mediators; and (4) issues of causality. The following hypotheses were tested: Direct cross-ethnic friendship as well as extended cross-ethnic friendship was expected to lead to more positive out-group evaluations among both German and Turkish children (Hypotheses 1a and 1b, respectively). This association was expected to be cross-sectionally as well as longitudinally mediated by intergroup anxiety (Hypothesis 2a) and by perceived social norms about cross-group friendship (Hypothesis 2b). Finally, direct as well as extended friendship effects were expected to be generally stronger for German (higher status and majority) children compared to Turkish (lower status and minority) children (Hypothesis 3a and 3b, respectively). A longitudinal study was performed to test these predictions. Participants were 78 German and 74 Turkish children (age range 7-11 years). The data was collected in three ethnically heterogeneous elementary schools in Germany. The children completed a survey in the beginning and at the end of the school year (time-lag: 7 months).

The main findings were: First, among German children only, having direct cross-ethnic friendships early in the school year causally predicted positive out-group evaluations at
the end of the school year. Hypotheses 1a and 3a were, therefore, partly confirmed as associations between cross-ethnic friendship and positive intergroup attitudes were only found among the German majority children.

Second, strong associations were found between German and Turkish children’s extended friendships and their out-group evaluations at both measurement points. However, no causal effects of extended friendship on out-group evaluations were found. Hypothesis 1b was, therefore, also partly confirmed. Against the predictions, multiple sample analyses indicated no differences across groups regarding strength in associations between extended friendship and out-group evaluations (Hypothesis 3b).

Third, contrary to predictions, intergroup anxiety was not found to mediate any longitudinal or cross-sectional effects in the present study (Hypothesis 2a). Instead, for German children only, having positive out-group evaluations early in the school year strongly predicted low levels of intergroup anxiety at the end of the school year.

Finally, the positive associations between German children’s direct and extended cross-ethnic friendship and their out-group evaluations were mediated by social norms, but only at the end of the school-year. Social norms were not found to longitudinally mediate the association between German children’s direct friendship and out-group evaluations. These results, therefore, partly support Hypothesis 2b. Contrary to predictions, positive social norms early in the school year causally predicted higher numbers of extended friendships among German children at the end of the school year. In turn, both direct cross-ethnic friendship as well as positive out-group evaluations early in the school year predicted positively German children’s perceived social norms at the end of the school year.

In sum, the present research contributes in several ways to what is known about the association between cross-ethnic friendship and intergroup attitude formation. It extends previous research on friendship effects among adolescents and adults as direct friendship was found to causally predict more positive out-group evaluations among children. With regard to status differences, the findings provided first evidence that friendship influences majority children’s intergroup attitudes more strongly compared to minority children. In contrast, extended friendship was found to be equally strong associated with intergroup attitudes among majority and minority children. Concerning underlying social processes, it was found that social norms influenced only majority children’s direct and extended friendship effects. No mediation effects of intergroup anxiety were found which is likely to be due to the ethnically diverse social context in which the study was performed. These findings suggest
that interventions focusing on direct friendship effects in the context of heterogeneous primary schools mainly work for majority children. Creating positive social norms about cross-ethnic friendship can facilitate this process. Instead, interventions using extended friendship are likely to be effective for both majority and minority children in middle childhood.
Samenvatting


De huidige dissertatie onderzoekt enkele centrale aspecten met betrekking op de vriendschap-attitude associatie: (1) Zowel effecten van directe als van verlengde vriendschappen op de ontwikkeling van intergroepsattituden in de kindheid; (2) de rol van groepslidmaatschap (b.v., sociale status) met betrekking tot effecten van directe en verlengde vriendschappen; (3) de rol van intergroepsangstigheid en sociale normen met betrekking tot vriendschap tussen leden van verschillende groepen als mogelijke mediatoren; en (4) aspecten van causaliteit. De volgende hypotheses werden getest: Zowel directe als verlengde vriendschappen tussen leden van de verschillende groepen zal leiden tot meer positieve evaluaties van de andere groep door Duitse en Turkse kinderen (respectievelijk Hypothese 1a en 1b). Naar verwachting wordt deze associatie gemedieerd door intergroepsangstigheid (Hypothese 2a) en sociale normen jegens deze vriendschappen (Hypothese 2b) zowel op elk individueel meetpunt alsmede over de tijd. Tenslotte, naar verwachting zijn zowel directe alsmede verlengde vriendschapseffecten sterker voor Duitse kinderen (de hogere status-
Samenvatting

meerderheids- groep) vergeleken met Turkse kinderen (de lagere status- en minderheids- groep; respectievelijk Hypothese 3a en 3b). Deze voorspellingen zijn getest in een longitudinale studie. Deelnemers waren 78 Duitse en 74 Turkse kinderen (leeftijdscategorie: 7-11 jaar). De data was verzameld op drie ethisch heterogene basisscholen in Duitsland. De kinderen vulden een vragenboekje in aan het begin en aan het einde van het schooljaar (tussenliggende tijd: 7 maanden).

De hoofdbevindingen waren: Enkel voor Duitse kinderen voorspelde het hebben van een vriend in de andere groep meer positive attituden jegens deze groep. Hypothese 1a en 3a zijn hierdoor gedeeltelijk bevestigd omdat associaties tussen directe vriendschap en positive attituden jegens de andere groep enkel bij de Duitse kinderen zijn gevonden.

Op elk meetpunt, zowel bij Duitse alsmede Turkse kinderen, zijn positieve associaties gevonden tussen verlengde vriendschappen en evaluaties van de andere groep. Er zijn echter geen causale effecten gevonden van verlengde vriendschappen op evaluaties van de andere groep. Hypothese 1b is, derhalve, eveneens gedeeltelijk bevestigd. Tegen de verwachtingen in duidden groepsvergelijkende structuuranalysen erop dat er geen verschillen zijn met betrekking tot verlengde vriendschapseffecten op intergroepsevaluaties (Hypothese 3b).

In tegenstelling tot de verwachtingen bleek intergroepsangstigheid geen enkel longitudinaal effect, noch effecten op een der beide gerapporteerde meetmomenten te medieren (Hypothese 2a). In plaats daarvan bleek het hebben van positieve evaluaties van de andere groep aan het begin van het schooljaar enkel bij Duitse kinderen te leiden tot een sterke reductie in intergroepsangstigheid aan het einde van het schooljaar.

Tenslotte bleek dat de positieve associaties tussen de directe en verlengde vriendschappen in de andere groep en de evaluaties van deze groep bij Duitse kinderen werd gemedieerd door social normen. Dit werd echter enkel aan het einde van het schooljaar gevonden. Er werd geen bewijs gevonden voor een longitudinale mediatie van sociale normen met betrekking tot de associatie tussen directe vriendschappen en evaluaties van de andere groep. Hypothese 2b is daarom gedeeltelijk bevestigd. In tegenstelling tot de verwachtingen voorspelde het hebben van positieve sociale normen vroeg in het schooljaar het hebben van meer verlengde vriendschappen aan het einde van het schooljaar. Daarbij voorspelde het hebben van directe vriendschappen alsmede het houden van positieve evaluaties jegens de andere groep vroeg in het schooljaar, meer positieve sociale normen aan het einde van het schooljaar.
Samenvattend kan worden gesteld dat het huidige onderzoek op verschillende wijzen bijdraagt aan wat tot dusver bekend is met betrekking tot de associatie tussen vriendschap en formatie van intergroepsattituden. De resultaten zijn in lijn met voorafgaand onderzoek naar vriendschapseffecten bij adolescenten en volwassenen vanwege de bevinding dat het hebben van directe vriendschappen met leden van een andere groep met de tijd tot positievere evaluaties van deze groep leid. Echter, dit werd enkel gevonden bij leden van een hogere status, meerderheidsgroep. Deze laatste bevinding is nieuw; verschillen in effecten van directe vriendschappen op intergroepsattituden als gevolg van groepsliddmaatschap zijn nog niet eerder bij kinderen aangetoond. Verlengde vriendschappen, daarentegen, bleken even sterk geassocieerd te zijn met positieve intergroupsattituden bij meerderheidskinderen alswel bij minderheidskinderen. Met betrekking tot de onderliggende psychologische processen bleek dat waargenomen sociale normen betreffende intergroepsvriendschappen een invloed hadden op directe en verlengde vriendschapseffecten enkel bij meerderheidskinderen. Geen mediatie-effecten van intergroepsangstigheid zijn gevonden. Deze laatste bevinding wordt toegewezen aan de ethisch diverse context waarin de studie plaatsvond. De bevindingen impliceren dat in de context van ethisch heterogene basisscholen, interventies gebaseerd op directe vriendschapseffecten met name functioneren bij kinderen behorende tot een hogere status, meerderheidsgroep. Het creëren van positieve sociale normen met betrekking tot vriendschappen tussen leden van verschillende groepen kan dit proces faciliteren. Interventies die gebaseerd zijn op verlengde vriendschapseffecten functioneren naar verwachting bij zowel kinderen die behoren tot een meerderheidsgroep alswel bij kinderen die behoren tot een minderheidsgroep.
Lebenslauf

Name                        Allard Rienk Feddes
Geburtsdatum                17. Januar 1980 in Hardenberg, die Niederlande
Familienstand               Ledig

Bildungsweg  
10/2004 – 10/2007 Friedrich-Schiller-Universität Jena, Deutschland
06/2004                     Diplom in Psychologie, Rijksuniverseit Groningen, die Niederlande
09/2003 – 02/2004 Simon Fraser University, Vancouver, Kanada
01/2002 – 06/2002 National University of Ireland, Maynooth, Irland
07/1998                     Abitur
08/1986 – 06/1992 Sjaloomschool, Hardenberg, die Niederlande

Berufserfahrung  
10/2004 – 10/2007 Forschungsstipendium zur Promotion, International Graduate College “Conflict and cooperation between social groups”, Friedrich-Schiller-Universität Jena, Deutschland
01/2001 – 04/2001 Studentische Hilfskraft, Rijksuniverseit Groningen, die Niederlande

Ehrenwörtliche Erklärung

Hiermit erkläre ich, dass mir die Promotionsordnung der Fakultät für Sozial- und Verhaltenswissenschaften an der Friedrich-Schiller-Universität Jena bekannt ist.


Ich habe weder die Hilfe eines Promotionsberaters in Anspruch genommen, noch haben Dritte unmittelbar oder mittelbare geldwerte Leistungen von mir für Arbeiten erhalten, die im Zusammenhang mit dem Inhalt der Dissertation stehen.

Die Arbeit wurde weder im In- noch im Ausland in gleicher oder ähnlicher Form einer anderen Prüfungsbehörde vorgelegt. Ich habe weder früher noch gegenwärtig an einer anderen Hochschule eine Dissertation eingereicht.

Ich versichere, dass ich nach bestem Wissen und Gewissen die Wahrheit gesagt habe und nichts verschwiegen habe.