Ethnic diversity and trust in the school context: When do adolescents trust their peers and people in general?

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Ethnic diversity and trust in the school context: When do adolescents trust their peers and people in general?

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1. GENERAL INTRODUCTION

Trust is an essential part of social life (Evans & Krueger, 2009; Sztompka, 2019) and is highly important for successful human interaction (Dunning et al., 2014; Fetchenhauer & Dunning, 2009). Research found that especially social trust, that is trust in *unknown* others, plays a central role. This trust might be the key to enlarging one's social network and thereby gaining access to new perspectives and resources. Numerous studies found evidence for positive consequences of trusting others, in particular unknown others, for individuals as well as the society as a whole (Stolle, 2002; Uslaner, 2002): trust is associated with higher life satisfaction (Batsaikhan, 2017; Maria Martinez et al., 2019; Mikucka et al., 2017; Prada & Roman, 2021; Zhang, 2020), better mental and physical health (Maria Martinez et al., 2019; I. K. Schneider et al., 2011; Williams & Ronan, 2014), and even lower suicide ideation (Hill et al., 2019; Lin et al., 2022). Generally, trustful people are more likely to engage with people outside their immediate surroundings and expand their social network (Dokuka & Yudkevich, 2020), are more likely to cooperate (Acedo & Gomila, 2013; Balliet & Van Lange, 2013a, 2013b; van Klingeren & de Graaf, 2021), and, perhaps as a consequence, have more economic or business success (Batsaikhan, 2017).

So far, the vast majority of work on (social) trust has focused on adults, while, in contrast, adolescence has received much less attention (Liu et al., 2018; Flanagan & Stout, 2010). At the same time, evidence suggests that social trust is relatively variable during early adolescence and becomes increasingly more stable over the course of late adolescence and early adulthood (Abdelzadeh & Lundberg, 2017; Flanagan & Stout, 2010; Janmaat, 2019). Scholars have emphasized the role of childhood in the development of trust (Markson & Luo, 2020) as well as the importance of trust during childhood and

adolescents for young people's healthy development (Gillham & Reivich, 2004; Qualter et al., 2013). Still, only a few have focused on trust among adolescents. Previous work thereby largely focused on trust in *well-known* others (Flanagan & Stout, 2010), for example in friends or parents, whereas trust in little-known or unknown people has rarely been the focus.

This gap in the literature is surprising given that social trust might become especially important during adolescence. Adolescence marks a period in life with many changes. The importance of adult caregivers decreases in favour of relationships with peers, and young people start to establish relationships outside their immediate surroundings (Cohen & Prinstein, 2006; Crone & Fuligni, 2020; Feiring & Lewis, 1991; Giordano, 2003; Miller-Johnson et al., 2003; Nickerson & Nagle, 2005; Stotsky et al., 2020; van de Groep et al., 2020). Adolescents broaden their social networks, interact with a wider range of people in different contexts, and spend increasingly more time unsupervised (Clarke et al., 2021; Flanagan & Stout, 2010; Lam et al., 2014). Trust in people in general and especially trust in unknown *peers* is therefore of special value during this period in life.

Furthermore, adolescence sets the stage for many outcomes later in life (Grütter & Buchmann, 2021; Hooghe & Wilkenfeld, 2008; Johnson et al., 2011; Jones & Meredith, 2000; Koppes et al., 2000; Meadows et al., 2006). This means on the one hand, that many highly trusting adolescents will develop into highly trusting adults (Abdelzadeh & Lundberg, 2017; Flanagan & Stout, 2010). On the other hand, adolescents who lack trust show a range of deviant and health-risk behaviours, that might result in long term health-problems later in their life. For example, generally trustful teenagers have a lower likelihood of (binge) drinking, cigarette smoking and other drug uses (Aslund & Nilsson, 2013; Lindström & Rosvall, 2018; Sjödin et al., 2022; Takakura, 2011; Wray-Lake et al.,

2012). Thus, promoting trust among children and adolescents may have a multitude of positive outcomes throughout people's lives.

Given the high relevance of this topic, this thesis investigates adolescents' trust in little-known and unknown peers and people in general. It thereby focuses on possible influencing factors specific to the school context. Next to the parental home, schools are a highly important social context in the life of children and adolescents and play a key role in their development (Brown & Chu, 2012; Eccles & Roeser, 2011; Kiuru, 2008; Osher et al., 2014). Students spend very regularly a large part of their time at school. Schools thereby provide an important meeting place for students and offer opportunities to widen one's social network (Eccles & Roeser, 2011). They are not only a place where many social interactions that involve and require trust take place but may also be key in shaping adolescents' expectations about other people (Lundberg & Abdelzadeh, 2019).

1.1 WHAT IS "TRUST"?

Before going into detail about the specific empirical studies undertaken for this thesis, let us define what is meant by "trust". Defining "trust" is not an easy task, given that this term is part of the everyday language of people and further has received immense attention from various research disciplines. As a consequence, a plethora of conceptualizations exists (Fetchenhauer & Dunning, 2009; Hupcey et al., 2001; Lyon et al., 2012). Finding common ground between those different conceptualizations or even proposing a conceptualization of trust that most scholars could agree on is an almost impossible endeavour, as evidenced by the numerous articles with this goal alone in mind (Hupcey et al., 2001; McKnight & Chervany, 2000; Robbins, 2016; Rotenberg, 2010b). Thus, instead of aiming at one unifying definition of trust, this thesis provides a puzzle piece to the picture of trust among adolescents with one particular conceptualization in mind.

I focus on trust as a *positive expectation or belief* about the actions and intentions of other people. It is the assumption, that others will act to one's benefit or at least not purposefully harmful (Foddy & Yamagishi, 2009; Möllering, 2001). Additional to this general definition, trust conceptualizations differ in their level of abstraction, as evidenced by the "grammar" they use (Nannestad, 2008; Uslaner, 2002). Following this approach, we can distinguish between:

1. A person (A) trusts,
2. A person (A) trusts a specific entity [person, group] (B), or
3. A person (A) trusts a specific entity [person, group] (B) concerning a specific matter (X)

In the most abstract grammar of trust, neither a trust target (B) nor a matter at hand (X) is specified. In its most specific form, the trust target (usually a specific person), as well as a specific matter at hand, are defined. For example a person (A) trusts their romantic partner (B) to keep private information to themselves (X) or A trusts their friend (B) to return the money they borrowed (X). Being aware of this grammar of trust is especially relevant when it comes to the measurement of trust, as I will discuss further in Chapter 1.4.2. In this thesis, I separate three different types of trust targets (B), as outlined below.

Generalised and context-specific social trust: Chapters 2 and 3 of this thesis address specifically "social trust", which is the default expectation regarding *unknown* others (Dinesen & Sønderskov, 2015). This type of trust is particularly important at the onset of a potential relationship when no prior interaction history exists that could meaningfully inform an individual about what to expect of another person.

I distinguish between "generalised social trust" and "context-specific social trust". The former targets the belief that *people in general* or *most people* can be trusted. This concept follows the most abstract grammar of "A trusts". Thus, there is no specific trust target but rather, from a conceptual perspective, everyone is included. It is an expression of an optimistic view of the world and the people in it (Uslaner, 2002).

Context-specific social trust, on the other hand, limits the radius of the trust target. For the purpose of this thesis, context-specific social trust covers trust in unknown peers within the context of the school grade. In terms of grammar, there thus is a clearly defined trust target "B". However, this target is not a specific person, but the group of unknown peers.

Trust in little-known peers: Chapter 4 focuses on a related type of trust target, which I here label as "little-known" others. This means people that are not *fully* unknown but generally recognized by name and appearance, without having a *personal* relationship or interaction history with them. This could, for example, be a fellow student whom one knows by name and regularly passes by in the hallway without ever having talked to them. In situations with those people, personal experiences thus, again, cannot inform an individual's trust expectation. In the context of this thesis, I further limit those people to be part of the school context, more specifically, the school grade. Again, this requires a grammar of trust that defines a trust target "B". In contrast to context-specific social trust, however, B now is a specific person rather than a whole group of people.

Consequentially, and to get a broader understanding of adolescents' trust, I focus on trust targets that require different levels of abstraction or generalisation: 1) trust in *generalised others*, 2) trust in *unknown peers* within the school context, and 3) trust in *little-known peers* within the school context.

1.2 WHEN DO PEOPLE TRUST UNKNOWN OR LITTLE-KNOWN OTHERS?

With people we know well, long interaction histories might clearly indicate what to expect of the other person in different situations (Six, 2008; Uslaner, 2002). Positive expectations, in this case, involve comparably little uncertainty but rather are based on knowledge (Evans & Krueger, 2009). In contrast, without such an interaction history, the accuracy of the expectations regarding the actions and intentions of the other person is limited (Yamagishi & Yamagishi, 1994). Being wrong in one's expectation is a much more likely possibility. Thus, why do people trust, if they have little to no knowledge about another person; why do they trust "people in general"?

Many scholars argue that trust is a social norm or a moral value: within their moral community people have an obligation to behave *as if* others are trustworthy (Uslaner, 2002). Similarly, people ought to act trustworthy, to not abuse such given trust (Bicchieri et al., 2011; Dunning et al., 2014; Möllering, 2001; Reiersen, 2018; Sztompka, 2019). In line with these thoughts, experimental research often shows evidence that people act more trusting and trustworthy than would be expected if they were simply trying to maximize returns (Dunning et al., 2014; Evans & Krueger, 2009). Accordingly, high trust expectations may arise among people of the same moral community, who share fundamental values regarding trust and trustworthiness and care for each other's interests. Trust in unknown or generalised others thus depends on who and how many people one perceives to be part of the own moral community (Uslaner, 2002).

Those who generally see "most people" as part of that community exhibit high *generalised social trust* (Uslaner, 2002). They do not link their trust to particular people or groups. In contrast, some people link whom they perceive to belong to the same moral community to a shared and salient social category (Foddy et al., 2009). Due to this shared identity, people trust others of, for example, the same ethnicity or religion, since they

expect those to act favourably towards them. In an attempt to limit social uncertainties, individuals may place high importance on and strongly identify with a particular group and place trust in unknown others within, but rarely outside that group (Brewer, 1999; Kenworthy & Jones, 2009). Consequentially, their trust in generalised others will be rather low, especially if they perceive their ingroup to be small. Uslaner (2002) argues that people, who have such a restricted moral community, view the world as "a threatening place, over which they have little control" (p. 31) and are pessimistic about their future. In contrast, those who are optimistic and feel in control of their life likely have a broader and more inclusive moral community.

1.2.1 DIVERSITY AND TRUST

But how do people come to those perspectives and define their moral community and who and how many belong to it? Part of an answer to this question may be found in the environment that individuals grow up or live in and experience on a daily basis. If they primarily experience strong differentiation based on group membership they are unlikely to see most people as part of their moral community (Uslaner, 2002). This is the case if salient social categories split society into smaller sub-groups that have little in common with each other and do not seem to share the same set of values. Especially living in societies with intensive intergroup conflicts at a societal level with a clear and largely irrevocable distinction between groups (Brewer & Miller, 1984) may – likely rightfully so – lead people to only trust their close kin and others of the same group.

However, it may not necessarily need extreme forms of conflict to reduce (generalised) social trust. For example, Putnam (2007) suggests that merely living in a highly ethnically diverse environment lowers social trust by inducing uncertainty and anxiety about the existence of shared values (van den Meer & Tolsma, 2014). Further, in ethnically diverse contexts, there are on average fewer people of the own ethnic ingroup.

Thus, if the own moral community is limited to people who share one's ethnic background, this may cause lower levels of social trust within the context, and if generalised, also of trust in people in general (Dinesen et al., 2020). Both of these arguments, however, imply a high importance and salience of ethnicity as a social category, to begin with. Whether, and to what extend, this assumption is warranted likely depends on the (geographical) context, among other factors (Dinesen & Sønderskov, 2018; Sturgis et al., 2011; van den Meer & Tolsma, 2014). Mixed findings in the area of ethnic diversity and social trust in different geographical contexts (see e.g. van den Meer and Tolsma, 2014) indicate that ethnicity is at least not an equally important nor equally salient for everyone in every context (Crisp & Hewstone, 2007; Kinket & Verkuyten, 1997).

Alignment of important social categories (e.g., if ethnicity and religion lead to largely the same group boundaries) may be one factor influencing the salience of those categories. This may impact whether someone restricts their moral community to only members of a specific social category, such as ethnicity. If many ethnic ingroup members have, for example, the same religion or socioeconomic status, while ethnic outgroup members differ also on those categories, the distinction between "us" and "them" becomes increasingly obvious. Further, such overlap strengthens the perception that outgroup members are largely different and unlikely to share similar values (Brewer, 1999; Uslaner, 2002). In contrast, if social categories cross-cut each other, ingroup members defined based on one category will be part of the outgroup based on another (e.g., if many people with the same ethnicity have different religious beliefs, while many people with a different ethnicity share the same religion). This reduces the importance of any single dimension (Brewer & Miller, 1984). If individuals frequently experience a strong alignment of group boundaries based on multiple social categories in their environment, they may perceive the own moral community as more limited and therefore exhibit lower social trust.

How people define their moral community and how they are affected by, for example, group compositions in their surroundings likely differs depending also on individual characteristics. In the context of ethnicity, we most importantly need to consider potential differences between ethnic majority and minority group members. Members of the majority group may pay less attention to their ethnic identity but rather take it and their group's status as "the majority" for granted, unless concretely threatened (Kinket & Verkuyten, 1997; Skey, 2010). In their perception, "most people" belong to their ethnic ingroup anyway. Majority group members may, thus, likely exhibit high social trust, unless they are given a reason to question their majority status.

In contrast, for members of ethnic minority groups, most people will be part of the ethnic outgroup. For these people, ethnicity may, due to their status as a minority, be a more important part of their self-description and identity compared to majority members (Kinket & Verkuyten, 1997). Ethnic minorities may thus, on average, exhibit lower social trust than majority group members. However, the definition of their own ethnic identity likely is much more complex for ethnic minorities – especially if ethnicity is based on immigration background and the family's place of origin (Jugert et al., 2018). Immigrants, and in particular, their descendants may be fully aware of the host country's culture, language, norms and values, while some may have little or no connection to the country their family migrated from. Some individuals, that are "objectively" (e.g., based on the birth country of their parents) ethnic minorities, may therefore not, or not solely, identify with their ethnic origin but rather with their host country (Jugert et al., 2018). Due to this complexity, their ethnic identity likely requires extensive deliberation and is nothing they experience as self-evident. We, thus, may assume a much higher salience of ethnicity as a social category compared to most majority members.

In addition to the status of the group they belong to, individuals' personal experience of where *they* stand within society and how others perceive them, irrespective of for example their ethnicity, may play an important role (Rotenberg, 2010b). Individuals who are well-liked and popular with many in their surroundings, who experience mainly acceptance by their peers, may be more likely to have a positive view of the world and the people in it. In contrast, those who mainly experience rejection and are seen in a negative light by those in their surrounding may have little reason to believe that others share the same fundamental values or would act trustworthy towards them. They may even be distrustful specifically to prevent further rejection (Rotenberg et al., 2010).

1.2.2 ADOLESCENTS' TRUST AND THE IMPORTANCE OF SCHOOLS

So far, I argued, following Uslaner (2002), that individuals with a more inclusive moral community are higher in (generalised) social trust compared to those who limit this community to only kin or people with a particular shared identity. I further discussed, how people's perception of their environment and their place in it may influence how many and whom they include in this community. In the next step, I will apply this perspective to early adolescence.

Assuming that early adolescents (or even adults) have a sufficient overview to make assessments for larger societies as a whole seems unlikely. Rather, they will transfer what they learn from their *immediate* environment. Most important in this process are likely family and schools (Gillham & Reivich, 2004; Liu et al., 2018; Lundberg & Abdelzadeh, 2019). Studies found parental views and rearing to have an important influence on children's and adolescents' perspective of the world and their trust in others (Liu et al., 2018; Wray-Lake et al., 2012). However, it is highly unlikely that parental influence is the only relevant factor in people's trust (Uslaner, 2002).

Important social contexts – such as schools – which adolescents frequent regularly and are able to comprehend as a whole likely shape their understanding of the world and their place in it (Eccles & Roeser, 2011; Lundberg & Abdelzadeh, 2019). Especially during early adolescents, as the focus shifts from parental figures to peers, the school context may be particularly important in influencing social trust. For instance, multiple studies suggest a relationship between social trust and school-related factors, such as perceived school climate, classroom justice and ethnic or socioeconomic diversity in school classes (Badescu & Sum, 2015; Liu et al., 2018; Loxbo, 2018; Lundberg & Abdelzadeh, 2019; Sum & Badescu, 2019).

The composition of different social groups within the school and how strongly those groups seem to be divided from each other may give students a (correct or incorrect) picture of what "the world" looks like. The social standing adolescents have with their peers at school and how those see and treat them likely influences their trust in peers. Adolescents might further generalise this experience to how others outside the school context may see them. Depending on what students experience in school they may make largely different conclusions about the world and their place in it: some may experience schools as a very inclusive place where most people share similar values. Others may perceive the student body to be split into separate and very distinct subgroups that do *not* share the same values. In the worst case, students may experience themselves as rejected and excluded by others and outside of any group. Assuming that experiences in the school context are in fact as central as suggested here, adolescents may generalise from those experiences and define the width of their moral communities based on those experiences.

1.2.3 TRUST WITHIN THE SCHOOL CONTEXT: TRUST IN UNKNOWN OR LITTLE-KNOWN PEERS

Until now, I mainly focused on how experiences in the school context may shape adolescents' trust in *people in general*. However, we can easily apply the same perspective

to other types of trust, such as context-specific social trust: if a person sees most people within *a specific context*, for example here the school, as belonging to the same moral community, they should exhibit high *context-specific social trust*. If they only trust a small subgroup of individuals within the school, for example only a small number of people with whom they share a specific social category, context-specific social trust should be low. The main advantage of such a context-limited perspective is that it requires much less generalisation on part of the adolescent. We can assume, that if the school context does have any effect at all on social trust, we are most likely to find it within the limits of the school (i.e., context-specific social trust) compared to beyond the school context (i.e., generalised social trust).

Both context-specific and generalised social trust access a default reaction towards unknown people. Looking at trust in a specific person and specific situation, individuals may try to assess whether *this* person belongs to their own community and is likely to act trustworthy towards *them*. In interaction with a fully unknown person, individuals have little to go on but their perception that most people do (or do not) belong to the same moral community, share fundamental values, and generally care about their interests. However, in many cases, people may have some information about the specific person, even though they have never interacted with them before. In particular, in the school context, students visit the same grade with largely the same group of people over several years. Even if they have never talked or interacted with a peer, adolescents are likely often able to recognize the name and appearance of a peer within their grade. Students may have heard about them from other peers and have a general idea of how other peers within the school grade see this person. This allows a more strategic approach to trust: instead of (or additional to) basing one's expectations on a general faith in other people, adolescents may trust another peer based on that peer's social standing within the grade. This social standing may be

grounded in previous behaviours and characteristics that give insights into their values and norms and whether they are likely to follow a social norm of trustworthiness.

1.3 OUTLINE OF THE THESIS

In the following, I will briefly discuss the research questions and results of the three empirical studies presented in Chapters 2 to 4 (see Table 1.3.1 for a brief overview). A detailed description of the dataset, a discussion of the geographical context under investigation as well as the methods used to measure trust will follow after this chapter in Chapter 1.4.

Chapter 2 investigates the association between ethnic diversity within the school grade and generalised and context-specific social trust among early adolescents in German schools. Ethnic origin may be an important factor along which adolescents separate their surroundings into different groups. Adolescents who visit school grades which are composed of many smaller ethnic groups might assume that few will share their same values and exhibit less social trust. However, adolescents may see the overall majority group (here "Germans") as different from the many, often very small, minority groups. Importantly, given that many students with a migration background have lived in Germany for most or all of their lives, they likely have extensive knowledge about the language, norms and values and even identify with the majority group. I, therefore, separate the overall ethnic diversity within the school grade into the share of majority and the diversity of ethnic minorities. Further, I analyse associations for minority and majority students separately. The results indicate a positive association between the share of majority and social trust for both majority and minority students. The relationship between the diversity of ethnic minorities and social trust is, however, inconsistent.

Chapter 3 is a collaborative work with Clemens Kroneberg[1]. Here, we target the relationship between the alignment of ethnic origin and gender within school classes and adolescents' social trust. This alignment is high if a student visits a school class in which many classmates of the same ethnic origin share the same gender, while many ethnic outgroup members are of the other gender (e.g., if most Turkish students are boys and most non-Turkish students are girls). In such classrooms, students can more easily split their surroundings into homogeneous sub-groups, in comparison to students who visit classrooms with low alignment (i.e., classrooms in which boys and girls are evenly distributed among the ethnic in-, and outgroup). High alignment might increase the salience of ethnic origin and lead students to experience their moral community as more limited. However, there may be differences in the consequences of the alignment of ethnic origin and gender for majority and minority students, given that they come from different starting points. Whereas for minority students, ethnic origin may generally be a salient social characteristic, majority students may only under certain circumstances use ethnic origin to distinguish between different groups. We, thus, examined majority and minority students separately. Our findings suggest that indeed, attribute alignment in school classes relates to lower generalised and context-specific social trust – but only among majority students. For minority students, we find no significant relationship.

Chapter 4 moves beyond analysing ethnic origin and diversity and focuses on another dimension of social differentiation: social standing. This chapter analyses the relationship between social standing within the school grade and trust in "little-known" peers. Within the school context, but also in other contexts frequented by adolescents, peers are often not *fully* unknown. Rather, students tend to be able to recognize (e.g., by

[1] Clemens Kroneberg and I jointly developed the research question and theoretical framework. I prepared the data for analyses, conducted the analyses and prepared the majority of first draft of the manuscript, which was then complemented and carefully edited by Clemens Kroneberg.

name and appearance) another peer from the same grade, without having had any personal interaction with that peer. While they do not have personal experiences, they may use their own and the other peer's social standing within the school grade to gauge what to expect of them. I distinguish between two commonly found dimensions of social standing during adolescence – social acceptance (also called likeability or peer preference) and peer-perceived popularity. The results indicate a clear positive relationship between social acceptance and trust in and by peers. In contrast, the relationship between popularity and trust seems to be more complex. While students high (compared to low) in popularity are more likely to trust their peers, popular peers are, if anything, less trusted than their less popular counterparts. Importantly, there is an interaction between the peer's ("B's") social acceptance, B's popularity and whether a student "A" has high trust expectations in B. The negative relationship between a B's popularity and A's trust in B becomes less pronounced if that peer B is high in social acceptance and even inverses for the most socially accepted B.

In Chapter 5, I supplement the analyses carried out in Chapter 4: Chapter 4 primarily focuses on trust in a recognised, though little-known peer. An important goal of this thesis is to gain a better understanding of adolescents' social trust, thus trust in fully unknown peers or people in general. Therefore, I add two analyses examining the relationship between the own social standing and context-specific as well as generalised social trust. Lastly, in Chapters 6 and 7, I provide a joint discussion and conclusion of the research findings from Chapters 2 to 5.

Table 1.3.1. Overview of empirical chapters

	Chapter 2	Chapter 3	Chapter 4
Data	SOCIALBOND (Wave 2)	SOCIALBOND (Wave 2)	SOCIALBOND (Wave 2)
Analytical method	• Linear regression with cluster robust standard errors for school grades • Multiverse analyses	• Linear regression with cluster robust standard errors for school classes	• Linear regression with cluster robust standard errors for school grades
Independent variables	• Share of majority (“natives”) • Diversity of the ethnic minorities • For ethnic minorities: share of ethnic ingroup members	• Alignment of ethnic origin and gender within the classroom	• Popularity and social acceptance within the school grade of adolescents and their (to-be-trusted) peer
Main outcome variables	• Generalised social trust • Context-specific social trust (trust in an unknown peer)	• Generalised social trust • Context-specific social trust (trust in an unknown peer)	• Trust in a little-known peer (known by name and appearance, but without direct relationship, e.g., friendship)
Additional information	• Analyses split by majority status	• Analyses split by majority status	• Analyses of interactions between social acceptance and popularity
Main Results	• Positive relationship between share of majority and social trust for both minority and majority students • Relationship between the diversity of ethnic minorities and social trust unclear • For ethnic minorities: no significant relationship between share of ethnic ingroup members and social trust	• Negative relationship between alignment and social trust only for majority students • No significant relationship for minority students	• Social acceptance increases both trust in and by peers. • Popularity relates to higher trust in peers. • Popular peers are on average less trusted, however, this relationship depends on the peer’s social acceptance

1.4 SAMPLE AND CENTRAL MEASUREMENTS USED IN THIS THESIS

In the following, I will discuss the sample used in all analyses presented in the empirical chapters. I will further go into detail on the measurement of trust applied here, which we newly developed for this project.

1.4.1 SOCIALBOND DATASET AND SAMPLE DESCRIPTION

For all data analyses, I used the second wave of the SOCIALBOND dataset. SOCIALBOND collected yearly longitudinal data over three subsequent years between 2018 and 2020 on children and adolescents visiting public schools in North Rhine-Westphalia (NRW), Germany, beginning in the 7th grade. The second wave contains data on all students in the 8th grade who were willing and had parental permission to participate in 37 schools (participation rate: 80.44%). One school had to be excluded from all analyses due to massive changes in classroom structure and student body shortly before the data collection of the second wave.

Most 8th-grade students (i.e., more than 80%) were between the ages of 12 and 13 years old and thereby fall in the category of early adolescence (age 10 - 14). I chose this age group for both substantial and practical reasons. Among the 8th-grade students, a large proportion will already have started puberty and experience the connected physical and social changes (Crone & Fuligni, 2020; Farello et al., 2019; Feiring & Lewis, 1991; Nickerson & Nagle, 2005). In addition, data quality and knowledge about information relevant to the data analyses, for example about parents' country of birth, is likely higher compared to the 7th grade. Due to the COVID-19 pandemic, the third wave of the SOCIALBOND dataset could not be used, as there were massive changes in the study setup as well as a strong diversion from the usual social and school life for the participants.

The sample was a convenience sample collected mostly in the densely populated and highly diverse region in and around the city of Cologne (see Table 1.4.1 for a comparison of the sample with NRW overall). All public school types were included in the sample (lower, intermediate and higher tracks as well as school types combining all tracks). 59% of the sample had a migration background, defined as at least one parent being born outside of Germany. This is notably higher compared to the average of NRW schools (36.9% in 2018/19; IT.NRW, 2019). This discrepancy is likely due to the mostly urban regions within which the participating schools are located. In the interpretation of the result, we thus need to be careful in the generalisation to more rural areas.

Table 1.4.1. Comparison of the SOCIALBOND sample to NRW schools

	Distribution of students per school type		% of people with a migration background	
School track	SOCIALBOND	NRW (only 8th-grade students)	SOCIALBOND	NRW
Lower school track	15.2%	6.9%	79.8%	56.8%
Intermediate school track	16.9%	21.7%	67.3%	47.3%
Higher or academic school track	37.5%	36.6%	47.1%	29.4%
Combined school track	30.4%	34.8%	58.9%	42.6%

Notes. NRW-data provided by Landesbetrieb IT.NRW (IT.NRW, 2019)

1.4.2 MEASUREMENT OF TRUST IN PEERS AND PEOPLE IN GENERAL

For the three empirical chapters as well as the additional analyses in Chapter 5, different types of trust targets are of interest: trust in generalised others, trust in unknown peers, and trust in little-known peers.

To measure trust in generalised others (generalised social trust), the SOCIALBOND survey included a standard survey item “In general, people can be

trusted". This measurement follows the grammar of *"A trusts"* without further specifying the trust target "B" or a matter at hand "X". This question or a variation of it has been used in social science research for decades to capture people's general beliefs about other humans. However, this approach has faced criticism (Nannestad, 2008). While it inquires very directly about what researchers would like to know, survey responses may be less straightforward to interpret due to the very high level of abstraction that is inherent to the grammar of "A trusts". It is unclear how survey participants arrive at an answer (see e.g., Delhey et al., 2011; Nannestad, 2008; S. S. Smith, 2010): for example, who do they define as "most people" or "people in general"? Do they use recent experiences as a basis for their answer, and, if so, do they generalise from (for example) experiences with their friends and family, or rather from experiences with strangers? Are there specific situations (or groups of situations) participants have in mind? What definition of trust do they have in mind? These questions illustrate, that there may be strong differences in how participants arrive at their response.

These issues and the required level of abstraction necessary to answer this survey question are likely even more problematic in the case of children or young adolescents as participants (de Leeuw, 2011; Omrani et al., 2019). Thus, rather than applying a similar strategy in case of context-specific social trust (e.g., "In general, the people in my grade can be trusted."), we developed a new measure of trust in peers for the SOCIALBOND survey. The goal was to assess adolescents' trust in (unknown and little-known) peers in an easy-to-understand, unambiguous way that requires little abstraction on the side of the participants and is close to their real-life experiences. We, therefore, applied a conceptualization of trust following the most specific grammar of "A trusts B with X", assigning each participant a particular person as a trust target and clearly defining the matter at hand. In the following, I will outline this new measurement strategy.

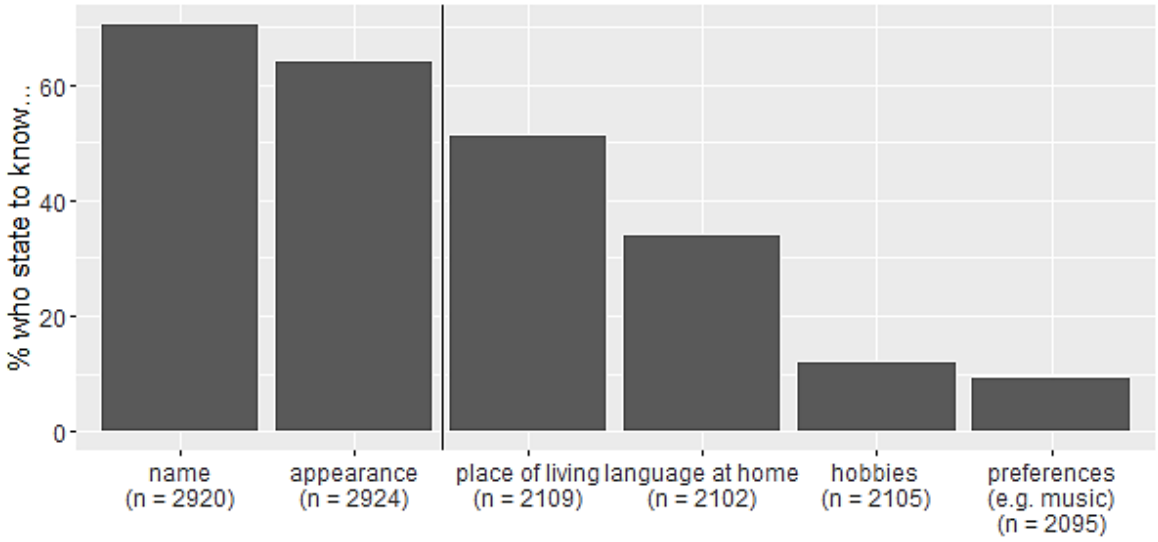
At the beginning of the survey, all participants received a list with the names of all students from their school grade, ordered by classrooms. Each name on this list had an ID number. Participants were assigned one random ID number identifying a fellow student from another classroom within the same grade. Subsequently, participants read a short story (see Appendix 8.1.4, p. 124). In the story, the randomly assigned student forgets their money for the school kiosk and now asks if they could borrow 5€ from the participant. Students were asked to imagine that they have enough money with them. They subsequently answered two questions: 1), would they lend the money to the other student? And 2), do they believe the other student will return the money? As this thesis is interested in trust *expectations*, I focus on the latter question in the analyses. Students further indicated how well they know the randomly assigned student, for example whether they knew their name, appearance, or place of residence.

The described scenario is very specific, leaves little room for interpretation and thereby is arguably more suitable for children and adolescents than very abstract survey items (such as "In general, people can be trusted."). The described scenario was pretested as an easily understandable and imaginable situation that is close to participants' real-life experiences. Almost every participant of a cognitive pretest (N = 12; carried out at a youth centre in Cologne) either stated that they had already experienced something like that or found it easy to imagine.

Only allowing random students from other classrooms within the school grade ensures relatively equal opportunities to know and observe the behaviour of the assigned peer (compared to selecting students from all classrooms including the own). It further ensures that it is at all possible to not or only indirectly know that student, given that students in the same classroom spent a significant amount of time in close proximity each day. Figure 1.4.1 shows that while a relatively large percentage recognized the name

(70.34%) or appearance (63.89%) of the other person, knowledge about the randomly assigned peer often does not go beyond this. Of those, who recognized name or appearance, only a few stated to know more personal information such as hobbies (11.83%) or preferences (9.26%)[2]. Thus, we still have a reasonable amount of people who do not know the other student to research context-specific social trust, while also being able to assess trust in recognized (but not well-known) peers.

Figure 1.4.1. Participants knowledge about the randomly assigned student



The proposed strategy is similar to other approaches which also describe everyday scenarios that require trust but insert random contemporary children's names (e.g., "Janet asks Brenda to lend her £1 and she does. The next day, Brenda sees Janet with a new bracelet. How likely is it that Janet will pay Brenda back?", Rotenberg et al., 2005). The main advantage of the here suggested approach is, that the trust target is a *real* person who likely also took part in the survey. Due to this, information about the random student can be matched to the answers of the participant. This is further particularly useful in the context of a survey, such as SOCIALBOND, that collects network information (e.g.,

[2] Only students who stated to know the name or appearance of the assigned peer were asked those follow-up questions.

regarding friendship, disliking or popularity). Thus, we can potentially combine data provided by the trusting individual “A”, the trust target “B”, and other peers in the context who made statements about “A” and “B”. We can further match aggregated information about the context itself.

The chosen scenario further holds parallels to a trust game (J. Berg et al., 1995). This form of economic game has the advantage that actual behaviour can be observed; however, this is neither the goal nor an ideal option in this case. Especially for children and adolescents, it is ethically questionable to give out the name of a partner with whom they will play a game which involves real money (at least if the trust game is fully played out). Further, trust games are expensive to conduct, need more explanation, and are practically difficult to implement within bigger surveys. Most importantly, in contrast to the illustrated scenario, playing a trust game is not an experience that is likely to happen outside of a survey or experiment.

Chapter 2 and Chapter 3, as well as the additional analyses presented in Chapter 5, focus on social trust (trust in unknown others). For this, only those participants who randomly received a fully *unknown* student (participants stated to not know the assigned peer’s name or appearance) are part of the analyses. Thus, this measure is the *school context-specific* counterpart to *generalised* social trust. One important feature of the suggested approach to context-specific social trust is the specificity of the question which leaves little room for (mis-)interpretation by the participants. By asking for trust in a specific, though unknown, person, within a clearly defined context, the "radius of trust" is clear: the person they think about is without a doubt a stranger within the school grade.

Chapter 4 focuses on trust in little-known peers – peers who are recognised but with whom there is no personal relationship (e.g., no history of interactions). In this case, only

those participants who recognised the name and appearance of the assigned grade mate but did not mention them in the network section of the study (e.g., as a friend, a person they disliked or received social support from etc.) were included[3]. Here, the advantage of being able to match information regarding the other person comes into effect. For this study, I am able to assign both the participant and their assigned mate values for their social standing within the school grade (e.g., in terms of the number of fellow students who rated them as popular in the grade).

[3] The goal of this approach is to exclude peers with whom participants have an (extensive) interaction history. I carry out several robustness checks using alternative approaches, as students might not mention all peers within the questions of the network section.

2 CHAPTER 2

Disentangling the impact of ethnic diversity on generalised and context-specific social trust in school settings

Abstract

Most research on the relationship between ethnic diversity and social trust has focused on relatively large contexts, such as countries, cities, or neighbourhoods. This article examines the diversity-trust nexus in the much smaller school context, which guarantees actual exposure to ethnic diversity. Data is drawn from a school survey in a highly diverse region in Germany. The analyses distinguish between the share of majority group students and the diversity of ethnic minorities as two components of ethnic diversity. Moreover, I examine trust in people in general as well as in unknown peers within the school grade and examine whether diversity affects majority and minority students differently. The results reveal strong evidence for a positive relationship between the share of the majority group and social trust for both majority and minority students. There is only weak evidence for a negative relationship between the diversity of ethnic minorities and social trust.

2.1 ETHNIC DIVERSITY AND SOCIAL TRUST IN SCHOOL SETTINGS

People with immigration background make up a growing part of the population in many developed countries (Peri, 2016). Simultaneously, also the ethnic diversity within the group of immigrants increases (see e.g., Akay et al., 2017 for the case of Germany). Understanding how this immigration and increase in ethnic diversity shapes people's lives has led to a large body of research within the last decades. One aspect that has received immense attention is the question of how ethnic diversity shapes social trust, that is, trust in strangers (Dinesen et al., 2020). Most studies thereby have focussed on adult samples and ethnic diversity within neighbourhoods, cities or countries. This study will add to the body of literature by investigating how ethnic diversity within schools relates to adolescents' social trust in a highly ethnically diverse region within Germany.

Adolescence is arguably an especially relevant time period for the development of trust in other people (Janmaat, 2009). While social trust seems relatively stable during adulthood research on adolescents shows higher variations (Flanagan & Stout, 2010). Puberty further marks a time period during which young people are less dependent on their parents while having increasingly more options to meet new people from different contexts (Clarke et al., 2021). Thereby, adolescents' positive expectations towards unknown peers and people in general might be an increasingly relevant characteristic in their daily life.

This study will focus on schools as a very important context for adolescents which offers many opportunities to get in contact with other peers (Dinesen, 2011). Schools fulfil several characteristics that make them especially interesting for research on ethnic diversity: first, attending school is legally mandatory for adolescents below a certain age and therefore almost unavoidable. Second, members have very few options for self-selection: there are usually only one or very few schools that a student can attend within reach. Parents have to move to another city or neighbourhood, or pay for a private school,

if they wish to strongly influence the choice of school. Third, especially within the same grade level, as is the focus of this study, this context is extremely stable, with mostly the same group of people being part of the same context over several years. Lastly, due to the large amount of time spent there, as well as the relatively small size of the context, some form of contact between pairs of students is generally possible, and even likely.

Despite an immense interest in and hundreds of studies focusing on the association between ethnic diversity and social trust there is no consensus regarding the nature of this relationship (Letki, 2008). A literature review by van den Meer and Tolsma (2014) found some evidence for a negative relationship in the USA but did not find the same for European countries. A recent meta-analysis by Dinesen et al. (2020) found a moderate negative effect of ethnic diversity on social trust overall. The results of their analysis further pointed to several reasons that may explain inconclusive results in the past: Ethnic diversity may matter more if it is observed at a more local level (e.g., in neighbourhoods vs. at the level of a country as a whole), as well as if the trust target is local (e.g., trust in people in the neighbourhood vs. trust in people in general). Due to the so far relatively little research in smaller-sized contexts, their focus stopped at the neighbourhood level. Whether this observation holds true for even smaller contexts, such as schools, in which actual contact is (highly) probable (Kaufmann & Goodwin, 2018) and exposure to ethnic diversity unavoidable, remains an open question (Dinesen et al., 2020).

Only a few studies have attempted to examine the relationship between school ethnic diversity and social trust finding varying results (Badescu & Sum, 2015; Dinesen, 2011; Janmaat, 2009, 2015; Loxbo, 2018). Dinesen (2011) examining Danish adolescents found no significant association between ethnic diversity and trust in people in general, nor an interaction between immigration status and diversity. In contrast, examining the Swedish context Loxbo (2018) found opposing effects for ethnic majority and ethnic

minority students: the share of majority within the school class had a positive impact for Swedish native students while for minority students it was negatively associated with trust in other people. Two studies on British students (Janmaat, 2009, 2015) found mixed evidence: Janmaat (2009) did not find a relationship between the share of white British students within a classroom and adolescents' trust in people in general, whereas Janmaat (2015), examining only the white British majority students, found a positive association with trust in people of one's own age group. Lastly, Badescu & Sum (2015) linked the share of non-Romanians (primarily Hungarians and Roma) to a decrease in trust in strangers and ethnic and religious out-groups for Romanian majority students. Overall, results so far do not show a clear general trend that is notable in all examined countries. Tentatively, there seems to be some evidence for a positive relationship between share of majority in classrooms and majority students' social trust.

My study makes several contributions to the study of ethnic diversity and trust in school settings: First, I analyse an additional and particularly ethnically diverse geographical region in the state of North Rhine-Westphalia in Western Germany. 29.3% of North Rhine-Westphalia's population in 2018 was either foreign-born or had at least one foreign-born parent according to micro-census data (IT.NRW, 2020). While there are no analyses of ethnic diversity and social trust at German schools, a few studies have examined this relationship at the neighbourhood or city-level with largely consistent results: Gereke et al. (2018) found evidence for a negative relationship between the share of people with non-German names in the neighbourhood and social trust in Western Germany. Similarly, Koopmans et al. (2014) showed a negative effect of ethnic diversity in German cities and regions on trust in neighbours for both German natives and immigrants. Using the same sample, Koopmans & Schaeffer (2015) further found that for German natives the ingroup share (thus the share of the German ethnic majority) is positively

related to trust in neighbours. In contrast, for immigrants, their ethnic ingroup share showed no relationship with trust while the diversity of ethnic outgroups had a negative impact.

A further important contribution of this study is the focus on disentangling the effect of ethnic diversity on social trust, by providing more evidence as to what aspect of diversity actually matters. Previous studies at schools primarily focused on the share of the majority within the overall population (with the notable exception of Dinesen, 2011). They thereby ignored the ethnic diversity *within* the group of minority students themselves. This may in part be due to the fact that the share of minority students in total is relatively low in many of the examined samples, thus the diversity within this group may be less notable (e.g., a large part of the Romanian or Swedish sample had no or only one ethnic minority student within the examined classrooms at all). Dinesen (2011) chose a different and very common strategy to depict ethnic diversity using the Hirschman-Herfindahl Index (HHI), which represents the likelihood that two random individuals within a context belong to different ethnic groups. In principle, this index does account for the diversity of ethnic minorities. However, in contexts with a clear majority and many minority groups, such an index is almost undistinguishable from the majority share (Schaeffer, 2013). Thus, using this approach still does not tell us much about whether the diversity of ethnic minorities relates to social trust. Hence, I separately examine the effect of the share of the overall majority (i.e., "native Germans") and the diversity of ethnic minorities (e.g., Akay et al., 2017; Schachner et al., 2015; S. Smith et al., 2016). Importantly, those components of ethnic diversity have different theoretical implications for minority and majority students and thus, separate analyses for both groups will be carried out.

Lastly, another potential limitation of previous studies is that they do not measure trust specific to the school context. Following the findings by Dinesen et al. (2020), ethnic

diversity may, however, more strongly affect trust locally – within the spatial boundaries in which it is measured – compared to trust in people in general (Wallman Lundåsen & Wollebæk, 2013). Thus, ethnic diversity within the school may especially affect trust in unknown peers within the school context. However, as schools are important and highly frequented contexts for adolescents, the generalization of experiences within the school context to other contexts and society in general seems likely. Thus, I will follow a twofold strategy, examining both trust in people in general ("generalised social trust") and trust in unknown peers in the school context ("context-specific social trust").

I use data from the second wave of the German school-based panel study "SOCIALBOND", which surveyed all 8th-grade students of the participating schools. Overall, I find consistent evidence for a positive relationship between majority share and social trust, irrespective of the trust measurement and for both, ethnic minority and majority students. I do not find a link between the diversity of ethnic minorities and context-specific social trust; however, there is some (however inconsistent) indication that the diversity of ethnic minorities negatively associates with generalised social trust.

2.2 WHAT IS SOCIAL TRUST?

Trust has been researched by various disciplines with vastly different conceptualizations and very little overlap. The major characteristic that most conceptualisations hold in common is that there must be some level of uncertainty regarding others' intentions. Without such uncertainty, "trust" would not be necessary. For the purpose of this study, I follow the reasoning that trust is a belief in, or positive expectation about, the actions and intentions of others (Möllering, 2001), assuming that others will act to one's benefit, or at least not act in a purposefully harmful way (Foddy et al., 2009; Offe, 2019). This stands in contrast to trust as a behaviour (e.g., *acting* as if another person were trustworthy), which will not be the topic of interest here.

Further, I focus on *social* trust, defined as a "disposition to trust unknown others by default" (Dinesen & Sønderskov, 2018, p. 2). Thus, I am not interested expectations regarding a specific person but a generalised unknown other. Trust has been analysed on different levels of abstraction with varying levels of uncertainty regarding the target of the trust and the matter at hand (Robbins, 2016; S. S. Smith, 2010; Uslaner, 2002). In its most specific form, it can be written as (Bulloch, 2013; Nannestad, 2008; Uslaner, 2002):

A trusts B with X

In the most general form of trust, neither the trust target (B) nor the matter at hand (X) is specified. Thus, we are left with "A trusts", which covers an abstract belief – or view of the world – that most people can be trusted ("generalised social trust"). In this study, ethnic diversity is measured within the spatial boundaries of the school. When speaking of "context-specific social trust" I refer to a trust target (B) that is an unknown other student visiting the same school grade. Given that the school context is so important and highly frequented, I assume that students will likely make generalizations from their experiences at the school to other contexts and society in general. Thus, I suspect context-related characteristics, such as ethnic diversity, to impact context-specific as well as generalised social trust.

2.3 ETHNIC DIVERSITY AND SOCIAL TRUST

Ethnic diversity combines information about 1) how groups are categorized, 2) the number of groups that exist in a context, and 3) how equally or unequally individuals are distributed among those groups (Koopmans & Schaeffer, 2015). Various different theories have been applied and may give insights into different aspects of ethnic diversity and how they relate to social trust. Theoretical arguments can be roughly distinguished into those

focusing on ethnic ingroup vs. outgroup sizes and those focusing on diversity in the stricter sense (i.e., considering multiple groups and their sizes in relation to each other).

2.3.1 INGROUP VS. OUTGROUP PERSPECTIVE

Theoretical argumentations based on homophily, the preference for being among similar others, state that mere exposure to (ethnic) outgroups decreases social trust (Dinesen et al., 2020; Koopmans & Schaeffer, 2015; Letki, 2008). People are sceptical about others who "look, act or think differently from themselves" (Gundelach, 2014, p. 129; Alesina & Ferrara, 2002; Uslaner, 2002). Being among people who are similar to oneself comes with advantages in communication (Dinesen et al., 2020). Similar others are more likely to share the same world views and norms, it is easier to be empathetic towards them and their behaviour is perceived to be more predictable compared to dissimilar others (Bjørnskov, 2008; Fukuyama, 1995). Being surrounded by many dissimilar people may lead to scepticism about the general trustworthiness of unknown people in that surrounding. Assuming that people of other ethnic origins are perceived as dissimilar and belonging to the outgroup, a higher share of the ethnic ingroup in a context should be associated with higher trust in unknown people within that context. This might further be generalised towards people in general, given that the context is highly frequented and experienced as typical.

The intergroup contact theory provides a prominent alternative to this line of thought: at the core, this theory states that positive contact with members of the outgroup reduces negative prejudice by reducing feelings of threat and uncertainty and increasing mutual understanding and empathy (Dovidio et al., 2017). In an extensive meta-analysis Pettigrew and Tropp (2006) found overall strong evidence for this theoretical account. Schools may take a central role when it comes to encouraging such intergroup contact, as they provide important contact opportunities with peers of different groups. Adolescents,

who go to schools with many ethnic outgroup members, may over time gain knowledge about and decrease uncertainties regarding outgroup members' actions and intentions – provided they use those opportunities and experiences with the outgroup are overall positive.

2.3.2 ETHNIC DIVERSITY

Following Putnam's (2007) constrict claim, people living in ethnically diverse contexts – that is contexts in which there are many smaller groups compared to one or a few large groups – are more likely to socially isolate themselves and show overall lower trust in people in general. Thus, while ethnically diverse contexts provide on average more contact *opportunities* with ethnic outgroup members, according to the constrict claim people may avoid those opportunities as well as contact overall. While Putnam's initial claim lacked thorough theoretical reasoning, other scholars since then suggested various explanations (Dinesen et al., 2020). In settings where many different cultures with their respective norms and values as well as different languages co-exist, it is more difficult to communicate, and correctly read a situation and act accordingly. Trusting a stranger in these diverse settings may therefore be more error-prone and risky than in homogenous settings. Generally, not trusting others may thus appear to be the safer approach. Further, following the homophily argument, people prefer to engage with others more like themselves. If people in highly diverse settings primarily engage with people of their own group networks would be overall less cohesive and thereby there would be lower social control (Schaeffer, 2013). The lack of social control may then reduce trust in other people in that context overall. Lastly, when many groups with various largely different preferences share a space it may be more difficult to come to agreements about commonly shared goals (Koopmans & Schaeffer, 2015) which may further result in lower trust. All of these assumptions imply that the existence of many different groups is more problematic

for social trust than the existence of a few big groups. Understanding each other and identifying common ground might be easier to achieve with fewer big groups.

However, there is some evidence that speaks against the proposed mechanisms: for example, studies in the school context that examine ethnic diversity and interethnic friendship suggest, that while adolescents show a stronger preference for ethnic ingroup friends in highly diverse settings, the absolute number of outgroup friends is still higher compared to less diverse contexts (see Thijs & Verkuyten, 2014 for an overview). Similarly, while Kalter and Kruse (2015) found evidence for higher ethnic homophily in ethnically diverse schools, friendship networks were equally as dense irrespective of the level of ethnic diversity in the school class. These findings thus do, at least, not support the assumption that ethnic diversity leads to social isolation and thus also challenges a negative association between ethnic diversity and trust.

In sharp contrast to the constrict claim, some authors have pointed out a potential positive effect of being among people from diverse backgrounds, specifically if those people belong to the outgroup: In the context of positive intergroup contact, for example, Brewer and Miller (1984) emphasize the importance of differentiating people of the outgroup into more fine-graded categories (compared to one seemingly homogeneous outgroup). They assume that this differentiation will lead to less salient boundaries, which can only be achieved if people interact with a diverse set of outgroup members. Similarly, Cao and Galinsky (2020) proposed in their more recently developed Diversity-Uncertainty-Valence (DUV) model of generalised trust development that trust develops when people experience many interactions with positive outcomes in which they are highly uncertain of the other's intentions, to begin with. If these positive experiences happen with a diverse (rather than a homogeneous) set of interaction partners this then leads to a generalization of trust towards people in general. Assuming that uncertainty prior an interaction is higher

with people of the ethnic outgroup, positive experiences with a highly diverse set of outgroup members may be linked to higher levels of social trust.

2.3.3 DISENTANGLING ETHNIC DIVERSITY, INGROUP SHARE, AND MAJORITY SHARE

Much research carried out in European countries utilizes the majority share (often defined as people without immigration background) as a proxy of diversity. Due to the usually high majority share in European contexts as well as the high number of ethnic minority groups, this indicator is often indistinguishable from other indicators of ethnic diversity that, in principle, do differentiate between different ethnic minority groups (Schaeffer, 2013). Consequentially, it is very challenging to gain a deeper understanding of which theoretical perspective may offer more insights, in particular since the majority share is equivalent to the ingroup share for a large proportion of the population. If we want to gain an idea about the effects of *diversity* it is, therefore, necessary to distinguish between the majority share and the diversity of ethnic minorities (S. Smith et al., 2016).

Importantly, both of these components of ethnic diversity have different theoretical implications for minority and majority students. As pointed out, for majority students they relate to ingroup share and outgroup diversity respectively - a differentiation that seems theoretically appropriate given the above-discussed arguments (Koopmans & Schaeffer, 2015). For minority students, the interpretation is less clear: First, most usually, the majority group is the biggest ethnic outgroup in a given context. If minority students primarily see themselves as being a minority (i.e., having an immigration background) compared to identifying with a particular ethnic origin (e.g., being Turkish), the majority share closely relates to the ethnic outgroup share. One might thus expect opposing effects for the minority and majority students regarding the majority share (as e.g., found by Loxbo, 2018).

However, this perspective may be unrealistic for most minority students: compared to other ethnic minority groups, the ethnic majority may be the group they feel most comfortable being around (next to their own) (Dinesen & Sønderskov, 2015). Students with an immigration background may have perfect knowledge of the German language, as well as of world views or norms of the ethnic majority and even identify themselves as German. In line with this assumption, a study examining adolescents with an immigration background in Germany found a, on average, relatively high national identification with Germany (Schulz & Leszczensky, 2016). Especially if an adolescent or one of their parents is born in Germany themselves they may not only know about but also have internalized similar views and norms and identify equally or even more closely with the ethnic majority (Diehl & Schnell, 2006). In contrast, other minority groups may be perceived as dissimilar, fully unknown and unpredictable to them. Thus, there is theoretical ground to assume that the majority share positively associates with social trust also for minority students.

Whereas for majority students the diversity of ethnic minorities is equivalent to outgroup diversity, for an ethnic minority student it does contain information on their ethnic ingroup share: higher diversity of ethnic minorities correlates negatively with the ingroup share of ethnic minorities, in particular for larger minority groups. Results obtained using this indicator alone might therefore be due to ingroup favouritism by minority students. Therefore, in the case of ethnic minorities, I not only distinguish between the majority share and the diversity of ethnic minorities but also include their ethnic ingroup share.

2.3.4 HYPOTHESES

So far, there is little evidence for a positive effect of diversity when focusing on social trust as an outcome in the case of Germany (Gereke et al., 2018; Kokkonen et al., 2014; Koopmans & Schaeffer, 2015) or the school context (Badescu & Sum, 2015;

Janmaat, 2009, 2015; Loxbo, 2018). Arguments, which assume outgroup share or ethnic diversity to have a positive effect on social trust, are based on the assumption, that more opportunities lead to more (positive) contact. This is not necessarily the case (Thijs & Verkuyten, 2014), though there is some evidence for more outgroup friendships in diverse German schools (Schachner et al., 2015). Importantly, intergroup contact theory primarily implies a *change* in social trust for the better given positive (diverse) outgroup contact. It may be that students in an ethnically diverse setting start off with lower levels of social trust (due to initial ingroup preference) which then increases over time. This study, does, however not examine this change over time, but only one particular point in time after most students have spent several years already in the same school. Assuming that there is an initial negative effect of ethnic diversity, I could only expect to find a positive relationship between indicators of ethnic diversity and social trust, if this effect was very strong.

In conclusion, following from the above-discussed theoretical arguments as well as prior research, I test the following hypothesis for ingroup share, the share of majority and diversity of ethnic minorities:

Hypothesis 1: A higher share of the ethnic ingroup is associated with higher (generalised and context-specific) social trust.

The share of majority is equivalent to the ingroup share for majority students. For minority students, two opposing hypotheses can be made regarding the share of the majority:

Hypothesis 2a: A higher share of the majority is associated with lower (generalised and context-specific) social trust for minority students.

Hypothesis 2b: A higher share of the majority is associated with higher (generalised and context-specific) social trust for minority students.

For the diversity of ethnic minorities the following hypothesis is tested:

Hypothesis 3: Higher diversity of ethnic minorities is associated with lower (generalised and context-specific) social trust.

2.4 DATA, MEASUREMENTS, AND METHODS

2.4.1 DATA

To test these hypotheses, I use the second wave of the school-based panel study SOCIALBOND. All students within the 8th grade in the participating schools in North Rhine-Westphalia, Germany were allowed to enter the study (participation rate: 80.44%). The survey included questions on various topics, such as students' social networks, ethnic background and social identification, lifestyle (e.g., music preferences), religion, life satisfaction and trust.

2.4.2 MEASUREMENTS

2.4.2.1 Dependent variables: generalised social trust & context-specific social trust

To measure generalised social trust, following a standard approach, students were asked to state their agreement with the statement "In general, people can be trusted" on a scale from 0 (agree completely) to 4 (disagree completely). I reverse the scaling so that higher values now indicate higher trust.

Given that this strategy is not without criticism – specifically, it is unclear who participants think about when answering this question – I use a new approach to measure context-specific social trust: each participant was assigned *one* random fellow student from one of the other classes within the 8th grade. Students read a short story in which the assigned grade mate forgets their money for the school kiosk and now asks if they can

borrow 5 euros from the participant (see Appendix 8.1.4, p. 124). To measure trust expectations, participants were asked how likely they thought it was that the other student would return the money, on a scale ranging from 1 to 4. Higher values mean higher trust. Each student was also asked several questions targeting if and how well they knew the assigned student. As the focus is on social trust or trust in unknown others, only those students who received an unknown partner (either name or appearance were not known) are part of the analytical sample for this analysis[4]. Thus, the context-specific social trust measure targets the positive expectation that a specific unknown peer within the school grade would return borrowed money. It thereby is very narrow and specific, with little room for (mis-)interpretation, where the standard measure for generalised social trust is very abstract.

2.4.2.2 Independent variable: ethnic diversity and majority group share

Ethnic origin serves as the basis for several variables in the analyses, most importantly ethnic diversity, diversity of ethnic minorities and the share of the ethnic majority. I measure ethnic origin using information from both the child's and the parent's country of birth. If both the child and the parents were born in Germany, the ethnic origin is coded as "German". If any of them came from a country other than Germany this country defined their ethnic origin. In a case where the father and the mother were born in different non-German countries, I used the birth country of the mother (Kalter & Kruse, 2015).

I distinguish two components of ethnic diversity: majority share and diversity of ethnic minorities within the grades. The former is the percentage of people without a

[4] This over-represents students who know fewer people in their grade, which might bias results. Therefore, I apply inverse probability weighting. Weights were determined by a logistic regression using the percentage of fellow students from another classroom a participant mentioned in the network section of the survey, the percentage of students from another classrooms who mentioned the participant as well as number of students outside of the own classroom (i.e., the size of the pool from which the random student was chosen).

migration background (e.g., the child and their parents are all born in Germany). To measure diversity I use the commonly used Hirschmann-Herfindahl Index (HHI). This index measures the likelihood that two random people within the same context belong to two different groups. It ranges between 0 and 1, where 0 indicates that all people belong to the same group and 1 means that each person belongs to a different group. I only use minority groups to calculate this index[5]. Additionally, for minority students, I account for a third indicator: ethnic ingroup share, or the percentage of students in the grade that have the same country of origin.

2.4.2.3 Analytical strategy and sample

I use linear regression analyses with robust standard errors clustered at the school grade level for both generalised and context-specific social trust – first for the full sample and then separately for majority and minority students. For context-specific social trust, I use inverse probability weighting to account for the fact that students who know fewer people in their grade are more likely part of the analytical sample. I further control for immigration generation, gender, age in month, as well as students' ability to afford things and activities and the school track they go to as proxies for their socioeconomic status.

Further, I test the robustness of my results following the idea of the multiverse analysis. In this analytical strategy, one first determines a set of *equally plausible* model specifications, for example, different operationalisations, sets of control variables, exclusion strategies or modelling strategies. Then, analyses are rerun with each combination of those plausible decisions. I present significance rates and sign stability for

[5] As discussed before, the HHI (as many other diversity indices) is almost undistinguishable from the share of the majority, if that share is relatively high in the analysed contexts. In the schools in this sample the share of majority ranges between 11.8% and 74.3%. Including German natives as an ethnic group in the calculation of the HHI results in a correlation between that index and share of majority of $r = -.95$, $p < .001$. To increase comparability to other studies, I include results of analyses with the ethnic diversity index using all ethnic groups in the Appendix, Table 8.1.12 and Table 8.1.13. There is no correlation between HHI without Germans and the share of Germans ($r = .01$, $p = .61$).

each of the independent variables. In the appendix, I further present significance rates by specification, to examine whether one (set) of specification(s) is likely responsible for lower or higher overall significance rates. For example, I include two alternative operationalisations of ethnic origin in addition to the approach used in the main analysis: One, following a stricter definition of immigration background where interethnic students (one parent born in Germany) are labelled as "German" and one where countries of origin are summarized into larger regions. The multiverse analyses then allow to evaluate whether results are overall robust or based on, for example, the specific definition of the ethnic origin. I further include several alternative operationalisations of students' SES, further indicators of school-level SES, an optional control variable for grade size and various exclusion strategies (e.g., excluding illogical answers or schools with changes in the classroom structure between the 7th and the 8th grade). In total, there are 216 unique combinations. An overview of the concrete alternatives used in the multiverse analysis is given in Table 8.1.4.

The analytical sample consists of 36 schools[6], 12 higher track schools, 7 intermediate schools, 9 lower track schools and 8 combined schools. Every student, who answered all questions relevant to the main analysis was included. The full sample consisted of 2,777 participants (47% female, 43.1% majority students). In the analytical sample testing context-specific social trust, which included only students who received a random partner they were unfamiliar with, 1,034 students were analysed.

[6] Originally, the dataset contained 37 schools. One school was excluded from the analytic sample due to massive changes just prior to the second wave of the SOCIALBOND study: the school added another classroom to the grade and reassigned the students; further, their grade size increased by roughly 50%. This school shows the highest percentage of first generation immigrants and a very unusual composition of ethnic groups in comparison to the rest of the sample.

2.5 RESULTS

2.5.1 DESCRIPTIVE ANALYSES

Descriptive statistics for all variables used in the main analysis can be found in the Appendix (Table 8.1.1 and Table 8.1.2). The share of students belonging to the ethnic majority ranges between 11.8% and 74.29% in the given sample. The ingroup share for minority groups lies between 0.6% and 36.84% with a mean of 7.94%.

The biggest minority groups are students with an immigration background from Turkey (22.8%), Poland (10.64%), Russia (6.46%), Morocco (4.24%) and Italy (3.74%). In six out of 36 schools, the overall ethnic majority ("native Germans") is *not* the biggest ethnic group. In five out of those six schools, students with a Turkish background make up the biggest group (with Germans as the second biggest; see Appendix Table 8.1.3 for an overview of the ethnic composition by school).

2.5.2 MAIN ANALYSES

Table 2.5.1 and Table 2.5.2 summarize the results of the regressions for generalised and context-specific social trust, respectively. The results indicate a positive relationship between the majority share and social trust for both majority and minority students as well as for both generalised and context-specific social trust. The coefficient is, however, only marginally significant ($b = 0.635$, $p = 0.058$) in case of context-specific social trust for majority students – likely as a result of the lower sample size. If we compare the empirical minimum and maximum of the majority share (e.g., 11.8% - 74.29%), this relates to an increase in the 5-point scale for generalised social trust of 0.446 scale points or 11.15% for majority students and 0.505 scale points or 12.6% for minority students. In the case of the 4-point scale for context-specific social trust, minimum compared to maximum majority share indicates an increase of 0.399 scale points or 13.31% for majority students and 0.505 scale points or 16.83% for minority students, respectively.

With respect to the diversity of ethnic minorities, I only find a significant negative relationship for minority students in the analysis of generalised social trust (b = -0.944, p < 0.05). For majority students, and in the analyses of context-specific social trust, there is no significant relationship. In terms of effect size, considering the empirical range (.675 to .945), this relates to a decrease in generalised social trust of 0.255 scale points or 6.37% of the scale. I do not find a significant relationship between the ethnic ingroup share and social trust for minority students.

To summarise, overall, I do find evidence for Hypothesis 1 for majority students: a higher share of the ethnic ingroup is associated with higher social trust for majority students but not minority students. Hypothesis 2a, stating that a higher share of the majority is associated with lower social trust among minority students clearly needs to be rejected in favour of Hypothesis 2b, stating the opposite. In the case of Hypothesis 3, evidence is overall weak, as I only find a negative association between the diversity of ethnic minorities and *generalised* social trust and only for minority students.

Table 2.5.1. Ethnic diversity and generalised social trust (OLS regression)

	All students	Majority students	Minority students	Minority students
Intercept	1.827***	2.277**	1.542*	1.588^{+}
	(0.527)	(0.821)	(0.739)	(0.890)
Share of Majority	0.771***	0.714***	0.817***	0.808***
	(0.118)	(0.194)	(0.155)	(0.164)
Eth. Minorities' Diversity	-0.604*	-0.197	-0.865*	-0.912*
	(0.283)	(0.306)	(0.385)	(0.425)
Share of Ingroup				-0.077
				(0.397)
No migration background	0.106			
	(0.077)			
2. Generation	-0.039		-0.008	-0.006
	(0.075)		(0.077)	(0.075)
interethnic	0.001		0.039	0.042
	(0.071)		(0.075)	(0.073)
Female (binary)	-0.255***	-0.147**	-0.336***	-0.336***
	(0.037)	(0.048)	(0.052)	(0.052)
Age (in month)	-0.002	-0.007^{+}	0.003	0.003
	(0.003)	(0.004)	(0.004)	(0.004)
Individual SES	0.219***	0.271***	0.187***	0.187***
	(0.035)	(0.049)	(0.051)	(0.051)
School track: lower	0.170**	0.045	0.198***	0.199***
	(0.062)	(0.102)	(0.060)	(0.060)
School track: intermediate	0.065	-0.072	0.131^{+}	0.131^{+}
	(0.063)	(0.070)	(0.078)	(0.078)
School track: higher	0.029	0.080	-0.044	-0.044
	(0.041)	(0.070)	(0.063)	(0.063)
Num. obs.	2777	1198	1579	1579
Adj. R-squared	0.056	0.065	0.043	0.043

Notes. $^{+}$ $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Standard errors are cluster-corrected at school level.

Table 2.5.2. Ethnic diversity and context-specific social trust (OLS regression)

	All students	Majority students	Minority students	Minority students
Intercept	1.399	1.379	1.182	1.493
	(-1.220)	(-1.352)	(-1.450)	(-1.331)
Share of Majority	0.785**	0.639+	0.857*	0.808*
	(0.274)	(0.334)	(0.386)	(0.406)
Eth. Minorities' Diversity	-0.057	-0.301	0.154	-0.145
	(0.693)	(0.652)	-1.016	(0.918)
Share of Ingroup				-0.399
				(0.626)
No migration background	0.047			
	(0.107)			
2. Generation	0.082		0.120	0.137
	(0.113)		(0.120)	(0.128)
interethnic	0.109		0.161	0.178
	(0.096)		(0.101)	(0.110)
Female (binary)	0.051	0.134	-0.015	-0.016
	(0.061)	(0.088)	(0.082)	(0.082)
Age (in month)	-0.000	0.002	-0.001	-0.001
	(0.005)	(0.007)	(0.006)	(0.006)
Individual SES	0.030	0.005	0.046	0.047
	(0.054)	(0.081)	(0.068)	(0.068)
School track: lower	-0.076	-0.469**	0.057	0.060
	(0.133)	(0.151)	(0.171)	(0.170)
School track: intermediate	0.002	-0.079	0.035	0.031
	(0.114)	(0.108)	(0.161)	(0.165)
School track: higher	0.218*	0.336**	0.095	0.092
	(0.100)	(0.103)	(0.146)	(0.147)
Num. obs.	1034	442	592	592
Adj. R-squared	0.057	0.099	0.027	0.026

Notes. $^{+}$ $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Standard errors are cluster-corrected at school level.

2.5.3 MULTIVERSE ANALYSES

Examining the robustness of the results, I reran all analyses with varying plausible operationalisation of the included variables, different sets of control variables or exclusion strategies[7]. This resulted in 216 unique combinations. The main goal of this strategy is to examine whether conclusions would have been similar had I decided on different, but equally plausible, strategies in the measurements and set-up of the models. In fact, the multiverse analysis reveals uncertainties, that are important to consider in the interpretation of the results. Table 2.5.3 and Table 2.5.4 summarise the percentage, in which the respective coefficient of interest is significant ($p < 0.05$ or $p < 0.1$, respectively) as well as the sign stability (percentage of models in which the sign pointed in the same direction) based on the 216 implemented alternative analyses.

In the case of the positive relationship between majority share and generalised social trust, all coefficients are positive and significant for both minority and majority students (i.e., 0 was within the 95%-confidence interval). In the case of context-specific social trust, in the pooled analysis including majority and minority students, the share of the majority is always positive and significant in 95.37% of the analyses (or 99.07% when using a significance level of 0.1). However, examining majority and minority students separately, results are not as clear, indicating a much higher uncertainty: only 74.54% of the coefficients are significant in the case of majority students and 64.81% in the case of the minority student (coefficients are marginally significant in 93.06% and 77.78% of all models, respectively). Considering that all coefficients were positive, and, in the case of the pooled analyses with an overall much higher sample size, almost always significant this is likely explained by the smaller sample size available for the analysis of context-specific social trust (the sample sizes range between 334 and 624 for majority and 233 and 585 for

[7] See Appendix, Table 8.1.4 for an overview of all used alternatives.

minority students depending on the model specification). Jointly examining all analyses, I, therefore, consider those results as evidence for a robust positive association between the share of majority and social trust.

Examining the relationship between the diversity of ethnic minorities and social trust, results are much less clear. For context-specific social trust, the multiverse analysis underlines the results from the main analysis: none of the coefficients are significant at a 5%-significance level. In the case of generalised social trust, however, more analyses give evidence for a significant negative relationship than no relationship for both majority and minority students. Examining the pooled data with all students, 70.83% of all models show a significant negative relationship between the diversity of ethnic minorities and generalised social trust. Coefficients are always negative. The analyses examining only majority students show a much lower significance rate of 42.13% (sign stability: 92.59%); examining only the minority students, 54.17% of the coefficients reach significance.

A deeper look at what specifications may be responsible for these uncertainties reveal that in particular, the operationalisation of ethnic origin results in very different significance rates. For majority students, the operationalisation of ethnic origin as chosen for the main analysis (e.g., defining the ethnic origin of students with one parent born outside of Germany as that parent's birth country) results in a significance rate of 0% whereas categorising students with one parent born in Germany as "German" led to a significance rate of almost 100%. In contrast, for minority students, summarising ethnic origin into larger regions, the diversity of ethnic minorities was significantly associated with generalised social trust in 100% of the analyses, whereas significance rates were below 35% for both other alternative operationalisations. Thus, choosing a different approach to measure ethnic origin would likely have changed my results and interpretation

fundamentally. The results found in the main analysis should therefore be interpreted with caution.

Looking at the connection between the ingroup share of minority students and social trust, there is hardly any evidence for a significant association in all of the analyses. Thus, choosing a different specification of the models would likely have resulted in the same conclusion as presented in the main analysis.

Table 2.5.3. Significance rates and sign stability - Generalised social trust

	All students		Majority students		Minority students		
	Share of majority	Eth. Minorities' diversity	Share of majority	Eth. Minorities' diversity	Share of majority	Eth. Minorities' diversity	Share of ingroup
Sig. rate (< 0.05)	100	70.83	100	42.13	98.15	54.17	0
Sig. rate (< 0.1)	100	81.02	100	49.54	100	66.2	0
Sign stability	100	100	100	92.59	100	100	77.78

Notes. Numbers in percent. Based on N(models) = 216

Table 2.5.4. Significance rates and sign stability - Context-specific social trust

	All students		Majority students		Minority students		
	Share of majority	Eth. Minorities' diversity	Share of majority	Eth. Minorities' diversity	Share of majority	Eth. Minorities' diversity	Share of ingroup
Sig. rate (< 0.05)	95.37	0	74.54	0	64.81	0	2.78
Sig. rate (< 0.1)	99.07	0.93	93.06	4.17	77.78	2.78	8.33
Sign stability	100	68.52	100	84.72	100	65.74	99.07

Notes. Numbers in percent. Based on N(models) = 216

Table 2.5.5. Significance rates and sign stability - Generalised social trust, by operationalisation of ethnic origin

	All students		Majority students		Minority students		
	Share of majority	Eth. Minorities' diversity	Share of majority	Eth. Minorities' diversity	Share of majority	Eth. Minorities' diversity	Share of ingroup
Ethnic origin: Student non-German if at least one parents not born in Germany							
Sig. rate (< 0.05)	100	27.78	100	0	100	29.17	0
Sig. rate (< 0.1)	100	51.39	100	0	100	61.11	0
Sign stability	100	100	100	77.78	100	100	66.67
Ethnic origin: Student non-German if both parents not born in Germany							
Sig. rate (< 0.05)	100	84.72	100	98.61	94.44	33.33	0
Sig. rate (< 0.1)	100	91.67	100	100	100	37.5	0
Sign stability	100	100	100	100	100	100	100
Ethnic origin: Country of origin summarised into larger geographical regions							
Sig. rate (< 0.05)	100	100	100	27.78	100	100	0
Sig. rate (< 0.1)	100	100	100	48.61	100	100	0
Sign stability	100	100	100	100	100	100	100

Notes. Numbers in percent. Based on N(models) = 72

2.6 DISCUSSION

This study found a positive relationship between majority share and social trust in German schools. This is in line with a recent meta-analysis on the topic (Dinesen et al., 2020) and previous research from neighbourhoods and cities in Germany (Gereke et al., 2018; Koopmans et al., 2014; Koopmans & Schaeffer, 2015) as well as findings for British (Janmaat, 2015) and Romanian majority students (Badescu & Sum, 2015). Importantly, and in contrast to a study conducted in Swedish schools (Loxbo, 2018), this positive relationship was also visible for minority students in the examined schools. Overall, results indicate a general favouritism of (a larger share of) majority group members in the school grade, while controlling for various potential confounders, including students' gender, SES and the type of school they go to. Given the very high negative correlation between majority share and ethnic diversity indices in German contexts this positive association found for minority students is similar to other literature in the German context that found a negative relationship between ethnic diversity and social trust for minorities (Koopmans et al., 2014; Koopmans & Schaeffer, 2015).

The results regarding the majority share are largely robust to various different modelling decisions (e.g., different operationalisations of ethnic origin and students' SES or the inclusion of further school-level SES indicators). Further, I do find this relationship for both measures of social trust, thus, irrespective of whether the focus is on people in general or unknown peers within the school grade. This further shows the robustness of these particular results, as both approaches to measuring trust followed vastly different conceptualisations with generalised social trust being conceptualized as abstract as possible ("A trust") and context-specific social trust as specific as possible (i.e., defining both a trust target and a matter at hand: "A trust B with X").

In contrast, I only find weak evidence regarding a negative association between the diversity of ethnic minorities and social trust, overall. In the case of context-specific social trust, there is no evidence at all that the diversity of ethnic minorities in the school grade matters. For generalised social trust, the multiverse analysis revealed very high uncertainties not allowing for a strong interpretation in one direction or the other. Most importantly, the operationalisation of ethnic origin – which serves as the basis to determine the diversity of minorities and the share of the majority – led to vastly different results. It needs further research examining how adolescents determine who belongs to which ethnic group and how they perceive ethnic group boundaries in their surroundings to offer more thorough guidelines for future studies.

Overall, this study is evidence of an ingroup bias for majority students, whereas for minority students the share of the ingroup within the school grade is not relevant to determining their trust in strangers. Finding no relationship between minority students' ingroup share and trust in strangers may be due to often very small ingroup sizes. It might need a relatively large share of ingroup members (that one is not already in contact with) to assume that a random stranger likely belongs to the same ethnic ingroup. In contrast, minority students also favour being surrounded by mainly majority students, which may indicate that a large part of minority students does not see the majority group as an outgroup or at least does not feel intergroup anxiety when it comes to interacting with majority group members. This may provide some evidence for a positive effect of intergroup contact for minority students, but *only* with respect to the majority group.

This study contributes to the analysis of ethnic diversity and social trust in several ways: 1) I analysed the small, contact-prone context of the school grade in a highly diverse geographical region in Germany. 2) I separated the share of the majority from the diversity of ethnic minorities to gain further insights into whether diversity rather than solely the

share of the majority impacts social trust. 3) I applied different methods to measure key concepts, as well as considered various variations in the model specifications via multiverse analysis.

Nevertheless, some limitations need to be taken into account. Most importantly the data used here are merely correlational and cover only one point in time. Thus, they cannot tell us anything about whether there is a *change* in social trust due to ethnic diversity in the school grade. For example, there could be an initial negative effect of being surrounded by many minority students due to homophily which may be overcome or even reversed over time given positive contact (with a diverse group of people) as intergroup contact theory or the Diversity-Uncertainty-Valence Model may suggest. However, most of the examined (8^{th}-grade) students have spent a large amount of their time in the last three years within this school grade, offering plenty of opportunities for positive contact with other students. If there would be a strong positive effect of (positive) contact one may assume to find evidence for a positive relationship after spending several years in that context. The results of this study could be interpreted in various ways: they could suggest a) little actual intergroup contact at diverse schools, b) overall more negative than positive contact or c) no or only a very small positive effect of intergroup contact when it comes to social trust. Future studies that directly consider positive and negative contact between students and use longitudinal data – which preferably observes students over several years starting by the time they enter secondary school – are needed to provide thorough testing.

While I assume that students and parents have few options to influence the school they go to, there is still possible self-selection into certain neighbourhoods based on their ethnic composition. Such self-selection into the neighbourhood could possibly explain a relationship between school diversity and social trust. If, for instance, particularly high trusting parents would be most likely to select neighbourhoods with a high majority share

as living places, this might produce the same results, assuming that adolescents' and their parents' trust as well as the share of the majority in the neighbourhood and the school are closely related. While those assumptions are quite reasonable, it is rather unclear why it should be the highly trusting individuals in particular who select the low-diversity neighbourhoods.

Finally, it should be taken into account that the analyses were based on a sample of schools from a highly diverse urban region and that relationships might differ in less diverse rural areas. Another limitation of the analytical sample is that it comprised only 36 schools. Especially in the analytical sample for context-specific social trust, the respective number of majority or minority students was very low for some of those schools. In the multiverse analyses some alternative model specifications further reduced the sample size, which is very likely the explanation for the lower significance rates in the analyses of context-specific social trust split for majority and minority students.

Overall, this study provides evidence for a moderate, positive relationship between majority share and social trust for majority *and* minority students, only weak evidence for a negative relationship between the diversity of ethnic minorities and social trust and no evidence for a relationship between ethnic ingroup share and social trust for minority students. Social trust is assumed to be crucial in human interactions and has been connected to adolescents' life satisfaction, mental and physical health as well as alcohol and drug use. Given the increasing share of ethnic minorities within German school populations, finding ways to decrease the importance that the distinction between majority and minority seems to have is a highly important task for schools. Future research should examine under which circumstances students are more prone to make this distinction and when ethnic origin does not play a role.

3 CHAPTER 3

How classroom composition affects social trust in secondary schools: The role of attribute alignment

Abstract

This study examines the relationship between the alignment of ethnic origin and gender in school classes and adolescents' social trust. Adolescents who visit classrooms which they can easily split into separate homogeneous subgroups that differ along several relevant criteria may be less likely to trust unknown others compared to those who visit classrooms in which important social criteria cross-cut each other and lead to very different sub-groups. We examine this assumption with 8th-grade students using survey data from German secondary schools. We analyse ethnic majority and minority students together as well as separately, since ethnic origin may have a very different presence in adolescents' lives depending on their majority or minority status and attribute alignment may therefore affect their perception differently. The analyses show a negative relationship between the alignment of ethnic origin and gender in the school class and generalised as well as context-specific social trust. However, this relationship was clear only for majority students whereas for minority students no significant relationship was found.

3.1 INTRODUCTION

With rising levels of ethnic diversity, many Western countries face the challenge to avoid conflicts along ethnic lines and ensure trust across groups, or more generally, trust towards strangers and people in general. This so-called social trust has been found to be of great importance, not only for people's mental health, life satisfaction and economic success (e.g., Mikucka et al., 2017; Prada & Roman, 2021; Zhang, 2020) but also for the functioning of society in general (Stolle 2002; Uslaner 2002). Previous work has focused extensively on the diversity-trust nexus, yielding mixed findings with a recent meta-analysis suggesting a moderately negative relationship on average (Dinesen et al., 2020). The variance of findings suggests that it is only under certain conditions that ethnic origin is a salient social characteristic due to which ethnic diversity reduces social trust. Our study examines one condition that has received hardly any attention in previous research on the diversity-trust nexus: attribute alignment.

Across different social sciences, a seminal idea has been that group boundaries tend to be stronger in social contexts where people across both sides of the boundary differ also along other dimensions (Blau, 1977; Lipset, 1960; Simmel, 1908), for example, when people of different ethnic origin also differ in terms of social class, religion, or gender. However, while previous studies have investigated how attribute alignment relates to outcomes such as segregation of friendships (Kroneberg et al., 2021a; Stark & Flache, 2012; Wimmer & Lewis, 2010; Zhao, forthcoming), defending against bullying (Hooijsma et al., 2021) or identity formation (Kroneberg et al., 2021a), we do not know whether it also affects social trust.

Our study focuses on the school context and asks how the alignment of ethnic origin and gender in school classes relates to adolescents' social trust. For example, do female students from the ethnic majority group trust strangers less, if their same-ethnic

classmates are also female whereas most minority students in their school class are male – compared to a school class in which gender is more evenly distributed across ethnic origin groups? If a school class can easily be split into smaller homogenous subgroups, which differ from each other in terms of both gender and ethnic origin, this might strengthen the notion that there are different moral communities that generally do not share the same values. As a result of such everyday experiences, students may perceive their moral community as more limited, which implies a lower generalised social trust (Uslaner, 2002).

We focus on adolescents in the school context for three reasons: First, as adolescence is a particularly formative period, young people's social trust can be assumed to respond strongly to their everyday experiences, with their school class providing a highly frequented and generally stable context. In particular, during early adolescence social trust seems to be more prone to change whereas during late adolescence and early adulthood, it tends to stabilize (Abdelzadeh & Lundberg, 2017; Flanagan & Stout, 2010). Second, compared to most other contexts, schools provide an environment in which adolescents of diverse backgrounds meet and are exposed to each other (Jugert et al., 2018), with relatively limited leeway to opt-out. Finally, to the extent that the composition of the school class in terms of ethnic origin and gender is actually consequential for students' social trust, it would provide potential leverage to promote social trust – by making sure that gender does not align with ethnic origin when assigning students to school classes.

We build on recent work by Kroneberg et al. (2021a) in focusing on how ethnic divides may be strengthened by their alignment with gender: Gender is a highly important social characteristic during adolescence (Kalter & Kruse, 2015; McMillan, 2022). Moreover, it lends itself to trace the causal effects of attribute alignment in school classes because its alignment with ethnic origin in school classes is largely accidental (i.e., less

due to selection compared to, e.g., the association of social class and ethnic origin). While Kroneberg et al. (2021a) showed that an alignment between ethnic origin and gender in school classes affects students' friendships and emerging identities, it did not cover social trust due to the absence of trust measures in their data (see already Kalter & Kruse, 2015).

Our study focuses on social trust or trust in strangers, given the high importance of this specific type of trust. We define trust as a *positive expectation or belief* about the actions and intentions of other people (Foddy & Yamagishi, 2009; Möllering, 2001). We further distinguish between generalised social trust and school context-specific social trust. The former targets a very abstract form of trust "in people" in general and without a limit to its radius. In theory, everyone would be included in this form of trust. Context-specific social trust, in this case, targets trust in an unknown peer *within the school grade*. Importantly, both forms of social trust go beyond the context in which alignment is measured (i.e., *the school class*) and therefore require generalisation.

Our analyses use data from a new study that surveyed almost 3000 students in early adolescence (roughly age 12 – 13) in 37 schools in Germany. The study employed separate measures of generalised social trust and school context-specific social trust. To measure generalised social trust, we use a standard survey item "In general, people can be trusted". However, this measure is not without criticism (Nannestad, 2008) and it is an open question whether people, and in particular young adolescents, are able to make this strong abstraction. We therefore further examine context-specific social trust using a newly developed measure of trust that is much more specific and thereby possibly more appropriate to measure trust among young adolescents.

Our results show that social trust tends to be lower in school classes where ethnic origin and gender align. Comparing ethnic majority and ethnic minority students, we find

that this average association conceals an important effect heterogeneity: While attribute alignment is associated with lower (generalised as well as context-specific) social trust among majority students, it is not significantly related to minority students' social trust.

3.2 THEORETICAL BACKGROUND AND PREVIOUS RESEARCH

Uslaner (2002) proposed the idea of moralistic trust, the notion that people *ought* to trust or behave *as if* others were trustworthy. It targets "the belief that others share your fundamental moral values and therefore should be treated as you would wish to be treated by them" (Uslaner, 2002, p. 18). Similarly, other scholars have suggested trust, and in specific, trustworthiness to be based on a moral value or social norm (e.g., Bicchieri et al., 2011; Dunning et al., 2014; Möllering, 2001; Reiersen, 2018; Sztompka, 2019). So long as another is expected to have the same values, to adhere to the same social norms, they can and should be trusted. Generalised social trust - the perception that most people can be trusted – thus targets "how *widely* people view their moral community" (Uslaner, 2002, p. 27), how many people they assume to share those same values. People high in generalised social trust include most people within their moral community, while people low in this type of trust perceive their moral community to be restricted to only their kin or members of their own social group.

As mentioned before, the concept (and measurement) of generalised social trust is very abstract and it stands to question whom individuals include in their assessment of "most people" or "people in general". However, we can easily apply the same logic within a more limited context, such as the school: if students perceive most people within their school as part of their moral community, they should have higher trust in unknown peers than if they perceive their moral community to be limited.

In societies that are strongly divided by, for example, ethnicity or religion, people do not perceive members of other groups within the society to be part of the same moral community with whom they share common interests and values (Uslaner, 2002). Thus, people in such societies should be low in generalised social trust. Similarly, Brewer assumes that outgroup antagonism or ingroup favouritism may be the strongest in "highly segmented societies that are differentiated along a single primary categorization, such as ethnicity or religion" (Brewer, 1999, p. 439). Contexts, in which more than one distinguishing characteristic is relevant and divides members into *different* groups might, in contrast, reduce conflict (Crisp & Hewstone, 2007). If there are multiple characteristics relevant to a person, outgroup members defined by one criterion may be in-group members using a different criterion. This makes people less dependent on one specific in-group and might blur the lines between in- and outgroups. Brewer (1999) expects higher tolerance for outgroups in general to be the consequence. Following the idea of moral communities, this should also result in higher generalised social trust. In contrast, if different important characteristics lead to the same group categorization, group boundaries should be most visible.

Hence, there are strong theoretical grounds to expect that attribute alignment – the contextual correlation of different characteristics – should lead to stronger group boundaries and reduce social trust. Up to date, however, previous research on trust in the school context has not examined this hypothesis.

3.2.1 ETHNIC DIVERSITY AND TRUST IN THE SCHOOL CONTEXT

Several studies have examined the association between ethnic diversity (or share of majority) and social trust in the schools in various European countries (Badescu & Sum, 2015; Dinesen, 2011; Janmaat, 2009, 2015; Loxbo, 2018). Studies from Denmark (Dinesen, 2011) and England (Janmaat, 2009) showed no general relationship between

ethnic diversity and social trust. However, using a Swedish sample, Loxbo (2018) found ethnic majority students to be positively impacted by the share of majority students within the classroom, while their fellow minority students showed decreased social trust. Two further studies, one from England (Janmaat, 2015) and one from Romania (Badescu & Sum, 2015) only focused on majority students. Both found a positive relationship between the share of majority and various forms of social trust. Hence, while there is no support for a strong generic effect of ethnic diversity on social trust in European schools, the evidence suggests a positive relationship between the share of majority students in classrooms and majority students' social trust. Going beyond previous studies on the diversity-trust nexus in the school context, we theorize and examine the role of attribute alignment in school classes for students' social trust.

3.2.2 ALIGNMENT OF ETHNIC ORIGIN AND GENDER IN THE SCHOOL CLASS: PREVIOUS FINDINGS AND ITS ROLE FOR SOCIAL TRUST

The idea that social cohesion is greater in contexts where people's socio-demographic attributes crisscross each other is a classic one (Blau, 1977; Lipset, 1960; Simmel, 1908). In the school context, Moody (2001) showed for the United States that students tend to befriend same-race students in schools where racial groups differ in their socio-economic composition. Another study examining Dutch students suggests, that the alignment of ethnic origin and cultural tastes (such as music preferences) or attitudes towards pro- and antisocial behaviours increases tendencies to choose same-ethnic friends (Stark & Flache, 2012).

For schools, many of these correlates of ethnic origin are given and can hardly be changed. However, school administrators are largely free in the assignment of students to school classes and therefore could ensure that ethnic and gender boundaries crisscross each other whenever possible (Kroneberg et al., 2021b). Currently, when assigning students to

school classes, school administrators aim to balance gender compositions, try to group students that come from the same primary school or neighbourhood, or allow students to nominate other students whom they (do not) want to have as classmates (Kroneberg et al., 2021b). However, based on a survey of German headmasters, Kroneberg et al. (2021b) conclude that schools rarely pay systematic attention to the question of how gender will *align* with ethnic origin in the school classes when assigning students to school classes. Thus, so far, the alignment of these characteristics is largely accidental, making them particularly suited to trace the causal effects of attribute alignment in school classes.

Based on these arguments, Kroneberg, Kruse, and Wimmer (2021a) have recently examined how ethnic divides may be strengthened by their alignment with gender. Using survey data from schools in England, Germany, the Netherlands, and Sweden (CILS4EU, 2016; Kalter et al., 2016), their analyses showed that, especially for minority students, the alignment between ethnic origin and gender in school classes leads to more same-ethnic friendship and less identification with the country they live in. However, they did not consider the potential effects on social trust and their data source lacks measures of this concept (Kalter & Kruse, 2015).

To understand the potential effects of attribute alignment and social trust, we first have to take into account the intensity and significance of school experiences for children and adolescents (Eccles & Roeser, 2011). It is in this context that they meet other people outside of their immediate family and spend, on a very regular basis, long periods of their days with the same group of people for several years. As such, they might transfer the cleavages they perceive in this surrounding to their general perception of the world as a whole. Divisions may be most obvious and stronger if several characteristics distinguish the different groups within one classroom, for example, when gender and ethnic origin align. In contrast, a division of the class into homogenous subgroups becomes increasingly

difficult if important distinguishing characteristics cross-cut each other (e.g., when splitting the classroom by gender or by ethnic origin would lead to vastly different subgroups). In such a case, students might be more likely to experience the whole class as a single group. Given the importance and regularity in which they visit this context, this experience might strengthen the general perception that (most) people, inside and outside of the school context, belong to the same moral community and can be trusted.

Hypothesis 1: Strong alignment between ethnic ingroup vs. ethnic outgroups and gender in the school class decrease generalised and context-specific social trust.

Following previous research on ethnic diversity and social trust in the school context (Badescu & Sum, 2015; Dinesen, 2011; Janmaat, 2009, 2015; Loxbo, 2018), we expect that attribute alignment may affect majority and minority students in different ways. Three studies found a positive relationship between the share of majority students in classrooms and majority students' social trust (in Sweden, Loxbo, 2018; in England, Janmaat, 2015; in Romania, Badescu and Sum, 2015). In turn, majority students' social trust seems to be lower in classrooms with a greater share of minority students. But why would majority students be particularly sensitive to a stronger presence of ethnic minorities? Smith et al. (2016, pp. 1256–1257) argued that "ethnically diverse classes are threatening to natives but not to immigrants. Native adolescents are used to being part of the majority ethnic group in their countries, and as such, becoming part of the numerically ethnic minority in a class challenges their dominant position. Immigrants, however, are familiar with a minority status, and as such, ethnic threat plays a weaker role in their friendship choice."

While the assumption that the outgroup is perceived as threatening seems unnecessarily strong, this argument rightly points out that majority and minority students

come from different starting points: For minority students, most other people belong to ethnic outgroups, such as majority group members or members of another ethnic minority. Ethnic background may therefore be a naturally relevant criterion along which most ethnic minority students distinguish groups in society and which may be important for their own identity (Kinket & Verkuyten, 1997). In contrast, for majority students most people belong to their ethnic ingroup. Ethnic origin might not generally be a criterion that most majority students use to distinguish people into different groups. While they may always feel as part of the majority, this may not hold the same importance to them as for minority students (Kinket & Verkuyten, 1997; Skey, 2010).

If generalised social trust captures the perception of the width of one's moral community then attribute alignment might not make much of a difference for ethnic minorities. They already perceive society as being split along ethnic lines and their own group as occupying a relatively small niche. In contrast, attribute alignment may lead majority students to see divides that they would otherwise not perceive to the same extent. Again, this logic should apply to school context-specific social trust in a similar way as to generalised social trust. This yields the following, second hypothesis:

Hypothesis 2: Strong alignment between ethnic ingroup vs. ethnic outgroups and gender in the school class decreases generalised and context-specific social trust for majority students. For minority students, such alignment is less associated with social trust.

At first sight, this hypothesis of a stronger effect of attribute alignment among majority students may seem to contradict the finding by Kroneberg et al. (2021a) that attribute alignment decreased identification as members of the nation, but only for minority groups. However, this pattern supports the same theoretical argument about different degrees of taken-for-grantedness. While majority students "typically identify with the

nation without much questioning" (Kroneberg et al., 2021a, p. 922) and are therefore not affected by school class composition in this identification, they are much more vulnerable when it comes to social trust. In contrast, identifying as a member of the nation to the same extent as the majority group is demanding and less self-evident for minority students, while they are much more used to perceiving society as being split along ethnic lines and therefore less inclined to show the same width of social trust.

3.3 DATA, MEASURES, AND METHODS

To test our hypotheses, we use data from a large-scale survey conducted in 37 school in 2019 in North Rhine-Westphalia, Germany. The survey was conducted in an urban area characterized by high levels of ethnic diversity and was designed to gain a better understanding of social boundary making in the school context. The questionnaire collected information on students' social networks, their ethnic background, self-identification and trust in peers and people in general. In the participating schools, all students of the 8th grade with parental permission were interviewed (response rate: 80.44%). One school had to be excluded due to massive changes in classroom structure and student body just prior to the data collection.

3.3.1 MEASURES

3.3.1.1 Dependent variables:

We use two measures of social trust, which capture respondents' trust 1) in people in general (generalised social trust) and 2) in unknown peers in the school grade (context-specific social trust). *Generalised social trust* was measured using a standard approach by asking students to report their agreement with the statement that "In general, people can be trusted" (on a scale ranging from 0 to 4, with higher values indicating higher trust).

Context-specific social trust is measured using a newly developed approach particularly appropriate for small contexts. Instead of asking about other students in general, we assigned each participant *one* random fellow student from one of the other classes within their grade. For this analysis, only those students who received an unknown partner (either name or appearance was unknown) are included in the analysis. Students then read a short story in which the assigned grade mate forgets their money for the school kiosk and now asks if they could borrow 5 euros from the participant[8]. Participants subsequently stated their expectation that the other student would return the money (on a scale ranging from 1 to 4, higher values again indicating higher trust).

3.3.1.2 Independent variables:

Ethnic origin: Following Dollmann, Jacob and Kalter (2014), we define ethnic origin using the country of birth of the student and their parents. If the student and their parents were born in Germany, their ethnic origin is coded as "German." If the student migrated themselves, their country of birth defines their ethnic origin; otherwise, their (immigrated) parent's country of birth is considered. In the case, that both parents are born in different non-German countries, the mother's country of birth is chosen.

Attribute alignment of ethnic origin and gender: To determine the degree of attribute alignment (that is, the association between ethnic origin and gender) in a class, we calculate Cramer's V. Thereby, we consider all students who did not have the same ethnic origin, and thus are not ingroup-members according to this categorization, to be part of the outgroup. This follows the assumption that people do not distinguish between a diverse set of outgroup members but see them as one coherent group (Brewer, 1999). For instance, in a classroom in which all students with a Turkish background are girls and all other students

[8] This scenario was found to be easily imaginable and realistic for school students in a cognitive pretest carried out with adolescents at a Cologne youth center (N=12).

are boys, there would be a perfect alignment between ethnic group and gender for those Turkish girls (or a Cramer's V of 1). In doing so, each member of a specific ethnic group in a classroom receives the same value for attribute alignment. Only ethnic origins that have a prevalence of *at least three* students in a classroom are considered, while students who are the only individuals of their ethnic origin or only have one other ingroup member in the classroom did not receive a value for attribute alignment and are thus not part of the final analysis. As this largely reduces the sample size, in particular for minority students of less prevalent ethnic origins, we further conduct robustness checks including all students with at least one other ethnic ingroup member in the classroom.

3.3.2 STRUCTURAL AND CONTROL VARIABLES

As argued by Kroneberg et al. (2021a), the alignment of ethnic origin and gender in school classes can largely be assumed as random as long as several structural variables are taken into account in the analyses. Accordingly, we control for the number of students visiting a classroom, the ethnic in-group size, the share of majority, the share of females, as well as ethnic and gender diversity in the classroom. Additionally, we control for sex, age (in month), secondary school type (basic track, intermediate track, academic track, combined schools) and immigrant generation (native, first, second and interethnic).

3.3.3 ANALYTICAL STRATEGY AND SAMPLE

To test the hypothesis that attribute alignment is associated with lower (generalised and context-specific) social trust, we estimated several linear regressions with clustered standard errors for school classes. We further explore the possibility that associations may differ between ethnic majority and minority students by conducting separate analyses for both groups and for both generalised and context-specific social trust.

The final sample for the analysis of generalised social trust consists of 1695 students visiting 139 classrooms at 36 schools (47.33% girls and 70.2% majority students)[9]. Note that of the original sample almost 3000 students only 57.21% of the participants had at least two other ingroup members in the classroom, which was the criteria for the calculation of attribute alignment.

For the analysis of context-specific social trust, only the subsample of students who randomly were partnered with an unknown student (n = 1069) could be part of the analysis. While this fellow student was assigned randomly, whether or not the participant *knows* this random student by name or appearance, depends on the percentage of people they know in their grade. To account for this, we applied inverse probability weights previously determined by logistic regression analysis: students are weighted more strongly in the analysis, the more students they know within the grade outside their own classroom, the more students outside their own classroom know them and the smaller the school grade they visit[10]. Results were largely the same compared to analyses without this weighting strategy. The final sample for the analysis consists of 647 students visiting 133 classrooms at 36 schools (42.92% girls and 68.27% majority students)[11].

[9] For a minimal group size of 2, the final sample for generalised social trust consists of 2018 students visiting 146 classrooms at 36 schools (47.08% girls and 60.16% majority students).

[10] The concrete predictors used in the logistic regression were:

- percentage of fellow grade mates outside of the own classroom mentioned in the network section (this includes a wide range of network types, e.g., friends, people one dislikes, people one talks about with ones friends, as well as members of cliques one knows about in the grade).
- Percentage of fellow grade mates outside of the own classroom that mention the participant in the network section.
- Number of grade mates who do not go in the same class (this is the pool of people the random student was drawn from).

[11] For a minimal group size of 2, the final sample for context-specific social trust consists of 764 students visiting 141 classrooms at 36 schools (43.32% girls and 58.77% majority students).

3.4 RESULTS

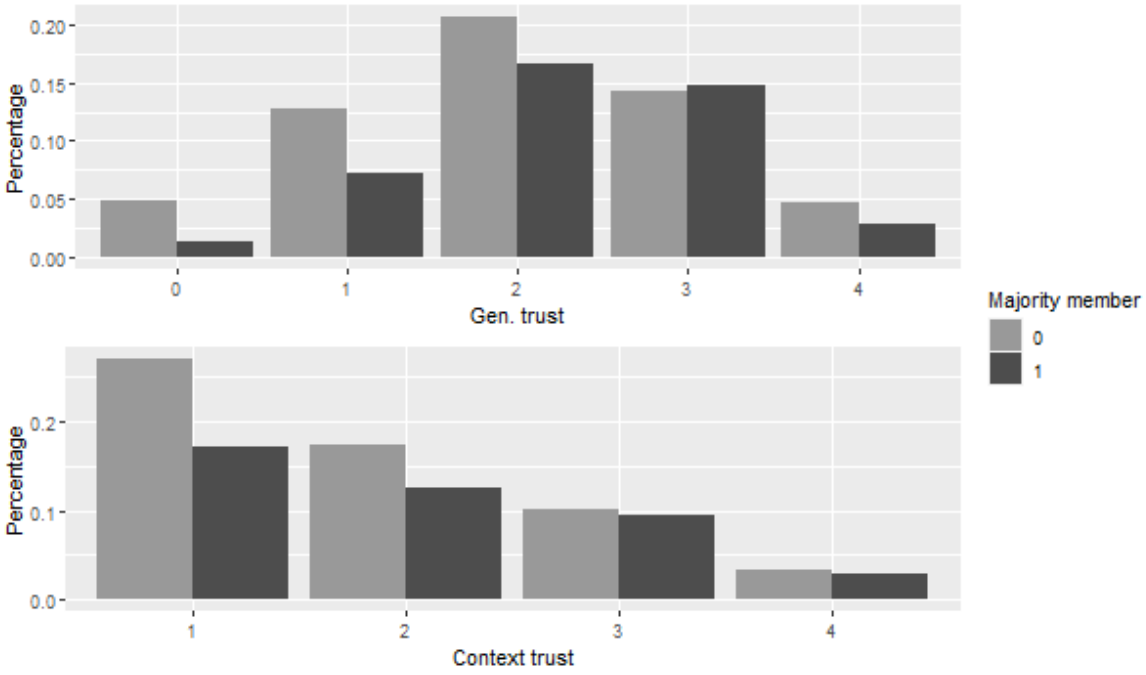
3.4.1 DESCRIPTIVE ANALYSES

The mean attribute alignment in the analytical sample for generalised social trust is moderate with a Cramer's V of 0.2, ranging between 0 and 0.681. There is no significant difference in the attribute alignment of ethnic majority or minority groups ($t(252.93) = -0.4095$, $p = 0.683$). The average number of students per ethnic group within the classrooms is 6.826 with a previously defined minimum of three and a maximum of 22. The average group size for majority groups thereby was expectedly higher ($M = 9.346$) than that of ethnic minority groups ($M = 4.276$; $t(162.97) = -10.602$, $p < 0.001$). The biggest ethnic minority group within one classroom consisted of 11 students with Turkish background. Besides majority students, only students with a Turkish background ever visited classrooms with more than 5 fellow students of the same ethnic group. Generally, of the over 100 different ethnic origins within the SOCIALBOND dataset, only 18 fulfilled the minimum group size criterion of at least 3 students per ethnic origin in any of the classrooms. This reflects the strong diversity of ethnic minority groups in German contexts.

The average generalised social trust in the analytical sample is 2.182 on a scale ranging from 0 to 4. This is slightly but significantly higher compared to those excluded from the sample due to an ethnic ingroup size of under three ($M = 2.026$, $t(2296.4) = 3.948$, $p < 0.001$). This is mainly due to the overrepresentation of minority students in the group excluded from the analysis: only 26 majority students in comparison to 1124 minority students do not fulfil the minimum group size criteria. On average, majority group members are more trusting than minority group members ($M = 2.255$ vs. $M = 2.008$ in the final analytical sample, $t(855.43) = -4.6122$, $p < 0.001$). The average context-specific social trust was 1.883 on a scale ranging from 1 to 4. As with generalised social trust, we

find lower context-specific social trust of minority students (*M*= 1.7) compared to majority students (*M* = 1.968, *t*(457.39) = -3.635, *p* < 0.001 in the final sample).

Figure 3.4.1. Distribution generalised and context-specific social trust by majority status



3.4.2 MULTIVARIATE ANALYSES

Table 3.4.1 summarizes the result of the linear regressions for generalised and context-specific social trust in a pooled analysis of both majority and minority students. The results partially support our Hypothesis 1: The coefficient for attribute alignment is negative in both cases, however only significantly relates to generalised social trust. The alignment of ethnic origin and gender has an empirical minimum of 0 (no alignment at all) and a maximum of 0.681 (for the generalised social trust sample) or 0.6455 (for the context-specific social trust sample). Thus, the difference between the minimum and maximum alignment translates into a difference on the 5-point generalised social trust scale of -0.347 points (or 8.68% of the scale). For the context-specific social trust, the maximum difference in alignment translates into an (insignificant) difference of -0.26 points on a 4-point scale (or 8.61% of the scale).

Table 3.4.1. Alignment of ethnic origin and gender and social trust (OLS-regression)

	Generalised social trust	Context-specific social trust
Intercept	4.44***	1.06
	(0.80)	(1.09)
Attribute alignment	-0.51**	-0.40
	(0.20)	(0.28)
Size ethnic group in class	0.00	0.05**
	(0.01)	(0.02)
Class: num. students	-0.01	-0.03*
	(0.01)	(0.01)
Class: ethnic diversity	-0.51	0.98
	(0.56)	(0.74)
Class: gender diversity	-0.74	0.66
	(0.56)	(0.71)
Class: majority share	0.22	0.47
	(0.35)	(0.50)
Class: share of girls	-0.05	0.01
	(0.21)	(0.36)
Sex (ref.: male)	-0.18***	0.13
	(0.05)	(0.08)
Age (in month)	-0.01*	0.00
	(0.00)	(0.01)
Immigrant: second generation	-0.14	-0.17
	(0.14)	(0.18)
Immigrant: interethnic	0.07	-0.01
	(0.14)	(0.21)
Immigrant: Native	-0.00	-0.22
	(0.14)	(0.18)
School: lower track	0.20*	-0.32*
	(0.08)	(0.14)
School: intermediate track	-0.08	0.01
	(0.08)	(0.10)
School: higher track	0.08	0.28**
	(0.06)	(0.09)
Num. obs.	1695	643
Adj. R-squared	0.05	0.08

Notes. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Standard errors are cluster-corrected at classroom level.

The comparison between ethnic majority and ethnic minority students, however, shows an interesting pattern for both generalised as well as context-specific social trust (see Table 3.4.2). While attribute alignment never significantly relates to minority students' social trust, it does significantly and negatively associate with generalised and context-specific social trust for majority students. The empirical maximum of attribute alignment in the case of majority students was 0.6455, thus a coefficient of -.63 relates to a maximum difference of 0.407 scale points (or 10.17% of the full generalised social trust scale). For the context-specific social trust, the difference between the empirical minimum and empirical maximum of attribute alignment translates to 0.452 scale points (or 15.06% of the full context-specific trust scale). These results may indicate the greater importance of attribute alignment for majority students as indicated by Hypothesis 2. However, differences in the coefficients are not significant and due to small sample sizes especially among minority students, we refrain from a strong interpretation of those results[12].

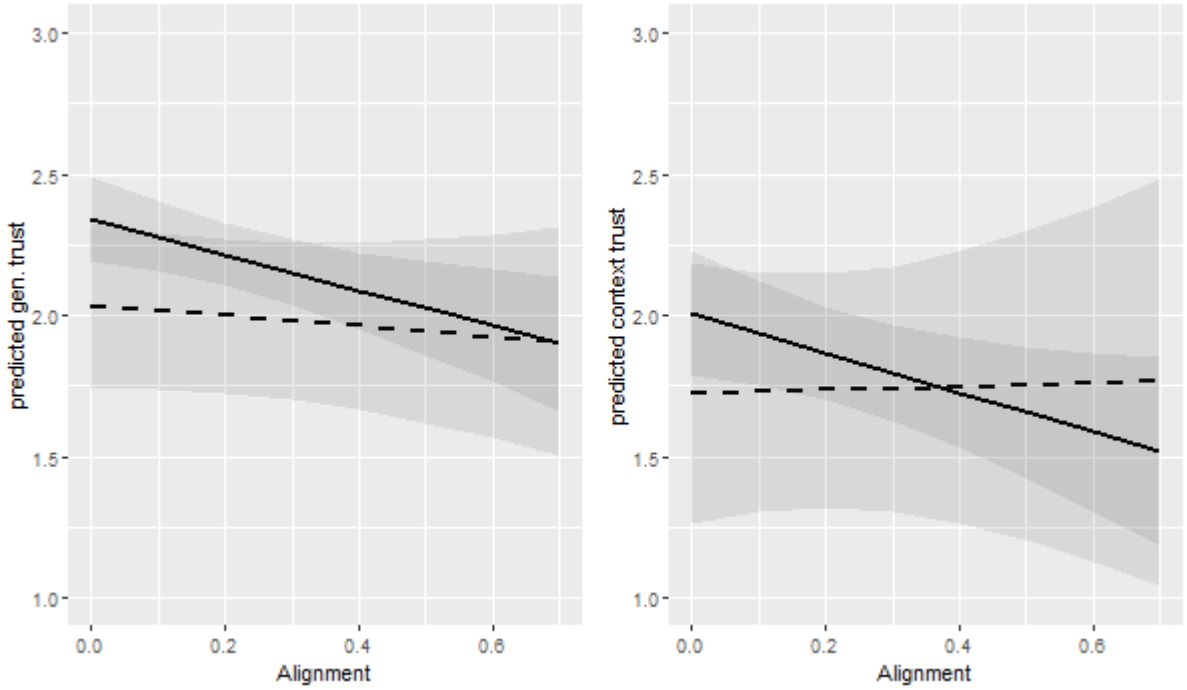
[12] Hypothesis 2 implies an interaction effect. As can be seen in the Appendix, Table 8.2.4, we do not find a significant interaction between majority status and attribute alignment (b = -0.56, p = 0.13 for generalised social trust and b = -0.99, p = 0.17 for context-specific social trust).

Table 3.4.2. Separate analyses for majority and minority students: alignment of ethnic origin and gender and social trust (OLS-regression)

	Generalised social trust		Context-specific social trust	
	Majority students	Minority students	Majority students	Minority students
Intercept	5.05***	5.41***	1.57	-0.46
	(1.14)	(1.56)	(1.45)	(2.28)
Attribute alignment	-0.63**	-0.18	-0.70*	0.06
	(0.23)	(0.30)	(0.33)	(0.61)
Size ethnic group in class	0.04	-0.00	0.04	0.05
	(0.03)	(0.02)	(0.06)	(0.04)
Class: num. students	-0.03	-0.01	-0.04	-0.03
	(0.02)	(0.01)	(0.03)	(0.02)
Class: ethnic diversity	-0.11	-2.60**	0.51	1.54
	(0.66)	(0.87)	(0.92)	(1.46)
Class: gender diversity	-0.92	-0.48	0.61	0.94
	(0.66)	(0.97)	(0.89)	(1.41)
Class: majority share	-0.38	-0.61	0.13	0.94
	(1.02)	(0.57)	(1.54)	(1.07)
Class: share of girls	-0.21	0.46	0.00	-0.15
	(0.22)	(0.55)	(0.39)	(0.78)
Sex (ref.: male)	-0.16**	-0.22	0.13	0.13
	(0.05)	(0.11)	(0.10)	(0.14)
Age (in month)	-0.01*	-0.01	0.00	0.00
	(0.00)	(0.01)	(0.01)	(0.01)
Immigrant: second generation		-0.09		-0.10
		(0.15)		(0.21)
Immigrant: interethnic		0.07		0.02
		(0.15)		(0.22)
School: lower track	0.03	0.34**	-0.54***	-0.16
	(0.14)	(0.12)	(0.16)	(0.27)
School: intermediate track	-0.11	-0.02	-0.07	0.06
	(0.11)	(0.11)	(0.12)	(0.18)
School: higher track	0.08	-0.06	0.32**	0.07
	(0.08)	(0.11)	(0.10)	(0.17)
Num. obs.	1190	505	439	204
Adj. R-squared	0.04	0.03	0.10	-0.02

Notes. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Standard errors are cluster-corrected at classroom level.

Figure 3.4.2. Slope of regression lines: Attribute alignment and social trust



Notes: Lines depict slope of regression lines. Majority students: solid line. Minority students: dashed line.

3.4.3 ROBUSTNESS ANALYSES

We examined the robustness of our results in several additional analyses. First, we estimated all models including minority students using ethnic group fixed effects. Second, we repeated the analyses using different minimal response rates per classroom (ranging from no minimal response rate to 80%). These variations yield substantively equivalent results. In particular, we again found a negative relationship between attribute alignment and social trust for majority students but no indication of a relationship for minority students.

Finally, we repeated our analyses using a less restrictive minimal group size criterion. Many minority students were not included in the analytical sample as they were the only or one of two members of their ethnic origin group within the school class. This leads to strongly reduced sample sizes. Including also ethnic groups that consist of only 2

students (instead of at least three) increases the sample size for minority students by roughly 300 (i.e., by 59.2%) for the analysis of generalised social trust and roughly 100 (i.e., by 54.4%) for the analysis of context-specific social trust.

Table 3.4.3 presents the results based on this larger sample. In the pooled analysis, we again found a negative and significant association between attribute alignment and generalized social trust. However, in this larger sample, this association is also significant for context-specific social trust. Even more remarkable, the results of the subsample analysis indicate a negative association between attribute alignment and generalised social trust not only for majority students but also for minority students. Hence, once we include also ethnic groups that consist of only two classmates in our analysis, the second part of Hypothesis 2 is no longer supported. We discuss two alternative interpretations of this finding in the concluding section.

Table 3.4.3. Attribute alignment and social trust, minimal group size >= 2 (OLS regression)

	Generalised social trust		Context-specific social trust	
	All students		All students	
Attribute alignment	-0.62***		-0.57*	
	(0.16)		(0.26)	
Num. obs	2018		764	
Adj. R-squared	0.05		0.08	
	Majority students	Minority students	Majority students	Minority students
Attribute alignment	-0.64**	-0.50*	-0.73*	-0.52
	(0.22)	(0.23)	(0.33)	(0.48)
Num. obs.	1214	804	449	315
Adj. R-squared	0.05	0.03	0.10	-0.00

Notes. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Standard errors are cluster-corrected at classroom level. The models include the same set of control variables as in Tables 3.4.1 and 3.4.2.

3.5 DISCUSSION AND CONCLUSION

Research on ethnic diversity and social trust usually takes for granted that ethnic origin is an important characteristic along which individuals split their surroundings into different groups. However, there may be circumstances that dampen or increase the importance of group boundaries along ethnic origin and thereby further impact social trust. Starting from the seminal idea of attribute alignment (Blau, 1977; Lipset, 1960; Simmel, 1908), this study examined whether students' trust in their schoolmates and people in general tends to be lower if they are exposed to a school class where students of different ethnic origin also differ in terms of gender. Young people who experience such a consolidation of their ingroup-outgroup divisions on an everyday basis may be more likely to restrict their moral community to a smaller group of people (Brewer, 1999; Uslaner, 2002). In comparison, students who attend school classes in which group lines based on different attributes cross-cut each other may be more likely to see most people as belonging to the same larger community as them. As the school and school class, in particular, is an important everyday context for adolescents (Eccles & Roeser, 2011), a generalization of what they perceive in the school class to the world beyond seems likely.

Overall, our findings support this view: For the groups who face the strongest attribute alignment, trust in schoolmates and people in general tends to be lower by about 0.4 to 0.51 scale points (on 4- or 5-point scales, respectively), compared to those who face no attribute alignment. This supports our Hypothesis 1. We also examined the impact of attribute alignment separately for majority and minority students. For majority students, the associations were even stronger and consistently suggested that the alignment of ethnic origin and gender relates to both lower context-specific as well as generalised social trust. While this supports the first part of Hypothesis 2, it is unclear whether this effect is indeed smaller or even absent among minority students.

We hypothesized that attribute alignment will be more consequential for majority students as they are used to situations where most people in their surroundings belong to their ethnic ingroup. For them, the ethnic origin may only be a salient and important characteristic under certain circumstances, for example, in the case of high attribute alignment or a high share of ethnic outgroup members in their surroundings (S. Smith et al., 2016). In line with this idea, several previous studies found that a higher share of minority students in classrooms relates to lower social trust for majority students (Badescu & Sum, 2015; Janmaat, 2015; Loxbo, 2018).

While we consistently found evidence for such a negative association between attribute alignment and social trust for majority students, the null-results in the case of minority students in the main analyses should be interpreted with caution. Sample sizes for minority students are much smaller than for majority students, especially in the case of context-specific social trust. This is primarily due to the group size criterion: Due to the very high ethnic diversity among minority groups in our school sample, many students were the only members (or one of two) of their respective ethnic origin in the classroom. This strongly decreases the number of minority students from the full sample and leaves mostly students from larger minority groups in Germany (e.g., students with a Turkish background). Robustness analyses show that by decreasing the minimum group size to two students, we observe a statistically significant negative relationship between attribute alignment and generalised social trust also among minority students. Given the inconsistent results and issues due to small sample sizes, we refrain from a strong final interpretation regarding the association of alignment and social trust for minority students. If one adopts the view that one needs at least three students for group processes to unfold (as Kroneberg et al., 2021a, p. 922), one could argue that our main analysis is much more informative and therefore conclude that there is no evidence for alignment effects among minority students.

If one takes the opposite view, one could argue that the robust analysis is more informative due to their larger (sub-)sample sizes and conclude that attribute alignment matters for both majority and minority students. Testing these competing interpretations is an important task for future studies which should follow our example and incorporate measures of social trust in large-scale school surveys (which are mostly lacking in the most prominent ones, such as AddHealth or CILS4EU).

In any case, our main analyses and robustness analyses consistently show that, overall, attribute alignment is associated with lower social trust for majority students. As there is no evidence for a beneficial, i.e., trust-enhancing, effect of alignment, our study has a clear implication for practitioners: School administrators may positively influence their students by taking the alignment of gender and ethnic origin into account in the distribution of students among classrooms. While the relationship between alignment and social trust alone is rather moderate and only clearly visible for majority students, evidence for the negative impact of attribute alignment in school classes is adding up (Hooijsma et al. 2021; Stark and Flache 2012; Kroneberg et al. 2021b, Zhao, forthcoming). In addition to lower social trust, alignment has been shown to come with fewer inter-ethnic friendships and a reduced inclination among minority students to identify as members of the nation. Moreover, as a recent study by Hooijsma and co-authors (2021) suggests, a different gender composition of ethnic groups could also reduce the potential of cross-ethnic defending against bullying. Given these findings, school administrators should pay closer attention to ensuring the crosscutting of gender and ethnic boundaries.

There is still much to learn about the effects of attribute alignment on social trust and other relevant outcomes in (and outside of) the school context. In conclusion, we would like to point out some limitations of our study that future research could attempt to overcome. First, our survey data was collected in an urban ethnically diverse region and it

remains to be seen whether our results generalize to more homogeneous rural areas. However, the alignment of ethnic origin and gender may generally be of less relevance in such areas, where the vast majority has no immigration background at all and the few minority students are not likely to form larger groups that could be considered in such analyses. Second, we could only use cross-sectional data and thus cannot make any claims about possible long-term effects. Future studies should examine whether the effects of attribute alignment in school classes mainly exist for the time that students visit those school classes or whether they are consequences even beyond that period. Third, we were only able to focus on one particular age group, early adolescents. While this is a highly important period in life, it does not answer the question of whether similar effects should be expected, for example already earlier in childhood or during late adolescents and early adulthood when many young people still visit (vocational) schools. Lastly, ethnic origin and gender, while surely important characteristics are just two of many. Future research should take into account whether the crosscutting of and with other characteristics, such as religion or socio-economic status, leads to similar conclusions.

4 CHAPTER 4

How are Social Acceptance and Popularity in the School Setting related to Trust among Adolescents?

Abstract

Is adolescents' social standing within the peer group of the school grade associated with trust in little-known peers in that same setting? Former research on adolescents' social standing suggests the relevance of two distinct hierarchical dimensions. First, social acceptance (i.e. being well-*liked*), which is connected primarily to prosocial behaviours. In contrast, peer-perceived popularity (i.e. well-*known*) is related to a complex set of prosocial as well as antisocial and manipulative behaviours. However, it is so far unclear how these two dimensions relate to trust. Using a sample of 1599 German 8th-grade students visiting 36 schools, this study addresses this gap in the literature. It tests whether social acceptance and popularity relate differently to trust in peers as well as being trusted by peers and whether there is an interaction between the two dimensions of social standing. This study found that social acceptance positively relates to trust *in* peers and being trusted *by* peers. The relationship between popularity and trust is, however, more complex and suggests an interaction between popularity, social acceptance and being trusted by peers. Popular students, in general, were seen as untrustworthy, but this pattern reversed for most highly accepted students. Overall, the finding suggests that both social acceptance and popularity matter for trust in and by peers, however in the case of popularity not always in a positive way.

4.1 INTRODUCTION

Early adolescence is a period of life characterised by manifold changes and uncertainties (Maresky et al., 2021). As adolescents attempt to gain autonomy for themselves (Allen et al., 2005; Moffitt, 1993), relationships with peers and the social standing within the peer group become increasingly important (Cohen & Prinstein, 2006; Feiring & Lewis, 1991; Giordano, 2003; Miller-Johnson et al., 2003; Nickerson & Nagle, 2005; Stotsky et al., 2020). In comparison to children, adolescents increasingly engage with people outside their immediate surroundings, widen their peer network, and establish new relationships with unfamiliar peers in larger contexts (Badaly et al., 2012; Dijkstra et al., 2013; Feiring & Lewis, 1991). In those situations, trusting peers and being perceived as trustworthy may be crucial (Betts & Rotenberg, 2008). However, when engaging with unfamiliar peers outside the immediate surrounding (for example outside the own classroom) there are little or no prior interactions that can inform an adolescent about what to expect of another person. An adolescent's social standing within the larger peer group (for example the whole school grade) may be an important indicator to determine whether or not to trust another peer.

Social hierarchies are a fundamental organizing principle and basic element of social groups (Cheng & Tracy, 2014; Maner, 2017; van Kleef & Cheng, 2020). In contrast to adulthood, adolescents' social standing within the peer hierarchy is almost solely based on the perceptions and evaluations of their peers, given that few formal differences between students exist. As such, social standing can provide 1.) very valuable indirect information about a peer's previous behaviour and 2.) determine what behaviour a student can expect of their peers directed at them.

Having a high social standing, that is, being socially accepted (or well-liked) and perceived as popular by one's peers, is an important goal for young people (Ferguson &

Ryan, 2019; LaFontana & Cillessen, 2010). While such a high social standing within the peer group has largely positive effects (Wingen et al., 2021; Yu & Blader, 2020), previous research (e.g., Ferguson & Ryan, 2019) also points out negative implications, e.g. lower friendship quality or social satisfaction. In particular, being popular may also be a "risky" proposition: it is often achieved by antisocial, deviant, and health-risk behaviours (e.g., Malamut et al., 2021; Mayeux et al., 2008) and has been found to relate to higher reputational dislike (i.e., the perception that a peer is disliked by others; Fujimoto et al., 2017). Due to those behaviours, popular peers might not always be seen in a solely positive light by their peers.

This study will focus on answering the question of whether social acceptance and popularity – two commonly distinguished dimensions of social hierarchy among adolescents – within the larger peer group of the school grade relate to adolescents' trust in peers. This research question has two compontents: Does an adolescent's social standing impact, 1) whether they trust their peers and 2) whether their peers trust them?

4.1.1 WHAT IS TRUST?

Trust has been the focus of extensive research over the past decades in various disciplines and thereby generated a large amount of very different conceptualisations that are only vaguely compatible with each other (Freitag & Traunmüller, 2009). Here, I follow a definition of trust as a *positive expectation* or belief regarding another person's actions and intentions (Möllering, 2001).

Secondly, I adopt a conceptualization of trust following the grammar of

"A trusts B with X" (Uslaner, 2002),

with B being a specific peer in the school grade and X a specific matter at hand. Given that the focus of this research targets the impact of social standing on trust expectations, I limit

trust targets ("B") to those peers that are *recognised* by the trusting person ("A"). I assume, that without this recognition the other person's social standing is unknown and therefore cannot have an effect. Further, trust targets are limited to peers whom one does not know well, i.e. with whom there is *little or no previous interaction*, assuming that concrete experiences with the trust target are likely considerably more relevant in an individual's trust expectations than the social standing within the larger peer group.

4.1.2 TWO DIMENSIONS OF SOCIAL STANDING DURING ADOLESCENCE

Numerous studies found that there are two distinct but correlated dimensions or strategies in the pursuit of a high rank in the peer group which are linked to different behavioural profiles - *social acceptance* and peer-perceived *popularity* (Cheng & Tracy, 2014; Cillessen & Rose, 2005; Maner, 2017; Parkhurst & Hopmeyer, 1998; Y. H. M. van den Berg et al., 2020; van Kleef & Cheng, 2020). The former, social acceptance (sometimes labelled peer preference or sociometric status), targets the *likeability* of an individual and is the composition of the personal emotional judgments by all peer group members (Cillessen & Marks, 2011). The highest possible, though unrealistic, social acceptance would be reached if a student is liked by everyone in the school grade and disliked by none. Social acceptance relates to primarily prosocial behaviours and traits, such as being (perceived as) helpful, supportive, cooperative, and empathetic, as well as showing a lack of antisocial behaviours, like bullying or aggression towards other peers (Cillessen & Borch, 2006; Cillessen & van den Berg, 2012; Greener, 2000; Lansu & Cillessen, 2012).

The second dimension, peer-perceived popularity (sometimes labelled consensual popularity), is strongly related to an individual's *visibility*, impact and dominance within the peer group (Cillessen & Marks, 2011). While social acceptance is not necessarily based on a consensus that is communicated within the group, a person's popularity is a

reputation about which there is a shared agreement in the peer group (Cillessen & Marks, 2011). Popularity relates to a complex set of socially valued traits and behaviours, that may differ between groups (Rubin et al., 2008). Those usually include prosocial behaviours or morally neutral characteristics such as being athletic or attractive (Cillessen & van den Berg, 2012; Mayeux et al., 2008; Parkhurst & Hopmeyer, 1998). However, many popular students additionally exhibit antisocial behaviours such as relational or physical aggression, as well as dominant and manipulative behaviours (Cillessen & Borch, 2006; Cillessen & Rose, 2005; Dijkstra et al., 2009; Lease et al., 2020; Mayeux et al., 2008, 2011; Rose et al., 2004). Several studies showed evidence that there are different subtypes of popular youth: one that primarily exhibits pro-social behaviour and one that strongly relies on highly noticeable aggressive, disruptive and deviant behaviours (Cillessen & Rose, 2005; de Bruyn & Cillessen, 2006; Rodkin et al., 2000).

4.2 HOW DOES SOCIAL STANDING IMPACT TRUST IN PEERS?

There are various reasons to assume a relationship between social standing and trust in peers: Firstly, trustworthiness is a prosocial behaviour and a social norm (Bicchieri et al., 2011; Möllering, 2001; Reiersen, 2018). So long as there are no specific reasons for the adolescent to think otherwise, expecting trustworthy behaviour from the other person might be generally reasonable. From that perspective, only under particular circumstances should adolescents have low trust expectations regarding their peers. Following Rotenberg (2010a), perspective-taking and recursive thinking are an important part of understanding trust expectations: An adolescent's ("A") trust in their peer ("B") depends on A's assumptions about what B thinks about them. With a relatively unknown peer, this might translate more to a general what they think "the peer group" perceives about them. Adolescents who do not perceive themselves as part of the community for whom general social norms apply, for example, those who are often rejected by their peers, may suspect

their peers to behave untrustworthy *towards them* without having to face any repercussions from the rest of the peer group.

Hardin (2002), following a rational choice approach, proposed a similar argument of encapsulated interest: A should trust B if they have good reasons to expect B to have positive intentions towards themselves. This expectation or "good reason" may be based on the assumption that B wants to maintain or establish a positive relationship with A, that A has resources that are of value to B or that abusing A's trust will have especially negative consequences for B. Applying this perspective, B may have good reasons to behave trustworthy towards a high-ranking A: abusing the trust of someone well-liked compared to someone who is mostly disliked may be seen as less acceptable behaviour within the peer group and thereby have more severe negative consequences by those who learn about the trust abuse. Further, abusing the trust of a highly popular student may be unwise, as information about such antisocial behaviour likely spreads very quickly and thoroughly within the peer group. One may therefore also suspect an interaction: consequences within the peer group may be the most negative when it comes to trust abuse towards someone who is well-liked *and* popular. Under the assumption, that adolescents generally realize these connections and correctly perceive their standing in the social hierarchy, A's social acceptance and popularity should both be positively linked to their trust expectations. Further, A's popularity may strengthen the association between A's social acceptance and A's trust expectations.

Even if one declines the assumption of such rational and well-informed adolescents, there is still argumentative ground for a positive relationship between social standing and trust expectations: People who often behave trustworthily – as can be expected from highly socially accepted students – are likely to evoke reciprocal behaviour (Lewicki et al., 2006), thus generally experience that their positive expectations about others are well-placed.

These learning experiences may lead them to usually trust. Further, one can also argue from the perspective of those with low social acceptance. Rotenberg et al. (2010) argue that excluded and lonely individuals may show self-protective behaviours that prevent them from experiencing further rejection. This in turn may decrease trust expectations.

On the other side, popular students may not generally have positive expectations about other's *intentions*. However, they may be confident in their own ability to enforce their peer's trustworthiness towards them – whether the peer wants it or not. Following this line of argumentation, an interaction between A's social acceptance and A's popularity in the assumed direction is unlikely: adolescents who choose antisocial behaviours to strive for popularity (and thereby may be disliked, but popular) may perceive themselves just as capable, if not more so, than their well-liked popular counterparts to make their peers behave in a certain way.

4.2.1 SOCIAL STANDING – AN INDICATOR OF PREVIOUS BEHAVIOUR

As mentioned before, adolescents' social standings, irrespective of the dimension, are primarily based on the perceptions and evaluations of their peers and largely depend on their previous behaviours and traits that they exhibit. To achieve and maintain being socially accepted and/or popular with one's peers, a student needs to behave in a certain way or else risk losing their social standing. Untrustworthy behaviour, as a norm-deviating, antisocial behaviour, might directly decrease their social standing.

This seems especially relevant concerning *social acceptance:* if a person acts untrustworthy, the peers' – likely negative – opinion about that behaviour will directly affect their social acceptance within the peer group. Especially if the individual, whose trust was abused, shares their information with other peers this may strongly impact the abusing peer's standing within the peer group. In line with this assumption, there is

evidence that peer-reported trustworthiness within school classes is related to higher social acceptance later on (Rotenberg et al, 2005, Rotenberg et al., 2004). Following this argumentation, 1) highly accepted B's should have good reason to act trustworthy towards their peers or else risk lowering their social standing, and 2) B's social acceptance is a valuable cue that B usually acts trustworthy towards their peers. Assuming that A knows about B's social acceptance within the peer group and they have no reason to believe that B would act differently towards them in specific, it would indeed be a good indicator of B's trustworthiness. Thus, a peer's social acceptance is likely positively related to trust in that peer.

In contrast, predictions regarding *peer-perceived popularity* are less clear. Abusing trust, as a norm-deviating behaviour, may be especially visible within the peer group. Such behaviour may thus be a valid strategy to maintain popularity – if the student does not care about their social acceptance – given the close relationship between being popular and being visible/well-known. Only in contexts, in which the group norms label untrustworthy behaviour as *unpopular* and not only *dislikable* would this strategy not add up. This may lead to the conclusion that, 1) highly popular B's have little reason to behave trustworthily and might even have reason to behave untrustworthy to maintain their popularity, and that 2) B's popularity is if anything a cue that they usually behave untrustworthy towards their peers. However, this holds only under the condition that they do not care about their social acceptance and use antisocial and deviant behaviours as a strategy to maintain popularity.

As discussed before, there is an overlap between the two dimensions of social standing and there are various strategies to achieve and maintain popularity. Some students seem to strive for both, social acceptance and popularity. A popular student is highly visible and talked about, thus it is well-known within the larger peer group whether they exhibit primarily prosocial and likeable behaviours. If people are and want to maintain

being well-liked *and* popular behaving trustworthy might be most important, as any misstep will likely be noticed by many and therefore damage their social acceptance more so than that of less popular students. In consequence, popularity might be an especially valuable cue for a peer's trustworthiness, but only if their social acceptance is accounted for as well. Thus, for highly socially accepted B, B's popularity might link to higher trust in B, whereas the opposite may be the case for Bs with low social acceptance.

Following the reasoning discussed above, I test six hypotheses regarding the relationship between A's and B's social acceptance and popularity within the peer group and A's trust expectations towards B. All hypotheses are summarised in Table 4.2.1.

Table 4.2.1. Overview of hypotheses

H1a	A's social acceptance is positively related to A's *trust expectation*s towards B.
H1b	A's popularity is positively related to A's *trust expectations* towards B.
H1c	A's popularity is associated with a stronger positive relationship between A's social acceptance and A's *trust expectations* towards B.
H2a	B's social acceptance is positively related to A's *trust expectations* towards B.
H2b	B's popularity is negatively related to A's *trust expectations* towards B.
H2c	B's social acceptance is associated with a weaker negative relationship between B's popularity and A's *trust expectations* towards B.

4.3 METHODS

4.3.1 PARTICIPANTS AND PROCEDURE

To test those hypotheses, I use the second wave of the school-based panel study SOCIALBOND. The full sample consists of 3076 students and 37 schools. One school is excluded from the analytic sample due to massive changes between the 7th and 8th grades just prior to the data collection. The participating schools were all public schools, including 9 lower track, 7 intermediate track, 12 higher track and 8 combined schools. Most schools

were located in densely populated and highly diverse areas in North Rhine-Westphalia, Germany.

In the participating schools, all 8th-grade students with parental consent were given the option to take part in the analysis (participation rate: 80.44%). Students filled out the questionnaire via tablet. Trained interviewers and scientific staff were on site to introduce students to the questionnaire and assist with any upcoming questions. The SOCIALBOND survey includes an extensive section on students' social networks within the school grade. Participants received a list with the names of all students in the grade. Each name had an identifying number. Participants, then, used these numbers to nominate their fellow grade mates regarding different types of social networks (among others, who they are friends with, whom they disliked, and whom they perceived as popular). Further, this number was used to assign each participant exactly *one* random fellow student from a different classroom for whom they answered questions regarding trust and familiarity. Using these identification numbers, the information collected on the participant and the randomly assigned student can be matched.

Only students who answered all relevant questions and randomly received a fellow grade mate who met the criteria of interest for this study were included in the analyses. The final analytical sample consists of 1599 8th-grade students from 36 schools (48.8% girls, mean age = 12.84, SD = 0.594).

4.3.2 MEASURES

4.3.2.1 A's trust expectations towards B

Participants read a short vignette in which a randomly assigned student forgets their money for the school kiosk and now asks if they could borrow 5 euros from the participant. To measure trust expectations, participants indicated whether they believed that the other

student would return the money on a scale ranging from 1 to 4. Higher values mean higher trust expectations. Following the conceptualization of trust using a grammar of "A trust B with X" (Uslaner, 2002), "A" here is the participant answering the question, "B" is the randomly assigned fellow grade mate and "X" targets the return of borrowed money. This scenario was chosen in favour of other scenarios that involve trust as a situation that is relatively plausible for adolescent students in case of unknown or little-known peers (in contrast to, for instance, disclosing personal information). The scenario was pretested as realistic and easily imaginable (N = 12).

This study focuses on a specific trust target, namely a peer whom the student *recognizes* but does have no (or little) interaction history with, in the assumption that the previously discussed theoretical elaborations are most relevant for this subgroup. For this reason, students who received a grade mate unknown by name or appearance are excluded (37.61%). To identify peers with whom a student has a personal relationship and interaction history, information from the network section of the survey is used. This targets peers who are identified as friends, people one receives emotional or practical support from, dislikes, is mean to or who are mean to the own person. Participants who were assigned a student from this list of people are exluded from the analysis (5.88%).[13]

4.3.2.2 Popularity of A and B

From the list of all grade mates, adolescents could choose up to 10 fellow grade mates concerning the question whom most other students see as popular. The sum of all nominations a student received, standardized within each school grade, measures a student's (peer-perceived) popularity (Cillessen & Marks, 2011). Using the identification

[13] It is possible that via this strategy not every individual who received a well-known peer with whom they share an interaction history is excluded. Analysis are repeated with two different exclusion strategies, (a) excluding participants who labelled their assigned student as well or very well known or (b) excluding participant who stated to know the assigned students' hobbies or preferences (in terms of e.g., activities or music). Results are largely similar irrespective of which strategy is chosen.

number the computed value for popularity is then matched with the participant (A) and the randomly assigned student (B).

4.3.2.3 Social acceptance of A and B

From the same list, adolescents could nominate up to 10 students, whom they regarded as their best *friends* in the grade as well as whom they *liked the least* in their grade. To measure social acceptance, the sum of all "liked least"-nominations, standardised within the school grade, is subtracted from the sum of all friendship nominations, standardised within the school grade. Following a standard procedure (see e.g., Cillessen & Marks, 2011), the thereby obtained values are then standardised within each school grade again[14]. Again, the computed social acceptance scores are matched with both the participant (A) and the assigned peer (B).

4.3.3 ANALYTICAL STRATEGY

To test the hypotheses summarised in Table 4.2.1, I perform OLS regression with school clustered standard errors and A's *trust expectations* towards B as the dependent variable. A's and B's social acceptance and popularity are examined while controlling for several potential confounders: A's and B's gender as well as an interaction of both (given the strong gender homophily in this age group), age in month, immigration background (student or at least one of the parents not born in Germany), financial situation (measured approximately by their ability to pay for things and activities they like) as well as the

[14] Social acceptance usually is measured by substracting "liked least" from "liked most"-nominations. However, to limit the length of the survey and due to the high expected overlap in "liked most" and "friendship"-nominations, the SOCIALBOND survey does not include this network information. For this reason, "friendship"-nominations are used as proximation of "liked most"-nominations. It should however be kept in mind for the interpretation of the results that "friendship"-nominations might be more rare than "liked most"-nominations and some students might receive lower social acceptance-scores than they would with the standard approach.

school type a student visits (lower track, intermediate track, higher track, and combined as reference category).

4.4 RESULTS

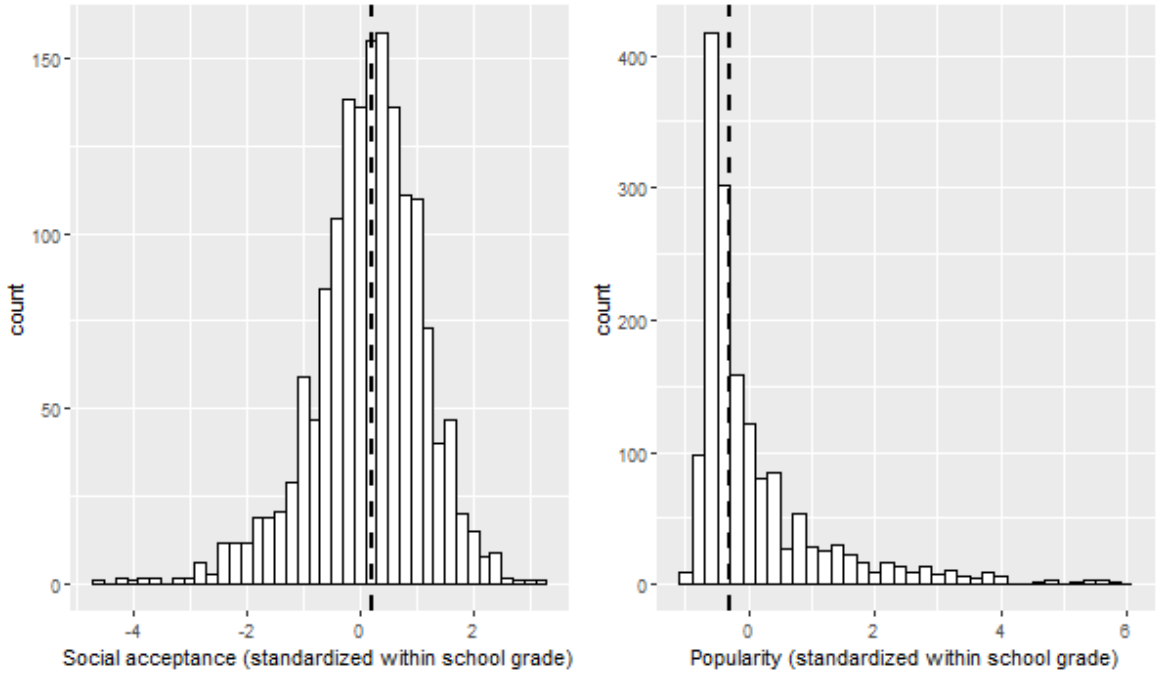
4.4.1 DESCRIPTIVE ANALYSES

Figure 4.4.1 shows the distribution of values for both dimensions of social standing. While social acceptance follows a normal distribution, popularity is clearly skewed with very few people at the very top. This is primarily explained by the different measurement strategies: for social acceptance low values relate to actual rejection, for example being *disliked* by many while having few friendship nominations from other students whereas for popularity low values simply mean the absence of popularity (and not being specifically unpopular). Most students do have very few popularity nominations, for example, 75% of the students had only 3 or fewer popularity nominations, while a handful of students accumulate most of the nominations in their respective grades. This is in line with the assumption that there is a consensus about who is popular. There is a small positive correlation between social acceptance and popularity in the analytical sample ($r = 0.187$, $p < .001$).

The average popularity among unfamiliar peers, who were however recognized by name and appearance (i.e., the analytical sample) was somewhat higher ($M = 0.066$) than those who were not recognized and thus fully unknown (i.e., excluded from the analyses; $M = -0.145$, $t(2557.5) = 5.827$, $p < .001$). Among those who had popularity scores of more the 2 standard deviations above the grade average, 71.63% were recognized by their peers in comparison to 59.94% of those with lower popularity. This difference is expected, given that popularity is strongly associated with visibility in the grade. There was no difference in the social acceptance of recognized and unrecognized peers ($t(2397.9) = -0.800$, $p = .424$). In the interpretation of the later results, it should be considered that students trust

recognized peers even without a personal interaction history considerably more (M = 2.484) than fully unknown peers (M = 1.897, $t(2502) = 14.304$, $p < .001$).

Figure 4.4.1. Distribution of social acceptance and popularity



4.4.2 MULTIVARIATE ANALYSES

The results from the OLS regressions are presented in Table 4.4.1. Model 1 only includes the control variables. Model 2 includes social acceptance and popularity for both, the trusting adolescent "A" and their assigned peer "B". Lastly, model 3 includes interaction terms for A's social acceptance x A's popularity and B's social acceptance x B's popularity, respectively. First, results clearly show a positive link between A's social standing within their larger peer group of the school grade and their trust expectations in another peer for both, social acceptance and popularity (b = 0.162 for A's social acceptance and b = 0.061 for A's popularity). Both indicators are standardised *within* their school grades and thus the coefficients relate to an increase of one standard deviation within the school grade. The difference between a student with an average social acceptance and one with a social acceptance of 1 SD above the school grade average thus

relates to an increase of 5.4% of the 4-point trust scale (2.03% in case of popularity). There is no evidence of an interaction between A's social acceptance and A's popularity. Results indicate evidence for H1a and H1b, but not H1c.

With respect to the peer's social standing, the results from model 2 show the expected opposing associations for B's social acceptance and B's popularity: a highly socially accepted peer B is more trusted (compared to a peer with low social acceptance), whereas a highly popular peer is less trusted (compared to a peer with low popularity). However, model 3 reveals evidence for the suspected interaction: for Bs with higher popularity, there is a stronger positive relationship between B's social acceptance and A's trust expectations in B. Interpret differently: as depicted in Figure 4.4.2, with increasing social acceptance, the negative relationship between a peer B's popularity and trust in B vanishes and even becomes slightly positive for peers with the highest social acceptance. Results thus indicate evidence for all three hypotheses regarding B's social standing.

Figure 4.4.2. Interaction: B's social acceptance x B's popularity

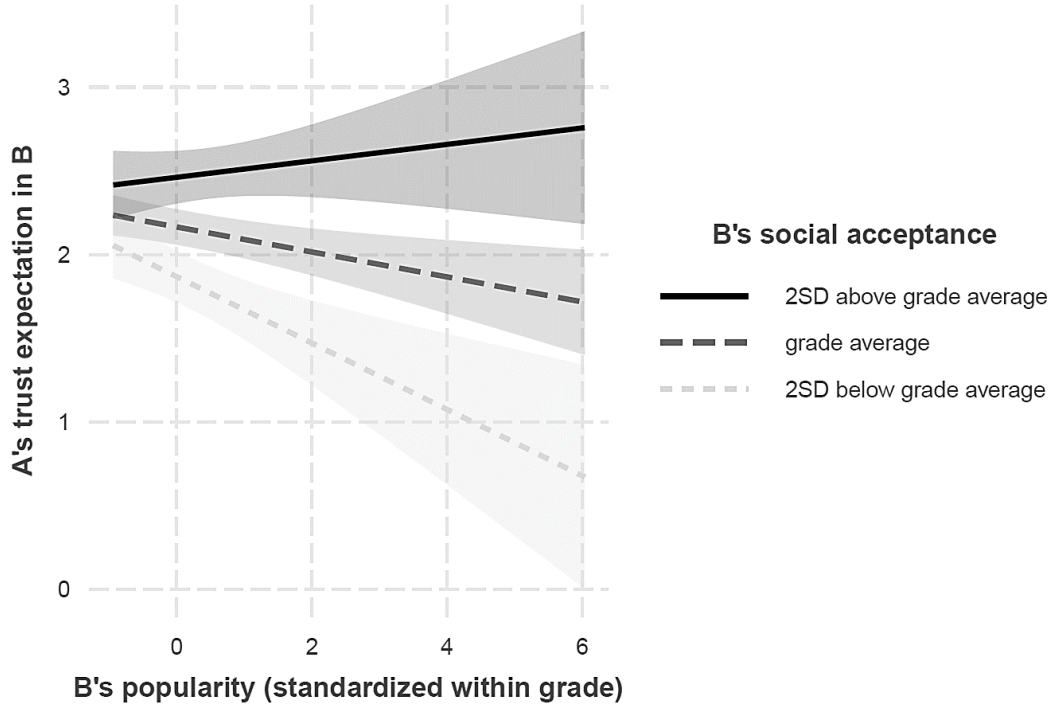


Table 4.4.1. Social acceptance, popularity and trust expectations towards B

	Model 1: controls only	Model 2: main variables	Model 3: interactions
Intercept	0.813	0.918	0.921
	(0.713)	(0.693)	(0.686)
A's social acceptance		0.162***	0.163***
		(0.027)	(0.029)
A's popularity		0.048*	0.050
		(0.024)	(0.026)
B's social acceptance		0.156***	0.149***
		(0.030)	(0.031)
B's popularity		-0.061**	-0.075***
		(0.023)	(0.022)
A's soc. acceptance*			-0.009
A's popularity			(0.019)
B's soc. acceptance*			0.062**
B's popularity			(0.022)
SES	0.141**	0.112*	0.110*
	(0.046)	(0.045)	(0.045)
A's Gender (female=1)	-0.177*	-0.151*	-0.151*
	(0.072)	(0.071)	(0.071)
B's Gender (female=1)	0.128	0.131	0.137
	(0.108)	(0.103)	(0.101)
A's Gender*B's Gender	0.409**	0.395**	0.392**
	(0.138)	(0.138)	(0.136)
Age (in month)	0.006	0.006	0.006
	(0.004)	(0.004)	(0.004)
No migration background	-0.058	-0.049	-0.056
	(0.072)	(0.071)	(0.068)
School track: lower	-0.090	-0.116	-0.116
	(0.103)	(0.096)	(0.098)
School track: intermediate	0.046	0.016	0.010
	(0.078)	(0.073)	(0.075)
School track: higher	0.431***	0.416***	0.412***
	(0.058)	(0.057)	(0.059)
Num. obs.	1599	1599	1599
Adj. R-squared	0.066	0.104	0.106

Notes. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Standard errors are cluster-corrected at school level.

4.4.3 ROBUSTNESS CHECKS AND ADDITIONAL ANALYSES

Several additional analyses were carried out to test the robustness of those results and further guide their interpretation. Firstly, different exclusion strategies regarding who

is considered aa “unknown” or “peer with an interaction history” may lead to different results. Therefore, analyses were repeated using different exclusion strategies (1. using students’ self-ratings regarding how well they knew the other students and 2. excluding those who stated to know B’s hobbies and preferences) with largely similar results (see Table 8.3.2).

Further, a comparison between the samples of those who received a fully unknown student (i.e., cases excluded from the analyses) and those who received a recognized student (i.e., analytical sample) shows that the latter is on average more popular as well as more trusted. The above-discussed analyses of only the recognized students show an, overall, negative relationship between B’s popularity and A’s trust in B. Given these contrary effects, adolescents may, on average, still trust a random popular peer more or equally so than a random unpopular one. To account for this, two further analyses were conducted using the full sample (i.e., including those who received a fully unknown or well-known randomly assigned peer): One including two binary control variables, indicating whether 1) the assigned peer B was fully unknown, and 2) whether there was a personal relationship with this peer; and one in which those binary variables were excluded (see Appendix, Table 8.3.3). For the former, results stay largely the same. However, when the binary variables indicating familiarity were excluded, the relationship between the peer B’s popularity and A’s trust expectations in B vanished and were no longer significant (b = 0.002, clustered $s.e.$ = 0.02). There is still a positive interaction between B’s social acceptance and B’s popularity also in this analysis.

Lastly, I ran an additional analysis that *only* included unrecognized peers (see Appendix, Table 8.3.4). This analysis gives information on two potential issues: if the randomly assigned peer B is fully unknown, their social standing *cannot* play a role in trust expectations towards them. Thus, repeating the analysis with this subsample allows us to

further test whether the chosen exclusion strategy was legitimate. Second, if the mechanism behind the relationship of an adolescent A's social standing and their trust expectations mainly rely on A's assumptions about what B thinks about them (as is the case for arguments reliant on recursive thinking and encapsulated interests), adolescents would need to assume that the other person knows about their social standing. This is a rather unrealistic assumption in the case of a fully unknown peer. Thus, finding a relationship here may indicate, that explanations that focus on the adolescent "A" themselves – for example learning experiences or self-protective behaviours in the case of social acceptance or confidence that no matter the actual intentions one could enforce trustworthy behaviour in the case of popularity – are of higher importance.

As expected, there is no relationship between B's social standing and trust in B in the case of a fully unknown and unrecognized peer. There is further no evidence for an association between A's social acceptance and A's trust in a fully unknown peer B. In contrast, A's popularity is still positively linked with their trust expectations ($b = 0.086$, clustered *s.e.* = 0.028, $p = 0.002$), possibly indicating that in the case of popularity, mechanisms are more focused on the own person in contrast to what the other person may think.

4.5 DISCUSSION

Achieving a high social standing with one's peers is an important goal, especially during adolescents. However, there have been speculations and research findings suggesting also negative impacts of a high standing, in particular in the case of popularity. This study was designed to test, first, whether adolescents with high social acceptance and popularity have more trust *in* their peers and, second, whether they are more (or less trusted) *by* their peers.

Overall, the results confirm the hypotheses proposed in this study: Social acceptance, which is largely related to prosocial, norm-confirming behaviours, is associated with trusting others more as well as being more trusted. As in other research, for popularity, this picture is more complex. While popular students do have higher trust *in* their peers, the results from this study show that they are, if anything, less trusted *by* their peers. However, in the latter case, there is an interaction with social acceptance: The negative relationship between B's popularity and A's trust in B becomes weaker with increasing social acceptance of B and even reverses for Bs with *very* high social acceptance scores. Overall though, popularity seems to serve as an indicator of *less* expected trustworthiness.

This finding adds to the range of studies indicating that being highly popular is not necessarily something that adolescents should strive for. Popularity has been found to relate to (health-)risk behaviours, such as smoking, drinking or early sexual intercourse (Gommans et al., 2017; Malamut et al., 2021; Mayeux et al., 2008; van den Broek et al., 2016) – behaviours that irrespective of peers' perceptions of those may have negative long-term consequences. Studies further showed a relationship between popularity and antisocial behaviours, such as relational and physical behaviours or bullying (Cillessen et al., 2014; Cillessen & van den Berg, 2012; Dijkstra et al., 2009; Ellis & Zarbatany, 2007; Malamut et al., 2021) – behaviours that likely (negatively) influence peers' emotional judgements of those individuals. This study now adds that, from peers' perspectives, higher popularity is associated with less expected trustworthiness (i.e., popular peers are less trusted). Given the likely high importance of being perceived as trustworthy in the establishment of new relationships, this may again in the long-term lead to issues for popular adolescents. This is especially the case if high popularity is paired with low social acceptance. Somewhat limiting this negative perspective, it should be noted that popular

students are more likely to be recognized and recognized peers are more likely to be trusted compared to fully unknown peers. Thus, the recognition itself that comes along with higher popularity is also advantageous.

While both, social acceptance and popularity have a positive, independent relationship with trust *in* peers, I did not find an interaction in this case: there is no indication that the association between an adolescent A's social acceptance and A's trust in peers increases with higher popularity of A. This interaction could be assumed if adolescents rationally and strategically think about their peers' possible behaviour and assume their peers to do the same, as proposed by the encapsulated interest account by Hardin (2002). Abusing the trust of someone who is highly socially accepted (compared to less accepted) may be perceived as worse by others who get to know about such behaviour, and with higher popularity, more of one's peers may get to know about the trust abuse. Thus, the social repercussions of abusing trust might multiply if done against an individual who is highly popular *and* socially accepted. While this might still be true, for an interaction to occur, adolescents would not only have to correctly assess their social standing within the peer group and come to this conclusion themselves but also assume that their peer makes those same assumptions and acts accordingly. A less rationalist view of adolescents may be more realistic.

Further, the additional analyses illustrated a positive relationship between an adolescent A's popularity and A's trust in another peer even if that peer was fully unknown and thereby less likely to actually know about A's popularity. This may give further indication about the mechanism behind the association of A's popularity and trust expectations: If the other peer does not necessarily need to know about the own popularity, then the effect may be less driven by what the other person might think and rather by the confidence of a popular person in their own abilities to get the other person to act

trustworthily (whether they want it or not). This interpretation is in line with the social competencies attributed to popularity in specific, for example, a high level of assertiveness, through argumentation and "playing by the rules" but if necessary also through coercion and forcefulness (Cillessen & van den Berg, 2012).

This study uses a new and unique way to measure trust in peers in the small and self-contained context of the school grade. A main advantage of this approach is the possibility to match information not only of the trusting individual but also of the peer who is to be trusted. Further, by using the combined sociometric information given by all other people in the grade, we get a complete and realistic picture of the student's social standing within their peer group. Several limitations should, however, be considered. Most importantly, the data used here is cross-sectional and thus only correlational. The assumed mechanisms behind the relationship between social standing and trust expectations are based on strong interdependencies between an individual's behaviours, their peers' perception and evaluation of such behaviours and the communication of those evaluations throughout the peer group. For example, the relationship between a peer's social acceptance and trust in that peer is based on the assumption that previous untrustworthy behaviours would have led to lower social acceptance, making current social acceptance a good indicator of future trustworthy behaviour. Due to the correlational nature of the used data, I cannot make definite statements about the causal relationship here.

Further, trust expectations in this study are limited to one particular matter at hand, that is the expectation that the other will *return borrowed money*. In comparison to other situations that require trust, being asked to lend a small amount of money is an easy-to-imagine situation which could realistically happen also with unknown or little-known peers. This study cannot out rule, however, that this particular matter is a special case and that results might be different for other situations.

Overall, this study is a further illustration that achieving a high social standing in terms of popularity is not always an advantage for adolescents and how they are viewed within their peer group. Given the potential importance of being perceived as trustworthy to establish meaningful relationships, being popular might have negative consequences in the long run, especially if it is paired with average or lower social acceptance. Future research should pay special attention to these long-term consequences of popularity.

5 SUPPLEMENTARY ANALYSES TO CHAPTER 4

While Chapter 4 sheds light on how the social standing within the school grade relates to trust in little-known peers – and thereby considers both adolescents' own and their peer's social standing – it does not discuss adolescents' generalised social trust and only briefly covers context-specific social trust as part of a robustness check. In the following, I will present additional analyses relating adolescents' own social standing within the school grade to their generalised social trust. To directly set it in comparison with context-specific social trust similar to Chapters 2 and 3, I will repeat the analysis with trust in fully unknown peers as the outcome here as well (this analysis will be almost identical to the one presented within the robustness checks of Chapter 4). As it does not make sense to assume a relationship between the random peer's social standing and trust in generalised or unknown others, I drop all variables regarding the assigned peer ("B"). Otherwise, no changes will be made to the before-presented analyses. The main question that these additional analyses can answer is whether adolescents' social standing within the school context has meaning for their social trust *beyond* this context.

Table 4.5.1 shows the results of the OLS regressions with school-clustered standard errors for both generalised and context-specific social trust. Interestingly, we see notable differences between the analyses of both trust measures: Social acceptance shows no significant relationship with context-specific social trust; however, there is a positive association with generalised social trust. An increase in social acceptance within the school grade of 1 standard deviation relates to 0.094 scale points or 2.35% of the scale. In contrast, popularity is *positively* associated with context-specific social trust ($b = 0.086$, $p < 0.01$ or 2.87% on a 4-point scale per 1 SD increase in popularity) and *negatively* with

generalised social trust (b = -0.061, p < 0.01 or -1.53% on a 5-point scale per 1 SD increase in popularity).

Table 4.5.1. Social acceptance, popularity and social trust (OLS regressions)

	Generalised social trust		Context-specific social trust	
	Model 1	Model 2	Model 1	Model 2
Intercept	1.712***	1.712***	2.300**	2.329**
	(0.519)	(0.519)	(0.798)	(0.797)
A's social acceptance	0.094***	0.093***	0.013	0.012
	(0.021)	(0.021)	(0.028)	(0.028)
A's popularity	-0.061**	-0.062**	0.086**	0.096**
	(0.021)	(0.021)	(0.027)	(0.032)
A's soc. acceptance*		0.004		-0.023
A's popularity		(0.020)		(0.025)
SES	0.213***	0.214***	-0.036	-0.039
	(0.034)	(0.035)	(0.049)	(0.050)
A's Gender (female=1)	-0.262***	-0.262***	0.061	0.059
	(0.037)	(0.037)	(0.056)	(0.056)
Age (in month)	-0.002	-0.002	-0.003	-0.003
	(0.003)	(0.003)	(0.005)	(0.005)
No migration background	0.198***	0.197***	0.093	0.094
	(0.042)	(0.042)	(0.068)	(0.068)
School track: lower	0.064	0.064	-0.031	-0.031
	(0.058)	(0.058)	(0.107)	(0.107)
School track: intermediate	0.014	0.014	-0.063	-0.064
	(0.097)	(0.097)	(0.123)	(0.124)
School track: higher	0.093	0.093	0.275*	0.272*
	(0.058)	(0.058)	(0.124)	(0.125)
Num. obs.	2747	2747	1055	1055
Adj. R-squared	0.053	0.052	0.029	0.028

Notes. * p < 0.05; ** p < 0.01; *** p < 0.001. Standard errors are cluster-corrected at school level.

Given the different sample sizes and measurement strategies, those differences should not be over-interpreted. Still, they show an interesting pattern, especially concerning popularity, that may warrant further research to take a closer look. These results support the interpretation, that the relationship between popularity and trust in peers (whether little or unknown) derives from a popular student's confidence that they can coerce or force the other student to behave trustworthily towards them. Outside of the

school context, they may perceive their school-related social standing to have little impact. If their positive trust expectations merely result from their assumed ability of what they can make others do and not from their belief in what others would do out of their own volition, this explains the negative relationship between popularity and generalised social trust.

6 GENERAL DISCUSSION

The goal of this thesis was to investigate how the school context influences adolescents' trust in peers and people in general. Schools as places where young people spend the majority of their time in close proximity to many other peers likely shape adolescents' understanding of the world they live in and their place within it (Eccles & Roeser, 2011). This was tested in the three different empirical chapters of this dissertation. The first two focused on the composition of ethnic origin within the school grade or class (Chapters 2 and 3). The latter (Chapter 4) added a different perspective by analysing the relationship between individuals' social standing within the school grade and trust in little-known peers. Chapter 5 added to this chapter by extending the analyses to generalised and context-specific social trust. In the following, I will first summarise and discuss the results of Chapters 2 and 3 and then move on to Chapters 4 and 5, given the different foci of these two parts of this thesis.

6.1 DISCUSSION OF CHAPTERS 2 AND 3

Chapter 2 showed a clear and relatively strong positive relationship between the share of the majority (Germans of at least the 3rd generation) within the school grade and context-specific as well as generalised social trust. This was the case for both majority and minority students. In contrast, results regarding the diversity of ethnic minorities are inconsistent and overall inconclusive. Further, there was no indication that the share of the

own ethnic ingroup within the school grade is positively related to minority students' social trust.

The third chapter analysed the relationship between the alignment of ethnic origin and gender within classrooms and social trust. While the analysis of ethnic diversity theoretically presupposes that ethnic origin is an important and salient social category in adolescents' lives, this relevance is unlikely to be equal for every student. High attribute alignment (e.g., most fellow students with a German background are male, while most others are female) may not only increase the salience of ethnic origin as a social category but thereby also strengthen the perception of a limited moral community within and outside the school context. Results show a notable negative relationship between the alignment of ethnic origin and gender and generalised and context-specific social trust for majority students: majority students who visited school classes in which most other majority students were of the same gender while most minority students were of the other gender showed lower social trust compared to majority students who visited school classes with an even distribution of the genders among the ethnic groups. For minority students, however, no clear significant relationship was found.

Several important points follow from these chapters: First, we find the same pattern in the analyses for context-specific and generalised social trust in both Chapter 2 and Chapter 3. Thus, adolescents' experience regarding the group compositions within the school context relates to their school context-specific social trust in the same manner as to their generalised social trust. This may point to a generalisation of their experiences within the school context to the world beyond. In the case of school grade ethnic diversity, students' experiences within the school context are likely similar to what they experience outside of school in their neighbourhood, given that many students tend to visit nearby schools. On the contrary, the alignment between ethnic origin and gender within the school

class is largely random and unlikely to even be perceivable within the school *grade*. Thus, while the distribution of ethnic groups analysed in Chapter 2 might relatively accurately reflect the ethnic groups that live in the larger area around the students' place of living, the attribute alignment analysed in Chapter 3 has little to do with a reality outside the school context. Still, we see the same relationships to both context-specific and generalised social trust also in this case.

Second, while the interpretation and the theoretical implications of the results of both chapters are clear and relatively straightforward for majority students, the interpretation is less clear for minority students. For majority students, the results from Chapter 2 may indicate clear favouritism for (being surrounded by) their ethnic ingroup, reflected in higher levels of social trust (Dinesen et al., 2020). For minority students, there is no indication of similar ingroup favouritism, if we define their ingroup as "minority students" or as other students of their ethnic origin. Rather, they are – just like majority students – more trusting when surrounded by many majority students. Chapter 3 provides evidence that alignment of ethnic origin and gender strengthens majority students' perception of a deeper division between important social groups. Consequentially, majority students may think of their moral community as being more limited. However, no such connection could be observed for minority students in the given data. A potential theoretical reason for these different findings may be that the "starting point" in students' perception of who belongs to their moral community differs between majority and minority students: while majority students might generally, if there is no counter indication, see most people as part of their community, minority students might, due to their status as minority, assume their moral community to be much smaller in the first place. Consequentially, alignment might not add much to this perception for minority students. However, as methodological issues, most importantly the small sample sizes available for

minority students, could also explain the results, we need more research to test this assumption.

The results for minority students of both, Chapters 2 and 3, may also point to a different issue: the categories used to define ethnic origin may not (for all) correctly reflect how they perceive themselves or are perceived by most of their fellow students. In the main analyses of both empirical chapters, I use the country of birth of the parents or the child, as is often done in European literature on ethnic origin (S. L. Schneider & Heath, 2020). There are good reasons for choosing such an "objective" measure of ethnic origin; most importantly, the composition of ethnic origins (based on e.g., birth countries) within the school itself may shift how individuals identify themselves within the context of the school (Kroneberg et al., 2021a). However, it may be that by using these strict, assigned-from-the-outside, categories, we miss that many adolescents with immigration background may not see themselves as a minority (or part of that particular minority group) at all, but rather as part of the majority (Jugert et al., 2018, 2022; S. L. Schneider & Heath, 2020). They may contrast themselves primarily against other "minority" students from a different background rather than against "native" Germans. Research showing a relatively high identification of immigrants and people with immigration backgrounds in Germany (Schulz & Leszczensky, 2016) may support this interpretation. If a large proportion of the alleged minority students does identify at least equally with the majority, then this could explain the positive relationship between the share of majority and social trust found in Chapter 2. It could further explain the insignificant findings regarding the alignment of ethnic origin and gender and social trust in Chapter 3. The assigned alignment score likely does not reflect how a student perceives their environment if their assigned ethnic origin has no connection to their self-identification. Further, the multiverse analyses in Chapter 2 may point to a similar issue regarding the categorisation of ethnic origin: they revealed in

part strong variations in the results based on different operationalisations of ethnic origin. Future research should investigate this issue further.

6.2 DISCUSSION OF CHAPTERS 4 AND 5

An overview of all results of Chapters 4 and 5 is provided in Table 6.2.1. Chapter 4 provided evidence that adolescents' social standing within the school grade, measured by popularity and social acceptance, does matter for their trust in and by (little-known) peers. Students with higher social acceptance or popularity show more trust in their peers. Further, a student ("A") is more likely to trust a peer ("B") if B is highly socially accepted (compared to a less accepted peer). However, they are overall less likely to trust B, if B is highly popular (compared to a less popular peer). Importantly, there is an interaction between B's social acceptance and B's popularity: for the handful of most socially accepted students, I found a positive relationship between their popularity and another student A's trust expectations towards them. However, even for students with average social acceptance, this relationship is reversed and their popularity *negatively* predicts A's trust expectations towards them.

Table 6.2.1. Overview results from Chapters 4 and 5

	A's trust expectations towards little known B	A's trust expectations towards fully unknown B (context-specific trust)	A's trust in people in general (generalised social trust)
A's social acceptance	+	insig.	+
A's popularity	+	+	-
A's social acceptance x A's popularity	insig.	insig.	insig.
B's social acceptance	+	*Not analysed*	*Not analysed*
B's popularity	-	*Not analysed*	*Not analysed*
B's social acceptance x B's popularity	+ (B's popularity less negatively related to A's trust with increase in B's social acceptance)	*Not analysed*	*Not analysed*

Chapter 4 focused solely on trust in a situation in which one recognizes, but does not personally know the trust target B. The additional analyses of Chapter 5 further illustrate that a student A's popularity is associated with more context-specific social trust but less generalised social trust. Lastly, A's social acceptance did not relate to context-specific social trust but did increase generalised social trust.

Several conclusions can be drawn from Chapters 4 and 5: Firstly, social acceptance (i.e. being liked by many and disliked by few) is consistently positive for trust in and by others. Only trust in completely unknown peers (i.e., context-specific social trust) was in these analyses not positively related to social acceptance. This is somewhat surprising given that social acceptance within the school context was positively associated with trust in people in general, thus including people outside the school context. Given the very notable differences between the measures conceptually, as well as with respect to the sample size that could be analysed (N = 2747 for generalised social trust, compared to N = 1055 for context-specific social trust), we cannot make strong conclusions from these differences. A substantial explanation for the insignificant results regarding context-specific social trust could be grounded in the fact, that the completely unknown peer is unlikely to know about A's social acceptance. Theoretical considerations (e.g., encapsulated interests) which are based on A's assumptions of what B perceives about A's social standing thus cannot apply. If those assumptions are responsible for the positive relationship between A's social acceptance and their trust in little-known peers, we would (as is the case here) not expect a significant relationship between A's social acceptance and their trust in fully unknown peers. However, this would imply that different mechanisms take place for context-specific and generalised social trust, given the positive association between social acceptance and generalised social trust. To summarise, taking into account

all analyses, being socially accepted by one's peers – an important social goal during adolescence – has overall positive outcomes for young people in terms of trust.

In contrast, popularity shows a more complex pattern. Popularity neither consistently leads to more trust, given that it is associated with lower generalised social trust, nor are popular peers overall more trusted. This research thereby aligns with multiple other studies that show potentially harmful effects of popularity (Cillessen & van den Berg, 2012; Gommans et al., 2017; Malamut et al., 2021; Mayeux et al., 2008; van den Broek et al., 2016). Hereby, it may be less the popularity itself, but the means, that some adolescents choose to achieve and maintain popularity, that cause issues. Aggressive and manipulative behaviours may strengthen a popular status (Cillessen et al., 2014; Cillessen & van den Berg, 2012; Dijkstra et al., 2009; Ellis & Zarbatany, 2007; Malamut et al., 2021) – however, they may also cause peers to have low trust expectations. Examining more extensively the relationship between popularity-related behaviours, peer-perceived popularity and trust may be a fruitful direction for future research.

In contrast to Chapters 2 and 3 (which focused on group composition within the school grade or class), Chapter 5 (which focused on adolescents' social standing within the school grade), shows little indication that adolescents generalise from their social standing within the school grade to their potential position outside the school context. If anything, popular students seem to be very aware of the fact that their social standing is limited to the school context and show even lower generalised social trust than their less popular peers. In combination with the positive relationship between popularity and trust in peers within the school context, this may suggest that they (strategically) adapt their level of trust based on what they assume they can get others to do.

In the interpretation of these results of Chapter 5, we should however pay close attention to the differences between the measures of context-specific and generalised social trust beyond the scope of people they target (only unknown peers in the school grade vs. people in general). For context-specific social trust, students were asked whether they believed that a specific, though unknown, peer within the school grade would return borrowed money. In this very specific situation, trustworthy behaviour *can* be enforced. The trust expectation here can be based on the own abilities, rather than beliefs about the other person's goodwill. To measure generalised social trust, students stated their agreement with a very abstract statement "In general, people can be trusted.". Using this formulation, answers may be less likely to reflect students' confidence in their own abilities.

7 CONCLUSION

The results of this thesis support the assumption that schools play an important role in adolescents' trust in peers and people in general. Chapter 2 and 3 illustrate that the composition of different socially relevant groups within the school context relate to social trust – within and outside of the school context. These compositions, for example, whether ethnic origin and gender align in a classroom, are at least in part changeable by school administrators and thus may be important aspects in interventions focusing on increasing social trust. In the case of ethnic diversity or the share of majority students within the school, one may argue from a policy perspective that achieving an equal distribution of ethnic groups between schools is desirable for achieving equal levels of social trust across schools. These results support admission criteria currently employed in North Rhine-Westphalia: here schools are encouraged to ensure an equal distribution of students with different first languages (§1 VVzAPO-S I). However, it seems unlikely that we can

achieve such an equal distribution between schools overall. It thus seems more important, to pay close attention to students' social trust if they visit schools with a lower share of majority. At these schools, students may benefit strongly from measures to promote social trust. School administrators at such schools in particular may be well-advised to pay close attention to the alignment of ethnic origin and gender when distributing students to new classrooms.

However, before making strong policy recommendations with need additional research. The results presented here may provide an interesting starting point for this endeavour. Future studies should further investigate the impact of alignment on trust, and thereby consider preferably *long-term* longitudinal data that provides information on young people's lives past their school years. Also, ethnic origin and gender are only two of many potentially important social categories. Future research should consider other combinations of social categories. Furthermore, more research is needed on how social trust can be promoted at schools, and in particular at schools, where students' average social trust may be low (e.g., at schools with a low share of majority students).

Chapters 4 and 5 further outlined how social standing within the school context relates to social trust as well as trust in little-known peers. Unsurprisingly, being well-accepted by peers is consistently positively related to trust in and by others. However, popularity is a more complex matter and may, in the long run, have more negative than positive consequences for trust. Students who primarily place importance on social acceptance, but care little about being popular with their fellow students may in the long term be at an advantage regarding trust. Future research should seek to test this statement using long-term longitudinal data. Taking into account also other research that shows negative effects of popularity (Dijkstra et al., 2009; Ferguson & Ryan, 2019; Fujimoto et al., 2017; Gommans et al., 2017; Guyll et al., 2014; Malamut et al., 2021; Mayeux et al.,

2008; van den Broek et al., 2016), for example with respect to health-risk behaviour, relational aggression or satisfaction with one's social life, weakening the importance of popularity during adolescence might generally be advisable. Furthermore, promoting strategies that do not rely on deviant or antisocial behaviours to achieve high popularity, may decrease a negative impact of (striving for) popularity. Given this research, future studies should look into measures with these goals in mind.

8 APPENDICES

8.1 APPENDIX CHAPTER 2

8.1.1 DESCRIPTIVE STATISTICS

Table 8.1.1. Descriptive statistics - individual level

	N	Mean	St. Dev.	Min	Max
Generalized trust	2,777	2.117	1.012	0	4
Context-specific Trust	1,034	1.881	.936	1	4
no migration background	2,777	.431	.495	0	1
interethnic	2,777	.166	.372	0	1
2. generation	2,777	.250	.433	0	1
1. generation	2,777	.153	.360	0	1
Female (binary)	2,777	.470	.499	0	1
Age (in years)	2,777	12.868	.620	10.583	15.833
Individual SES	2,777	3.508	.558	1	4

Table 8.1.2. Descriptive statistics - school-level

	Mean	St. Dev.	Min	Max
School average: generalized trust	2.100	.204	1.727	2.588
School average: context-specific trust	3.488	.130	3.234	3.699
Share of majority	.382	.188	.118	.743
Minorities' diversity	.876	.063	.675	.945
School track: higher	.333	.478	0	1
School track: intermediate	.194	.401	0	1
School track: lower	.250	.439	0	1
School track: combined	.222	.422	0	1

Notes. N(schools) = 36

Table 8.1.3. Overview ethnic diversity and composition by schools

	Largest group		**2.** Largest group		**3.** Largest group		Diversity	
Nr.	Ethnic origin	Share	Ethnic origin	Share	Ethnic origin	Share	Share of Majority	Minorities' diversity
1	Germany	0.74	Russia	0.06	Poland	0.03	0.74	0.90
2	Germany	0.14	Turkey	0.10	Syria	0.08	0.14	0.94
3	Germany	0.34	Turkey	0.16	Syria	0.11	0.34	0.89
4	Germany	0.68	Poland	0.07	Turkey	0.06	0.68	0.89
5	Germany	0.65	Turkey	0.10	Poland	0.07	0.65	0.83
6	Germany	0.63	Poland	0.05	Russia	0.03	0.63	0.94
7	Germany	0.18	Turkey	0.16	Poland	0.12	0.18	0.91
8	Germany	0.30	Turkey	0.14	Syria	0.09	0.30	0.92
9	Germany	0.27	Poland	0.11	Turkey	0.11	0.27	0.91
10	Germany	0.15	Romania	0.11	Spanien	0.10	0.15	0.92
11	Germany	0.26	Kosovo	0.24	Turkey	0.18	0.26	0.81
12	Turkey	0.37	Germany	0.33	Libanon	0.05	0.33	0.68
13	Germany	0.17	Morocco	0.14	Poland	0.13	0.17	0.91
14	Germany	0.26	Iraq	0.13	Italy	0.10	0.26	0.91
15	Germany	0.30	Turkey	0.16	Italy	0.07	0.30	0.90
16	Germany	0.27	Turkey	0.16	Iraq	0.08	0.27	0.89
17	Turkey	0.23	Germany	0.19	Bulgaria	0.06	0.19	0.89
18	Turkey	0.30	Germany	0.19	Bulgaria	0.07	0.19	0.83
19	Germany	0.61	Kazakh.	0.07	Poland	0.04	0.61	0.93
20	Germany	0.26	Turkey	0.19	Russia	0.09	0.26	0.90
21	Germany	0.24	Turkey	0.20	Iraq	0.07	0.24	0.89
22	Turkey	0.31	Germany	0.20	Iraq	0.08	0.20	0.82
23	Germany	0.50	Russia	0.11	Poland	0.08	0.50	0.88
24	Germany	0.52	Turkey	0.09	Iran	0.06	0.52	0.92
25	Germany	0.72	Poland	0.14	Russia	0.03	0.72	0.74
26	Turkey	0.36	Germany	0.23	Greece	0.04	0.23	0.76
27	Germany	0.66	Poland	0.04	Turkey	0.04	0.66	0.94
28	Germany	0.28	Turkey	0.20	Poland	0.07	0.28	0.89
29	Germany	0.51	Russia	0.09	Afghan.	0.05	0.51	0.92
30	Germany	0.41	Poland	0.13	Turkey	0.12	0.41	0.88
31	Germany	0.47	Turkey	0.19	Poland	0.07	0.47	0.84
32	Germany	0.49	Poland	0.13	Turkey	0.07	0.49	0.89
33	Germany	0.56	Turkey	0.11	Poland	0.03	0.56	0.92
34	Germany	0.54	Turkey	0.08	Poland	0.05	0.54	0.92
35	Germany	0.37	Turkey	0.30	Poland	0.08	0.37	0.74
36	Syria	0.16	Libanon	0.14	Germany	0.12	0.12	0.90

8.1.2 MULTIVERSE ANALYSIS AS AN ANALYTICAL STRATEGY

Multiverse analyses are highly useful when seeking to achieve a greater transparency regarding model uncertainty. One natural element of the social sciences is that researchers constantly have to make more or less arbitrary decisions on their way to final (and publishable) results. This includes, for example, the operationalisation of variables, the choice of control variables, the specific form of analysis, exclusion strategies and so on (Dragicevic et al., 2019; Simonsohn et al., 2020; Steegen et al., 2016; Young & Holsteen, 2017). In many cases, the theoretical guidance on which specific approach to choose is rather slim. Therefore, two researchers using the same data set working on the same research question might obtain completely different results depending on which specifications they view as appropriate (Simonsohn et al., 2020).

Methods like the specification curve analysis (e.g., Simonsohn et al., 2020) or multiverse/multimodel analysis (e.g., Young & Holsteen, 2017) tackle a part of this problem. The idea behind such methods is to present not just one or a couple of plausible models but to run all plausible models and summarise or graphically present results, for example via sign stability and significance rates. Such an approach increases transparency and may reveal whether results are highly dependent on a specific operationalisation, control variable etc.

Following the approach by Young and Holsteen (2017) I defined a main model as well as a set of appropriate alternatives. The set of alternatives included different operationalisations of variables, different sets of control variables, and different exclusion strategies. According to (Young, 2019, p. 438), only the "most compelling and best understood controls should be treated as 'always belonging' in a regression, and any variable that simply seems plausible should be treated as uncertain". Considering this, I differentiated between control variables that were always included in the models

("essential control variables") and those that were "optional". For each coefficient of interest, I present the significance rate and sign stability (tables presented in main text). Further, I summarise the significance rates by specification (Appendix, Chapter 8.1.3).

Several notes of caution for the interpretation of the multiverse analysis should be heeded. First, the coefficients obtained are not independent of each other. Models are viewed as equally plausible within the multiverse analysis, even though some models must be closer to reality than others. The distribution merely shows the numeric values of all coefficients not qualified by, for example, a model fit (as prompted, for example, by Slez, 2019). As such, neither the mean nor the peak of the coefficient distribution, or any other similarly obtained value should be interpreted by itself. The goal of this analysis is not to arrive at an allegedly most accurate coefficient but to increase transparency about model uncertainties and to reveal whether results are highly dependent on certain specifications (Young, 2019). The multiverse analysis shows whether a coefficient is sensitive to specific choices made by the researcher (indicated by e.g., sign stability, significance rate or the curve of the distribution). Lastly, the multiverse analysis does not, in practice, include all plausible models. The number of models increases exponentially with each new alternative included in the set (e.g., including 10 optional control variables in a multiverse model leads to 2^{10} models), practically limiting the number of alternatives it is feasible to include. Further, some specifications may be highly plausible but are not possible to include due to data restrictions (e.g., small sample sizes, missing values etc.). Despite these limitations, the multiverse analysis is a step in the right direction towards more transparency and a more thorough understanding of the data. See Table 8.1.4 for an overview of all alternative specifications applied in the multiverse analysis.

Table 8.1.4. Overview of operationalisations and alternative specifications included in the multiverse analysis

	Operationalization (main analysis in bold)
Operationalisation of ethnic origin	**1) Birth country of child or parents: If at least one parent is born outside of Germany, this parent's birth country defines the student's ethnic origin**
	2) Birth country of child or parents: only if both parents are born outside of Germany, Germany is not coded as "ethnic origin"
	3) Birth country of child or parents (main): recoded into larger regions
	Independent variables
1. Share of majority	Percentage of student with "German" ethnic origin based on operationalisation described above
2. Diversity of ethnic minorities	Hirschmann-Herfindahl Index calculated based on operationalisation described above
3. Share of ethnic ingroup (only applicable for minority students)	Percentage of student with same ethnic origin based on operationalisation described above
	Control variables
Immigration generation	**Categorical variable: no immigration background, interethnic, 2. Generation, 1. Generation (dropped in analysis for only majority students)**
Gender	**Binary variable: female**
Age	**Age in month**
SES (individual level)	**1) Availability of money**
	2) Two binary variables: both parents unemployed + both parents in full employment
	3) Highest parental ISEI-score (20.9\% missing values, listwise exclusion)

Table 8.1.5.b Continuation of Table 8.1.4

SES (school level)	**1) Categorical variable school track: lower, intermediate higher, combined**
	2) Categorical variable school track & share of unemployed parents per school
	3) Categorical variable school track & school average: availability of money
Grade size	**1) not included**
	2) number of students in the grade
	Exclusion strategies
Exclusion strategy	**a) Exclusion of extreme outlier school school**
	b) Exclusion of extreme outlier school and students with illogical answers (e.g., stating that they do not know assigned student even though they mentioned them within the social network-section of the survey)
	c) Exclusion of all schools with major changes in class structure
	d) Exclusion of all schools with major changes in class structure and students with illogical answers

8.1.3 DETAILED RESULTS MULTIVERSE ANALYSES

Table 8.1.6. Significance rates by specifications: Generalised social trust

Specification	Share of majority	Minorities' diversity
Operationalization of ethnic origin		
Ethnic origin: one parent non-German (main analysis)	100	27.8
Ethnic origin: both parents non-German	100	84.7
Ethnic origin: larger regions	100	100
Operationalization of control Variables		
SES ind.: money available (main analysis)	100	79.2
SES ind.: parental employment status	100	69.4
SES ind.: ISEI parents (max.)	100	63.9
SES school: only school track (main analysis)	100	79.2
SES school: school track + mean money available	100	61.1
SES school: school track + perc. unemployed	100	72.2
Grade size: not included (main analysis)	100	77.8
Grade size	100	63.9
Exclusion strategies		
excl. a: outlier school (main analysis)	100	66.7
excl. b: a and illogical answers	100	53.7
excl. c: change in classrooms W1-W2	100	85.2
excl. d: c and illogical answers	100	77.8

Notes. Significance rates for $p <= 0.05$.

Table 8.1.7 Majority students only. Significance rates by specifications: Generalised social trust

Specification	Share of majority	Minorities' diversity
Operationalization of ethnic origin		
Ethnic origin: one parent non-German (main analysis)	100	0
Ethnic origin: both parents non-German	100	98.6
Ethnic origin: larger regions	100	27.8
Operationalization of control Variables		
SES ind.: money available (main analysis)	100	41.7
SES ind.: parental employment status	100	47.2
SES ind.: ISEI parents (max.)	100	37.5
SES school: only school track (main analysis)	100	47.2
SES school: school track + mean money available	100	31.9
SES school: school track + perc. unemployed	100	47.2
Grade size: not included (main analysis)	100	50
Grade size	100	34.3
Exclusion strategies		
excl. a: outlier school (main analysis)	100	44.4
excl. b: a and illogical answers	100	35.2
excl. c: change in classrooms W1-W2	100	48.1
excl. d: c and illogical answers	100	40.7

Notes. Significance rates for $p <= 0.05$.

Table 8.1.8. Minority students only. Significance rates by specifications: Generalised social trust

Specification	Share of majority	Minorities' diversity	Ingroup share
Operationalization of ethnic origin			
Ethnic origin: one parent non-German (main analysis)	100	29.2	0
Ethnic origin: both parents non-German	94.4	33.3	0
Ethnic origin: larger regions	100	100	0
Operationalization of control Variables			
SES ind.: money available (main analysis)	100	61.1	0
SES ind.: parental employment status	100	56.9	0
SES ind.: ISEI parents (max.)	94.4	44.4	0
SES school: only school track (main analysis)	94.4	63.9	0
SES school: school track + mean money available	100	37.5	0
SES school: school track + perc. unemployed	100	61.1	0
Grade size: not included (main analysis)	97.2	54.6	0
Grade size	99.1	53.7	0
Exclusion strategies			
excl. a: outlier school (main analysis)	98.1	48.1	0
excl. b: a and illogical answers	96.3	33.3	0
excl. c: change in classrooms W1-W2	98.1	75.9	0
excl. d: c and illogical answers	100	59.3	0

Notes. Significance rates for $p <= 0.05$.

Table 8.1.9 All students. Significance rates by specifications: Context-specific social trust

Specification	Share of majority	Minorities' diversity
Operationalization of ethnic origin		
Ethnic origin: one parent non-German (main analysis)	100	0
Ethnic origin: both parents non-German	86.1	0
Ethnic origin: larger regions	100	0
Operationalization of control Variables		
SES ind.: money available (main analysis)	97.2	0
SES ind.: parental employment status	100	0
SES ind.: ISEI parents (max.)	88.9	0
SES school: only school track (main analysis)	88.9	0
SES school: school track + mean money available	98.6	0
SES school: school track + perc. unemployed	98.6	0
Grade size: not included (main analysis)	93.5	0
Grade size	97.2	0
Exclusion strategies		
excl. a: outlier school (main analysis)	96.3	0
excl. b: a and illogical answers	98.1	0
excl. c: change in classrooms W1-W2	90.7	0
excl. d: c and illogical answers	96.3	0

Notes. Significance rates for $p <= 0.05$.

Table 8.1.10 Majority students only. Significance rates by specifications: Context-specific social trust

Specification	Share of majority	Minorities' diversity
Operationalization of ethnic origin		
Ethnic origin: one parent non-German (main analysis)	91.7	0
Ethnic origin: both parents non-German	61.1	0
Ethnic origin: larger regions	70.8	0
Operationalization of control Variables		
SES ind.: money available (main analysis)	79.2	0
SES ind.: parental employment status	95.8	0
SES ind.: ISEI parents (max.)	48.6	0
SES school: only school track (main analysis)	73.6	0
SES school: school track + mean money available	75	0
SES school: school track + perc. unemployed	75	0
Grade size: not included (main analysis)	64.8	0
Grade size	84.3	0
Exclusion strategies		
excl. a: outlier school (main analysis)	85.2	0
excl. b: a and illogical answers	68.5	0
excl. c: change in classrooms W1-W2	77.8	0
excl. d: c and illogical answers	66.7	0

Notes. Significance rates for $p <= 0.05$.

Table 8.1.11 Minority students only. Significance rates by specifications: Context-specific social trust

Specification	Share of majority	Minorities' diversity	Ingroup share
Operationalization of ethnic origin			
Ethnic origin: one parent non-German (main analysis)	90.3	0	0
Ethnic origin: both parents non-German	13.9	0	8.3
Ethnic origin: larger regions	90.3	0	0
Operationalization of control Variables			
SES ind.: money available (main analysis)	61.1	0	0
SES ind.: parental employment status	72.2	0	8.3
SES ind.: ISEI parents (max.)	61.1	0	0
SES school: only school track (main analysis)	50	0	2.8
SES school: school track + mean money available	73.6	0	2.8
SES school: school track + perc. unemployed	70.8	0	2.8
Grade size: not included (main analysis)	63.9	0	2.8
Grade size	65.7	0	2.8
Exclusion strategies			
excl. a: outlier school (main analysis)	63	0	0
excl. b: a and illogical answers	77.8	0	11.1
excl. c: change in classrooms W1-W2	48.1	0	0
excl. d: c and illogical answers	70.4	0	0

Notes. Significance rates for $p <= 0.05$.

8.1.4 STUDY MATERIAL: NEW MEASURE OF CONTEXT-SPECIFIC SOCIAL TRUST

It's the long break and you are currently waiting in line at the school kiosk. Another student, "random student ID", stands behind you. Please identify the person with this ID number on the list containing the names of all of the students within your grade. Imagine that this person tell you, that they forgot their money for the kiosk at home. He or she asks you to lend them 5€. You have enough money with you.

- Would you give student "random student ID" the money?
- Do you believe, that student "random student ID" will give you the money back? (Answer categories: no, rather no, rather yes, yes)

8.1.5 REGRESSION RESULTS WITH ETHNIC DIVERSITY INDEX INCLUDING MAJORITY GROUP

Table 8.1.12. OLS-regression. Ethnic diversity (HHI *including* majority) and generalised social trust

	All students	Majority students	Minority students
Intercept	2.398***	3.075***	2.013**
	(0.566)	(0.782)	(0.713)
Eth. Diversity (all groups)	-1.041***	-0.861***	-1.188***
	(0.151)	(0.238)	(0.215)
No migration background	0.109		
	(0.076)		
2. Generation	-0.036		-0.004
	(0.076)		(0.078)
interethnic	0.007		0.044
	(0.070)		(0.074)
Female (binary)	-0.254***	-0.147**	-0.336***
	(0.037)	(0.048)	(0.053)
Age (in month)	-0.001	-0.008	0.003
	(0.003)	(0.005)	(0.004)
Individual SES	0.217***	0.270***	0.183***
	(0.035)	(0.049)	(0.051)
School track: lower	0.134*	0.012	0.162**
	(0.058)	(0.099)	(0.056)
School track: intermediate	0.028	-0.105	0.097
	(0.066)	(0.074)	(0.079)
School track: higher	0.011	0.075	-0.069
	(0.037)	(0.072)	(0.056)
Num. obs.	2777	1198	1579
Adj. R-squared	0.057	0.066	0.044

Notes. $^{+}$ $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Standard errors are cluster-corrected at school level.

Table 8.1.13. OLS-regression. Ethnic diversity (HHI including majority) and context-specific social trust

	All students	Majority students	Minority students
Intercept	2.436**	1.972*	2.517*
	(0.918)	(0.937)	-1.144
Eth. Diversity (all groups)	-1.049**	-0.847*	-1.141*
	(0.338)	(0.422)	(0.492)
No migration background	0.043		
	(0.107)		
2. Generation	0.079		0.114
	(0.113)		(0.120)
interethnic	0.106		0.150
	(0.097)		(0.103)
Female (binary)	0.053	0.130	-0.007
	(0.061)	(0.088)	(0.082)
Age (in month)	0.000	0.003	-0.000
	(0.005)	(0.007)	(0.006)
Individual SES	0.025	0.004	0.040
	(0.052)	(0.080)	(0.068)
School track: lower	-0.099	-0.492***	0.043
	(0.125)	(0.140)	(0.160)
School track: intermediate	-0.031	-0.107	0.011
	(0.103)	(0.097)	(0.146)
School track: higher	0.218*	0.324**	0.116
	(0.109)	(0.112)	(0.150)
Num. obs.	1034	442	592
Adj. R-squared	0.059	0.102	0.028

Notes. $^{+}$ $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Standard errors are cluster-corrected at school level.

8.2 APPENDIX CHAPTER 3

8.2.1 DESCRIPTIVE STATISTICS

Table 8.2.1. Descriptive statistic - analytical sample generalised social trust

	Mean	Min	Max
Generalised social trust	2.182	0	4
Attribute alignment	0.191	0.000	0.681
Size ethnic group in class	10.034	3	22
Sex (ref.: male)	0.473	0	1
Age (in month)	153.709	127	185
Immigration background: 1. generation	0.049	0	1
Immigration background: 2. generation	0.158	0	1
Immigration background: Interethnic	0.091	0	1
No migration background	0.702	0	1

Note. N(students) = 1695

Table 8.2.2. Descriptive statistic - analytical sample context-specific social trust

	Mean	Min	Max
Context-specific social trust	1.883	1	4
Attribute alignment	0.192	0.000	0.645
Size ethnic group in class	9.886	3	22
Sex (ref.: male)	0.429	0	1
Age (in month)	153.849	127	181
Immigration background: 1. generation	0.050	0	1
Immigration background: 2. generation	0.174	0	1
Immigration background: Interethnic	0.093	0	1
No migration background	0.683	0	1

Note. N(students) = 643

Table 8.2.3. Descriptive statistic - class-level data

	Mean	Min	Max
Class: num. students	21.158	7	30
Class: ethnic diversity	0.711	0.169	0.907
Class: gender diversity	0.469	0.142	0.500
Class: majority share	0.416	0.036	0.909
Class: share of girls	0.462	0.077	0.808
School type: lower track	0.158	0	1
School type: intermediate track	0.165	0	1
School type: higher track	0.360	0	1
School type: combined track	0.317	0	1

Note. N(classrooms) = 139

8.2.2 INTERACTION: MAJORITY STATUS AND ALIGNMENT

Table 8.2.4. Attribute alignment and social trust, interaction of majority status and alignment (OLS regression)

	Generalised social trust	Context-specific social trust
Intercept	4.44***	1.12
	(0.79)	(1.08)
Attribute alignment	-0.13	0.24
	(0.32)	(0.60)
Interaction: Alignment x majority status (native)	-0.56	-0.99
	(0.37)	(0.72)
Majority status (native)	0.12	-0.01
	(0.00)	(0.00)
Size ethnic group in class	0.00	0.04**
	(0.01)	(0.02)
Class: num. students	-0.01	-0.04*
	(0.01)	(0.01)
Class: ethnic diversity	-0.49	0.87
	(0.55)	(0.72)
Class: gender diversity	-0.82	0.55
	(0.58)	(0.72)
Class: majority share	0.20	0.41
	(0.35)	(0.49)
Class: share of girls	-0.03	-0.02
	(0.21)	(0.36)
Sex (ref.: male)	-0.18***	0.12
	(0.05)	(0.08)
Age (in month)	-0.01*	0.00
	(0.00)	(0.01)
Immigrant: second generation	-0.13	-0.15
	(0.14)	(0.18)
Immigrant: interethnic	0.07	-0.03
	(0.15)	(0.20)
School: lower track	0.19*	-0.37*
	(0.08)	(0.15)
School: intermediate track	-0.08	-0.01
	(0.08)	(0.09)
School: higher track	0.06	0.26**
	(0.06)	(0.09)
Num. obs.	1695	643
Adj. R-squared	0.05	0.09

Notes. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Standard errors are cluster-corrected at classroom level.

8.3 APPENDIX CHAPTER 4

8.3.1 DESCRIPTIVE STATISTICS

Table 8.3.1. Descriptive statistics

	Mean	Min	Max
A's trust expectations towards B	2.484	1	4
A's social acceptance	0.138	-4.669	3.120
A's popularity	0.119	-0.939	6.038
B's social acceptance	0.012	-4.364	2.707
B's popularity	0.066	-0.939	6.038
A's Gender (female=1)	0.488	0	1
B's Gender (female=1)	0.445	0	1
Age (in month)	154.076	137	187
SES	3.514	1	4
No migration background	0.435	0	1
School track: lower	0.125	0	1
School track: intermediate	0.153	0	1
School track: higher	0.409	0	1

Notes. N(students) = 1599

8.3.2 ROBUSTNESS CHECKS

Table 8.3.2. Robustness check: different exclusion strategies

	Exclusion of those who state to do not know B at all, know them well or very well		Exclusion of those who do not know name and appearance or do know hobbies and preferences	
	Model 2	Model 3	Model 2	Model 3
Intercept	1.794**	1.796**	1.125+	1.120+
	(0.624)	(0.620)	(0.629)	(0.624)
A's social acceptance	0.113**	0.112**	0.138***	0.135***
	(0.036)	(0.038)	(0.025)	(0.025)
A's popularity	0.078***	0.079***	0.067*	0.065*
	(0.023)	(0.023)	(0.027)	(0.029)
B's social acceptance	0.153***	0.148***	0.122***	0.120***
	(0.031)	(0.032)	(0.030)	(0.031)
B's popularity	-0.078**	-0.083**	-0.063**	-0.072**
	(0.029)	(0.028)	(0.023)	(0.022)
A's soc. acceptance*		-0.002		0.006
A's popularity		(0.027)		(0.026)
B's soc. acceptance*		0.040+		0.045*
B's popularity		(0.022)		(0.023)
SES	0.062	0.062	0.123**	0.121**
	(0.039)	(0.039)	(0.041)	(0.041)
A's Gender (female=1)	-0.011	-0.008	-0.130+	-0.128+
	(0.069)	(0.070)	(0.068)	(0.069)
B's Gender (female=1)	0.246**	0.256**	0.166*	0.170*
	(0.082)	(0.081)	(0.085)	(0.084)
A's Gender*B's Gender	0.211+	0.204+	0.369**	0.367**
	(0.120)	(0.119)	(0.127)	(0.125)
Age (in month)	0.001	0.001	0.004	0.004
	(0.004)	(0.004)	(0.004)	(0.004)
No migration background	-0.061	-0.068	-0.057	-0.062
	(0.076)	(0.074)	(0.077)	(0.075)
School track: lower	-0.190+	-0.191+	-0.174+	-0.178+
	(0.098)	(0.100)	(0.093)	(0.096)
School track: intermediate	0.022	0.016	0.006	0.002
	(0.084)	(0.087)	(0.082)	(0.084)
School track: higher	0.450***	0.446***	0.385***	0.380***
	(0.075)	(0.077)	(0.067)	(0.067)
Num. obs.	1192	1192	1428	1428
Adj. R-squared	0.121	0.121	0.102	0.102

Notes. $^{+}$ $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Standard errors are cluster-corrected at school level.

Table 8.3.3. Social acceptance, popularity and trust in peers. Analyses of the full sample.

	Model 2		Model 3	
	no familiarity control	familiarity control	no familiarity control	familiarity control
Intercept	1.729***	1.973***	1.716***	1.958***
	(0.503)	(0.514)	(0.503)	(0.513)
A's social acceptance	0.101***	0.110***	0.099***	0.109***
	(0.019)	(0.020)	(0.020)	(0.020)
A's popularity	0.074***	0.103***	0.072***	0.103***
	(0.017)	(0.018)	(0.019)	(0.019)
B's social acceptance	0.121***	0.105***	0.118***	0.101***
	(0.023)	(0.025)	(0.023)	(0.025)
B's popularity	-0.035	0.002	-0.043*	-0.007
	(0.018)	(0.020)	(0.019)	(0.020)
A's soc. acceptance*A's popularity			0.006	0.002
			(0.014)	(0.016)
B's soc. acceptance*B's popularity			0.034^{+}	0.038*
			(0.018)	(0.019)
SES	0.054	0.055	0.053	0.054
	(0.035)	(0.036)	(0.035)	(0.036)
A's Gender (female=1)	-0.095	-0.139*	-0.093	-0.136*
	(0.058)	(0.054)	(0.057)	(0.054)
B's Gender (female=1)	0.084	-0.045	0.087	-0.042
	(0.067)	(0.063)	(0.066)	(0.063)
A's Gender*B's Gender	0.330***	0.510***	0.330***	0.508***
	(0.099)	(0.095)	(0.099)	(0.095)
Age (in month)	0.002	-0.001	0.002	-0.001
	(0.003)	(0.003)	(0.003)	(0.003)
No migration background	0.025	0.031	0.021	0.027
	(0.054)	(0.060)	(0.053)	(0.058)
School track: lower	-0.066	0.007	-0.068	0.004
	(0.071)	(0.077)	(0.072)	(0.078)
School track: intermediate	0.019	0.009	0.013	0.002
	(0.085)	(0.096)	(0.086)	(0.097)
School track: higher	0.352***	0.352***	0.349***	0.349***
	(0.076)	(0.088)	(0.077)	(0.088)
B not recognized	-0.567***		-0.567***	
	(0.050)		(0.050)	
Personal relationship with B	0.217*		0.208*	
	(0.097)		(0.097)	
Num. obs.	2805	2805	2805	2805
Adj. R-squared	0.135	0.075	0.135	0.075

Notes. $^{+}$ $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Standard errors are cluster-corrected at school level.

Table 8.3.4. Social acceptance, popularity and social trust. Analyses of only unrecognised peers.

	Model 2: main variables	Model 3: interactions
Intercept	2.221**	2.260**
	(0.818)	(0.820)
A's social acceptance	0.011	0.011
	(0.028)	(0.028)
A's popularity	0.086**	0.096**
	(0.028)	(0.032)
B's social acceptance	-0.018	-0.017
	(0.031)	(0.031)
B's popularity	-0.007	-0.004
	(0.040)	(0.043)
A's soc. acceptance*A's popularity		-0.023
		(0.025)
B's soc. acceptance*B's popularity		-0.015
		(0.029)
SES	-0.033	-0.036
	(0.050)	(0.050)
A's Gender (female=1)	0.061	0.059
	(0.066)	(0.066)
B's Gender (female=1)	0.058	0.057
	(0.075)	(0.075)
A's Gender*B's Gender	0.021	0.021
	(0.096)	(0.097)
Age (in month)	-0.003	-0.003
	(0.005)	(0.005)
No migration background	0.093	0.094
	(0.070)	(0.069)
School track: lower	-0.027	-0.027
	(0.105)	(0.105)
School track: intermediate	-0.055	-0.053
	(0.122)	(0.124)
School track: higher	0.273*	0.271*
	(0.124)	(0.125)
Num. obs.	1055	1055
Adj. R-squared	0.027	0.026

Notes. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Standard errors are cluster-corrected at school level.

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