It’s who you know and what you know

Exploring the relationship between education and prejudice in adolescence

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To my parents
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Abstract

Background. Previous studies have consistently identified an association between higher levels of education and lower levels of anti-immigrant sentiment, but the underlying reasons for this relationship remain unclear. Therefore, this research aims to help explain why education matters for attitudes toward immigrants. This thesis consists of two studies, where in I examine the role of two features of education, specifically the acquisition of knowledge and social relationships.

In the first study, I analyze how two aspects of teaching in schools are associated with anti-immigrant sentiment. I examine education as a means to knowledge by investigating whether the content of education, such as critical thinking and multicultural education, is inversely related to students’ prejudice. I also look into the certification of teachers and whether this has a similar effect.

In the second study, I investigate the school as an arena for social interaction and examine the relationship between outgroup contact and prejudiced attitudes. Previous research has found that outgroup contact, especially contact in the form of outgroup friendship, is effective in reducing prejudice. Based on these previous findings, I study how the Secondary Transfer Effect (STE) of friendship with a specific outgroup member is associated with attitudes towards other ethnic or racial groups.

Method. The two studies rely on a cross-sectional survey of Swedish high school students (aged 16-18) administered by ‘Forum för levande historia’ (Forum for living history) and Statistics Sweden during the 2009-2010 academic year. Additionally, survey participants’ responses are matched to registry data. This thesis also uses multilevel (MLM) and ordinary least squares (OLS) regression models.

Results. Results show that both aspects of education are correlated with lower levels of anti-immigrant sentiment. The first study, in which education is a means to knowledge, demonstrates that education focused on critical thinking and multiculturalism are negatively correlated with anti-immigrant sentiment. Furthermore, results show that more exposure to teachings about xenophobia and racism is associated with less prejudice. However, when controlling for exposure to critical thinking, as well as learning about religions and cultures, the results show that exposure to learning about xenophobia and racism are no longer significant. Moreover, there is a negative association between exposure to teachers with a teaching certification or teaching degree and prejudice.
Results from the second study, in which the school functions as an arena for social interaction, shows that positive attitudes associated with intergroup friendship not only generalize to the ethnic outgroup of that friend but, more importantly, also to other secondary outgroups. STEs are most frequently found where boundaries between ingroups and outgroups are perceived to be the thickest. Thus, the presence of STEs appears to be group-specific. Previous research on perceived social distance in Sweden and other countries help shed light on these findings.

In summary, the results of this thesis provide evidence of two different complimentary accounts of the negative relationship between education and prejudice.
List of original studies


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If you read only one sentence in this manuscript, let it be this: *when you fall, pick yourself up!* If there is anything I have learned through this process, it is the importance of persistence. However, getting help along the way, getting help to get up after each fall, has been essential. If not for the support of family, friends, and colleagues, I simply would not have finished this thesis.

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Introduction

Research consistently shows that one of the phenomena that unites the broad field of prejudice research is that education is associated with less prejudice (Pettigrew, 2000). Studies show that education is associated with lower levels of prejudice across many countries (e.g. Hjerm, 2001) and that the effect of education has remained stable throughout time (Semyonov, Rajman, & Gorodzeisky, 2006). However, the focus on the association between lower levels of prejudice and education remains very broad. Previous research in the field vary from investigating under what conditions democratic values take root in adolescents and how their political attitudes are shaped (C. Hahn, 1998; C. L. Hahn, 1999), to how cognitive abilities are associated with levels of prejudice (e.g. Hodson & Busseri, 2012). Other researchers have studied how school teachers’ knowledge about implementations of multicultural education, or the lack thereof, is associated with how they can combat racism in classrooms (Forrest, Lean, & Dunn, 2016). Another study suggests that increasing the average years of schooling is associated with less negative attitudes towards foreigners (Gang, Rivera-Batiz, & Yun, 2013), while another study shows how multiple career tracks in the university are associated with different attitudes amongst students (Sidanius, Pratto, Martin, & Stallworth, 1991).

Although research show that education is associated with less prejudiced attitudes, relatively few studies have investigated what exactly it is about education that is responsible for this association. Instead, education is often treated as a control variable without examining why education is linked to lower levels of prejudice (e.g. Hooghe & de Vroome, 2015). Moreover, most studies that seek to understand this relationship are focused on higher education—college or university education (see e.g. Hogan & Mallott, 2005; Lancee & Sarrasin, 2015; Sidanius et al., 1991). Only a few focuses on high school education and the age group between 16 and 18 years, despite this period being considered a part of one’s formative years. The present research aims to fill this gap.

Previous research has shown that attitudes towards outgroups\(^1\) are formed during our upbringing (e.g. Raabe & Beelmann, 2011), and once attitudes towards outgroups are formed, they tend to be stable across our lifespan (Henry & Sears, 2009; Miller & Sears, 1986). Research have found that the number of years in high school is significant in attitude development, including one’s attitudes

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\(^1\) Throughout this thesis, I discuss ingroups and outgroups. An ingroup is a group a person identifies with based on some salient shared features, while an outgroup is a group that a person does not identify with (see works on social identity theory by Tajfel & Turner, 2004; Turner, Brown, & Tajfel, 1979). Ingroups and outgroups are commonly used terms for discussing many categories, including perceived ethnic heritage, culture, race, or religion.
towards outgroups (Aboud, 2005; Henry & Sears, 2009). A recent longitudinal study has found that even one extra year in high school decreases anti-immigrant sentiment long-term (Cavaille & Marshall, 2018). Although the phenomenon of education has been repeatedly shown to negatively correlate with prejudice towards outgroups, less is known about what it is within education that has this effect.

My overall aim in this thesis is to investigate two different aspects of education — knowledge and social relationships — to understand better its relationship to prejudice. First, I examine education as a means to knowledge, specifically what is being taught and by whom. Previous research on multicultural education have pointed towards the importance of tools available to teachers in the education system, such as school curricula (e.g. Banks, 2001; Gay, 2004). However, what exactly in the curricula guidelines influence attitudes towards outgroups remains an underexplored area, especially in high schools. Second, I study school as a social arena that may facilitate contact between people from different ethnic or racial groups. Several previous studies have found intergroup contact is effective in reducing negative attitudes towards outgroups (e.g. Pettigrew, 1998a; Pettigrew & Tropp, 2012). Research in contact theory show that the quality of contact matters to the level of prejudice and that the most effective form of intergroup contact to achieve a more positive attitude towards outgroups is through intergroup friendships (Brown & Hewstone, 2005; Davies, Tropp, Aron, Pettigrew, & Wright, 2011; Pettigrew & Tropp, 2012). However, how adolescent friendships with a specific ethnic outgroup is associated with attitudes towards other specific, ethnic outgroups is a less explored area in the field of contact theory, also referred to as the Secondary Transfer Effect (STE) (e.g. Lolliot et al., 2012; Pettigrew, 2009; Tausch et al., 2010).

I conduct these two studies using different versions of the same cross-sectional Swedish data set from 2009-2010 on anti-immigrant sentiment.
Theoretical Background

Prejudice is a broad term that includes “anti-immigrant sentiment,” “anti-immigrant attitudes,” and “negative attitudes” towards other groups. For this thesis, these three terms are used interchangeably. I also use the terms “outgroup” and “minority group” interchangeably, since the study focuses only on the majority group’s attitudes towards minority groups—and not the other way around. Thus, ingroup attitudes and majority group attitudes are one and the same.

The formative years

As mentioned in the introduction, I study adolescents’ attitudes during ages 16-18. Adolescence is the period when people are formed in many ways, and attitude formation is no exception. Previous studies have, for example, shown that racial prejudice develops during adolescence (e.g. Miller & Sears, 1986; Sears, 1983, 1988). Attitudes formed during this stage also appear to be consistent over one’s lifespan (Henry & Sears, 2009; Sears & Funk, 1999). Other evidence showing how crucial adolescent years are seen, for example, in political events. Pre-adult political events can generate predispositions that last a lifetime (Sears & Valentino, 1997). Moreover, previous research has found evidence that outgroup contacts made early on in life continue to have an impact on people’s lives and attitudes as they mature. Adults who have been in contact with individuals from outgroups during their upbringing are more likely to have ethnically diverse friendships (Ellison & Powers, 1994). Other studies show that children and adolescents, who have friends from outgroups, tend to keep that contact with outgroups even when they are adults (Crystal, Killen, & Ruck, 2008; Emerson, Kimbro, & Yancey, 2002). Adolescent years are, thus, formative also from the perspective of cross-group friendships.

One reason to examine adolescence is that friends are becoming increasingly important for individuals during these years than they are during childhood. Therefore, norms amongst friends and outgroup contacts have a larger impact on adolescents’ attitudes than on younger individuals (Aboud, 2005). Research has shown that people follow norms of social groups meaningful to them, either of groups to whom they already belong or groups they wish to belong to (Crandall & Stangor, 2005). This is particularly true for adolescents who are in a period of their life when they search for their identity (Aboud, 2005). As a part of their

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2 Attitudes towards racial or ethnic groups have been found to be formed throughout the adolescent years. Thus, this period is considered the formative years. Research about attitude formation towards racial attitudes mainly cover the pre-adolescent period (Miller & Sears, 1986; Sears, 1988); fewer studies focus on socialization effects on attitude formation towards ethnic or racial groups in the mid- and late-adolescent years.
identity search, conforming to social norms is important. Conforming to norms can both cause and reduce prejudice since “... people from the same social culture tend to hold the same prejudices” (Crandall & Stangor, 2005:296). Thus, local norms and the cultural context people live in play a part. Additionally, Crandall and Stangor (2005) state that people who feel supported in their prejudiced beliefs have been shown to not change easily; but those who do not feel supported are more likely to change their beliefs. If conformity influences peoples’ social norms, and adolescence is the formative years when social norms are learned, then it is perhaps especially relevant to study adolescents in the environment where they spend most of their time. Such environment is the school.

**Previous explanations of the relationship between education and prejudice**

In the following section, I discuss previous research that in different ways attempt to explain how and why education is linked to lower levels of prejudice. One of the main explanations as to why education is linked to lower levels of prejudice is that schools act as socializing agents and foster children into the norms of the democratic society (Bowles & Gintis, 1976). Schools serve as socializing agents through teaching knowledge and by providing students with an intellectual environment, as well as facilitating an arena for students’ social interactions. At school, individuals who are not previously connected take classes together as schools gather people from across societies. Therefore, students are provided with an environment where social connections take place with people other than their family (Vogt, 1997). Previous research has found that “adolescents in a wide range of cultures believe that equality, justice, and fairness apply to individuals everywhere” (Killen, Killen, & Smetana, 2005; 157). One’s attitude towards fairness and justice are formed by parents, peers, and within the educational system (Killen et al., 2005). The size of a city or a region where one is raised is also found to be important to forming one’s attitudes (Miller & Sears, 1986). Thus, there are many aspects of an adolescent’s environment that function as socializers. However, for young adults (aged 18-27), socialization in schools has been found to have a greater potential to affect students’ attitudes than other environmental factors (Hello, Scheepers, Vermulst, & Gerris, 2004). Credentialed teachers are trained leaders of the classrooms and as such they are responsible for a number of tasks, including introducing informal rules of fairness, equality, and justice to students (Riksdagsförvaltningen, 2018). Thus, credentialed teachers should be better equipped to uphold the norms of fairness, equality, and justice for all students, regardless of students’ ethnic heritage or perceived ethnic heritage. The norms of procedural equality and justice are considered to be of great importance for tolerance to other people’s ideas and group differences (Vogt, 1997). Moreover, a cross-national study (Hello, Scheepers, & Gijsberts, 2002) found results supporting that education remains...
the main explanation to lower anti-immigrant sentiment, despite controlling for a variety of factors, such as ethnic compositions and employment rates. Schools, therefore, are a socializing agent that transmits knowledge, norms, and values to students.

Another explanation is that the level of education has been found to be an indicator of one’s social status in society. This is shown in part by the classic realistic conflict theory, which explains people’s level of prejudice in connection to competition between groups for scarce resources (e.g. Blalock, 1967; Hello et al., 2004; Quillian, 1995; Scheepers, Gijsberts, & Coenders, 2002). According to the theory, higher education indicates a higher social position in society. The higher the social status, the lower the threat and lesser the competition from ethnic or racial outgroups for opportunities such as in the labor market, housing, and schools (Hello et al., 2002; Meeusen, de Vroome, & Hooghe, 2013). Additionally, Meyer (2011) argues that education, or the lack thereof, allocates people to different positions in society. According to allocation theory, having attended higher education or not matters more for an individual’s social status and opportunities in society than the specific school one has attended.

Yet another way to explain the effect of education on anti-immigrant sentiment is through selection. This means that less prejudiced individuals pursue higher education to a greater extent (Lancee & Sarrasin, 2015). A commonly discussed possible explanation as to why education is correlated with less prejudice is social desirability. Social desirability is not a new phenomenon. In 1954, Allport observed white Americans’ inner conflict, between their learned egalitarian values and the racial prejudice against African-Americans, as seen in peoples’ everyday lives. Many white Americans felt this conflict over their own or others’ reactions when they did not match the egalitarian value of equality. It is possible that people with higher education have learned how to talk about sensitive topics to avoid social sanctioning. There is research, for example, that shows that highly educated Americans still have prejudice but have learned not to show it (Jackman & Muha, 1984) and that white Americans are friendlier to African-American interviewers than white American interviewers (e.g. Sanders & Kinder, 1996; Schuman, 1997). However, more recent research questions these findings in survey research, saying: “... the existing evidence does not indicate that such biases are powerful enough to render survey measures invalid” (Sears, 2005: 355). In Europe, another study found that social desirability is not associated with education’s effect on intergroup attitudes (Knudsen, 1995).

Despite there being a number of accounts, my thesis focuses only on one of these explanations: socialization in schools. I study how knowledge and values are transmitted by the educational system through its intellectual and social environments. While other explanations are well established, they do not identify
what features of the educational system are important, which is the goal of my research. The above mentioned research also tends to focus on students in higher education and not younger high school students, who have not yet selected in or out of higher education. Lancee & Sarrasin’s (2015) conclusions are based on an analysis of a broad range of youth and young adults, and may not hold for high school students. By focusing only on students aged 16-18, I can evaluate the role of education in compulsory school. This approach offers another additional benefit, namely that high school students receive more comparable education than students do when starting different tracks at university. Finally, social desirability should be addressed because it is commonly used in the field, but it is not the focus of my thesis, partly due to my chosen methods and dataset.

While previous research described above has increased our understanding of the relationship between education and attitudes towards outgroups, these explanations are not sufficient to fully explain the link between education and prejudice. Some scholars claim that education, and especially higher education, has a liberalizing effect, where education socializes students into more democratic attitudes and egalitarian values. Other researchers claim that higher education is what trains people into higher positions in society, with skills that are more sought after and thus reduces perceived threats from ethnic minorities (Lancee & Sarrasin, 2015). However, regardless of differences in theoretical explanations as to why education is linked with lower levels of prejudice, the abovementioned theories support that education is in fact associated to lower levels of prejudice.

My contribution
Despite the large body of research on this field, studies focusing on how the instructional content of schooling during adolescence affects anti-immigrant sentiments are still lacking. There is also a lack of studies focusing on how the social environment in high schools is associated with how students make their contact with other ethnic or racial groups. In other words, only a few studies focus on what it is in the school’s environment that explains the link between education and less prejudiced attitudes.

I wish to contribute to the field of prejudice research by studying Swedish adolescents in high school from two different aspects — knowledge and socialization. This is on the assumption that first, education is a means to knowledge, meaning the educational system contributes to the acquisition of knowledge through what is taught in school and by whom. In the first study, I focus on how critical thinking, multicultural education, and credentialed teachers are associated with less anti-immigrant attitudes. Second is that the schools are an arena for social interaction. From this point of view, schools are a place that
make social interactions happen, potentially in the form of intergroup contact between the Swedish majority group and several ethnic minorities. I look into how individual intergroup friendships are associated with attitudes towards secondary ethnic outgroups amongst adolescents.

In my second study, I examine how individual friendship between native Swedes (defined here as the ingroup/majority group) and people with Arabic/African/Finnish/Jewish/Roma heritage (defined here as outgroups/minority groups) is associated with attitudes towards the secondary outgroups Arabs/Africans/Jews/Roma (also defined here as outgroups/minority groups) as well as attitudes towards immigrants (also defined as an outgroup/minority groups).

I want to emphasize that for most adolescents, there is no other single activity besides their time spent in school that occupies their time awake (Jackson, 1990). School is a place where this age group spends plenty of time regardless if they are in class, on a break, or spending time studying within the school facilities. Within school as an educational system, I introduce two aspects that help explain what it is within the school and education that is associated with anti-immigrant sentiment. The first aspect is education as a means to knowledge and the second is school as an arena for social interaction. In each aspect, I introduce the theories I used to help me derive my explanations.

**Education as a means to knowledge**

In this thesis, my definition of education as a means to knowledge includes two broad things. First, I study both generic skills that permeate the school system as well as specific skills taught based on curricular guidelines (Banks, 2001; Gay, 2004). Where education is a means to knowledge explains how curricula-based education, such as instruction and content knowledge, is associated with anti-immigrant sentiment. In this thesis, education as a means to knowledge includes two aspects. First, critical thinking, multicultural education, and teaching of xenophobia and racism. Second, comparing credentialed teachers and non-credentialed teachers and how they are associated to lower levels of anti-immigrant sentiment of the students. In Swedish schools, there are both credentialed teachers as well as teachers who are not credentialed. Teachers are the leaders and role models of the classrooms and as such, shape the curricula-based knowledge taught to their students. I go deeper into the curricula-based education and how teachers influence their students’ attitudes in the following sections.

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3 Here, ‘native Swedes’ are defined as Swedish-born student with two Swedish-born parents. From here on this is what I mean by this term. Please see data and methods for more details.
Curricula-based education

Curricula-based education concerns different skills taught to students. One of these skills is critical thinking. Critical thinking permeates all education taught in the Swedish school system (Swedish National Agency for Education, 2018a). It is a highly valued skill that can be considered to act like latent curricula in education⁴. Critical thinking is defined as a cognitive progress that can be learned and developed (Daly, 1998; R. Paul & Heaslip, 1995; R. W. Paul, 1984; Walsh & Paul, 1986). It is a rational thinking skill we use when we decide what to believe in. Thus, critical thinking is associated with the way we think of the world and understand our reality. In a review (Pithers & Soden, 2000), critical thinking is also considered a generic ability that includes skills or knowledge, such as collecting information, analyzing and organizing information, problem-solving, and communicating. It is also about being able to distinguish and focus on a problem, to evaluate skills, and to judge the information and/or data on both validity and reliability. It is a method of higher meta-cognitive reasoning that can be learned in one context and then applied in another. It is often the combination of “good thinking” and “good knowledge” that has been found to have the best results (e.g. Bereiter & Scardamalia, 1993). Yet another definition about critical thinking is that it includes reflection and reasoning when deciding what to think or do (Ennis, 1993). Research has shown that training in critical thinking and self-regulatory judgment is correlated to less prejudice, because training in higher order thinking is associated with an understanding that if individuals from outgroups perform a negative action, it stands for them and not the whole outgroup (e.g. see a meta-analysis by Abrami et al., 2008).

Another broad skill distinguished in curricula-education is multicultural education. Multicultural education here is defined in the school curriculum as knowledge about different religions and cultures, as well as knowledge about racism and xenophobia. If critical thinking, on the one hand, functions as a latent curriculum in education, multicultural education, on the other hand, is taught as a specific curriculum in Swedish schools. In high school, the conduct of teaching is grounded on the school’s curricula and students are graded based on their performance and knowledge gained on various subjects.

Originally, multicultural education is rooted in ethnic studies⁵ and is influenced heavily by African-American scholars and other ethnic minority groups in the

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⁴ Perceived education in critical thinking could vary between programs and, thus, high school program is a control variable in Study 1.
⁵ Multicultural education and ethnic studies both originated in the USA. Definitions of ethnic studies vary between universities and somewhat over time. However, it is an interdisciplinary field that mainly spans social sciences and humanities and is born out of the civil rights movements. Ethnic studies challenges ethnocentrism and seeks to recover the neglected history of minority people, but also includes sexuality and gender (Hu-DeHart, 1993).
United States (Banks, 2001). Multicultural education developed to improve ethnic and race equity in the United States and with time came to include gender equality. Multicultural education refers to a specific type of knowledge, which aims to teach students about different outgroup perspectives, and one potential outcome is that with knowledge gained, outgroup prejudice decreases. However, the field of multicultural education is broad and there is a somewhat lacking consensus as to what exactly should be the approach (Sleetner & Grant, 1987), although there is a clearly defined and agreed upon goal (Banks, 1993). This goal is to create education equality for different ethnic, racial, gender and class groups. This goal also matches the goal in the Swedish Education Act (2010:800). The general assumption about multicultural education is that it has one main focus, namely curriculum that may influence attitudes towards ethnic or racial groups (Banks, 1991, 1993; Gay, 2004). However, multicultural education also includes more aspects, for example, how knowledge is constructed. In the knowledge construction process, teachers play a vital role when it comes to helping students understand how knowledge is put together and understood from the perspective of different ethnic or racial groups (Banks, 1993). From this point of view, the role of credentialed teachers matters because they are expected to be better equipped in helping students construct knowledge, in a connection to the Education Act.

**Credentialed teachers**

The second part of education as a means to knowledge looks into the role of credentialed teachers. Teachers are responsible for students’ education and what knowledge students learn in schools. Credentialed teachers in Sweden undergo training at universities as well as practical training in schools to earn their degree. Although schools ideally want to fill all teaching positions with credentialed teachers, some employ non-credentialed teachers when there is none available (Swedish National Agency for Education, 2018c). In this section, I will first discuss how teachers matter to students’ learning from the perspective of social learning theory. Second, I will discuss how credentialed teachers’ training and understanding of curricula and the Swedish Education Act (2010:800) might impact their students differently than uncredentialed teachers who lack this training.

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6 The Swedish Education Act (2010:800) states that: “The national school system is based on democratic foundations. The Education Act (2010:800) stipulates that education in the school system aims at pupils acquiring and developing knowledge and values. It should promote the development and learning of all pupils, and a lifelong desire to learn. Education should impart and establish respect for human rights and the fundamental democratic values on which Swedish society is based. Each and everyone working in the school should also encourage respect for the intrinsic value of each person and the environment we all share.” (Swedish National Agency for Education, 2018b:5)
A classic social psychological theory is social learning theory (Bandura, 1977). According to it, humans learn in social contexts by watching other humans and through that observation gain new ideas and behaviors that are later imitated and applied in different circumstances. One such social context is schools. Previous research has found that teacher’s moral standards shapes the norms in the classroom and amongst students (e.g. Killen et al., 2005; Vogt, 1997). Teachers have been found to set these norms not just by what they say and how they say it, but also through facial expressions and body language. Morals become a part of the attitude they teach students, intentionally or unintentionally (Vogt, 1997). In schools, students compete for their teacher’s attention and approval (Aronson & Patnoe, 1997). How well a student manages to show their teacher that they are performing good can have a direct impact, not just on the teacher’s approval but also on the student’s grades. Teachers thus influence norms in the classroom. According to the social learning theory, behavior is adjusted in relation to the approval or punishment of actions or attitudes, either directly (e.g. a student who is told they did a good/ bad thing) or indirectly (by fellow students observing the interactions in the classroom). This is known as ‘vicarious reinforcement’. Thus, rewarded attitudes and behaviors have a chance to remain, whereas, punished attitudes and behaviors are more likely to slip away (e.g. Albert Bandura, Ross, & Ross, 1963). Vicarious reinforcement can apply to teaching in at least two ways. First, it can affect the learning environment and encourage students to study, discuss, and learn the curricula-based knowledge presented by the teacher. Therefore, social learning theory indicates that more knowledge also brings a better understanding of a phenomena (Banks, 1991). In other words, more knowledge about different religions and cultures should decrease negative attitudes towards outgroups. Second, because the teacher is the “leader” in the classroom, students imbibe their norms and attitudes and often adjust to them (Aronson & Patnoe, 1997).

Education includes interplay between the teachers’ interpretation of the school curricula and the students.’ How teachers teach a class based on the school curricula and what the students take away from the class can somewhat vary, especially since teachers have within their mission to make their education reach each individual student (Riksdagsförvaltningen, 2018). Education is, thus, a constant interplay between teachers and students where the teacher-student relationship is associated with achievements (Hattie, 2009; Rockoff, 2004), motivation, and learning (Rimm-Kaufman & Sandilos, 2016). From this perspective, it matters whether or not the teacher is credentialed. In relation to adolescents’ attitudes towards immigrants, there are two potential aspects connected to the teacher. First, previous research has shown that students in general learn more from credentialed teachers. This has been shown through examples by studying students’ grades and the level of teacher education; where it has been found that students who study under credentialed teacher also achieve
higher grades (Rockoff, 2004; The Swedish Schools Inspectorate, 2010). Thus, it is reasonable to assume that the teacher’s level of education can also impact other parts of education such as curricula-based instruction (e.g. critical thinking and multicultural content). Second, credentialed teachers have undertaken teacher training, including both subject-specific training and training in upholding liberal democratic values as stated in the Swedish Education Act (2010:800). This training includes upholding social norms that promote liberal democracy, as well as actively dealing with intolerance and racism when encountered. It is worth remembering that in schools, teachers are the leaders of the classrooms and as such they are in charge of the social interactions and what is being taught to students inside the classrooms (Kernell, 2002). Teachers are trusted to manifest the curriculum in the classroom as they find best. As leaders, teachers also act as role models to the students and how they react to different situations can potentially impact the students learning (e.g. Irvine, 1989; Shein & Chiou, 2011). Thus, students exposed to more time with credentialed teachers should also show lower levels of anti-immigrant sentiment.

School as an arena for social interaction

In this thesis, I also focus on school as an arena for social interaction. The educational system does not just concern the curricula and other tools used by teachers. The educational system of schools may also facilitate contact between different ethnic or racial groups. Based on theories about critical thinking, multicultural education and intergroup contact, I argue that both the educational knowledge aspect and the social aspect of the educational system are crucial in shaping adolescents’ attitudes towards ethnic and racial outgroups. Therefore, I also study adolescents’ social interactions and intergroup friendship. Below I will discuss three theories or approaches relevant for the second empirical study in the thesis. First, how school as an arena for social interaction may facilitate interactions between adolescents from different ethnic groups. Second what intergroup contact theory and STE are, as well as how intergroup contact theory and STE decrease anti-immigrant sentiment. Third, how research about social distance and perceived ethnic hierarchies help explain why STE differ between outgroups.

The school is an arena for adolescents where social interactions take place. As stated earlier, adolescents spend a lot of their time in schools. Adolescents attend education together but they also spend much time together in schools even when not in class. Group constellations for assignments are not always decided by students but often by teachers. These group assignments also often require adolescents to meet and work together between classes. However, students also spend a lot of time in school the way they choose to. Adolescents have breaks together, where they spend time with the friends they make in school or people
they take classes with, among other social interactions taking place in school. Thus, education may facilitate many opportunities for students to meet and the longer a person spends time within an educational system, the more opportunities are presented to the person to have social relationships with outgroups (Hello et al., 2004). Previous research has found associations between intergroup contact in schools and increased integration in schools (Emerson et al., 2002). To have contact with outgroups decrease negative attitudes towards outgroups amongst adults (Pettigrew, 1998a, 2008) but outgroup contact in schools has also been found to be associated with less negative attitudes towards outgroups amongst children (Hughes, Campbell, Lolliot, Hewstone, & Gallagher, 2013).

Some of these social aspects that take place within the educational system are mentioned also in the multicultural educational theory discussed above, such as personal development and social reform (Gay, 2004). Some multicultural researchers (e.g. Sleeter & Grant, 1999) even suggest that “the goal of education is not merely to teach students to fit into the existing workforce, social order, and political structure but also to transform them” (Gay, 2004:39). This reasoning opens up different aspects of social conscientiousness in the school milieu (Gay, 2004). As an arena for social interaction, school is a place where contact between outgroups may happen. Moreover, more ethnic diverse classrooms are connected to more positive attitudes towards multiculturalism (Geel & Vedder, 2011). In one study it was even found that children at a heterogenic elementary school who had a direct friendship with someone from another ethnic group were predicted to have more positive attitudes towards outgroups over time (Feddes, Noack, & Rutland, 2009).

The school as an arena for social interaction also plays a part in the growing multicultural society. In a multicultural society, the school is increasingly considered as being the place where not just democratic values but also social cohesion should be fostered (Oller, Vila, & Zufiaurre, 2012). Schools thus have an opportunity to shape students’ attitudes through social activities, as much as through teaching them curricula-based skills. The reason schools have an opportunity to shape their students is because education is compulsory for high school students. Thus, students show up for their education every day, just as adults show up for work every day. Therefore, students who are put together in a class might be strangers to each other at the beginning, but through time get the opportunity to know each other better. There is also the proximity as most students attend the school that is close to where they live. This nearness makes the school a place for adolescents to make new contacts, become a part of networks, and make new friends. Schools therefore offer opportunities for interethnic friendship that otherwise might never happen. Friends are important in many ways, especially to teenagers because it is during these years that they
start to spend time outside family and find their own identity. Kuhn (Kuhn, 2004) found that friends are important when it comes to attitudes towards immigrants.

**Intergroup contact theory**

Intergroup contact theory states that outgroup contact decreases prejudice towards a multitude of outgroups (Pettigrew, 1998a), while intergroup contact in school has been found to have a strong association to more positive attitudes towards ethno-religious outgroups (Hughes et al., 2013). School as an arena for social interaction may facilitate how intergroup friendship is associated with attitudes towards outgroups. Intergroup friendship is softer and subtler than education as a means to knowledge. It is also not a formal component in the official school curricula. However, it is an aspect that can help explain the contextual effects of the educational system. Below I describe how intergroup contact is negatively associated with prejudice.

With today’s vast empirical support, we know that outgroup contact is, in most cases, very effective to reduce prejudice (to mention a few studies: Dhont, Van Hiel, & Hewstone, 2014; Hughes et al., 2013; Pettigrew, 1998a, 2008; Pettigrew & Tropp, 2005, 2006, 2008, 2012). Therefore, the four conditions Allport (1954/1979) (equal status exists between the groups, common goals, no competition between the groups, and an authority sanctions the contact, for example, the government, the law, or a social norm) puts forward for outgroup contact to be successful are no longer considered necessary, but facilitating. In other words, positive contact between outgroups may occur without Allport’s conditions. In a meta-analytic study Pettigrew & Tropp (2008) explain the process of how contact theory works. They find that three things mediate contact theory and help explain why and how contact theory works. First, contact is mediated through an increased knowledge about outgroups. Second, intergroup contact reduces anxiety. Third, intergroup contact increases empathy towards outgroups. All three mediators have an effect, with reduction of anxiety and empathy found to be the two stronger paths. Moreover, it has also been established that if contact offers an opportunity for self-disclosure so friendship can grow between outgroups, it has an even stronger positive effect (Ellison & Powers, 1994; Pettigrew, 1998a; Pettigrew & Tropp, 2006; Powers & Ellison, 1995). The positive effect of contact does not just include the outgroup friend, but positive attitudes are generalized to the entire outgroup the friend belongs to (e.g. Pettigrew, 1998a)- this is referred to as the Primary Transfer Effect (PTEs; Pettigrew, 2009). The secondary transfer effect (STEs; Pettigrew, 2009) is a direction of intergroup contact theory that aims to explain how expansive attitude generalization of contact is (e.g. Harwood, Paolini, Joyce, Rubin, & Arroyo, 2011; Hughes et al., 2013; Lolliot, 2017; Lolliot et al., 2012; Pettigrew, 1997, 2009; Tausch et al., 2010). The effect of friendship on outgroup attitudes can be so
strong that it transfers not just to the primary group the friend belongs to, or is perceived to belong to, but also to secondary outgroups. Some of the earlier studies on STE include an American study where it is found that the contact between white and black soldiers not only lessened black soldiers’ negative attitudes towards the American white soldiers, but the group has also shown more positive attitudes towards the Germans (Weigert, 1976). In more modern times, STEs mean that positive attitudes generated via contact with immigrants of one ethnic group are generalized to other immigrant and minority groups (STE) (Pettigrew, 1997; Pettigrew & Tropp, 2012; Schmid, Hewstone, & Tausch, 2014). For example, positive contact with immigrants is also related to positive attitudes towards homosexuals (e.g. Schmid, Hewstone, Küpper, Zick, & Wagner, 2012) and the disabled (Vezzali & Giovannini, 2012). Moreover, research on STEs have developed from studying primary contact with immigrants to studying primary contact with someone who identifies as lesbian or gay and has been found to be associated with positive STE towards the smaller and lesser known transgender group (Flores, 2015). A recent study has also found support for STE through ethnic intergroup contact online (Lissitsa & Kushnirovich, 2018). Although longitudinal studies on this field remain sparse, those conducted have found STE to be consistent across different contacts and settings (Eller & Abrams, 2004; Laar, Levin, Sinclair, & Sidanius, 2005; Tausch et al., 2010). However, how STE works and why are questions that remain to be answered. The majority of existing studies investigating STE and immigrant groups or ethnic groups often categorize contact with immigrant groups into one all-encompassing immigrant group and then test if knowing an immigrant can generalize attitudes towards secondary groups. Therefore, previous studies on STE offer limited insight into the effect of individual friendship ties between a majority ingroup and several specific ethnic outgroups/minority groups on attitudes towards other specific ethnic outgroups/minority groups.

As I move on, I want to address the direction of effects, which is a common criticism to studies providing support for contact theory. Critics argue that less prejudiced and more open individuals may seek outgroup contact; whereas more prejudiced and less open individuals may avoid coming into contact with outgroups. Although it has been shown in research that more prejudiced individuals do avoid contact (e.g. Herek & Capitanio, 1996), research within contact theory has also found evidence for contact lowering prejudice in longitudinal data (e.g. Binder et al., 2009; Eller & Abrams, 2003, 2004). Indeed, research mentioned above has shown that the relationship between outgroups contact and reduced prejudice appears to be the stronger one.
How social distance and perceived ethnic hierarchies help explain why STE differ between outgroups

People subjectively perceive social distance differently to different outgroups and based on perceived distance, people rank groups. The reasons for ranking vary. Four identified reasons for perceived social distance are immigrant groups new to the society (Hagendoorn, Drogendijk, Tumanov, & Hraba, 1998), perceived social distance between culture and lifestyle (Snellman & Ekehammar, 2005), race or phonotypical differences, different religion and language (Verkuyten & Kinket, 2000), and, finally, socioeconomic status of the outgroups, where groups with lower socio-economic status are also ranked lower (Lange, 2000; Verkuyten, Hagendoorn, & Masson, 1996). Research has found that perceived social distance is rather similar across European countries (e.g. Hraba, Hagendoorn, & Hagendoorn, 1989; Snellman & Ekehammar, 2005) as well as in other parts of the world (Axt, Ebersole, & Nosek, 2014; Berry & Kalin, 1979; Hagendoorn et al., 1998; Pettigrew, 1960). A common pattern found in this social distance literature is that the ingroup, regardless of country, is ranked at the top (Hagendoom & Hraba, 1987). Perceived ranking of ethnic outgroups (after the country’s main ingroup) identified in the literature finds Northern Europeans at the top, followed by East and South Europeans and with groups from African countries and the Middle East at the bottom (e.g. Hagendoorn, 1993; Hagendoorn et al., 1998; Snellman & Ekehammar, 2005). It can be argued that ethnic hierarchies and boundaries only exist in peoples’ minds but what is perceived by the mind has been shown to have consequences in real life (Lange, 2000). Social distance research thus aims to explain how group boundaries are based on perceived social distance between groups and how ethnic hierarchies are built depending on subjective perception of differences and similarities. The larger social distance is perceived to be between ingroups and outgroup, the thicker the boundary between groups (Lange, 2000).

In this thesis, I rely on previous research on perceived social distance to help explain the variation in attitudes towards different ethnic outgroups. Intergroup contact theory assumes that all outgroup contact has equal effects on attitudes. In other words, intergroup contact theory does not take into consideration that the effect of outgroup contact can vary depending on ethnic membership or subjective social boundaries. Further, intergroup contact theory does not take into consideration how STEs might be associated with varying outgroup contact. Thus, knowledge of subjectively perceived ethnic hierarchies and social distance can provide insight into the likelihood of STEs. I argue that STEs should vary depending on subjectively perceived social distance between ingroups and outgroups. Where intergroup friendship cross perceived thick social boundaries, there should be evidence of a STE.
Data and Methods

Country context

Education is compulsory for all children and adolescents in Western Europe (Garrouste, 2010). Therefore, schools become one of the most central organizations in today’s society, being an organization that includes students from across the entire population, regardless of social class, gender, ethnic- or racial backgrounds, religious backgrounds or sexual orientation (Riksdagsförvaltningen, 2018). The school is therefore an organization that can lay the foundation for a democratic society in a way that no other institution or organization in society has the means to do. In fact, because schools have a major impact on people and nations, a part of the post-war educational aim in Western Europe has been to decrease prejudiced attitudes and this has been done through, for example, increasing the number of years of compulsory education for all children and adolescents (Cavaille & Marshall, 2018). Sweden is no exception to this. All education in Swedish schools is based on the Swedish Education Act, which rests upon the backbone of the United Nations Declaration of Human Rights. The Education Act permeates the entire school system, all school curricula and sets the frames within the law for social norms and values to be taught and upheld. The Education Act explicitly states that one of the missions of teachers and school staff is to educate students in the values of liberal democracy and human rights, as well as to actively work for equality and against discrimination (Education Act 2010:800). In the Swedish educational system, children start primary school at the age of seven and attend a minimum of nine years of compulsory schooling. After the first nine years of schooling, high schools offer three-year programs. High schools in Sweden are not compulsory per se, but once a student has accepted a place in one of the high school programs they become compulsory for the student. The multitude of programs adolescents can choose from are divided into two main categories: theoretical programs, which prepare students for a wide range of higher studies and the vocational programs, which prepare students for different lines of work after graduation. Many programs also offer students opportunity to pursue a higher degree afterwards.

Data

I use the survey data of high school students collected by Statistics Sweden for ‘Forum för levande historia’ (Forum for living history). Statistics Sweden collected the survey data in academic year 2009–2010. The students, aged 16-18, attended year 1 and 3 in high school. Most or 91 percent of the high school students are born in Sweden and the majority, 70.6 percent, born to two Swedish-born parents. Students with one parent born in another country comprise 10.1 percent of the survey respondents and students with both parents born in another
country are 10.3 percent. Only 9 percent of the students are born abroad with both parents also born abroad (see Table 1).

Table 1. Ethnic background of students

<table>
<thead>
<tr>
<th>Variable</th>
<th>Freq.</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Born abroad &amp; both parents born abroad</td>
<td>419</td>
<td>9.0</td>
</tr>
<tr>
<td>Born in Sweden &amp; both parents born abroad</td>
<td>480</td>
<td>10.3</td>
</tr>
<tr>
<td>Born in Sweden &amp; one parent born abroad</td>
<td>471</td>
<td>10.1</td>
</tr>
<tr>
<td>Born in Sweden &amp; two Swedish born parents</td>
<td>3,297</td>
<td>70.6</td>
</tr>
<tr>
<td>Total</td>
<td>4,667</td>
<td>100 %</td>
</tr>
</tbody>
</table>

Note: 1) In study 1 all four ethnic background categories were used in the analyses. In study 2, I used a restricted sample of students born in Sweden with both parents born in Sweden. 2) n = 4667 because seven individuals have unknown ethnic background and have thus been removed from this variable. N (total sample) = 4674.

Data collection followed Statistics Sweden protocol for gathering adolescent data. There are 1,005 high schools in Sweden. Students with a foreign background are a relatively small group and in order to be able to study this group in more detail, a stratified unbound random sampling method is used to produce a sample of 200 schools. The schools were used as a second frame and 431 classes in total were chosen, at least one class per school. The total number of students in a school is considered when sampling as well as the number of students with foreign background. 154 high schools agreed to participate, for a total of 4674 students (Löwander & Lange, 2010). The final sample consisted of at least one class per school and in total 328 classes. The initial sample consisted of 36 more schools7. Respondents participated voluntarily, while the headmasters of the 36 schools declined to participate, saying their students have already participated in several surveys of late and have been tired of doing so. Majority of the schools that declined to participate are located in the larger cities of Sweden. The full survey contains 40 questions. The questions were formulated by a group of experienced researchers and many of which previously been tested in validated batteries, such as the European Social Survey (ESS). Moreover, register data from Statistics Sweden are added to include, for example, the socio-economic characters of school areas. Additionally, data are included for the high schools’ density of teachers and teacher certification. This data, thus, offer an opportunity to

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7 In study 1 an error was made where we wrote that forty-six schools declined participating, instead of thirty-six. This error was found after the study had gone to print.
compare students’ attitudes, not just between individuals, but also between schools. Moreover, SAMS data\textsuperscript{8} were added to measure family income, and finally, parents’ university education is included from the register of total population and matched to the survey data.

Many adolescents with foreign background live in one of Sweden’s three biggest cities, Stockholm, Gothenburg, and Malmö. Sampling procedures thus include oversampling of high school students with a foreign background in these three bigger cities. Forty percent of participants live in these cities, while the rest of the sample (60%) live in the rest of Sweden\textsuperscript{9}. To collect the survey, Statistics Sweden has sent field-staff to each school that have agreed to participate. The field-staff met the students and teachers in their respective classrooms during the school day. They introduced and administered the survey in the schools, as well as supervised the students to make sure they worked independently while answering the survey. All students in the sample participated voluntarily, while only a few declined to answer the survey (translating to a response rate of 75 percent, and the majority of the 25 percent who did not answer the survey were absent from school that day for various reasons, for example, internships).

Differences in data between the sample and the total population of students that year exist in three areas, because of the chosen method to over-sample students with immigrant-backgrounds. More students in the sample (1) have chosen to study in a vocational high school program, (2) are living in one of the three biggest cities, and (3) are students of parents born outside the Nordic countries. This difference is, to a large extent, the consequence of the stratified sample with 40 percent of the sample coming from Stockholm, Göteborg and Malmö (Löwander & Lange, 2010).

Table 2. Descriptive statistics of school-level or school-area variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>S.D.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion high income in school area</td>
<td>.29</td>
<td>.06</td>
<td>.13</td>
<td>.64</td>
</tr>
<tr>
<td>Proportion unemployed in school area</td>
<td>.04</td>
<td>.01</td>
<td>.02</td>
<td>.08</td>
</tr>
<tr>
<td>Proportion households in rental homes</td>
<td>.27</td>
<td>.12</td>
<td>.05</td>
<td>.74</td>
</tr>
<tr>
<td>Proportion certified teachers at schools</td>
<td>.72</td>
<td>.19</td>
<td>.04</td>
<td>.97</td>
</tr>
<tr>
<td>Average grade</td>
<td>13.94</td>
<td>1.42</td>
<td>10.44</td>
<td>18.20</td>
</tr>
<tr>
<td>Teacher ratio, per 100 students</td>
<td>7.91</td>
<td>2.21</td>
<td>1.5</td>
<td>19.2</td>
</tr>
</tbody>
</table>

Note: 1) N(schools)= 154. 2) Proportion of high income in school area and proportion certified teachers can also be found in study 1, Table 1. 3) Average grade at the school: Grades range from 0-20, where 10 is passing.

\textsuperscript{8} SAMS=" Small Area Market Statistics. A database that use digitalized maps divided into smaller social ecological meaningful areas" (authors translation, from Löwander & Lange, 2010).

\textsuperscript{9} Data do not include weights on individual level.
Table 2 (above) describes school-level and school-area variables. Table 2 contains variables, of which some are used in study 1, such as the control-variable on macro-level ‘high income in school area’ (percent highest income quintile in school area). This variable is used as a proxy for the socio-economic composition of different schools. Income in the school-area can be used like this because the majority of students in Sweden attend high school in the area where they live. As can be seen in Table 2, the mean of high income in school area is 29 percent (SD=6%), with one area having 13 percent of households belonging to the highest income quintile and one area up to 64 percent. Additionally, in study 1 ‘proportion of certified teachers’ at school-level are used as well (see study 1, Table 1). Certified teachers are those who hold an exam in teaching from a university and information about the number of certified teachers in each school comes from the school registry. Certified teachers are used at school-level because data do not allow to connect teachers to classrooms. However, the assumption is that the greater the number of certified teachers who work in a school, the more exposure students have to higher quality education. As can be seen in Table 2, the number of certified teachers in a school has a mean of 72 percent (SD=19%). Yet in different schools, the number of certified teachers has a span that ranges from 4 percent to 97 percent.

Remaining variables shown in Table 2 are not used in any of the studies but added here to help describe what the population in the different schools in the data look like. The macro-variables ‘proportion of unemployed’ and ‘proportion of households renting a home’ in the school area can be considered good descriptive variables of the school area because, as mentioned above, the majority of the students in Sweden attend high school in the area where they live. Moreover, mean of unemployment is 4 percent (SD=1%), where as few as 2 percent of the population in some areas are unemployed and a maximum of 8 percent are unemployed. Regarding rental homes, the mean is 27 percent (SD=12%) and in the sample used, 5 percent rent their homes in some areas and 74 percent rent their homes in other areas. The remaining two school-level variables ‘average grades’ and ‘teacher ratio per 100 students’ are described as follows.

‘Average grades’ refers to the average grades of all courses for the graduating students in a school (mean=13.94, SD=2.21). Each course gives a grade between 0-20 and the total average for each student is based on all courses and range from 0-20, where everything above 10 is passing. The lowest average grade found in

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10 For this group of students’ average grades are counted as follows. Each course gave one of four grades, each grade worth different points. Not pass (Icke Godkänd, IG) = 0 points, Pass (godkänd, G) = 10 points, pass with distinction (väl godkänd, VG)= 15 points, and the top grade pass with high distinction (mycket väl godkänd, MVG)=20 points. Each subject could have one or several courses and each course had its own grade. Students receive an average score of their combined grades for all their courses, varying between 0-20.
the sample is 10.44, which means that in the sample, there are students who, on the average, have passed their courses and the school, most likely, has a population of students who struggle to pass their courses. At the other end of the spectrum, there is a school in the sample that has an average of 18.20, which indicates that many of its students have very good grades and pass with distinction. This difference may be due to a number of factors, including the school’s student population; the type of programs the school offers as different high school programs require different grade-point averages for acceptance; and whether the school is private or not. The final variable in Table 2 is teacher ratio per 100 students. This variable refers to how many teachers, certified and uncertified, the schools employ for every 100 students. The mean is 7.91 teachers per 100 students (SD=2.21). This ranges between 1.5 and 19.2 teachers per 100 students. The difference in ratio of teachers depends on a number of factors, for example, the municipality and the number of teachers present in the area for each subject; students in need of extra help and thus have specially educated teachers on staff; and the type of programs the school offers as some programs demand smaller groups of students for proper training, such as some vocational programs.

This thesis includes two empirical studies. Although I use the same dataset for both studies, I use different sub-samples of the dataset in each respective study with regards to the students’ ethnic background. For study 1, we use the full dataset described with students from all four categories of ethnic background available in the dataset (see Table 1). In study 2, I focus on how friendship between the majority group/ ingroup and different ethnic or racial outgroups/ minority groups are associated with the majority group’s attitudes towards secondary minority groups/outgroups. Thus, I use a smaller part of the dataset, which is the majority group of native Swedes, defined as Swedish-born adolescents with two Swedish born parents.

**Data on attitudes**

Within the field of prejudice, measures of anti-immigrant sentiment are somewhat disputed and operationalization is not always clear, nor is there an analytical consensus. Even within Europe, there is some disagreeing as to which terms researchers should use in describing or understanding attitudes towards immigrants and different ethnic or racial minorities. Commonly used concepts in this field are prejudice, racial prejudice, anti-immigrant sentiment, anti-immigrant attitudes and xenophobia, to mention a few (for reference see Ceobanu & Escandell, 2010). Different countries also have different histories and policies for immigrants and these impacts who is considered an immigrant and not, which additionally complicates operationalizations and concepts (Pettigrew, 1998b). Who is seen as an immigrant and who is not is also something that seems to differ over time, as group boundaries change (Wimmer, 2013). However, despite that
the field being broad and operationalizations and concepts vary, there is a general consensus that the majority of measures are robust.

In the first study, I use a dependent variable that can be considered to be a general measure as it measures general attitudes towards immigrants. The general measure is operationalized through an additive index, based on the following questions: ‘It is good for Sweden’s economy that people from different countries come here to live’ and ‘It is good for Sweden’s cultural life if people from other countries come here to live’. The adolescents indicate on a five point-scale to what extent they agree or disagree with the statements: (1) No; (2) Doubtful; (3) Yes, to a certain extent, (4) Yes, absolutely; (5) Have no opinion. The ‘no opinion’ answers are excluded and the rest of the answers are used to create an additive index. The index is then rescaled to a range between 0 and 10 and higher values indicate negative attitudes towards immigrants, while lower values indicate lower levels of negative attitudes towards immigrants. These questions have previously been used in the European Social Survey (ESS) to study negative attitudes towards outgroups (e.g. Hjerm, 2009; Schneider, 2008). The two questions measuring this dependent variable have been previously established and found to work well for what it aims to measure.

In the second study, I study how individual intergroup friendship affects STE. In this research, evidence of a STE is a statistical association between individuals’ intergroup friendship and attitudes towards another outgroup. For this, I use five dependent variables. One of the dependent variables is the same as in study 1, which is the anti-immigrant index (described above). For the other four dependent variables, I use additional questions regarding attitudes towards several specific ethnic or racial outgroups. These are the Roma, Jewish, Arabic, and African groups (defined here as outgroups). I use separate regression models to test the attitudes towards each group. Regarding the measurement of STE of friendship from one outgroup to other outgroups, the following question is asked in the survey: ‘What is your opinion about people with the following backgrounds?’ The questions measuring adolescents’ opinions towards the different outgroups are incorporated into the survey. The participants indicate their opinion on a 6-point Likert scale, from ‘very negative’ to ‘very positive’. The missing answers and the ‘have no opinion’ answers are removed from the sample.

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11 Unfortunately, data did not exist to measure attitudes towards Finns.
Table 3. Comparison of means of 'no opinion' and opinions among native Swedes

<table>
<thead>
<tr>
<th>Attitudes towards</th>
<th>Sex 0-1</th>
<th>Age</th>
<th>High School program 0-1</th>
<th>Parents’ education 0-1</th>
<th>Region 0-1</th>
<th>Attitudes towards immigrants 0-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arabs total mean</td>
<td>.50</td>
<td>17.08</td>
<td>.65</td>
<td>.47</td>
<td>.68</td>
<td>5.13</td>
</tr>
<tr>
<td>Arab no opinion</td>
<td>.53</td>
<td>17.09</td>
<td>.70</td>
<td>.46</td>
<td>.71</td>
<td>4.71</td>
</tr>
<tr>
<td>Africans total mean</td>
<td>.50</td>
<td>17.09</td>
<td>.65</td>
<td>.48</td>
<td>.68</td>
<td>5.12</td>
</tr>
<tr>
<td>African no opinion</td>
<td>.52</td>
<td>17.07</td>
<td>.69</td>
<td>.45</td>
<td>.69</td>
<td>4.83</td>
</tr>
<tr>
<td>Jews total mean</td>
<td>.50</td>
<td>17.08</td>
<td>.65</td>
<td>.48</td>
<td>.67</td>
<td>5.13</td>
</tr>
<tr>
<td>Jewish no opinion</td>
<td>.52</td>
<td>17.09</td>
<td>.67</td>
<td>.45</td>
<td>.70</td>
<td>4.85</td>
</tr>
<tr>
<td>Roma total mean</td>
<td>.49</td>
<td>17.08</td>
<td>.66</td>
<td>.47</td>
<td>.69</td>
<td>5.23</td>
</tr>
<tr>
<td>Roma no opinion</td>
<td>.54</td>
<td>17.08</td>
<td>.66</td>
<td>.48</td>
<td>.68</td>
<td>4.67</td>
</tr>
</tbody>
</table>

Note: 1) N ‘no opinion’ answers amongst native Swedes for attitudes towards x-minority group: n-Arabs= 702, n-Africans= 803, n-Jews= 994, n- Roma= 1,093. 2) N-missing answers amongst native Swedes for attitudes towards each minority group: n-Arabs=9, n-Africans=11, n-Jews= 12, n-Roma=7. 3) Explanations for coding of each variable are as follows: sex: 0= men & 1= women, age: 16-18, high school program adolescents attend: 0= theoretical program & 1= vocational program, parents’ education: 0= parents with no higher education & 1=parents attended higher education, region: 0= the school is placed in a major city & 1= the school is not placed in a major city. Attitudes towards immigrants-index is scaled 0-10 where higher values indicate more negative attitudes towards immigrants.
I have compared the group who answered ‘no opinion’ with the group who did have an opinion on the 6-point Likert scale with regards to the control variables used in study 2: sex, age, high school program, parents’ education, region, and attitudes towards immigrants (see Table 3 above). I found that the ‘no opinion’-group is similar to the average student. Table 3 shows the total mean for the group who answered that they had attitudes and the mean for those who did not have an opinion. Included for each control-variable is the coding I have used. Additionally, I compared the group who answered ‘have no opinion’ towards specific outgroups with the answers the same group gave in the anti-immigrant index. The group who answered ‘have no opinion’ and mean of the group who had an opinion are very similar. Additionally, I controlled for outgroup friendship and found that those who answered ‘have no opinion’ have friends from each outgroup. However, I cannot exclude that the students who answered ‘no opinion’ towards x-outgroup are not different from the rest of the students on unobserved factors, such as political correctness, subtle prejudice, and psychological disposition.

Control variables

I used the same individual-level control variables for both studies, see Table 4. Table 4 is divided into study 1 and study 2—as study 1 includes the full dataset, while study 2 includes a smaller part of the dataset for study 2 (70.6%), as described above. There are five individual-level variables described in Table 4. First, ‘gender’ shows that 51 percent of the participants are girls. I control for gender difference because previous studies have found that women, on the average, are less prejudiced than men. Women have been found to less frequently report too many immigrants arriving in their country (Gang et al., 2013), and women have been found to be less negative than men towards immigrants from a different ethnic background (Bridges & Mateut, 2009). Second, the parents’ tertiary education is a control-variable used for two reasons. One is that I study adolescents and their socio-economic standing depends on their parents. Whether or not a parent has participated in a tertiary education is commonly used as a variable to control for socio-economic status of the family (Sewell & Hauser, 1972; Sewell & Shah, 1967). Two, higher education is a common control-variable in the field because those who have attained higher education are found to be less prejudiced (e.g. Gang et al., 2013; Hogan & Mallott, 2005; Pettigrew, 2000). Table 4 shows that 45 percent of the adolescents in the full dataset used in study 1 have parents who have a tertiary education. The group of Swedish-born students with two Swedish-born parents have 47 percent tertiary-educated parents. Third, I control for whether the adolescent lives in a major city in Sweden or not. To live in a major or non-major city is also a common control variable as majority of the
immigrants in Europe live in major cities\textsuperscript{12} (Pettigrew, 2000). Thus, intergroup contact is more likely to take place when people live in ethnically mixed neighbourhoods (Kouvo & Lockmer, 2013; Schmid, Ramiah, & Hewstone, 2014). As stated above, the three major cities in Sweden are Stockholm, Göteborg, and Malmö and these are oversampled because majority of the adolescents with an immigrant background live in these cities. Regarding the sampled native population in study 2, 68 percent do not live in one of the three major cities. Lastly, age is found to be connected with anti-immigrant attitudes and is therefore a common control-variable (see e.g. Demker, 2017; Raabe & Beelmann, 2011).

Table 4. Descriptive statistics of control variables used in the two studies

<table>
<thead>
<tr>
<th>Variable</th>
<th>Study 1</th>
<th>Study 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Girls</td>
<td>51%</td>
<td>51%</td>
</tr>
<tr>
<td>(ref. Boys)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tertiary educated parents</td>
<td>45%</td>
<td>47%</td>
</tr>
<tr>
<td>(ref. Non-educated parents)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Live in non-major city</td>
<td>60%</td>
<td>68%</td>
</tr>
<tr>
<td>(ref. Live in major city)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vocational program</td>
<td>64%</td>
<td>66%</td>
</tr>
<tr>
<td>(ref. Academic track)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean age</td>
<td>17.07</td>
<td>17.09</td>
</tr>
</tbody>
</table>

Note: Study 1 includes all four ethnic background and study 2 includes only Swedish born students with two Swedish born parents.

Method

In this thesis, I use OLS regression models and multilevel models (MLM). For the first aspect, education as a means to knowledge through curricula and instruction, we use MLM to study anti-immigrant sentiments amongst adolescents that attend high school. For the second aspect of education, school as an arena for social interaction, I use multiple regressions models to study how adolescents’ friendship with different ethnic or racial groups is associated with their attitude towards primary and secondary outgroups. Different statistical models are used in an attempt to find the best way to describe different social processes. Statistical modelling includes trying to find models that fit the

\textsuperscript{12} On a side note, when I controlled for living in a major city (i.e., Stockholm, Göteborg and Malmö) in my analyses results for adolescents are found to be mixed. Previous studies, for example by Pettigrew (2000), found that when studying contact theory, intergroup friendship and urbanism are a strong anti-prejudice factor for adults. Pettigrew explains this as an effect of new European minorities living in big cities and, thus, friendship has the biggest impact to these areas. Although a majority of minorities in Sweden live in the three major cities too, it appears other aspects of the contact situation are more important for adolescents.
empirical data set and thus can provide correct descriptions of the data. The paragraphs below describe each of the two methods.

MLM is used to study what type of education influences students’ attitudes and if credentialed teachers influence students more than the non-credentialed teachers. MLM is used for data with multilevel hierarchical structures, such as schools. “The individuals and the social groups are conceptualized as a hierarchical system of individuals nested within groups, with individuals and groups defined at separate levels of this hierarchical system” (Hox, 2010:1). Such hierarchical system makes it possible to study 2 or more levels simultaneously and analyze interactions of variables at different levels within a unit. With MLM, we can model the presumed similarity by different members of the same unit. Students in schools can be nested at different levels at the same time. They can be nested within the same school unit and within that school they can be nested into the smaller units of classes. Thus, MLM allows us to study if school characteristics (school effects) influence individual student outcomes. In a school, it is therefore possible to study how education impacts students at a school level, at the classroom level, as well as to look at how education influences individuals. Students clustered within the same school are likely to be more similar to each other than the students from different, randomly selected schools. The idea is that the students in each school, and in each classroom, may share similar properties, such as: “...socialization patterns, traditions, attitudes, and work goals. Similarly, properties of groups may also be influenced by the individuals in the groups (e.g. leadership abilities, attitudes, and motivations)” (Heck & Thomas, 2000: p. ix). Normally, students in the same school also share a similar socioeconomic status (SES) (Hox, 2010). Thus, students are clustered together at different levels. It is a way of modelling that helps explain how the dependent variables vary at different levels, e.g. across individuals, classrooms and schools. Additionally, in an MLM, different variables can be measured at different levels, as long as they are defined. Variables can thus be used in their natural level, such as measuring individuals’ attitudes towards immigrants. However, individuals can also be aggregated into a group to measure a higher level in the multilevel hierarchy. MLM are an extension of linear regression models and are suitable when using data from individuals and contexts at the same time. To have a multilevel structured data draw conclusions based on data analysed at the wrong level might cause a conceptual problem (Hox, 2010). For an OLS regression model to work well it needs independent observations—not dependent observations. MLM works well for dependent observations because it shows correct estimates of uncertainty and statistical significance for such data. MLM includes parameters measuring variance patterns that are linked to the different hierarchical levels, which OLS regression does not include.
In this thesis, the data set contain information collected at different analytical levels, such as first sampling schools across the country and then sampling classes within those schools. Thereby the data set provides a hierarchical structure and an opportunity to do research using MLM models. We use the general assumption that individuals in the same environment are exposed to the same influences. People may be influenced both by the groups and contexts they exist with. When using MLM, for education as a means to knowledge, the individual adolescents can be seen as clustered in different educational and social contexts, where individual adolescents (level 1) are nested in classrooms (level 2) and classrooms are nested in schools (level 3). Individuals are the lowest level (level 1) and to gain a second classroom level (level 2), individual students are aggregated into the classes they study with. This is done through assigning the individual mean score for attitudes towards immigrants to a mean for the class. Through aggregating individual-level data into a class-level data, we gain an additional level of measurement on how attitudes on a classroom level look like. However, through aggregating individual data we also reduce potential biases of self-reported data. Finally, a third school level (level 3), is also used in the MLM model, consisting of school level variables.

When studying how outgroup friendship influences STE, I use the previously mentioned and classic OLS multiple regression model. It is a statistical model that works very well when studying individual level variables and when all variables is on only one level, as long as the dependent variable is quantitative and non-binary. Thus, it is an analysis method that works well for studying how intergroup friendship with specific outgroups is associated with attitudes towards several secondary outgroups. I measure attitudes towards four specific outgroups and one measure of general anti-immigrant sentiment as dependent variables. Each specific outgroup acting as a dependent variable in a multiple regression model.

**Limitations with the data and measurement**

This thesis has limitations worth discussing. One limitation is the self-reported data used in this thesis, in which I measure both dependent and independent variables. For study 2, the limitation is in the self-reports about people’s attitudes to outgroups (dependent variables) and self-reported friendship with different minority groups (independent variables). The dependent variables about specific minority groups that I used in this study are attitudes towards individuals with background or heritage from African-, Arabic-, Jewish-, and Roma- groups. I operationalize STE of friendship from one outgroup to other outgroups through the following questions used in the survey: ‘What is your opinion about people with the following backgrounds?’ (see Data on attitudes above) These measures are chosen because they are questions about attitudes towards specific minority
groups. However, all of these four dependent variables are single-item measures. Previous research has found that people who have negative attitudes towards one group can carry negative attitudes towards other groups as well, regardless if the group exists or not (Hodson & Hewstone, 2012). Although the research mentioned can be interpreted as a negative STE towards unknown outgroups, with the explanation that what is not known is not liked, based on this finding, one can also question if the measure I use captures what is intended when I only have access to single-item measures. However, I do not only test attitudes towards outgroups but also test how self-indicated friendship with each outgroup is associated with attitudes towards each outgroup measured. The final dependent variable used in the second study is an anti-immigrant attitude index. It is the same as the one used in study 1 (for a wider discussion about limitations regarding the anti-immigrant index, please read the paragraph ‘Measures’ in study 1, page 6).

My operationalization of independent variables in study 2, individual friendship with specific outgroups, are based on the following question: ‘Do you have any friends with the following backgrounds: African/Arabic/Finnish/Roma/Jewish?’ Each group is a separate variable. The answers are (1) no, no one; (2) yes, one; (3) yes, a couple; and (4) yes, many13. Thus, adolescents self-report on their perceived friendships with individuals from minority groups, but the dataset does not contain data that allows me to control for networks to see if friendships are mutual or one-sided. Nor do the data allow me to control for how deep the friendship is or how much self-disclosure adolescents share with their perceived friend. In this sample, friendships can thus range from people who are actual best friends to mere acquaintances. Moreover, different people define friendship differently and the same type of contact can be considered friendship by one individual or just an acquaintance by another. Although research has shown that outgroup contact in in most cases is associated with positive outgroup attitudes (Pettigrew & Tropp, 2005, 2008, 2012) other research show that closer contact such as friendship is even stronger associated with positive attitudes towards outgroups (e.g. Pettigrew, 1998a; Pettigrew & Tropp, 2006). Thus, one can assume that outgroup friendship will show a stronger STE than outgroup contact involving less self-disclosure.

With self-reports there is always a risk for bias. However, bias based on self-reports should not be of great concern, partly because precautions have been taken through a careful design of the survey and also because robust relationships

13 I then constructed a binary code where no friends were in one group and one or more friends in another group. I did this because focus for study 2 was if friendship with outgroups mattered and not how many friends that mattered. See study 2 for additional information.
are found between the measured single items\textsuperscript{14}. Regarding study 2 on STEs, the use of self-reported survey data should be of no concern. In fact, previous research finds that intergroup friendships are an individual-level factor for reducing prejudice (Pettigrew, 2000). Moreover, in the first study, concerns for bias should be of even less concern because we use aggregated data on class-levels as well as on individual levels. Thus, group measures are taken and not just individual measures to, for example, measure exposure to critical thinking.

\textsuperscript{14} Regarding study 2. To establish results found, additional analyses are made for attitudes towards 11 more nationalities. Many of the measured nationalities come from neighboring areas, for example, attitudes towards Iran, Iraq and Kurdish people. Results of these analyses are mainly similar to the results presented in the study. Thus, supporting the main results of the thesis.
**Results: Summary of the studies**

**Study 1. How critical thinking, multicultural education and the quality of teachers affect anti-immigrant attitudes.**

*Authors (in alphabetic order): Mikael Hjerm, Ingemar Johansson Sevä & Lena Werner. MH conceived the study idea and study design. LW performed the data analyses with support from MH and IJS. MH, IJS and LW prepared and revised the draft of the manuscript.*

The first study examines education as a means to knowledge and what in curricula-based education is associated with anti-immigrant sentiment. Previous studies have repeatedly identified a relationship between education and anti-immigrant sentiment. However, there is an uncertainty regarding the underlying factors linking education to anti-immigrant sentiment. In this study, education as a means to knowledge is understood as school curricula-based skills taught to students as well as the relationship between teacher’s education and anti-immigrant sentiment. Three questions guide the analysis. The first addresses the relationship between adolescents’ exposure to critical thinking and anti-immigrant sentiments. The second addresses the relationship between adolescents’ exposure to multicultural education, in the form of knowledge about different religions and culture, as well as racism and xenophobia. The third, and final question, asks whether teacher certification matters to the adolescents’ anti-immigrant sentiments.

The analysis is based on survey data collected from high school students in Sweden. Register data are added to the survey data collected from the participating schools and the socio-demographic information of the areas where the schools are situated. As for the results, multilevel regression models show an association between exposure to critical thinking and multiculturalism and anti-immigrant attitudes amongst students, that is, higher exposure is related to lower levels of anti-immigrant sentiment. Thus, individual students attending classes with students who, on the average, report that they have received more teaching about critical thinking, report lower levels of anti-immigrant sentiment than those students attending classes where critical thinking is sparse. This finding is interpreted as support to the idea that developing skills in critical thinking better equips students to overcome stereotypical thinking. Moreover, more exposure to multicultural education also reduces the students’ anti-immigrant sentiment. This finding is in line with previous research based on the ‘social learning theory’ and shows that the content of education in schools can help students develop more positive attitudes towards outgroups (Banks, 1991). We also find evidence indicating that teaching about xenophobia and racism affect anti-immigrant
sentiment, but not when simultaneously controlling for teaching about critical thinking and religions/cultures. In terms of teacher certification, we find that students in schools with a high proportion of credentialed teachers tend to have lower levels of anti-immigrant sentiments.
Study 2. The secondary transfer effect: The effect of friendship amongst adolescents on prejudice towards specific outgroups

Author: Lena Werner.

In the second study, I focus on exploring additional moderators to determine what in education reduces anti-immigrant sentiment, especially by treating education as an arena for social interaction where outgroup members come in contact with each other. Outgroup contact is a softer and subtler aspect of the educational system, but equally important as previous research on outgroup contact have shown that intergroup contact has the potential to reduce anti-immigrant sentiment (e.g. Pettigrew, 1998a; Pettigrew & Tropp, 2012). More specifically, I study the relationship between outgroup contact and anti-immigrant sentiment, testing the primary transfer effect (PTE) but concentrating on the secondary transfer effects (STEs). In this research, evidence of a STE is a statistical association between individuals’ intergroup friendship and attitudes towards another outgroup. STE builds on PTEs and occurs when the positive consequences of intergroup contact are generalized to other groups. Drawing insights from contact theory and research on social distance and ethnic hierarchies, this is done with a focus on individual intergroup friendships with several ethnic outgroups. I use results of previous research on social distance and ethnic hierarchies to explain why STE of friendship with members of different outgroups vary.

Analyses rely on Swedish survey data from 2,831 high school students. OLS regression analyses are used to study how individual friendships between native Swedes and people from five outgroups: Africans, Arabs, Finns, Jews and Roma respectively, are associated with attitudes both towards primary and secondary outgroups. Results show that friendship generates positive attitudes that generally apply to all primary outgroups tested and also to many of the secondary outgroups. Positive STEs are generated across groups where there is a perceived social distance between the ingroup and the ethnic or racial outgroup, such as friendship between Swedes and Arabs generalizes a positive secondary effect to Africans. Thus, the assumption that perceived ethnic hierarchies help explain the varying STE are empirically supported. The effect of friendship on STEs is found between the groups where boundaries are perceived to be thickest. The most prominent STE is seen for groups where the primary outgroup is similar to the secondary outgroup, e.g. Swedes reporting friendship with Africans (primary group) and Swedes’ attitudes towards Arabs (secondary group). This finding is in line with previous research (Pettigrew & Tropp, 2012). Additionally, STEs tend to be group-dependent, and therefore limited, and are mainly present when

15 ‘Native Swedes’ are here defined as being born in Sweden with both parents also born in Sweden.
friendships cross perceived, thick boundaries among social groups. In conclusion, STE varies between different ethnic outgroups and research on social hierarchies and ethnic distance can help explain why.
Discussion

The starting point of this thesis is the limited knowledge on what in the educational system is associated with anti-immigrant sentiment. The overall aim is to explain how two different aspects in the educational system is associated with anti-immigrant sentiments. One aspect is education as a means to knowledge and this aspect involves two parts. One part includes curricula-based education, such as critical thinking and multicultural education. Multicultural education is defined as the knowledge about different religions and cultures, as well as xenophobia and racism. The other part is if credentialed teachers are associated with lower anti-immigrant sentiments among students. The second aspect is how school as an arena for social interaction may facilitate intergroup friendships. Thus, proximity matters as friendships are presumably often made within the context or extended context of activities relating to the educational system. More specifically, I address the question if individual, intergroup friendships between native Swedes and different ethnic outgroups is correlated with primary-, but foremost secondary transfer effects. The research questions in this thesis help to answer what it is in the educational system that correlates with anti-immigrant sentiment. They add new knowledge to the field by studying two different aspects that are, so far, less explored in relation to anti-immigrant sentiments. Overall, results in this thesis support the idea that different aspects of the educational system are negatively associated with adolescents’ attitudes to immigrants as well as other ethnic or racial outgroup members.

The two studies in this thesis show two clearly different aspects of education-knowledge and social relationships, where schools act as socializing agents both by teaching students’ curricula-based knowledge and by allowing intergroup contact to take place. However, one thing unites multicultural education and intergroup friendship, both aspects are directly influencing attitudes amongst students (Vogt, 1997). Below is a more in-depth discussion, presenting the two aspects separately.

Education as a means to knowledge and its association with anti-immigrant sentiment

Results in the first study suggest that the type of knowledge taught to students matter. Students’ exposure to critical thinking is associated with their attitudes towards immigrants. The more exposed students are to critical thinking, the lower their anti-immigrant attitudes. Thus, students equipped with more advanced skills in critical thinking can more easily recognize and overcome stereotypical constructs. These results are also in line with previous research on what triggers “stereotypical thinking” (Devine, 1989; Devine & Elliot, 1995).
Critical thinking may be an effective skill to reduce prejudice as it permeates all subjects taught schools. Moreover, exposure to multicultural education, defined here as learning about different cultures and religions, plays a role in reducing negative attitudes towards immigrants. Results on multicultural education are in line with ‘social learning theory’ and the idea that knowledge reduces negative attitude towards outgroups. Results on multicultural education in this thesis also support previous research that show correlation between educational content with the students’ attitude towards outgroups (Banks, 1991). The results with regards to multicultural education are a contribution to this field of study, since the majority of previously conducted studies have been intervention studies whereas the present study used survey data. Finally, results support that credentialed teachers are associated with less negative anti-immigrant attitudes amongst students. It can be assumed that credentialed teachers, through teaching trainings, are equipped with a more extensive knowledge about school curricula, didactics, and how the Education Act can guide norms and values in the classroom.

Initially, the generalizability of the study needs to be discussed with regards to national contexts. This is a study conducted in Sweden and as such is limited, partly because the curricula contexts might differ from other countries. Thus, results regarding exposure to multicultural education might also differ. This may perhaps further explain the cross-national differences in the effects of education, as found in some previous studies (Hello et al., 2002; Weil, 1985). Therefore, future research may do longitudinal studies to include several different countries and investigate how multicultural education influences high school students’ attitudes towards immigrants. Regarding skills learned in schools, contextual differences are unlikely to be correlated with the relationship between exposure to critical thinking and anti-immigrant sentiment. Critical thinking is, after all, considered a non-biased skill regardless of context. It would be interesting to study further the effects of critical thinking by examining it longitudinally. Finally, with regards to the data, I looked into individual variable data and individual data aggregated to classroom level from a cross-sectional survey. Future research can also benefit from using longitudinal data to develop an understanding on what is happening over time and explain what it is in education that impacts adolescents’ anti-immigrant sentiments. I believe that a combination of longitudinal survey data and interviews can reveal interesting information to further the field. After all, closed-end items in surveys do not provide us with as much insight into people’s own inner-conflicts and prejudices as one would wish for. People are much more complicated than what can be captured from a limited number of variables.
How school as a social arena may facilitate intergroup friendships and STE

School as an arena for social interaction may facilitate individual, interethnic friendships, and how positive attitudes are generalized to secondary ethnic outgroups. School as an arena for social interaction plays an understudied role in connecting outgroups that otherwise might never cross paths. Schools are a place where students meet. During their time in school, adolescents from different ethnic groups may find themselves in a social environment that offers opportunities to not only establish intergroup contact, but also intergroup friendships. Intergroup friendships have been shown to be the most powerful form of contact to reduce prejudice (Pettigrew, 1998a; Pettigrew & Tropp, 2006). Additionally, anti-immigrant sentiment is but one part of prejudice. I have, like others before me (Pettigrew & Tropp, 2012), found support that there is an interrelated secondary transfer effect between some ethnic or racial outgroups. Through this research, I contribute to the field by explaining STE a step further. I study individual friendships between a majority ingroup and several different ethnic outgroups, and tested STE towards several specific, ethnic or racial outgroups. I use a statistical association between intergroup friendship and attitudes towards another outgroup as evidence for STEs. My results show that friendships between the Swedish ingroup and attitudes generalized towards secondary outgroups vary, depending on the primary outgroup friendship. Thus, STEs are group-dependent. Previous research on perceived ethnic hierarchies and social distance add to the understanding as to why STEs vary. Results found in my study support that positive attitudes are most generalizable to secondary outgroups when there is a perceived thick social boundary between ingroup and primary outgroup. Outgroups more similar to the ingroup, with a perceived thinner boundary between the groups, mainly show no significant STE and or when a STE is found it is weak.

Before I move on to discuss future research for the second study, some limitations should be discussed. As mentioned above, I use Swedish data that includes ethnic minority groups in Sweden. Although the same groups exist as minority groups in other countries, attitudes towards these groups might change due to contextual factors. However, my results show patterns of similarity between the primary and secondary group- which is supported by previous studies (Pettigrew & Tropp, 2012). Future research may investigate the underlying mechanisms of how and when STE works, preferably through studies that can help confirm order of causality. Additionally, future research can test social hierarchies in relation to STE. Contact with specific outgroups, where STE is generalizable or where it is not, should be studied in different countries and cultures as different cultures have different outgroups because what can be a stigmatized group in one culture might not be in another. STE is an important area of research with regards to
education, especially as it deals with the attitudes shaped during the formative years and because of how generalizable attitudes are across groups and how big the impact these can have over time.

Previous research on prejudice consistently show that education is associated with less prejudice. In this thesis, I provide evidence to two different and complimentary aspects of the high school educational system - knowledge and social relationships- that help explain why education is associated with lower levels of prejudice and anti-immigrant sentiment. High school students are in their adolescence; thus, they are in their formative years. The knowledge and norms learned during adolescence tend to persist over the life course. In this thesis, education as a means to knowledge shows that what is taught in schools matters to the students’ anti-immigrant sentiment. Findings show support for the effects of critical thinking and the lessons on multicultural education on one’s anti-immigrant sentiments. Moreover, who the teacher is matters because credentialed teachers are correlated with less anti-immigrant sentiments of the students. I also find that school as a social arena may facilitate contact between people from different ethnic or racial groups. Adolescent friendships with a specific ethnic outgroup are associated with secondary attitudes towards other ethnic outgroups. Thus, schools may work on creating interethnic functioning groups that offer opportunities for intergroup friendship ties. In sum, in this thesis I contribute to studying two aspects in the educational system that is correlated with lower levels of prejudice- what we learn in school and who the teacher is, as well as, how intergroup friendship is associated with less negative attitudes to primary and secondary outgroups. Knowledge presented in this thesis can help guide practitioners and policy makers alike towards a deeper understanding of where to focus resources guided towards the educational system.
References


