



JÖNKÖPING UNIVERSITY
School of Health and Welfare

Doctoral Thesis

Understanding the social integration of adolescents of foreign origin:

Longitudinal investigations of inter-origin
friendship formation

Olov Aronson

Jönköping University
School of Health and Welfare
Dissertation Series No. 106 • 2021



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Jönköping, August 2021

Olov Aronson

Abstract

In the last few decades, an increasing number of individuals of foreign origin have settled in Sweden. Today, about one quarter of Swedish adolescents are of foreign origin. The social integration of individuals of foreign origin is a challenge for Swedish society. Informed by previous research, the present dissertation suggests that successful social integration involves friendship formation between peers of similar origins (intra-origin friendship formation) as well as friendship formation between peers of different origins (inter-origin friendship formation). Social integration can be difficult to achieve in practice because most individuals tend to be homophilic and form intra-origin friendships rather than inter-origin friendships.

The present dissertation aims to understand some of the opportunities for and influences on intra-origin and inter-origin friendship formation among adolescents in Sweden. Four studies are presented. The first study seeks to widen the understanding of refugee girls' friendship formation through a qualitative analysis of interviews with 12 refugee adolescent girls from the research project Resettlement Strategies in Families. The second, third, and fourth studies analyze quantitative data from the research project Longitudinal Research on Development In Adolescence (LoRDIA). Using stochastic actor-oriented models, the second study ($n = 471$) investigates the friendship formation of native and foreign adolescents who have supportive and/or controlling parent-child relationships. The third study ($n = 203$) presents cross-lagged panel models for the reciprocal longitudinal associations between friendship formation and two forms of leisure: visits to youth centers and participation in structured leisure activities. Finally, the fourth study ($n = 406$) estimates stochastic actor-oriented models to investigate the friendship formation of native and foreign adolescents who are involved in different forms of digital leisure, including online communication, video watching, and digital gaming.

The results suggest that native and foreign adolescents do not spontaneously form an increasing number of friendships with each other over time. Some refugee girls in the first study claimed that they formed close friendships with family members, such as cousins and siblings, rather than peers of native origin because they experienced the latter as too dissimilar from themselves. The adolescents in the second study formed relatively more inter-origin friendships when their parents were supportive, and they formed

fewer inter-origin friendships when their parents were controlling. According to the third study, visits to youth centers predicted a larger number of intra-origin friendships among adolescents of foreign origin, while participation in structured leisure activities, such as sports and cultural projects, predicted a larger number of friends regardless of origin. The findings of the fourth study suggested that native adolescents who were involved in digital gaming formed fewer friendships with native peers and had fewer friends outside of the school class, and foreign adolescents who communicated more online formed fewer friendships with native classmates but more friendships outside of the school class.

All four studies indicate that the social integration of adolescents of foreign origin is not an automatic process that invariably happens when adolescents of different origins are “mixed” in the same locations. When adolescents organize their own social lives away from the involvement of adults, they remain or become more homophilic and form more friendships with peers of their own origin. By contrast, native and foreign adolescents tend to form more inter-origin friendships when adults provide them with support and contribute to organizing structured social activities.

Original papers

Paper 1

Bergnehr, D., Aronson, O., & Enell, S. (2020). Friends through school and family: Refugee girls' talk about friendship formation. *Childhood*, 27(4), 530-544. <https://doi.org/10.1177/0907568220923718>

Paper 2

Aronson, O., Bergnehr, D., & Wells, M. Native and foreign adolescents form more homophilic friendships when their parents are controlling and unsupportive: A two-wave panel study with 12-14-year-olds. (Submitted, revise and resubmit)

Paper 3

Aronson, O. & Gerdner, A. (2021). Youth centers, structured leisure activities, and friends of native and foreign origin: A two-wave longitudinal study. *Journal of Leisure Research*, 52(3), 265-285. <https://doi.org/10.1080/00222216.2020.1780521>

Paper 4

Aronson, O. Digital leisure is related to decreased friendship formation among native and foreign adolescent classmates: A two-wave longitudinal study (Submitted)

Contents

Introduction	1
Friendship and the life course	2
Ethnicity, culture, immigration, and foreign origin.....	4
Homophily and segregation	7
Assimilation and social integration	8
The importance of social integration.....	11
Facilitating social integration	12
The Swedish context	15
The present dissertation.....	16
Methods.....	18
Data collection.....	18
Resettlement Strategies in Families	18
Longitudinal Research on Development In Adolescence	20
Concepts and measures	23
Study I	23
Study II.....	23
Study III	24
Study IV	26
Analytical approach.....	27
Study I	27
Study II.....	27
Study III	29
Study IV	30
Ethical considerations	31
Summary of findings.....	35
Study I	35

Study II.....	36
Study III.....	38
Study IV	40
Discussion	44
Understanding inter-origin friendships.....	44
Opportunities for friendship formation during leisure	47
Family influences on friendship formation	49
Supportive and committed adults	51
Methodological discussion	52
Implications	55
Conclusion.....	58
Populärvetenskaplig sammanfattning på svenska	59
References	64
Appendix 1: Scale items.....	83
Study II.....	83
Study III.....	83

Introduction

Friendships are challenging. Most adolescents have friends with whom they meet up on an everyday basis, but it can be difficult to find new friends, or even to keep old ones. Friendship formation is likely to be particularly difficult for individuals who are somehow different—who belong to different groups, speak different languages, and have different cultures (McPherson et al., 2001; Moody, 2001; Smith et al., 2016). For adolescents of different origins, it may even be difficult to agree upon what it means to be friends (Steen-Olsen, 2013), and the meanings of friendship are likely to change over time (Rawlins, 1992). Because the meanings of friendship vary among individuals and across cultures, and since there are no distinct features of friendship that separates it from other personal relationships (Killick & Desai, 2013), any adequate understanding of friendship in a culturally diverse context must be open to a multitude of interpretations of the relationship.

Even though it is difficult to pinpoint exactly what friendship *is*, it is clear that friendships matter for both individuals and society. The links between personal relationships, such as friendships, and a sense of purpose and meaning in life were noted already in the foundational works of sociology (Durkheim, 1897/2007; Marx & Engels, 1932/2011). Indeed, adolescents without friends are more likely to experience depression and seek to commit suicide (Gallagher et al., 2014; Lasgaard et al., 2011). Friendships can be understood as the organic, informal ties that bind society together. While laws can demand by citizens that they cooperate, friendships can allow individuals to cooperate spontaneously (cf. Coleman, 1990). The present dissertation suggests that friendships between native and foreign adolescents (hereafter referred to as *inter-origin friendships*) constitute one aspect of the *social integration* of foreign adolescents. The concept of *social integration* has been debated in academia, but it is generally understood as favorable to both individuals and society. Socially integrated adolescents experience better mental wellbeing and sociocultural skills (Berry et al., 2006), and societies with socially integrated minorities are less likely to have widespread prejudice, racism, and deviant subcultures (cf. Goldstein & Golan-Cook, 2016; Portes, 1998; Portes & Rumbaut, 2001; Titzmann et al., 2015).

Still, it is often difficult to achieve social integration in practice. Individuals of different origins who meet and interact with each other in

competitive or superficial ways may even become more prejudiced and aversive toward each other (Allport, 1954/1979; Blalock, 1967; Smith et al., 2016). Recognizing the persisting conflicts between individuals of different origins, early research on social integration (or assimilation) focused on relationships between ethnic and “racial” groups in the United States (Allport, 1954/1979; Blalock, 1967; Gordon, 1964), while the experiences of European countries have been addressed more recently (e.g. Smith et al., 2016; Titzmann, 2017). A systematic search for research on friendship formation between native and foreign adolescents made for the present dissertation suggests that few studies have investigated the social integration of foreign adolescents in Sweden. This lack of research is striking when taking into consideration that social integration is one of the most prioritized issues in the contemporary Swedish political debate (Lochow & Söderpalm, 2019; Novus, 2019). Research from the Swedish context is needed to inform policymakers, social workers, teachers, parents, and other concerned adults who strive to facilitate the social integration of foreign adolescents.

The present dissertation investigates opportunities for and influences on friendship formation between adolescents of native and foreign origin. The intention is to provide knowledge that is practically useful and relevant to the contemporary Swedish national context. The first sections of the introduction will elaborate on the concepts and theoretical approaches employed by the dissertation. The “Methods” section will present and explain the data and analyses of the four studies of the dissertation, and it will present some ethical considerations. The “Summary of findings” will provide the main results under a separate heading for each of the studies. Finally, the “Discussion” will present plausible explanations of the findings, offer some “meta” conclusions, and provide some implications and advice for policymakers, professionals, parents, and other concerned individuals.

Friendship and the life course

During adolescence, friendships appear to involve a particular degree of intimacy and companionship. Compared to younger children and adults, adolescents spend more time with and receive more social support from their friends (Bokhorst et al., 2010; Crosnoe & Johnson, 2011; Furman & Buhrmester, 1992). During adolescence, friends begin to take on social roles that were previously met by family members, such as parents and siblings

(Collins & Steinberg, 2007; Crosnoe & Johnson, 2011). Adolescence can be understood as a period of social reorientation, in which personal relationships become characterized by more negotiations, mutual adaptation, and mutual influencing, compared to personal relationships in early childhood (although younger children, too, exhibit all of these social qualities to some extent) (Collins & Steinberg, 2007; Crosnoe & Johnson, 2011). Friendships in adolescence involve both continuous negotiations and mutual influences (Rawlins, 1992), through which adolescents may acquire essential social skills as well as detrimental social habits, such as delinquency or substance use (Ander, 2018; Erdley & Day, 2016; R. Turner, 2020).

From a life course perspective, an adolescent's social development is explained in relation to the social and cultural contexts that the adolescent lives through (Alwin, Felmlee, et al., 2018). Contemporary social life is linked to previous social experiences, and it colors social futures. The social development of an adolescent depends on the social experiences that he or she has had as a young child, and it is influenced by the social characteristics of parents, siblings, and friends (Alwin, Felmlee, et al., 2018; Elder, 1994). Even though there are universal biological developments in adolescence, such as new emotional and cognitive abilities related to puberty (Collins & Steinberg, 2007), the social development of an adolescent depends on the meaning, norms, and ideals of social behavior and social relationships that are defined by culture. Thus, the life course perspective integrates a psychological understanding of neurobiology with a sociological understanding of cultural context and meaning.

Some universalistic suggestions about adolescents' social development made by researchers in individualistic cultural contexts can be questioned on the basis of the life course perspective. For example, some previous research suggests that adolescents tend to become more independent from their parents and form a clearer personal identity of themselves as individuals (Collins & Steinberg, 2007). In more collectivistic cultures, adolescents' social development is not understood as much in terms of independence as in terms of interdependence, collective identifications, and responsibilities (Kagitcibasi, 2013). The present dissertation focuses on the Swedish social context, but since Sweden is a culturally and socially diverse country, adolescents of different origins in Sweden may experience different developmental trajectories. Adolescents in the native majority may seek independence and self-realization through their friendships, while adolescents of foreign origin may develop an increasing sense of responsibility and

identity with their friends (Fandrem, 2015; T. Reynolds, 2007). Thus, while some adolescents might develop toward more autonomy, others may develop toward more interdependence.

Previous research has argued that adolescents live through *racialized* life courses and form different types of personal relationships based on the ethnic or “racial” group to which they belong (Alwin, Thomas, et al., 2018). It is important to recognize that it is not only the culture of the group that colors the racialized life course but, more importantly, the historical experiences and structural positions which have shaped the group. For example, experiences of racism, discrimination, and economic dispossession among disadvantaged minorities may make individuals in these minorities more prone to seeking close and supportive friendships to “get by,” while individuals in privileged groups may seek more extensive but less close social networks to “get ahead” (Portes, 1998; Putnam, 2000).

When individuals from different backgrounds meet and seek to become friends, their life courses intersect in more or less compatible ways. Some adolescents may grow together, while others grow apart. Children who previously used to play together may become estranged from each other, as some of them develop increasing autonomy while others acquire increasing responsibilities (Haque, 2012; Mørck, 2000; Peltola, 2016). Adolescents of different origins may therefore have different expectations and ambitions related to their friendships. These differences in motives and expectations may hinder friendship formation, since adolescents who seek more closeness may be alienated by friends who seek more casual and less close friendships (Steen-Olsen, 2013). Inter-origin friendship not only involves a relationship between individuals with different origins, but it also involves a negotiation between different cultural worlds, with different meanings ascribed to friendship. Thus, researchers who investigate inter-origin friendships struggle to explain how inter-origin friendship comes about at the same time as they struggle to define what inter-origin friendship *is*. The work on the present dissertation reflects both of these struggles.

Ethnicity, culture, immigration, and foreign origin

The dissertation focuses on adolescents of foreign origin, for whom a number of concepts have been employed. The concept of *foreign origin* requires a justification, since it is a relatively rare concept in the research literature. The

short justification for using the concept of *foreign origin* in the present dissertation is that it is the least problematic concept. This conclusion has been reached through an examination of other, alternative, concepts.

For example, the concept of *ethnicity* has been used for individuals and groups, and the concept of *interethnic* has been used for friendships (Titzmann, 2017). Ethnicity is generally used for referring to a minority group within a country that shares a common origin, culture, language, and identity (Calhoun, 1993; Portes & Rumbaut, 2001). Unlike a national group, the ethnic group does not claim political sovereignty and an independent state, and it is built on organic networks of families and personal liaisons rather than impersonal loyalty to the “imagined community” of individuals that share the same (national) identity (Calhoun, 1993). One major problem with using ethnicity as the main concept for identifying individuals in research is its subjective and relative character: the contents and borders of different ethnicities depend on who defines the ethnicities in relation to what outgroups (Brubaker, 2009). By researching distinct ethnic groups, there is a risk of reifying group differences and contributing to division and exclusion (Kertzer, 2017). Also, since ethnicity is fundamentally subjective, it is difficult to determine what the category means in quantitative studies, where the details of participants’ understandings of their ethnic belongings cannot be easily captured in numbers or simple categories. Arguably, comparing different individuals’ perceptions of their ethnicities is difficult in qualitative research too.

Two aspects of ethnicities are, as noted above, cultural identities and cultural practices. For this reason, some prominent theorists have analyzed individuals and groups in terms of their cultural identities and cultural skills (such as language and communication skills) (Berry, 1997, 2005). Others have referred to friendships between peers of different cultures as *intercultural* friendships (Sias et al., 2008). Since culture is an aspect of ethnicity, it involves similar shortcomings as the concept of *ethnicity*. Cultural identities are inherently subjective, and they are therefore difficult to compare and generalize. The categorization of individuals into clearly delimited groups risks reifying cultural groups as having distinct and fixed identities rather than overlapping and continuously changing belongings (an adolescent of foreign origin is likely to move between several cultural belongings) (Berry, 1997, 2005). Therefore, it is just as problematic to use *culture* as *ethnicity* when referring to adolescents of foreign origin.

Another common term in the research literature on adolescents' friendships is *immigrant* (e.g. Leszczensky, 2016; Portes & Rumbaut, 2001; Reynolds, 2016). This term is generally used indiscriminately to refer to adolescents who live in another country than their country of birth or their parents' country of birth (Berry et al., 2006; Leszczensky, 2016; A. Reynolds, 2016). This indiscriminate usage of *immigrant* is discouraged by the United Nations Refugee Agency (UNHCR, 2018) and by the International Organization for Migration (IOM, 2020), since the term *immigrant* implies that an individual has made a voluntary decision to migrate from one country to another, while in practice many individuals have moved across borders involuntarily, for example as refugees. By conflating the terms *immigrant* and *refugee*, there is a risk of conflating voluntary and involuntary movement across borders and disregarding the special legal status that refugees have, which involves the right to seek asylum (IOM, 2020; UNHCR, 2018). Furthermore, it is difficult to use the term *immigrant* to describe friendships that are formed between immigrants and non-immigrants. For example, would these friendships be referred to as *intra-migrant* or *inter-migrant* friendships? Would *inter-migrant friendships* relate to friendships between immigrants or to friendships between migrants and non-migrants (natives)? The term is unclear.

Instead of using the concepts of *ethnicity*, *culture*, and *immigrant*, the present dissertation employs the concept of *foreign origin*. The dissertation uses the same definition of foreign origin as the one used and recommended by Statistics Sweden (Statistikmyndigheten), which is the central government agency providing public statistics about the Swedish population. According to Statistics Sweden (2002), individuals have foreign origin if they were born in another country than Sweden or if both of their parents were born in another country than Sweden. Unlike *ethnicity* and *culture*, the concept of *foreign origin* is objective: it relates to countries of birth rather than to arbitrary delimitations of groups based on subjective experiences. Unlike the concept of *immigrant*, the concept of *foreign origin* does not imply that traveling from one country to another has taken place voluntarily or involuntarily. Finally, the concept can be used in relation to friendship: the term *inter-origin friendship* relates to a friendship between an adolescent of native origin and an adolescent of foreign origin. By contrast, the term *intra-origin friendship* relates to a friendship between two peers who have native origin or to a friendship between two peers who have foreign origin. Even though adolescents of foreign origin may come from different geographical, cultural,

and economic backgrounds, they share experiences related to being a minority and may have a common *pan-immigrant* identity (Erdmann, 2015), which suggests that their friendships have a quality of being formed within an ingroup. Therefore, I argue that the term *intra-origin* is adequate for friendships between peers of foreign origin, despite variations in their geographic, cultural, and economic backgrounds. In the present dissertation, the concept of *foreign origin* is used as an umbrella term to refer to adolescents of foreign origin in any of the four studies, even though the term *refugee* was also used in the first study to refer to a narrower group of adolescents and parents of foreign origin, who had migrated to Sweden to seek asylum.

Homophily and segregation

Friendships are likely to be characterized by homophily, that is, a preference for peers from the same group (McPherson et al., 2001). Previous research has indicated that adolescents tend to form homophilic friendships even though they have access to peers of another origin in their schools and school classes (Moody, 2001; Smith et al., 2016). Mixing adolescents of different origins in the same schools and school classes may even intensify homophily when native adolescents experience that the foreign adolescents become sufficiently numerous to threaten the native adolescents' normative dominance (Blalock, 1967; Smith et al., 2016).

On the macro scale, homophily tends to contribute to segregation between different groups of individuals—especially if the groups are marked by several differences of identity (Blau, 1977; Scraton et al., 2005). For example, adolescents of foreign origin generally have lower socioeconomic status than natives in Sweden (Nyman, 2020), and since socioeconomic status is closely related to social isolation among friends (Hjalmarsson & Mood, 2015), the isolation of adolescents of foreign origin may in part depend on socioeconomic differences (cf. Walseth, 2008). Likewise, racist prejudice related to physical characteristics, like a darker skin pigment, may make inter-origin friendship formation more difficult for some adolescents of foreign origin (Demir & Ozgul, 2019; Kumi-Yeboah, 2018).

Various explanations have been proposed to account for the consistent finding of homophily. It is relevant to notice that individuals can form only a limited number of close relationships, as restraints on time and cognitive abilities make it unfeasible to sustain many close relationships at the same

time (Granovetter, 1973; Mac Carron et al., 2016). Homophily and intra-origin friendship formation can be an obstacle to adolescents' inter-origin friendship formation because adolescents' "friendship budgets" may be filled by intra-origin friendships before inter-origin friendships are being considered by the adolescents (Gouldner & Strong, 1987). In other words, the relatively low number of inter-origin friendships observed among adolescents need not be a consequence of dislike for peers of another origin. Instead, adolescents may avoid forming friendships with peers of another origin, whom they like, simply because they have an even stronger liking for peers of their own origin. The present dissertation does not investigate the psychological motives for intra- and inter-origin friendship formation, but it notices that the phenomenon of homophily has been identified in numerous studies that have applied different theoretical frameworks.

Assimilation and social integration

Assimilation is the presumed tendency of individuals of foreign origin to become more similar to the native population over time. This concept has been criticized in a European context for suggesting that individuals of foreign origin become more similar to natives while natives remain unaffected, but in the American context the concept has been used more openly, as potentially indicating a mutual adaption (Waters, 2014). By the middle of the 20th century, Gordon (1964) envisioned assimilation as a process involving several steps. Arguably, Gordon's key insight was that assimilation is multidimensional, as reflected in the different steps of his assimilation model. The first step, according to Gordon, is *cultural and behavioral assimilation*, through which individuals of foreign origin acquire, for example, language abilities and cultural knowledge. The second step is *structural assimilation*, through which individuals of foreign origin are included in friendship networks and institutions, such as schools and social clubs. The third step is *marital assimilation*, referring to intermarriage between individuals of different origins, and the fourth step is *identificational assimilation*, which is achieved when individuals of foreign origin perceive themselves as part of the native population. Gordon argues that cultural and behavioral assimilation is the first step, but the most important step is structural integration in friendship networks and social institutions, which will inevitably lead to further assimilation and fulfillment of the other steps. In this context, it is relevant to

notice that the concepts of cultural and identificational assimilation are based on the essentialist argument that there exists a certain national culture and identity that individuals of foreign origin may adapt to, while in fact, different individuals perceive different contents of and limits to any given national culture and identity (Brubaker, 2009; Portes & Rumbaut, 2001). The concepts of structural and marital assimilation, by contrast, relate to objective conditions: individuals either have an employment, or they do not; individuals either are married, or they are not.

Since Gordon (1964) envisioned assimilation as a one-way process, he did not predict any reemergence of ethnic identity and conflict, although this has been recurrent in history (Horowitz, 1985; Lake & Rothchild, 1996). Still, Gordon's argument that individuals of different origins who form friendships and engage in close and personal interaction become successively more similar and sympathetic toward each other seems supported by empirical evidence. Previous research has demonstrated that friendships between peers of different origins indeed reduce prejudice (Titzmann et al., 2015; R. N. Turner et al., 2007), and adolescents of foreign origin tend to become successively more similar to their native friends on a number of dimensions (Greenman & Xie, 2008).

More recently, the concept of *integration* has been used, instead of the concept of assimilation, to refer to the desired outcome of contact between individuals of native and foreign origin (Berry, 1997, 2005). Unlike Gordon's (1964) concept of assimilation, which was intended as a descriptive term for what he understood happened to individuals of foreign origin, the concept of integration has a more pronounced normative aspect, indicating what *should* happen to individuals of foreign origin when they come into contact with native society if they are to adapt well in psychological and social terms. Berry (1997, 2005) has conceptualized integration as simultaneous inclusion in two cultures: the culture of the ethnic minority group and the culture of native society. Thus, while the assimilated individual loses his or her connection to the culture of origin, the integrated individual does not. Substantial data from a large number of countries has indicated that integration is preferable to assimilation since it promotes improved psychological adaptation and sociocultural skills, such as language abilities (Berry et al., 2006; Phinney et al., 2006; Sam et al., 2006). The concept of integration, as developed by Berry (1997, 2005), focuses on culture and identity rather than inclusion in institutions and friendship networks, although friendship is occasionally mentioned. Thereby, Berry's notion of integration largely disregards, or fails

to spell out, Gordon's (1964) key insight that the inclusion of individuals of foreign origin in native society is multidimensional and involves a number of different aspects, which may not be fulfilled at the same time. These aspects relate to culture, friendship networks, institutions, intermarriage, and identity.

The Effectiveness of National Integration Strategies (EFFNATIS) research program from 1998-2001 (Heckmann & Schnapper, 2003) and the ongoing research program Children of Immigrants Longitudinal Survey in Four European Countries (CILS4EU) (2020) consider four aspects of integration, which, I argue, can bridge the gap between Gordon's (1964) multidimensional assimilation model and Berry's (1997, 2005) understanding of integration. The first aspect is *cultural integration*, which involves language skills, attitudes, and norms. The second aspect is *structural integration*, which relates to achievements in school, inclusion in labor markets, and participation in public institutions. This aspect of integration should not be conflated with Gordon's (1964) structural assimilation, which involved both institutions and informal personal associations and friendship networks. The third aspect is *identification integration*, and this aspect refers to sharing identities and having solidarity with other groups. Finally, the concept of *social integration* is used to refer to inclusion in informal social associations and networks, of which the most prominent ones are friendship networks (CILS4EU, 2020; Heckmann & Schnapper, 2003). Merging Berry's (1997, 2005) theory of integration with the typology offered by EFFNATIS (Heckmann & Schnapper, 2003) and CILS4EU (2020), I argue that the concept of *social integration* can be used to refer to a society in which most adolescents have friendships with *both* intra-origin and inter-origin peers. Adolescents of foreign origin are socially integrated to the extent that they have both native and foreign friends. This is the definition of *social integration* employed in the present dissertation, and it is one of the theoretical contributions of the dissertation.

Even though the focus of the present dissertation is on adolescents of foreign origin, it is important to recognize that social integration is a mutual process (Berry, 1997). Adolescents of foreign origin cannot form inter-origin friendships and become socially integrated unless they are accepted by native adolescents. In some instances, adolescents of foreign origin are not accepted as friends due to racism and prejudice among native adolescents or their parents (Demir & Ozgul, 2019; Kumi-Yeboah, 2018; Steinbach, 2010). Therefore, to understand the challenges of social integration, it is necessary to

consider the behavior and experiences of adolescents of both native and foreign origin.

The importance of social integration

There are several reasons for arguing that social integration, rather than segregation or assimilation, is a reasonable aim for policymakers and researchers. To begin with, there is an ethical and political argument, based on liberal democratic values, in favor of social integration. In a liberal democracy, individuals should have the freedom to seek friendships regardless of group differences. This freedom is an expression of individual liberty, and it is a prerequisite of reasonable and tolerant debates between individuals with different backgrounds, which are essential to democratic decision making (Rawls, 2005). Inter-origin friendship formation and social integration are more easily achieved in a society characterized by democracy and tolerance, where sectarian parochialism does not limit individuals in their exploration of friendships and ideologies. Through friendship and communication between individuals of different origins, these individuals are empowered to choose who they want to be and what political ideas and ideologies they wish to support (Gurin et al., 2002). Native adolescents, too, can benefit from inter-origin friendships and social integration. For example, native adolescents who have friends of foreign origin are more likely to have the opportunity to learn new cultural perspectives, choose between different identities, resist conformist norms, and learn different ways of relating to peers and adults (cf. Aron & Aron, 1996; Erdley & Day, 2016; Gurin et al., 2002; Portes, 1998).

There is also a psychological and didactic argument in favor of social integration, suggesting that adolescents of foreign origin who have both native and foreign friends experience better mental wellbeing and acquire better sociocultural skills, such as language skills (Berry et al., 2006; Phinney et al., 2006; Sam et al., 2006). The close relationship between language abilities and friendships has been confirmed by a large number of studies (Demir & Ozgul, 2019; Jørgensen, 2017; Lam, 2009, 2014; Shih, 1998; Steinbach, 2010; Titzmann et al., 2012; Titzmann & Silbereisen, 2009; Tsai, 2006). Some adolescents, influenced by their parents' ambitions, may even seek friendships with peers of other specific origins and cultures to gain knowledge, achieve

better school results, and improve their career opportunities (Akinsulure-Smith et al., 2016; Kumi-Yeboah, 2018).

Not least, social integration may contribute to limiting the influence of countercultures that have aims and ways of life that are considered deviant and criminal by dominant society. Counterculture theory has generally stressed the interplay of ethnicity, socioeconomic status, and location when explaining the emergence of countercultures that are detrimental to individuals and society (Black, 2014). There is a risk, when friendship formation is limited to certain disadvantaged segments of the native society, that adolescents of foreign origin may be socialized into deviant countercultures that foster criminality and neglect of education (Fordham & Ogbu, 1986; Ogbu, 2003; Portes & Rumbaut, 2001; Portes & Zhou, 1993; Zhou, 1997). Thus, it is possible to argue that social integration is an insufficient aim—it may be claimed that researchers and policymakers need to specify at least the socioeconomic status and criminal past of the native peers with whom adolescents of foreign origin become socially integrated. However, I consider this argument as premised on an inadequate understanding of the concept of *social integration*: social integration does not mean inclusion in one type of friendship networks, with peers from only one socioeconomic or ethnic background, but inclusion in several friendship networks with peers of different socioeconomic and ethnic origins. Thus, social integration breaks the borders of ethnic and socioeconomic segments of society and can be assumed to counteract deviant countercultures, which demand separation from, and opposition to, the norms and values of dominant society. This conceptual understanding of social integration highlights the necessity of accounting for the diversity of the peers with whom foreign adolescents form friendships.

Facilitating social integration

The previous sections have argued that social integration involves the formation of personal relationships, such as friendships, between peers of different origins. Promoting social integration, therefore, involves promoting inter-origin friendship formation. Inter-origin friendships are formed by peers through social interaction, but this interaction is done against the backdrop of given social opportunities and influences (Fehr, 1996). Without opportunities for social interaction, friendships cannot be formed. From this perspective,

friendship networks reflect the underlying structures of everyday life that offer individuals opportunities for repeated social interactions with each other, such as schools, neighborhoods, workplaces, and leisure activities (Feld, 1981; Feld & Carter, 1999). The so-called *propinquity hypothesis* suggests that friendships tend to be formed between peers that are physically and geographically close, which has been demonstrated in Swedish research on adolescents (Preciado et al., 2012).

Arguably, leisure activities are particularly interesting for research on social integration and inter-origin friendship formation among adolescents since they offer opportunities for repeated and voluntary (or at least uncoerced) social interactions (Stebbins, 2005). Voluntary social interactions are more likely to be rewarding, and rewarding interactions are more likely to contribute to friendship formation (Homans, 1961; Lawler, 2001). Leisure activities can bring adolescents from different origins together, although leisure activities, too, are segregated along ethnic and socioeconomic lines (Schaefer et al., 2011, 2018). Leisure activities have been understood, by Swedish policymakers and politicians, as means to solve social problems such as delinquency, social exclusion, and conflicts between groups (Ekholm, 2016; Ministry of Culture, 2018). Previous Swedish research has suggested that both youth centers and structured leisure activities—in sports teams, cultural schools, or political movements—can promote the wellbeing and belongingness experienced by adolescents of foreign origin (Geidne et al., 2015; Hertting & Karlefors, 2013). Structured leisure activities seem to have many social benefits compared to youth centers, since structured leisure activities involve adults that provide supervision and support (Mahoney & Stattin, 2000). Nevertheless, there are few studies on friendship formation between native and foreign adolescents in youth centers and structured leisure activities that can be used to guide policymakers who seek to promote the social integration of foreign adolescents.

Friendships are not only formed through leisure in specific physical locations, such as youth centers or structured leisure activities, but also through leisure in digital contexts (Carter, 2005; Peter et al., 2005). Through digitalization, the range of available leisure activities has been expanded. Sweden is one of the most digitalized countries in the world (European Commission, 2019), where almost all adolescents engage in several forms of digital leisure on an everyday basis by communicating online, watching videos, or playing digital games (Swedish Media Council, 2019). Social interaction during digital leisure is less dependent on physical appearance and

language accents, and for this reason, it has been suggested that digital leisure might be more socially inclusive and more suited to promoting inter-origin friendships (Carter, 2005; Marlowe et al., 2016; Valtchanov & Parry, 2017). It has been argued that digital leisure might make friendship formation easier for adolescents with less social self-confidence, who do not have to risk humiliation when making contact with peers (Carter, 2005; Peter et al., 2005). Still, it is important to note that the field of digital leisure is diverse and continuously changing (Miller, 2020). Contemporary digital leisure is influenced by global trends as well as local practices (Punathambekar & Mohan, 2019), which makes it necessary to investigate and compare different forms of digital leisure in different local and cultural contexts. There appear to be few studies, if any, that investigate the ways in which different forms of digital leisure shape opportunities for inter-origin friendship formation among native and foreign adolescents in contemporary Sweden.

Opportunities for friendship formation are not only provided by leisure; they are also mediated by personal networks. The personal networks of parents, siblings, previous friends, and other close relationships comprise the most immediate influences on friendship formation (Parks, 2007). It is well known that individuals tend to seek friends who are already friends with, or who are similar to, their previous friends—this tendency is referred to as *transitivity* or *closure* (Coleman, 1990; Granovetter, 1973). Different causes of transitivity have been suggested, from psychological explanations of individuals seeking consistent and congruent information from friends of their friends (Byrne, 1961; Heider, 1958) to structural sociological explanations based on the fact that individuals tend to meet friends of their friends more often than they meet other peers, and thereby they interact and form friendships with friends of their friends more frequently (Feld, 1981; Granovetter, 1973).

Transitivity may also involve parents, and it has been noticed that adolescents are more likely to seek inter-origin friendships if their parents, too, have such friendships (Smith et al., 2015; Windzio, 2012; Windzio & Bicer, 2013). If parents do not have any inter-origin friendships, adolescents may find themselves in a position where they need to negotiate between the expectations and norms endorsed by their parents and their friends (Högdin, 2006; Parks, 2007; Sedem & Ferrer-Wreder, 2015). Contrasting expectations from parents and peers are likely to make inter-origin friendship formation more difficult for foreign adolescents (Akinsulure-Smith et al., 2016; Kumi-Yeboah, 2018).

It has been noticed that parents who actively seek to exercise excessive social control over their adolescents contribute to making their adolescents more prejudiced and less likely to form inter-origin friendships (Altemeyer, 1998; Oesterreich, 2005). Swedish studies have suggested that some foreign parents may limit their adolescents' opportunities to become friends with native peers by excessively controlling them and making them abide by cultural traditions—this is more clearly seen in regard to the parenting of girls in families of foreign origin (Högdin, 2006; Sedem & Ferrer-Wreder, 2015). On the other hand, supportive parents seem to provide their adolescents with better self-esteem and more tolerance for cultural differences, which facilitates friendship formation with peers of another origin (Allen & Tan, 2018; Miklikowska, 2016; Mikulincer & Shaver, 2001). It should be noted that experiences of what constitutes controlling and supportive parent-child relationships vary by cultural context: what is considered controlling in individualistic cultures may be understood as a legitimate expression of parental concern in more collectivistic cultures (Kagitcibasi, 2013). Thus, researchers need to contextualize experiences and consequences of supportive and controlling parent-child relationships. By collecting data from both native and foreign adolescents, it may be possible to understand what forms of parent-child relationships are experienced as most challenging by whom. Currently, there does not appear to be much research that compares the ways in which native and foreign adolescents in Sweden experience their parent-child relationships and are influenced by their parents when forming friendships.

The Swedish context

Sweden was once a country of emigration, but after the Second World War, Sweden received a large and miscellaneous immigrant population (Swedish Migration Agency, 2020). During the 1940s, Sweden received refugees from neighboring countries, and during the following two decades, a considerable number of economic migrants from European countries moved to Sweden to fill vacant employment opportunities (Swedish Migration Agency, 2020). From the 1980s onward, immigration to Sweden has largely consisted of refugees seeking asylum (Swedish Migration Agency, 2020). In 2019, roughly 26 percent of Swedish adolescents were of foreign origin, and the most common birth countries for foreign-born adolescents were Syria, Somalia,

Iraq, and Afghanistan (Statistics Sweden, 2020). Among adolescents who were born in Sweden but had two parents born in other countries, the most common birth countries for the parents were former Yugoslavia, Finland, Iran, and Iraq (Statistics Sweden, 2020). Residential segregation based on origin is considerable in Sweden, with large concentrations of individuals of foreign origin living in disadvantaged suburbs of larger cities (Malmberg et al., 2018). Recently, Swedish authorities have reported that schools have become more ethnically and socioeconomically segregated (Swedish National Agency for Education, 2018).

Swedish research indicates that adolescents of foreign origin tend to face isolation and rejection in relation to peers more frequently than natives do (Plenty & Jonsson, 2017). Furthermore, Swedish adolescents of foreign origin more often experience loneliness than native adolescents (Thommessen et al., 2015). Adolescents of foreign origin generally have less economic resources than native adolescents, which is likely to contribute further to their isolation from friends (Hjalmarsson & Mood, 2015). Between 2008 and 2018, Swedish “hate crimes” motivated by racism increased by about 20 percent according to official statistics (Forselius & Westerberg, 2019), which might have been related to increasing xenophobia against individuals of foreign origin.

According to national polls, immigration and social integration have become two of the most important political issues for Swedish citizens, followed by the problem of “law and order” (Novus, 2019). The Swedish government has specifically addressed the problems of segregation and inequalities between individuals of different origins in a major section of the last budget proposition (Ministry of Finance, 2020). A recent report made on behalf of the Ministry of Research and Education (Åstrand et al., 2020) has suggested that segregated schools, in which students of different origins are not mixed, contribute to considerable inequalities and problems with conflicts and prejudice between adolescents of different origins. Thus, the challenge of social integration is addressed in both the contemporary political debate and in recent policy documents.

The present dissertation

As the discussion above shows, international migration poses challenges to individuals and society, including challenges related to segregation. With more knowledge about adolescents’ opportunities for inter-origin friendship

formation and with knowledge about conditions that influence and facilitate these friendships, policymakers and other adults may more effectively contribute to the social integration of foreign adolescents in society. Knowledge is needed about inter-origin friendship formation and social integration of adolescents of foreign origin in the Swedish context, since Sweden is characterized by much recent immigration. Knowledge about the social integration of adolescents of foreign origin in Sweden may be relevant to other culturally diverse societies too.

To offer knowledge that is relevant to the promotion of social integration, the present dissertation aims to improve the understanding of some of the opportunities for and influences on inter-origin friendship formation among adolescents in Sweden. Unlike most previous research on the topic, the present dissertation investigates two recently collected samples from the Swedish national contexts, including adolescents who were born or whose parents were born in more than 30 different countries. The dissertation seeks to answer three research questions:

1. To what extent do adolescents spontaneously form inter-origin friendships as they grow older?
2. Through what social activities do adolescents have opportunities to form inter-origin friendships?
3. How do adults influence adolescents' inter-origin friendship formation?

The dissertation includes four studies. The research and writing of the different studies was largely performed in parallel, and the process was iterative in the sense that older material was revised and updated as new knowledge was learned. Therefore, it is difficult, or misleading, to represent the research process as linear and following a preplanned disposition. The following presentation of the studies of the dissertation seeks to construct a simplified narrative that connects the studies in a logical structure, but readers should bear in mind that the actual research process was more complex.

Methods

The current dissertation includes one qualitative study and three quantitative studies. Table 1 presents an overview of the titles, samples, data collection methods, and analytical approaches of the studies.

Table 1 Overview of the four studies of the dissertation.

Study	Title	Sample	Data collection method	Analytical approach
I	Friends through school and family: Refugee girls' talk about friendship formation	12 refugee adolescent girls	Interviews made individually or with family members, over three years	Qualitative, explorative
II	Native and foreign adolescents form more homophilic friendships when their parents are controlling and unsupportive: A two-wave panel study with 12-14-year-olds	22 school classes including 471 adolescents of foreign and native origin	Panel design, questionnaires, collected over two waves	Stochastic actor-oriented models
III	Youth centers, structured leisure activities, and friends of native and foreign origin: A two-wave longitudinal study	203 adolescents of foreign origin	Panel design, questionnaires, collected over two waves	Cross-lagged panel models
IV	Digital leisure is related to decreased friendship formation among native and foreign adolescent classmates: A two-wave longitudinal study	19 school classes including 406 adolescents of foreign and native origin	Panel design, questionnaires, collected over two waves	Stochastic actor-oriented models

Data collection

Resettlement Strategies in Families

The first study was based on longitudinal interview data collected in the research project Resettlement Strategies in Families (original Swedish title: *Familjens anpassningsstrategier*), which focused on refugee families' social strategies as they resettled in Swedish society. All families had received residence permits before, or soon after, the data collection began. I did not

personally conduct any interviews but participated in some of the transcribing of interview materials. The main researcher (Disa Bergnehr) interviewed and collected diaries from recently arrived adolescent refugees and their parents over three years. Families were recruited through schools. The families lived in socioeconomically disadvantaged areas with large proportions of individuals of foreign origin. Both the adolescents and their parents were provided with information about the aims and design of the project. During data collection, the researchers emphasized on several occasions that the project was voluntary. Active consent was collected from both adolescents and parents. The interviews were semi-structured and performed with an interpreter, who facilitated the communication when needed. If the adolescents found it desirable, siblings or parents were present when the interviews were performed.

The first study of the dissertation used a selection of 18 interviews with 12 girls because these interviews included materials of relevance to friendship formation. The girls and their parents were invited to the study in 2016. They were of Syrian or Iraqi origin and had lived in Sweden for between one and eight years. The girls were 12 to 15 years old during the time that the interviews, in any of the waves, were conducted. Among foreign-born adolescents aged 10-14 years residing in Sweden in 2016, the most common birth countries were Syria and Iraq (Statistics Sweden, 2020), which suggests that the girls in the study sample were representative of foreign-born adolescents at the time of data collection.

During the first wave of interviews, all girls lived in disadvantaged suburbs of a medium-sized Swedish city where most peers were of foreign origin (one of the girls moved from her suburb during the data collection). The girls attended or had attended schools in these disadvantaged areas, which almost only included children and adolescents of foreign origin. All the girls in the study had to make an active school choice in grades six or seven, to decide which schools they wanted to be enrolled in. This school choice provided them with contact with some new peers. At the same time, some of the girls were at risk of losing contact with friends and classmates who had selected other schools. Changing schools in grades six or seven is common in Sweden, and the legal right of children and adolescents to choose which schools they wish to attend (or at least to choose which schools they wish to be queuing for) contributes to the rearrangement of classes and friendship networks. With the consent of their parents, some of the girls in the sample chose to remain in the schools in the disadvantaged areas, where they had

some old friends, while some other girls chose to be enrolled in more mixed schools in the inner city.

Longitudinal Research on Development In Adolescence

The second, third, and fourth studies were based on a longitudinal quantitative data set collected by the research program Longitudinal Research on Development In Adolescence (LoRDIA), which has targeted two complete cohorts of adolescents in four Swedish municipalities. LoRDIA is a broad research program that has collected data on adolescents' social relationships, mental health, school functioning, substance use, delinquency, and parental relationships. I participated in the data collection on a few occasions, but the main work with data collection was performed by research assistants and by researchers who had joined the project at an earlier phase.

The municipalities targeted by LoRDIA comprised small and medium-sized towns, including a municipality that was close to a larger city (commuting distance). Compared to Swedish society at large, the municipalities were close to being representative in terms of unemployment rate, annual income, university degrees, and proportions of inhabitants of foreign origin (see Table 2). None of the municipalities included any of the disadvantaged areas referred to as *utsatta områden* or *särskilt utsatta områden* by the Swedish police (Nationella operativa avdelningen, 2015).

Table 2 Comparison between the municipalities covered by LoRDIA and Swedish national statistics.

	LoRDIA municipalities	Swedish national population
Unemployment rate among adults	7.37 %	9.66 %
Annual income among adults	330,000 SEK	313,000 SEK
Proportion of adults having a university degree	22.24 %	25.83 %
Foreign origin among children 5-14 years of age	20.02 %	26.01 %

Note. The Swedish population data were retrieved from Statistics Sweden (2020) and the Swedish Public Employment Agency (2020).

A decisive majority of the foreign adolescents in the LoRDIA sample were born in Sweden while both their parents were born in foreign countries (the exact proportion was between 65-77 %, depending on the subsamples selected

for the different studies). To investigate if the LoRDIA sample was close to being nationally representative in terms of national origin, it was relevant to compare the parents' birth countries to the birth countries of the total national population of foreign-born individuals in the same generation. It was less relevant to compare the birth countries of the adolescents in the LoRDIA sample with the birth countries of foreign-born adolescents in the national population, since foreign-born adolescents comprised a relatively small proportion of the LoRDIA sample. Most parents in the LoRDIA sample were born in former Yugoslavia (27 %), Vietnam (15 %), Iran (6 %), and Finland (4 %). The parents were likely to be 20-39 years old at the time when most of the participating adolescents were born, that is, around year 2000. According to official Swedish statistics from 2000, most foreign-born individuals aged 20-39 years were born in former Yugoslavia (13 %), Finland (10 %), Iran (7 %), and Iraq (6 %) (Statistics Sweden, 2020). Thus, the parents of the adolescents in the LoRDIA sample were moderately to weakly representative of the national population, although there was a clearly disproportionate number of parents born in Vietnam.

Parents were informed about the design and aim of LoRDIA through postal letters, which were translated into 32 languages other than Swedish. The parents could decline participation on behalf of their children, and if they did not, the adolescents had the full right to independently decline. Passive consent was collected from all parents, and the adolescents had the opportunity to opt out in each wave of the questionnaire distribution. In total, 2,150 adolescents were invited to LoRDIA, and 1,885 participants chose to remain in the study population, of whom 299 were of foreign origin. The first cohort participated in four waves, from grade seven in secondary school to grade eleven in upper secondary school, and the second cohort in LoRDIA participated in five waves, from grade six to grade eleven. The first wave of the data collection was in 2013. Researchers and research assistants distributed questionnaires in school to adolescents, by postal mail to parents, and by email to teachers. All adolescents were coded with numeric codes instead of names before the data analysis in order to avoid identifiability of individuals by researchers working on the material.

As can be noted in Table 3, below, most schools and school classes included in the studies were relatively small. The mean number of students per grade was 61-66. There were 21-24 students per class, which suggests that, on average, each school had three parallel school classes in each grade. However, it should be noted that some students in each school chose not to be

included in the study population (on average about 12 %), and the given statistics are therefore slight underestimations. In all three studies, about one fifth of the students in the included school classes were of foreign origin.

Table 3 Descriptive statistics for the schools and school classes included in studies 2, 3 and 4.

	Study 2	Study 3	Study 4
Number of included students	471	203	406
Number of included schools	10	14	9
Number of included school classes	22	64	19
Mean number of students per grade in the included schools	65	66	61
Mean number of students in the included school classes	21	24	21
Mean percent of students of foreign origin in the included school grades	17	21	18
Mean percent of students of foreign origin in the included school classes	21	21	20

Study 2 included data from 471 students in 22 school classes in waves one and two, collected between 2013 and 2014. There were 353 native students, 93 foreign students, and 25 students of unknown origin in these school classes. The school classes were selected because they had less than 20 percent missing data in waves one and two according to a comparison with the number of students in the class lists. Having less than 20 percent missing data is required to estimate reliable stochastic actor-oriented models in RSiena (Huisman & Steglich, 2008).

The third study included a subsample of 203 adolescents of foreign origin that participated in both waves two and three of LoRDIA, collected in the fall of 2014 and the fall of 2015. These waves were chosen because they included relevant variables, and the adolescents remained in the same school classes, which ensured that the opportunity structures for friendship formation were constant. In addition, the friendship nominations of all 1,185 peers who participated in both the second and third waves were included to provide the subsample of 203 adolescents of foreign origin with their complete received and sent friendship nominations.

The fourth study was based on the first two waves of the data collection from 406 adolescents in 19 school classes. These school classes were selected

because they had less than 20 percent missing data in both waves one and two and because each of them included at least two students of foreign origin. There were 307 native adolescents, 76 foreign adolescents, and 23 adolescents of unknown origin in the school classes.

Concepts and measures

Study I

Refugees were defined as individuals who had moved across national borders due to persecution, war, or other threats (UNHCR, 2018). They were understood as having a special legal status and a right to receive asylum in the country where they were seeking protection.

Friendship was conceptualized as a subjective relationship prone to change. The concept was not defined with any more detail a priori but was explored inductively through the empirical material.

Similarity between friends was understood as a subjective experience and not as an objective characteristic.

Study II

Foreign origin was operationalized as having been born abroad or having two parents who had been born abroad. Information about birth countries was received through questionnaire items distributed to both the adolescents and their parents. All adolescents who were not identified as being of foreign origin were categorized as natives.

Legal gender was obtained from each participant's social security number, which was given at birth. The second-last digit of a Swedish social security number indicates legal gender (an even digit indicates female gender, and an odd digit indicates male gender).

Perceived financial situation was measured through an item that read, "What is your financial situation like, compared to others where you live?" There were three response categories from 1 to 3, where 1 = "We have less money than other families," 2 = "We have as much money as other families," and 3 = "We have more money than other families."

Friendships were measured through an item that read, "Who are included in your friendship group, who you feel are your friends?" It was possible to

name eight friends and indicate their schools and school classes. Only friendship nominations within the same school classes were included since each school class was analyzed as a separate network.

Supportive parent-child relationships were measured through 10 items from the scale “perceived parental support” developed by Tilton-Weaver (2014). Five items were related to mothers and five to fathers. An example item was, “I know that mom/dad is there for me when I need her/him.” All items included in the scale are presented in Appendix 1. Responses were made on seven-category Likert scales, where 1 = “Not accurate at all,” 2 = “Not accurate,” 3 = “Not quite accurate,” 4 = “Neutral/mixed,” 5 = “Quite accurate,” 6 = “Accurate,” and 7 = “Very accurate.” Two items from the original scale, related to disclosure to parents, were excluded from the scale in the present study because they contributed to a lower Cronbach’s alpha and appeared to tap into theoretically different issues. Cronbach’s alpha for the index was .88, which was considered excellent. The scale was standardized to range between 0 (minimal support) and 1 (maximal support), to facilitate comparisons with the variable for controlling parent-child relationships.

Controlling parent-child relationships were measured through one item that read, “Do you feel as though your parents control everything in your life?” The item had three response options where, where 1 = “No, seldomly;” 2 = “Yes, sometimes;” and 3 = “Yes, generally.” The item was originally formulated by Kerr and Stattin (2000). Three response options on a single item is sufficient for variables included in stochastic actor-oriented models, even though it is generally not considered sufficient in more conventional statistical methods based on assumptions of normality (Ripley et al., 2021). The item was standardized to range between 0 (minimal support) and 1 (maximal support), to make it comparable to the scale for parental support.

Study III

The third study tested the inclusion of several different control variables through model selection procedures (see “Analytical approach,” below). Only the control variables that remained in the final models are presented in the following section. All other variables can be found in the original study.

Foreign origin was operationalized as having been born abroad or having two parents who had been born abroad. Information about birth countries was obtained through questionnaire items distributed to both the adolescents and

their parents. All adolescents who were not identified as being of foreign origin were categorized as natives.

The proportion of students of foreign origin in each class was included as an individual-level variable. It was based on the responses from the 1,185 adolescents who participated in both waves two and three.

Immigrant generation was obtained from the same questions used to identify adolescents as being of foreign origin. Participants who reported in any wave that they were born in a foreign country were categorized as first-generation immigrants, and participants who reported in any wave that they were born in Sweden while both their parents were born in other countries were categorized as second-generation immigrants.

Substance use was measured through a scale that was computed based on the mean scores of six items, all of which are presented in Appendix 1. The items were developed by the LoRDIA team, inspired by The Swedish Council for Information on Alcohol and Other Drugs (Gripen, 2013). Cronbach's alpha for the index was 0.78, which was deemed satisfactory. The index was standardized to the range between 0 (no substance use) and 1 (maximum substance use).

Friendships were measured through a question that read, "Who are included in your friendship group, who you feel are your friends?" Eight names could be reported in combination with information about schools and school classes. Friendship was operationalized as being nominated as a friend by a peer. In other words, friendship was operationalized as incoming friendship nominations and not outgoing friendship nominations to avoid the bias that is associated with self-reports of friendships (Feld & Carter, 2002).

Youth center visits were measured through an item that read, "During an ordinary week, how many days do you usually visit a youth center or something similar?" The phrase "something similar" was included because there are many synonyms for *youth center* in Swedish. There were four response options, where 1 = "Never," 2 = "Less than one day a week," 3 = "One day a week," and 4 = "More frequently."

Structured leisure activities were measured through an item that read, "During an ordinary week, how many days do you usually participate in a leader-led activity in which you develop your abilities? (e.g., sports, culture, nature, politics, or something else?)" In other words, structured leisure activities were operationalized as leisure activities with adult leaders through which adolescents could develop their abilities. There were four available

answers, where 1 = “Never,” 2= “Less than one day a week,” 3 = “One day a week,” and 4 = “More frequently.”

Study IV

Foreign origin was operationalized as having been born abroad or having two parents who had been born abroad. Information about birth countries was obtained through questionnaire items distributed to both the adolescents and their parents. All adolescents who were not identified as being of foreign origin were categorized as natives.

Legal gender was obtained from each participant’s social security number.

Perceived financial situation was measured through an item that read, “What is your financial situation like, compared to others where you live?” There were three response categories from 1 to 3, where 1 = “We have less money than other families,” 2 = “We have as much money as other families,” and 3 = “We have more money than other families.”

Friendships were measured through the question, “Who are included in your friendship group, who you feel are your friends?” Participants could name eight friends and indicate their schools and school classes, but only nominations within the same school class were included because the school classes were analyzed as separate networks.

Online communication was the first form of digital leisure, and it was measured through an item that read, “About how many hours do you use a computer or cell phone for sending emails, chatting, or surfing online during an ordinary weekday?” The item was developed by Statistics Sweden (2009). There were three available responses, where 1 = “Seldom or never,” 2 = “Less than one hour a day,” and 3 = “One hour a day or more.”

Video-watching was measured through the question, “About how many hours do you watch TV programs or movies on TV, video, DVD, or computer on an ordinary weekday?” This question, too, was formulated by Statistics Sweden (2009). There were four available responses, where 1 = “Seldom or never,” 2 = “Less than one hour a day,” 3 = “About 1-2 hours a day,” and 4 = “More than 1-2 hours a day.”

Digital gaming was measured through an item that read, “About how many hours do you play computer games or games on TV consoles (or something similar on a cell phone) on an ordinary weekday?” The item was retrieved from Statistics Sweden (2009). There were four available answers,

where 1 = “Seldom or never,” 2 = “Less than one hour a day,” 3 = “About 1-2 hours a day,” and 4 = “More than 1-2 hours a day.”

Analytical approach

Study I

The first study employed a qualitative approach inspired by narrative theory (Freeman, 1993). The interviews were transcribed verbatim, and all interviews were read repeatedly. The analysis commenced with the first reading of the material. Each researcher coded the material individually, and then the researchers formulated common codes and themes through discussions within the research group. Several topics were noted among the themes, but only those pertaining to friendships were included in the study.

Inspired by narrative theory, the analysis assumed that individuals construct reasonable and coherent accounts of themselves and their lives to understand their past experiences and actions (Freeman, 1993). From this perspective, individuals retrospectively “make sense” of their personal history, rather than rationally determine motives, interpretations of contexts, and effective strategies before taking action. The analysis focused on how the participating refugee girls constructed identities and formulated similarities and differences between themselves, their friends, and other peers.

Study II

The second study used stochastic actor-oriented models (SAOMs), estimated through the statistical package RSiena, to investigate the friendship formation of native and foreign adolescents who had supportive and/or controlling parent-child relationships. RSiena is a package in the statistical environment R that can be used to model the longitudinal development of networks and analyze which individuals form relationships with whom (Ripley et al., 2021). Stochastic actor-oriented models in RSiena assume that individuals are rational actors that continually make decisions to form, maintain, or dissolve relationships. Stochastic actor-oriented models include a number of effects that indicate the desire that certain individuals have for certain relationships when making their decisions. These effects should not be conflated with variables: effects are based on variables, and several different effects can be

obtained from the same variable. For example, the variable *legal gender* can be used in several effects, such as an effect for individuals of a certain legal gender sending more friendship nominations (egoX), an effect for individuals of a certain legal gender receiving more friendship nominations (altX), and an effect for pairs of individuals with the same legal gender nominating each other more frequently (sameX). Also, a large number of effects can be based on the structure of the network rather than variables for individual participants.

Effects are estimated through Markov Chain Monte Carlo (MCMC) iterations (Ripley et al., 2021). The studies in the present dissertation used a Bayesian estimation method, which allows for larger statistical power and obviates the need for data imputations (since posterior distributions are only derived from the observed data). When more than 97.5 percent of the iterations yield parameter estimates above or below zero for a certain effect, the effect can be considered important. This procedure corresponds to hypothesis testing with $\alpha = 0.05$ in frequentist statistics. A credibility interval (which is similar to a confidence interval) indicates the interval within which 95 percent of the iterations fall. Combined effects for interaction terms and main effects can be tested by adding the estimated parameters for each iteration separately and thereafter computing the mean and identifying the 0.025th and 0.975th percentiles for the distribution of the summed parameters. The percentiles indicate the credibility intervals of the combined effects. All effect parameters can be interpreted as log-probability ratios for the decision to form or maintain a friendship given that the mathematical definition of the effect is increased by 1 (e.g. from 0 to 1). For example, the parameter 0.5 for the effect relating to the nominating individual's legal gender suggests that the probability for friendship formation or friendship maintenance is $\exp(0.5) = 1.65$ times larger for females than for males (where females are coded as 1 and males coded as 0).

One benefit of using stochastic actor-oriented models in RSiena rather than “conventional” statistics based on variables for individual participants is the possibility of considering and controlling for network structure (Ripley et al., 2021). “Conventional” statistics can include variables for individuals' relationships (such as the number of nominated friends), but these relationships cannot be connected to any other specific individuals in the data material. In stochastic actor-oriented models, relationships are included as both outcomes and predictors. For example, stochastic actor-oriented models can estimate the tendency of two individuals to form or maintain friendships with each other based on whether or not they share another relational

characteristic, such as being of the same origin. Furthermore, stochastic actor-oriented models can distinguish between effects for received and sent friendship nominations. That is, stochastic actor-oriented models can indicate both who tend to nominate friends and who tend to be nominated as friends. Also, the models control for opportunity structures (the availability of peers with certain characteristics in the networks) when estimating effects. Because multiple networks can be included in the analyses, it is possible to generalize the findings to the assumed population of networks (in other words, to all networks of the same type) given that the effects are sufficiently strong.

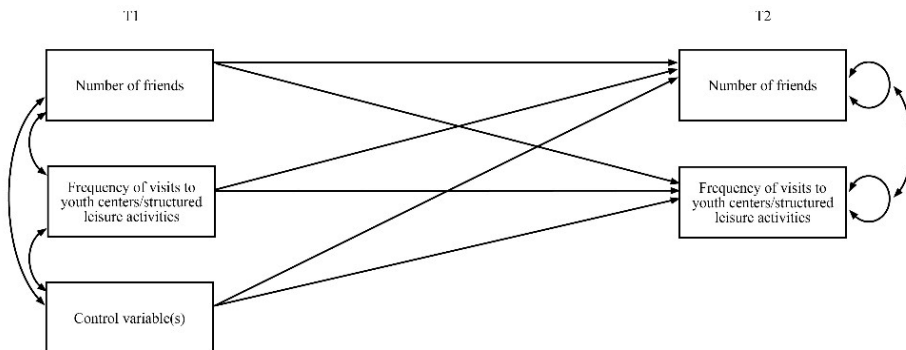
In the second study, one model was estimated with effects for supportive parent-child relationships, and one model was estimated with effects for controlling parent-child relationships. In each model, effects were included for nominators having supportive/controlling parents. Interaction terms were included between nominators having supportive/controlling parents and pairs of adolescents having the same native or foreign origin. These interaction terms could indicate if adolescents with supportive or controlling parents were particularly likely (or unlikely) to form friendships with peers of their own origin. Furthermore, a number of control effects were included related to the network structure, to the adolescents' origins, and to the adolescents' legal gender and perceived financial situation. All effects are presented in the tables and explained in the original manuscript of the second study. Mathematical definitions of the effects are provided in the RSiena manual (Ripley et al., 2021).

Study III

The third study used cross-lagged panel models to analyze the reciprocal associations between, on the one hand, visits to youth centers and participation in structured leisure activities, and on the other hand, incoming friendship nominations from peers of native and foreign origin. There were less than 12 percent missing data on all variables, but an analysis with the R package *Finalfit* (Harrison, 2020) suggested that not all data were missing completely at random. Therefore, multiple imputation of missing data was performed with the *MICE* package in R (Buuren & Groothuis-Oudshoorn, 2011). Predictor variables for the imputations included the variables of the data set as well as similar variables from other waves. The multiple imputation computed 100 complete data sets using 20 iterations, for which convergence was acceptable.

Cross-lagged panel models were constructed with the LAVAAN package (Rosseel, 2012). Since cross-lagged models regress the variables at time two on the variables at time one, they control for autocorrelations and indicate longitudinal associations rather than mere correlations. Six models were constructed, relating to each combination of activity (youth centers and structured leisure activities) and friendship group (regardless of origin, native origin, and foreign origin). Models with friends of native and foreign origin controlled for the proportion of classmates of foreign origin in the school class, and all models tested control variables for age, legal gender, immigrant generation, language proficiency, perceived financial situation, school absence, delinquency, and substance use. These control variables were tested because previous research has suggested that they can be relevant either for friendship formation or for participation in different forms of leisure (Allan, 1989; Dipietro & Mcgloin, 2012; Greenman, 2013; Nordstrand, 2017; Prado et al., 2009; Scraton et al., 2005; Stodolska & Floyd, 2015). Each tested control variable was excluded from the final model if it did not contribute to a significant improvement in model fit according the corrected chi-square test provided by the WLSMW estimation (Asparouhov & Muthén, 2010). A conceptual model is presented in Figure 1.

Figure 1 Conceptual cross-lagged model.



Study IV

The fourth study used stochastic actor-oriented models (Ripley et al., 2021) to investigate the friendship formation of native and foreign adolescents who are involved in digital leisure, including online communication, video-watching, and digital gaming. The general features of stochastic actor-oriented models

were described in relation to the second study, above. The models in the fourth study included effects for nominators and nominees being involved in each form of digital leisure. Also, the models included effects for pairs of adolescents having the same origin. An interaction term was included between nominators' involvement in each form of digital leisure and pairs of adolescents having the same origin. This interaction term could indicate if adolescents who were more involved in each form of digital leisure were more (or less) likely to form friendships with peers of their own origin. In addition, a number of control effects were included related to the structure of the network, to the adolescents' legal gender, and to the adolescents' perceived financial situation. All effects are interpreted in the original manuscript of the fourth study, and mathematical definitions of all effects can be found in the RSiena manual (Ripley et al., 2021). A supplementary correlational analysis was performed to investigate the associations between each form of digital leisure and the number of friendships inside and outside of the school class. The correlational analysis was based on Spearman's correlation coefficient since the measures for digital leisure were on ordinal scales.

Ethical considerations

During planning and data collection, ethical aspects were considered by the researchers that initiated the projects. The project Resettlement Strategies in Families received ethical approval from the Regional Ethical Vetting Board in Linköping (reference number: 2016/4-31). LoRDIA received initial approval from the Regional Ethical Vetting Board in Gothenburg (reference number: 362-13) and then additional approvals for added items in later waves (reference numbers: T446-14 and T553-15).

Both of these ethical applications and approvals were based on the Ethical Review Act (Etikprövningslagen, SFS 2003:460; SFS 2019:1144), which regulates the ethical aspects of Swedish research. The Ethical Review Act requires informed consent and a balance between risks and benefits for participants, where only minimal risks for participants are acceptable in the absence of great benefits. Consent must be documented, but not necessarily written. The Vetting Board can accept other forms of consent, when justified.

Several potential ethical risks were identified for both projects. In regard to Resettlement Strategies in Families, it was noticed that the participating families comprised a vulnerable population since they had fled war or

persecution, often had a precarious financial situation, and often had relatively poor language abilities and knowledge about Swedish regulations and individual legal rights. Thus, the researchers were concerned that some participants would not experience their participation as voluntary or would experience the interactions with the researchers as patronizing or stigmatizing. To minimize this risk, the researchers repeatedly stressed that the participants could decide to opt out of the research project at any time without having to justify this decision. Parents could decline participation for both themselves and on behalf of their children, and the children could decline participation independently of their parents' decision. To avoid stigmatization or patronization, the researchers sought to acknowledge and emphasize the subjective experiences, agency, and strategies that the participants expressed (this was the grand aim of the project). Also, all participants had the opportunity to be assisted by an interpreter, who allowed the participants to express themselves in their mother tongue and thereby allowed the participants to gain more control over the ways in which they represented themselves.

There were also risks related to the potentially very sensitive information being shared during the interviews in *Resettlement Strategies in Families*. To begin with, some of the interviews covered topics that the participants could have experienced as disturbing or even traumatic. In case the topics covered in the interviews made the participants feel distress, the team of researchers had a broad therapeutic experience and could refer the participants to professional support. There was also a risk that the researchers would come across information about children having problematic family situations, which could motivate help with referral to social service agencies and potential interventions in the family. If such a situation arose, contact with the social service agencies would be made in dialog with the parents and children in the study. Also, the researcher had contact with school personnel to make sure that the parents and children could receive adequate support if contacts were made with the social service agencies.

Despite the risks inherent in the research performed in *Resettlement Strategies in Families*, the benefits were, arguably, greater. The participants were able to reflect upon their experiences and represent themselves through their own voices, thereby contributing to an understanding of the challenges and opportunities they faced in their everyday lives. The interviews could provide knowledge that would be valuable to researchers and policymakers by highlighting the agency, abilities, and strategies that refugee parents and

children employ to actively manage their resettlement in Swedish society. This knowledge could indicate what was needed by these parents and children, from their own perspective.

One of the main ethical challenges of the LoRDIA project related to the collection of informed consent. It was noticed that parents who were struggling with health problems, substance abuse, or a disordered family life were less likely to provide active consent. Therefore, if active consent had been collected from these parents, there would have been a substantial risk that their adolescents would have been excluded from the study. To minimize this risk, it was decided that passive consent would be collected from parents. To make sure that all parents had the opportunity to decline participation on behalf of their adolescents, information about LoRDIA was translated into 32 languages other than Swedish and sent by postal mail to all parents. The adolescents were given the opportunity to opt out of each wave of data collection, and the researchers did not ask any questions and avoided exerting any pressure if the adolescents decided not to participate in any or parts of the data collection. Adolescents who found it difficult to understand the information provided or the questions asked, for example because they had a developmental disorder, were given the opportunity to have assistance when answering the questionnaire or to participate in structured interviews instead of filling out the questionnaires themselves.

The researchers also noticed that several of the questions asked in the LoRDIA questionnaires covered highly sensitive topics, such as criminality, substance abuse, sexual activity, and being a victim of child abuse or neglect. To make sure that the confidentiality of the participants was safeguarded, all data were handled according to strict routines. The questionnaires were only distributed and handled by the researchers and the research assistants, without any intervening third parties. Personal information that could be used to identify participants was stored in an offline environment, which was only accessible to the research administrator. All researchers, including the project leader, only had access to data files with removed personal information that were stored on encrypted university servers. If any of the participants in the project experienced the questions to be emotionally distressing, the questionnaires provided information about how to contact the school counselor.

By following these strict routines, the LoRDIA project minimized the risks for the participants and received approval from the Regional Ethics Vetting Board. The benefits of the LoRDIA project therefore outweighed the

risks, which would otherwise have been substantial. The project could provide longitudinal data about contemporary Swedish adolescents' social and psychological development, which were lacking at the time the research project was initiated. A particularly important benefit was access to prospective data that could be used by policymakers and professionals to promote the wellbeing of adolescents living under adverse conditions or experiencing other challenges. In later waves (in high school), the adolescents were given cinema tickets as a remuneration for their participation. Apart from that, no clear benefits were identified for the participants themselves, although it was noticed that other adolescents who lived under similar conditions could benefit from research on their experiences, since such research could inform future interventions and policies. Indications that the participants appreciated their participation were found at the end of the questionnaires in waves three and four, where the participants evaluated the importance of answering to the questions. On both occasions, a great majority of the adolescents reported that they found it important or very important to answer the questions (wave 3: 86.5 %; wave 4: 84.3 %).

Summary of findings

The following sections present the main findings of the studies. Full quotes and qualitative analyses are only included in the original publication of the first study and not in the following summary. Likewise, descriptive statistics and complete interpretations of the inferential statistics for the second, third, and fourth studies can only be found in the original publications and manuscripts.

Study I

The first study explored the friendship formation of adolescent refugee girls through a qualitative analysis of 18 interviews with 12 girls. Two major categories were found: friends through school and friends through family. Most of the girls said that they mainly met inter-origin peers in school and intra-origin peers through their families. The extended family provided opportunities for friendship formation, and on several occasions, the categories of family and friendship seemed to intersect. More specifically, some of the girls referred to their siblings and cousins as some of their best friends. One girl was asked, “What do you find most fun in your life right now, like in your everyday life and at the weekends?” The girl answered:

Lucy: To spend time with my [big] brother and sister.

Interviewer: OK. What do you usually do?

Lucy: I’m mostly with my sister because she has female friends and the like, and she usually takes me to town. We hang out and talk, like that. She takes me out with her friends, for example to a restaurant or somewhere. And she has taken me to another neighboring city together with her friends.

(Lucy, interview 1)

In this quote, Lucy explains that she prefers socializing with her siblings and her sister’s friends. Trust, affinity, and shared activities were important aspects of friendships with family members for several of the interviewed girls. The girls explained that they found the experience of similarity central to friendship formation, and they claimed that the experience of dissimilarity

made friendship formation with inter-origin peers difficult. For example, two sisters and their cousin were asked why they did not have native friends, and they answered:

Lucy: I don't really know.

Interviewer: You laugh [to Hannah and Susanna]. Why do you laugh? [. . .]

Lucy: But they are not like me [the natives].

Susanna: You don't have things in common. That's what [makes the question] funny.

(Lucy, Hannah, Susanna, interview 2)

The three girls found the idea of forming friendships with native peers quite implausible, since they experienced natives as clearly dissimilar from themselves. Interactions with peers of another origin in school generally did not lead to friendships because the girls did not experience having anything in common with these peers. By contrast, some of the girls mentioned strong prejudice from, and intense conflicts with, peers who did not share their origin or who shared their origin but had different cultural belongings. Furthermore, some of the girls explained that their parents had normative concerns or insufficient economic means to let them participate in some organized leisure activities, and they therefore experienced that their opportunities for inter-origin friendship formation were limited outside of school.

Study II

Based on the LoRDIA sample, the second study investigated the inter-origin friendship formation of adolescents with supportive and controlling parent-child relationships through stochastic actors-oriented models. The descriptive results indicated that native adolescents received more friendship nominations from foreign adolescents than they sent to foreign adolescents in both wave one (Cohen's $d = .10$, $p = .030$) and in wave two (Cohen's $d = .09$, $p = .040$). Table 4 presents the results of the stochastic actor-oriented model with supportive parent-child relationships. The control effects will not be interpreted in running text in the present section, but complete interpretations can be found in the original manuscript of the second study. When the

nominator and the nominee had different origins (and the interaction term was zero), the ego effect for supportive parent-child relationships was positive, and its credibility interval was close to excluding zero ($M = .62$, 95% CrI [-0.04, 1.35]). In other words, adolescents with supportive parents appeared more likely to select friends that did not have their own origin, although there was some uncertainty about the effect. When the nominator and nominee had the same origin, the combined effect of the ego effect for supportive parent-child relationships and the interaction term with same origin was negative, and the credibility interval excluded zero ($M = -.54$, 95% CrI [-0.96, -.11]). Thus, adolescents with supportive parents were less likely to select friends of their own origin.

Table 4 Parameter means and credibility intervals for the stochastic actor-oriented model with supportive parent-child relationships ($n = 471$).

Effects	<i>M</i>	95% CrI	
		From	To
Outdegree (density)	-2.63*	-3.26	-2.22
Reciprocity	1.42*	1.26	1.60
Transitive triplets	0.50*	0.43	0.57
Outdegree activity	-0.10*	-0.16	-0.05
Female ego	0.15	-0.01	0.29
Female alter	0.02	-0.12	0.16
Same legal gender	0.76*	0.62	0.90
Perceived financial situation ego	-0.04	-0.22	0.14
Perceived financial situation alter	0.10	-0.02	0.25
Same perceived financial situation	0.01	-0.15	0.17
Foreign ego	0.08	-0.18	0.40
Foreign alter	-0.02	-0.24	0.22
Same origin	0.32*	0.14	0.52
Support ego	0.62	-0.04	1.35
Int. Same origin x Support ego	-1.15*	-2.03	-0.37

Note. *Credibility interval excludes zero.

The stochastic actor-oriented model with controlling parent-child relationships is presented in Table 5. When two adolescents had different origins, the ego effect for controlling parent-child relationships was negative, although the credibility interval did not completely exclude zero ($M = -.14$, 95% CrI [-0.31, .02]). In other words, adolescents appeared less likely to select friends of another origin when they had controlling parents, although there

was some uncertainty about the findings. The combined effect of the ego effect for controlling parent-child relationships and the interaction term with pairs of adolescents having the same origin was positive, and the credibility interval excluded zero ($M = .11$, 95% CrI [.01, .22]). These results suggest that adolescents with controlling parents were more likely to select friends of their own origin.

Table 5 Parameter means and credibility intervals for the stochastic actor-oriented model with controlling parent-child relationships ($n = 471$).

Effects	<i>M</i>	95% CrI	
		From	To
Outdegree (density)	-2.77*	-3.22	-2.19
Reciprocity	1.43*	1.22	1.64
Transitive triplets	0.47*	0.36	0.56
Outdegree activity	-0.08*	-0.13	-0.03
Female ego	0.09	-0.07	0.27
Female alter	0.04	-0.17	0.23
Same legal gender	0.78*	0.61	0.94
Perceived financial situation ego	-0.04	-0.20	0.15
Perceived financial situation alter	0.14	-0.07	0.37
Same perceived financial situation	-0.01	-0.13	0.15
Foreign ego	0.12	-0.05	0.31
Foreign alter	-0.12	-0.30	0.10
Same origin	0.30*	0.14	0.49
Control ego	-0.14	-0.31	0.02
Int. Same origin x Control ego	0.25*	0.06	0.44

Note. *Credibility interval excludes zero.

Study III

The third study investigated the reciprocal associations between leisure activities and friendship formation through cross-lagged models based on the LoRDIA sample. An analysis of the combined sample of native and foreign adolescents who participated in both waves two and three of LoRDIA ($n = 1,185$) indicated that the adolescents formed significantly fewer inter-origin friendships in wave three compared to wave two, although the effect size was very small (Cohen's $d = .06$, $p = .035$). According to the cross-lagged model presented in Figure 2, adolescents of foreign origin who visited youth centers more often had a larger number of friends of foreign origin one year later ($\beta =$

.12, $p = .046$, 95% CI [.00, .24]). On the other hand, the number of friends of foreign origin in the first wave was not clearly associated with visits to youth centers one year later. This suggests that the association was directed rather than reciprocal. The result was robust even after controlling for the number of classmates of foreign origin, immigrant generation, and substance use (the other control variables were excluded from the model because they did not contribute to a significant improvement of model fit—see “Analytical approach” in the “Methods” section).

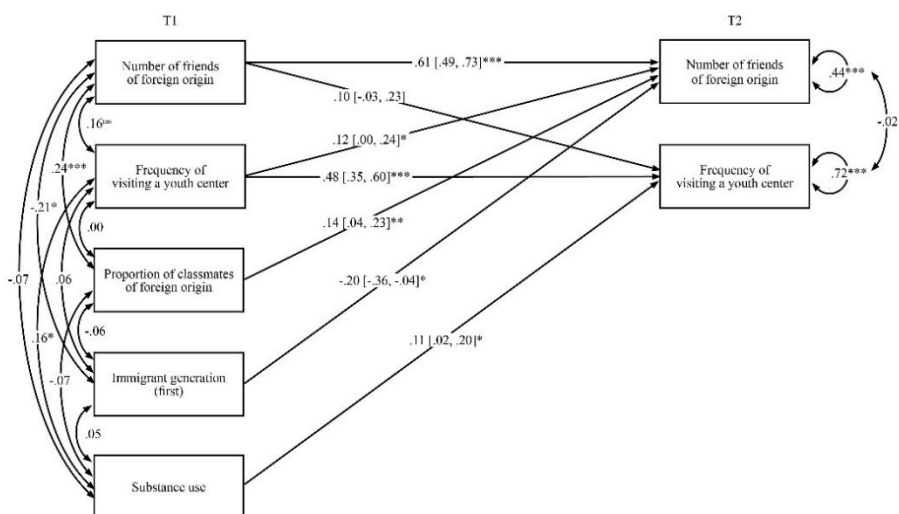


Figure 2 Cross-lagged model for visits to youth centers and number of friends of foreign origin ($n = 203$).

According to Figure 3, participation in structured leisure activities predicted a larger number of friends regardless of origin, although this finding only approached significance ($\beta = .13$, $p = .069$, 95% CI [-.01, .27]). The number of friends in the first wave did not predict participation in structured leisure activities one year later. In other words, this association, too, was directed rather than reciprocal. None of the tested control variables were included in the model because none of them contributed to a significant improvement of model fit. In summation, the third study revealed contrasting implications of youth centers and structured leisure activities, since only the latter predicted increased friendships regardless of origin.

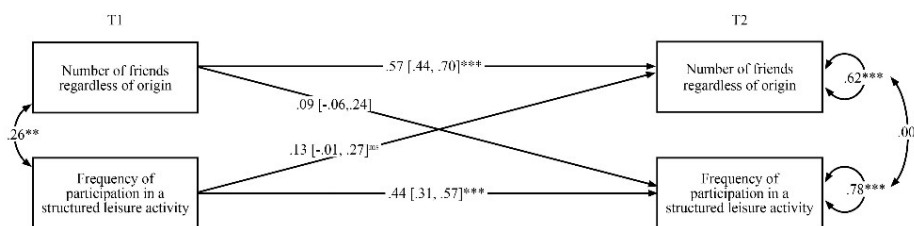


Figure 3 Cross-lagged model with participation in a structured leisure activity and the number of friends regardless of origin ($n = 203$).

Study IV

The fourth study investigated the friendship formation of native and foreign adolescents who were involved in digital leisure. A correlational analysis suggested that native adolescents who were more involved in digital gaming had more friendships with classmates of foreign origin (wave 1: $r = .16, p = .003$; wave 2: $r = .14, p = .013$). At the same time, native adolescents who were more involved in digital leisure had fewer friendships with native classmates (wave 1: $r = -.12, p = .029$; wave 2: $r = -.14, p = .010$), and they had fewer friendships with peers outside of the school class (wave 1: $r = -.15, p = .008$; wave 2: $r = -.16, p = .004$). Foreign adolescents who communicated more online had fewer friendships with classmates of both native origin (wave 2: $r = -.25, p = .038$) and foreign origin (wave 2: $r = -.21, p = .082$), but they had more friendships with peers outside of the school class (wave 2: $r = .22, p = .076$). The conclusions for the correlations related to foreign adolescents were based on $\alpha = .10$, since the sample of foreign adolescents was relatively small ($n = 78$). Using $\alpha = .10$ increased statistical power for the statistical tests on this sample; in other words, using $\alpha = .10$ decreased the risk that incorrect null hypotheses would be accepted.

Table 6 presents the results of the stochastic actor-oriented model with online communication. When the nominator and nominee had different origins (and the interaction term was zero), adolescents who communicated more online sought fewer friendships, and the credibility interval excluded zero ($M = -.39, 95\% \text{ CrI} [-.60, -.16]$). In other words, the adolescents were less likely to nominate classmates of another origin as friends when they communicated more online. The combined effect of the ego effect for online

communication and the interaction term with same origin was negative, but the credibility interval included zero ($M = .13$, 95% CrI [-.29, .02]). Thus, adolescents who communicated more online may have nominated fewer friends of their own origin too, but these results had some uncertainty.

Table 6 Parameter means and credibility intervals for the stochastic actor-oriented model with online communication ($n = 406$).

Effects	M	95% CrI	
		From	To
Outdegree (density)	-2.60*	-2.91	-2.32
Reciprocity	1.38*	1.15	1.53
Transitive triplets	.51*	.43	.60
Outdegree activity	-.10*	-.16	-.04
Female ego	.24*	.04	.44
Female alter	-.13	-.34	.03
Same legal gender	.71*	.54	.86
Perceived financial situation ego	.12	-.06	.32
Perceived financial situation alter	.17*	.01	.34
Same perceived financial situation	.04	-.11	.19
Foreign ego	.22	-.08	.44
Foreign alter	-.08	-.32	.11
Same origin	.39*	.21	.56
Online communication ego	-.39*	-.60	-.16
Online communication alter	.07	-.06	.22
Same online communication	.11	-.05	.25
Int. Same origin x Online communication ego	.25	-.02	.96

Note. *Credibility interval excludes zero.

The stochastic actor-oriented model for digital gaming is presented in Table 7. When the nominator and the nominee had different origins, the ego effect for digital gaming was relatively small, and the credibility interval included zero ($M = -.06$, 95% CrI [-.22, .09]). However, the combined effect of the ego effect for digital gaming and the interaction term with same origin was clearly negative, and the interaction term excluded zero ($M = -.10$, 95% CrI [-.18, -.01]). In other words, the participants were less likely to nominate friends of their own origin when they were more involved in digital gaming.

Table 7 Parameter means and credibility intervals for the stochastic actor-oriented model with digital gaming ($n = 406$).

Effects	<i>M</i>	95% CrI	
		From	To
Outdegree (density)	-2.66*	-2.96	-2.37
Reciprocity	1.37*	1.19	1.51
Transitive triplets	.50*	.42	.58
Outdegree activity	-.09*	-.14	-.04
Female ego	.11	-.14	.36
Female alter	-.10	-.33	.14
Same legal gender	.79*	.59	.98
Perceived financial situation ego	.11	-.05	.29
Perceived financial situation alter	.12	-.05	.29
Same perceived financial situation	.06	-.09	.23
Foreign ego	.26*	.05	.45
Foreign alter	-.05	-.26	.15
Same origin	.43*	.26	.62
Digital gaming ego	-.06	-.22	.09
Digital gaming alter	-.05	-.14	.03
Same digital gaming	.06	-.10	.21
Int. Same origin x Digital gaming ego	-.04	-.20	.13

Note. *Credibility interval excludes zero.

Table 8 presents the stochastic actor-oriented model with video-watching. When the nominator and nominee had different origins, the ego effect for video-watching was relatively small, and the credibility interval included zero ($M = .05$, 95% CrI [-0.14, .24]). The combined effect of the ego effect for video-watching and the interaction term was even closer to zero. Thus, video-watching did not appear to be clearly related to friendship formation with classmates of either the same or another origin.

Table 8 Parameter means and credibility intervals for the stochastic actor-oriented model with video-watching ($n = 406$).

Effects	<i>M</i>	95% CrI	
		From	To
Outdegree (density)	-2.77*	-3.04	-2.51
Reciprocity	1.41*	1.23	1.62
Transitive triplets	.48*	.40	.57
Outdegree activity	-.09*	-.14	-.04
Female ego	.19	-.04	.41
Female alter	-.07	-.25	.08
Same legal gender	.78*	.60	.98
Perceived financial situation ego	.06	-.15	.26
Perceived financial situation alter	.17	-.03	.35
Same perceived financial situation	.10	-.10	.30
Foreign ego	.24*	.04	.46
Foreign alter	-.05	-.27	.18
Same origin	.43*	.27	.58
Video-watching ego	.05	-.14	.24
Video-watching alter	-.05	-.15	.06
Same video-watching	.13	-.01	.25
Int. Same origin x Video-watching ego	-.01	-.25	.24

Note. *Credibility interval excludes zero.

Discussion

Informed by previous research, the present dissertation has suggested that inter-origin friendship formation is an element of the social integration of foreign adolescents and that social integration has benefits for both individuals and society. The four studies of the dissertation have aimed to identify opportunities for, and influences on, friendship formation. Both qualitative and quantitative methods have been used to analyze two longitudinal data materials. The following sections will elaborate on the main findings and indicate the general conclusions and implications of the research.

Understanding inter-origin friendships

Before addressing opportunities and influences on inter-origin friendship formation, it is relevant to briefly survey the knowledge gained about the characteristics of these friendships. The introduction of the dissertation noted that the meaning of friendship varies across cultures and may be indistinguishable from family relationships in some cultural contexts (Killick & Desai, 2013). As a matter of fact, the first study of the dissertation showed that friendships and family relationships can overlap, since siblings and cousins were referred to as best friends by the adolescent refugee girls who participated in the study. The refugee girls' understanding of friendship was contrary to the definitions of friendship put forward in some intercultural research, which has identified friendship as a distinct extra-familial relationship that can be found in all cultures (Krappmann, 1996). The findings of the first study point to the importance of not using preconceived conceptualizations of friendship when performing research on friendship in culturally diverse contexts.

Previous research has suggested that mere physical proximity and opportunities for social interaction can promote friendships between peers of different origins (Homans, 1961; Moody, 2001; Preciado et al., 2012). In official policy documents and budget propositions, the Swedish government has described the challenges faced by individuals of foreign origin primarily in terms of "segregation" (Ministry of Culture, 2018; Ministry of Finance, 2020). The solution to segregation is the mixing of individuals in, for example, shared neighborhoods, under the tacit presumption that the mixing of

individuals of different origins will in itself lead to better relationships between these individuals (Ministry of Finance, 2020). Likewise, the official policy documents from the Swedish National Agency of Education (Skolverket) (2018) seem to presume that the social integration of foreign adolescents in Swedish schools can be achieved simply through the mixing of students of different origins in the same schools. These ideas are echoed in a recent report made on behalf of the Ministry of Education and Research, where it is suggested that mixed schools will by themselves contribute to “promoting tolerance,” “eliminating bias and prejudice,” promoting “trust,” and providing shared “social capital” among students of different origins (some of the quotes are second-order citations from other sources) (Åstrand et al., 2020, p. 192).

The studies put forward in the present dissertation problematize these official documents and reports by indicating that adolescents of native and foreign origin do not automatically form friendships with each other simply because they meet each other in school. That is, social integration does not simply “happen” of its own accord through the mere mixing of peers of different origins. If anything, the adolescents in the LoRDIA material formed slightly (yet significantly) *fewer* inter-origin friendships in the later waves of the data collection, and some refugee girls interviewed in Resettlement Strategies in Families explained that they found the idea of forming friendships with native peers quite implausible because of perceived differences between the groups. The second study indicated that native adolescents avoided nominating inter-origin friends to an even greater extent than foreign adolescents did, which suggests that native adolescents, too, contribute to preventing the social integration of foreign adolescents. It remains true that mixing adolescents of different origins in the same schools and neighborhoods provides new opportunities for inter-origin friendship formation (without any mixing, there would not be any opportunities), but mixing adolescents is not in itself sufficient to accomplish social integration.

This conclusion may seem surprising, but it is supported by a recent study in a leading sociological journal that has analyzed friendship nominations among 18,716 adolescents in Sweden, Germany, England, and the Netherlands (Smith et al., 2016). In accordance with previous research (e.g. Moody, 2001), this study suggests that there are more inter-origin friendships in *total numbers* when there are more similar proportions of adolescents from different origins in the same school classes (Smith et al., 2016). However, when a larger and more homogenous group of foreign adolescents is present

in the same school class, the native adolescents in the class express a greater relative *preference* for friends of their own origin (Smith et al., 2016). In other words, native adolescents are more likely to seek native friends when they have more classmates who are of foreign origin and belong to the same foreign ethnic group. The authors of the study argue that these results may be explained by the fact that native adolescents can experience a symbolic, cultural, and normative threat from a larger homogenous group of foreign adolescents (Smith et al., 2016). This line of reasoning draws upon the threat hypothesis, originally formulated by Blalock (1967) in regard to the fact that racist prejudice was most prevalent in areas in the United States with larger proportions of Afro-Americans. The present dissertation does not have any results that can support or invalidate the threat hypothesis, but it confirms that native adolescents do not form an increasing number of friendships with foreign peers over time even though they are mixed in the same school classes.

It may also be argued that having classmates of another origin is of little importance, or may even cause additional problems, unless these classmates are friends or interact in a friendly manner. According to Allport's (1954/1979) early theorizing on social interactions and prejudice among individuals of different origins, which was foundational to an entire field of research (Pettigrew & Tropp, 2005), superficial interactions between peers of different origins may indeed lead to more prejudice rather than less, since such interactions are more likely to be motivated by self-interest and are less likely to involve cooperation. In other words, just mixing adolescents of different origins in the same schools and school classes, without any adult interventions to facilitate inter-origin friendship formation, may indeed cause more prejudice and tension between the groups. By contrast, actual friendships between adolescents of different origins appear to contribute to reducing prejudice between these adolescents (Titzmann et al., 2015). The interviews with the refugee girls who participated in the first study included experiences of xenophobic prejudice between students of different origins in the same schools. Thus, the initial qualitative study implied that in some Swedish schools with mixed students there were conflicts rather than friendships between individuals of different origins. Unfortunately, these findings were not further addressed in the quantitative studies based on the LoRDIA material, since the importance of this finding for the dissertation was not noticed until later in the research process (when compiling the dissertation).

Opportunities for friendship formation during leisure

Unlike many other aspects of adolescents' everyday lives, their leisure time is characterized by being uncoerced (Stebbins, 2005). In other words, adolescents cannot always choose to participate in certain forms of leisure, because they do not have geographical access or the necessary funds to do this, but they can generally choose to abstain from participation. For this reason, leisure offers unique possibilities for adolescents to both be social and to avoid unrewarding social situations (Gary, 2006; Schaefer et al., 2011).

Most Swedish adolescents visit youth centers or participate in some form of structured leisure activity, such as a sports activity or a cultural project, on a regular basis (Nordstrand, 2017; Swedish Agency for Youth and Civil Society, 2006). These forms of leisure bring adolescents together and allow for repeated social interactions, which is generally necessary for friendship formation to ensue because it offers an opportunity for shared positive experiences (Feld, 1981; Homans, 1961; Lawler, 2001). Swedish policymakers commonly promote certain forms of leisure among adolescents to ameliorate social problems such as delinquency or social conflicts (Ekholm, 2016; Ministry of Culture, 2018).

Nevertheless, little research has been performed on the ways in which youth centers and structured leisure activities, with adult leaders, contribute to the social integration of foreign adolescents. The third study of the dissertation addressed this issue and revealed that youth centers promoted intra-origin friendship formation among adolescents of foreign origin, while participation in structured leisure activities promoted both intra-origin and inter-origin friendship formation. The differences between the findings for youth centers and structured leisure activities may be due to the fact that social interactions in youth centers are generally less controlled by adults (Geidne et al., 2016; Mahoney & Stattin, 2000) and that adolescents of different origins may find fewer reasons to interact with each other under these conditions. Structured leisure activities that are organized by adults, on the other hand, actively bring adolescents together in cooperative tasks, which is likely to contribute to friendship formation (Allport, 1954/1979; Lawler, 2001). Furthermore, it should be noted that, compared to native adolescents, adolescents of foreign origin visit youth centers to a greater extent than they participate in structured leisure activities—both in the third study and according to previous research (Nordstrand, 2017; Swedish Agency for Youth and Civil Society, 2006).

Thus, the fact that more intra-origin friendships were formed among adolescents of foreign origin in youth centers may in part be a consequence of there being more peers of foreign origin in these locations.

Even though leisure in youth centers and structured leisure activities is uncoerced, it is still limited by geographical restraints. By contrast, digital leisure mediated by computers and smartphones is not circumscribed by any geographical restraints, and it can allow adolescents from vastly different regions and backgrounds to interact and form friendships (Gilhooly & Lee, 2014; Ito et al., 2008; Lam, 2009, 2014). Indeed, the findings of the fourth study suggested that foreign adolescents who communicated more online formed more friendships with peers outside of the school class. The data at hand could not indicate whether these friends were geographically close or distant from the participants (since not all friends outside of the school class participated in the data collection), but it may be presumed that some of them were dispersed over a larger geographical area. While more friendships were formed with peers outside of the school class, foreign adolescents who communicated more online formed and maintained fewer friendships with their classmates.

By providing these results, the fourth study complements much previous theory and research, which has mainly argued that online communication facilitates the formation and maintenance of friendship (Domahidi et al., 2014, 2018; Haikkola, 2011; Peter et al., 2005; Veronis et al., 2018). However, in reality, individuals have a finite number of friendships that they may preserve at any one time (Gouldner & Strong, 1987), and to the extent that they form new friendships online, they may lose friends that they meet face-to-face, in their everyday lives. Since digital technology allows foreign adolescents to keep contact with peers of their own origin despite geographical distances (Lam, 2009, 2014), they may make fewer friends with native peers in, for example, their school classes. Thus, the development of new forms of technology and new platforms for online communication may not contribute to increased inter-origin friendship formation and social integration but to the opposite.

Furthermore, the fourth study noted that native adolescents who were more involved in digital gaming were friends with more classmates of foreign origin, which may have been related to the fact that, on average, foreign adolescents were more involved in digital gaming on average. However, the longitudinal analysis in the stochastic actor-oriented model did not indicate that native adolescents who were more involved in digital gaming formed

more inter-origin friendships; this model only indicated that native adolescents who were more involved in digital gaming lost native friends. Also, native adolescents who were more involved in digital gaming had fewer friends outside of the school class. Therefore, digital gaming does not seem to promote any friendships but rather to make them less likely. This conclusion, too, is contrary to some previous research in the field, which has suggested that digital gaming can complement opportunities for friendship formation offline (Carter, 2005; Domahidi et al., 2014, 2018; Peter et al., 2005). Some adolescents appear to use digital gaming to escape social situations and demands, which makes them socially isolated rather than available for friendship formation (Kaczmarek & Drązkowski, 2014; Lemmens et al., 2011). Thus, digital leisure may isolate some adolescents from their peers and thereby be detrimental to social integration.

Family influences on friendship formation

Adolescents' friendship formation occurs in the context of the adolescents' family networks, which include parents, siblings, and kin (Parks, 2007). Some previous research on family networks and friendship formation has been optimistic and argued that family networks can offer additional opportunities for friendship formation among adolescents of foreign origin (Smith et al., 2015; Windzio & Bicer, 2013). However, most of this research has neglected the fact that adolescents can only form a limited number of (close) friendships, since they have limited time and cognitive resources (Granovetter, 1973; Mac Carron et al., 2016). When their "friendship budgets" (Gouldner & Strong, 1987) are full, the adolescents are unlikely to form new friendships. For this reason, forming many friendships within the family network may impede friendship formation with peers of another origin. Evidence for this conclusion was found in the first study, where several girls had their main friendships within the family network and experienced native adolescents as too different from themselves to be a realistic social alternative. The very fact that these girls had close access to family members as friends seemed to make them less inclined to consider native peers as potential friends. In other words, the family networks seemed to allow the girls to be "pickier" when making decisions about the friendships they wanted to form.

The natural affinity that the girls experienced in relation to their family members trumped their desire for finding new friends of another origin.

Expressed in the terminology of classic sociologists, the adolescent girls sought *gemeinschaft* rather than *gesellschaft* (Tönnies, 1887/2002); they sought *mechanical solidarity* rather than *organic solidarity* (Durkheim, 1893/2014). More recent theorizing would suggest that these girls sought *strong ties* rather than *weak ties* (Adler & Kwon, 2002; Granovetter, 1973; Portes, 1998). All of these concepts indicate that the adolescent girls of foreign origin were more interested in forming and maintaining close friendships based on an experience of natural similarity rather than less intimate friendships with a wider circle of peers. These close friendships, within the family circle, probably contributed to an experience of strong solidarity but also to strong conformity, which was noticed when the parents sought to restrict social leisure activities that they found inappropriate for their girls (Adler & Kwon, 2002; Feld & Carter, 1999; Portes, 1998).

The risks related to conformity in the family were noted in the second study too, where adolescents with more controlling parents were less likely to form friendships with peers of another origin. In other words, controlling parents, who demanded conformity, contributed to making the social integration of foreign adolescents more difficult. Also, the results of the second study suggested that parents of foreign origin were particularly likely to be experienced as controlling by their adolescents. Similar results have been noted in previous research from both Sweden and other countries (Akinsulure-Smith et al., 2016; Haque, 2012; Högdin, 2006; Sedem & Ferrer-Wreder, 2015). Because experiences of control and conformity in personal relationships are likely to be shaped by the cultural contexts in which the relationships are situated (cf. Kagitcibasi, 2013), the second study contributed knowledge of particular relevance to the (diverse) cultural context in contemporary Sweden. Even though the parents in the study might have had good intentions, they made their adolescents' social lives more difficult. Previous research has suggested that fear, shame, and concern about negative influences are some of the most important factors behind foreign parents' reluctance to let their adolescents participate in the same social activities as native adolescents (Akinsulure-Smith et al., 2016; Sedem & Ferrer-Wreder, 2015; Steen-Olsen, 2013). In other words, to reduce parental control, it seems necessary to make the parents experience more security.

Secure parents may not only be less controlling but also more able to provide secure environments and support for their children (van IJzendoorn & Bakermans-Kranenburg, 2019; Verhage et al., 2016). As the second study indicates, native and foreign adolescents form more friendships with each

other when they have supportive parent-child relationships. Thus, making parents more secure can contribute to social integration in two ways: by making the parents less prone to be controlling and more prone to be supportive. This conclusion highlights the fact that adolescents' life courses can be understood in relation to those life courses with which they intersect (Alwin, Felmlee, et al., 2018; Elder, 1994). More specifically, foreign adolescents' opportunities to form friendships are influenced by their parents' social experiences, which are shaped by their access to native friends, coworkers, and neighbors. Previous research has noted that there is an intergenerational link of social integration, from parents to adolescents (Nauck, 2001; Windzio, 2012). Thus, the social integration of foreign adolescents is, to some extent, contingent on the social integration of their parents and families.

Supportive and committed adults

The findings of the present dissertation suggest that adolescents are less likely to form inter-origin friendships in social contexts where adults are less clearly present and less involved—such as in youth centers or digital leisure activities. By contrast, inter-origin friendships appear to be promoted by supportive parents and by adults who are involved as leaders in structured leisure activities. Thus, a general conclusion of the dissertation is that adolescents appear relatively more likely to form inter-origin friendships when adults are supportive and committed, that is, when they contribute social support and a structure for social interactions. Previous research has addressed certain ways in which adults can contribute to facilitating friendship formation between peers of different origins (see the discussion in the sections above), but there appear to be few studies, if any, that make the general conclusion that supportive and committed adults are important to make inter-origin friendship formation happen. The present dissertation contributes by formulating this conclusion in general terms.

Supportive and committed adults need not be present during the actual process of friendship formation; rather, supportive and committed adults contribute by providing adolescents with opportunities to meet and interact with peers of another origin in a manner that is experienced as secure and cooperative (Allport, 1954/1979; Lawler, 2001). Adults can be committed to facilitating inter-origin friendship by building inclusive meeting places, such

as structured leisure activities that actively bring adolescents together in close and repeated social interactions rather than keeping them at a distance from each other (Schaefer et al., 2018; Wong, 2010). Supportive parents promote a sense of self-confidence and tolerance among adolescents through the security of their relationships with the adolescents (Mikulincer & Shaver, 2001). Importantly, supportive and committed adults who effectively promote inter-origin friendships are not controlling and intrusive, since controlling relationships tend to limit opportunities for inter-origin friendship formation.

Controlling or indifferent adults seem to cement social segregation among adolescents (cf. Demir & Ozgul, 2019; Kumi-Yeboah, 2018; Sedem & Ferrer-Wreder, 2015). These adults do not facilitate and structure social interactions between peers of different origins, nor do they contribute to a sense of security, confidence, and agency during these interactions. The consequence of letting adolescents organize their own social time, without offering any support or structure, is that adolescents select friends with whom they experience the most similarity, since similar friends lend themselves to building a (subjectively) secure social environment (there have been several classic studies on this, including Berger & Calabrese, 1975; Heider, 1958; Moreland & Zajonc, 1982; Newcomb, 1961; Zajonc, 1968).

In summation, the main conclusions of the dissertation are that social integration does not happen automatically through the mere passage of time and mixing of adolescents of different origins, and strategies to promote social integration must involve supportive and committed adults. “Laissez-faire” policies that rely on a presumption of spontaneous friendship formation between peers of different origins are consistently refuted by the findings of the present dissertation, which do not indicate any general increase in inter-origin friendships during adolescence but rather a decrease. Supportive and committed adults appear to be *necessary* to make social integration among adolescents happen.

Methodological discussion

The dissertation made use of two different data sets: the first study analyzed qualitative data from Resettlement Strategies in Families, and the last three studies analyzed quantitative data from LoRDIA. The samples complemented each other by including foreign-born refugees in more disadvantaged areas (Resettlement Strategies in Families) and second-generation foreign

adolescents in relatively less disadvantaged areas (LoRDIA). The fact that the foreign-born refugee girls found friendship formation with natives quite implausible provides some insight into the acute challenges to social integration experienced by foreign-born adolescents in more disadvantaged areas. In the less disadvantaged areas, friendships between native and second-generation foreign adolescents were relatively frequent, although there remained a strong tendency toward homophily. To clarify within which contexts and populations the findings were generalizable or transferable, an attempt was made to provide clear descriptions and contextualizations of the samples under “Data collection.”

Even if the samples were moderately similar to the population of foreign adolescents on a national level for the years when the data were collected (in terms of birth countries), the findings are not necessarily representative of adolescents of foreign origin in Sweden today, since the population changes considerably over the course of just a few years (Statistics Sweden, 2020). From a life course perspective, each generation has its own conditions and paths of development, which are colored by both personal networks and local cultures (Alwin, Felmler, et al., 2018; Elder, 1994). This is one of the major difficulties of research on individuals of foreign origin: the sheer diversity and malleability of the population (Brubaker, 2009; Calhoun, 1993). Individuals have subjective identities that obviously are of central importance to their life courses, but to be able to generalize, it is necessary to use relatively objective categories that can be applied regardless of subjective perceptions. To make generalizations, the present dissertation used the category of *foreign origin* to refer to adolescents who were born in a country other than Sweden or who had two parents born in other countries, regardless of their subjective identities (cf. Statistics Sweden, 2002).

A potential limitation of the dissertation was the relatively small sample sizes used in the studies. The first, qualitative, study included 12 girls and the third, quantitative, study included 203 adolescents of foreign origin. The second study was based on a sample of 471 adolescents, and the fourth study included 406 adolescents. The small sample size in the first study limited the transferability of the findings, and the results were understood as implying possibilities rather than facts. In the third study, the finding that structured leisure activities promoted friendships regardless of origin only approached significance ($p = .069$), which may be due to the small sample size (or possibly due to a spurious result—it is impossible to determine which interpretation is

correct). Therefore, larger sample sizes in the first and third studies could have contributed to more generalizable (or transferable) conclusions.

A considerable strength of the dissertation was the longitudinal approach, through which associations and decisions made across time could be distinguished from mere correlations. Although the studies may not have indicated causality, they offered statistically robust findings, which hinted at possible causal relationships. The concept of *causality* is complex and has been debated for centuries, but if a cause is understood simply as the initial condition that increases the probability that a certain outcome follows (Hitchcock, 2018), then *regular series of events that unfold across time* and *causal relationships* are interchangeable terms, and longitudinal analyses can indicate causality. However, the concept of causality has been debated for centuries, and any causal interpretations are therefore controversial.

In the three quantitative studies of the dissertation, socioeconomic status was measured through a proxy variable that asked the adolescents to assess their perceived financial situation compared to other families in their neighborhoods. This proxy variable was used because the variables that more directly measured socioeconomic status (for example through parental education or employment) were included in the questionnaires distributed to parents, and the response rate for these questionnaires was very low (below 30 percent). One disadvantage of using perceived financial situation as a proxy variable is its subjective character. The adolescents probably had an incomplete understanding of both the financial situation of their own family and of the finances of other families in their neighborhoods. Nevertheless, it has been noted that the inclusion and exclusion of adolescents from friendship networks is related to the adolescents' financial situation (Hjalmarsson & Mood, 2015), and it was more reasonable to control for perceived financial situation than to disregard socioeconomic status altogether.

The concept of *foreign origin* may appear as imprecise, vague, and simplistic. Furthermore, the concept of *intra-origin friendships* may be perceived as inadequate for some pairs of friends, both of whom have native or foreign origin but have completely different backgrounds in other respects. Still, the concept of *foreign origin* was motivated by the data at hand. If adolescents of foreign origin had not been considered a coherent group but had been divided into national, ethnic, or cultural subgroups, there would have been very few peers, if any, with whom the adolescents of foreign origin could have formed intra-origin friendships in their school classes. In most cases, it is difficult to make generalizations for adolescents in specific national, ethnic,

and cultural subsamples because these groups tend to be very small relative to the total sample size. More detailed analyses of specific subgroups of adolescents require extensive or homogenous data sets. Also, the concepts of *nationality*, *ethnicity*, and *culture* are subjective and risk being exclusive: categorizing an adolescent as Han Chinese would risk implying that the adolescent was not Swedish. The term *foreign origin* refers to individuals who can be (but need not be) fully “Swedish,” since the term only relates to the birth countries of the adolescents or their parents and not to their identities or cultures. Thus, for the purposes of the present dissertation, I argue that the term *foreign origin* is the most useful and accurate conceptual alternative.

Implications

To achieve social integration, as defined by the present dissertation, adolescents of foreign origin need to form friendships with both peers of native and foreign origin. Since there is a strong tendency toward homophily based on origin in adolescents’ friendship networks (Moody, 2001; Smith et al., 2016), the difficulty with social integration is generally not the formation of intra-origin friendships but the formation of inter-origin friendships. These inter-origin friendships are not formed in a social vacuum—they are formed in relation to the opportunities and influences of their social milieu, and they require that both foreign and native adolescents actively contribute to forming friendships. The descriptive statistics of the second study indicated that the native adolescents generally were less inclined to seek foreign friends than vice versa. This finding suggests that policies and interventions intended to facilitate social integration not only should target adolescents of foreign origin but, perhaps even more importantly, their native peers. It is possible that native adolescents avoid foreign peers because the groups have different social status (Ball & Newman, 2013) or because the natives have some (non-conscious) racist prejudice against peers of foreign origin (Demir & Ozgul, 2019; Kumi-Yeboah, 2018; Steinbach, 2010). Regardless of the causes of discrimination, policymakers need address the problem of adolescents of native origin avoiding friendships with peers of foreign origin.

The second study suggested that supportive rather than controlling parents can promote inter-origin friendship formation. Policymakers may seek to inform parents about the importance of being supportive and about the perils of being controlling, since some parents may inadvertently contribute to

making social integration more difficult through their ways of relating to their adolescents (Haque, 2012; Högdin, 2006; Sedem & Ferrer-Wreder, 2015; Steen-Olsen, 2013). This information should not only be directed toward parents of foreign origin but also toward parents of native origin, even though foreign parents appeared to be experienced as more controlling by their adolescents. To reach and influence parents of foreign origin, it may be necessary to help them experience a sense of security and understanding with regard to native adolescents and their culture, which is more likely if the foreign parents, too, have friends of native origin.

Policymakers may also facilitate inter-origin friendship formation by funding structured leisure activities, with adult leaders, for all adolescents. One contemporary problem in Sweden is that leisure is segregated, with more native adolescents participating in structured leisure activities and more adolescents of foreign origin visiting youth centers (Nordstrand, 2017; Swedish Agency for Youth and Civil Society, 2006). The third study suggested that some leisure activities may not be available to adolescents of foreign origin because their parents do not have sufficient funds. More inclusive leisure activities funded by public agencies, which include adolescents regardless of origin, may facilitate inter-origin friendship formation and social integration. In this context, it is relevant to note that one strength of youth centers is that they tend to be more inclusive toward adolescents who have less economic resources or parental support, since there are few requirements, and no mandatory fees, demanded of adolescents that attend youth centers (Nordstrand, 2017; Swedish Agency for Youth and Civil Society, 2006). Structured leisure activities arranged by youth centers may be most accessible to adolescents with less social and economic resources, thereby combining the benefits of a structured leisure time with the inclusiveness of youth centers. One remaining problem is that youth centers generally attract participants from the local, segregated neighborhoods in which they are situated. The challenge for policymakers is to preserve the availability of youth centers while increasing their social and geographical reach, for example through information and advertisement campaigns and through better local traveling opportunities.

Digitalization is sometimes understood as related to general social progress, and large economic resources are spent in Sweden to further digitalization and provide access to different forms of digital tools for all members of society (Regeringskansliet, 2017). However, the findings of the present dissertation suggest that digitalization may not favor friendship

formation and social integration, and it is important not to uncritically contribute to a digital culture that makes friendship and social integration more difficult. The social aspects of digitalization should be considered when policies for digitalization are developed. Since the digital landscape is continuously changing, and since empirical researchers can only identify the social effects of digitalization retrospectively (when the digital changes have already occurred), it is important to take early and tentative findings seriously and apply a precautionary principle. I argue that policymakers should recognize the risks involved in changing the conditions of adolescents' social lives through digital technology without knowing the outcomes that this will have for their personal social lives. As digitalization proceeds, continuous research is needed to monitor the potential social problems that may ensue.

Conclusion

International migration poses considerable challenges to many countries, including the challenge of social integration. Sweden is an informative country for research on the social integration of adolescents of foreign origin, given that one quarter of Swedish adolescents have foreign origin. Social integration is generally challenging, since most individuals are homophilic and prefer to become friends with peers who are similar to themselves. The causes of homophily are not only found among adolescents of foreign origin: the discrimination expressed by native adolescents, too, makes inter-origin friendship formation more difficult. The present dissertation concludes that the social integration of foreign adolescents does not happen automatically through the mere mixing of adolescents of different origins, but it requires supportive and committed adults who offer social support and structured social activities for adolescents.

Populärvetenskaplig sammanfattning på svenska

Omkring en av fyra personer i Sverige har utländsk bakgrund. Integrationen av personer med utländsk bakgrund har blivit en viktig politisk fråga och en stor utmaning för det svenska samhället. Samtidigt pågår det en diskussion om vad begreppet *integration* innebär. Vem ska integreras och på vilket sätt? Räcker det att "blanda" människor från olika bakgrund i samma bostadsområden, arbetsplatser och skolor för att åstadkomma integration? Avhandlingen diskuterar dessa frågor. Syftet är att förstå hur social integration kan uppstå.

Jag inleder med att diskutera innebörden av begreppen *utländsk bakgrund* och *social integration*. I likhet med Statistikmyndigheten använder jag begreppet *utländsk bakgrund* för att referera till personer som är födda i ett annat land än Sverige eller som har två föräldrar födda i andra länder. Jag menar att begreppet *utländsk bakgrund* är bättre än många andra liknande begrepp eftersom det inte antyder något om varför personerna (eller deras föräldrar) har migrerat och det antyder inget om deras identitet (en person kan ha utländsk bakgrund och ändå identifiera sig helt som svensk). Jag argumenterar för att ett samhälle präglas av *social integration* när personer med olika bakgrund har nära, personliga relationer till varandra. Social integration (med betoning på ordet *social*) skiljer sig från andra former av integration, som kan vara relaterade till deltagande på arbetsmarknaden, kultur eller identitet. Social integration tycks vara viktig för att andra former av integration ska kunna ske. Utgångspunkten i avhandlingen är att ungdomar med utländsk bakgrund är socialt integrerade när de både har vänner med utländsk bakgrund och vänner med inhemsk bakgrund. Ungdomar med utländsk bakgrund behöver således inte "överge" gamla vänner med utländsk bakgrund för att bli socialt integrerade, men de behöver även hitta vänner med inhemsk bakgrund.

Många ungdomar upplever dock att det är svårt att bli vän med kamrater som har en annan bakgrund. Det är välbelagt i tidigare forskning att de flesta ungdomar föredrar att umgås med dem som de upplever att de liknar. Konsekvensen av detta är att vänskapsnätverk blir segregerade och dessa segregerade vänskapsnätverk kan leda till olika utmaningar för samhället, såsom konflikter eller problematiska subkulturer i marginaliserade grupper.

Det behövs därför kunskap som kan visa hur ungdomar med olika bakgrund kan bli vänner trots att de upplever sig vara olika.

Avhandlingen presenterar fyra olika studier som har publicerats, eller som avses publiceras, i vetenskapliga tidskrifter. Den första studien analyserade intervjuer med tolv flickor som tillsammans med sina föräldrar hade sökt och fått asyl i Sverige. Dessa intervjuer inhämtades från forskningsprojektet *Familjens anpassningsstrategier*, som var longitudinellt och samlade data från samma deltagare under tre års tid. Deltagarna bodde i områden med låg socioekonomisk status och en stor andel invånare med utländsk bakgrund. Deltagarna hade nyligen migrerat till Sverige från Mellanöstern. Resultaten av studien visade att flickorna till stor del umgicks med sina syskon och andra släktingar som vänner. Det framgick att flickorna inte såg på vänner och familjemedlemmar som uteslutande kategorier utan det var möjligt att vara både vän och familjemedlem. Flickorna berättade att de upplevde att de var så olika ungdomar med inhemsk bakgrund att det var svårt att bli vän med dem. Trots att de flesta flickorna träffade ungdomar med andra bakgrunder i skolan så blev de sällan vänner med dem, förutom på ett ytligt plan. Flickorna upplevde även vissa konflikter med ungdomar med andra bakgrunder.

Den andra studien genomförde statistiska analyser för att undersöka hur ungdomar påverkades av att ha kontrollerande och stöttande föräldrar när de valde vänner. Datamaterialet kom från enkäter som hade delats ut genom forskningsprojektet *Longitudinal Research on Development In Adolescence* (LoRDIA). LoRDIA samlade in data om bland annat ungdomars vänskapsnätverk, föräldrarelationer, skolerfarenheter, psykiska hälsa och användning av tobak, alkohol och droger. Datamaterialet var longitudinellt och samlades in genom årliga utdelningar av enkäter och insamling av registerinformation från årskurs sex eller sju i grundskolan upp till årskurs två i gymnasiet, med undantag för första årskursen i gymnasiet, då ingen data samlades in. LoRDIA vände sig till nästan 2000 ungdomar i fyra kommuner och av de som deltog valdes 471 ungdomar ut till den andra studien, utifrån sammansättningen av deras skolklasser och antalet svarande i dessa. Resultatet av de statistiska analyserna visade att ungdomarna oftare blev vänner med klasskamrater med en annan bakgrund om de hade stöttande föräldrar och de blev mindre ofta vänner med klasskamrater med en annan bakgrund om de hade kontrollerande föräldrar. Ungdomar med utländsk bakgrund uppgav oftare än ungdomar med inhemsk bakgrund att de upplevde att deras föräldrar var kontrollerande.

Även den tredje studien analyserade longitudinella data som hade samlats in genom LoRDIA. Till denna studie valdes 203 ungdomar med utländsk bakgrund ut. Studien genomförde statistiska analyser för att undersöka om ungdomar med utländsk bakgrund som besökte fritidsgårdar eller deltog i organiserade fritidsaktiviteter med vuxna ledare (såsom idrott eller kulturverksamheter) fick fler vänner. Resultatet visade att ungdomar med utländsk bakgrund som besökte fritidsgårdar enbart fick fler vänner med utländsk bakgrund. Ungdomar med utländsk bakgrund som deltog i organiserade aktiviteter med vuxna ledare fick däremot fler vänner överlag, oavsett vännernas bakgrund. En kompletterande analys av hela LoRDIA:s datamaterial visade också att ungdomarna hade färre vänner av en annan bakgrund än deras egen i den andra insamlingsvågen jämfört med den första insamlingsvågen.

Den fjärde och sista studien analyserade longitudinella data från 406 ungdomar som ingick i LoRDIA. Denna studie syftade till att undersöka om ungdomar som deltog i olika former av digitala fritidssysselsättningar (som spelade digitala spel, kommunicerade online eller tittade på videoklipp) fick fler eller färre vänner. Statistiska analyser visade att ungdomar med inhemsk bakgrund som oftare spelade digitala spel hade färre vänner utanför sina klasser och fick färre vänner med inhemsk bakgrund i sina egna klasser. Ungdomar med utländsk bakgrund som oftare kommunicerade online hade fler vänner utanför klassen, men de fick färre vänner i sina klasser (i synnerhet förlorade de vänner med inhemsk bakgrund). Inga andra tydliga resultat framgick.

Genom att diskutera de fyra studierna i förhållande till tidigare forskning drar jag två övergripande slutsatser, som jag presenterar i avhandlingens sista avsnitt. Min första slutsats är att ungdomar med utländsk bakgrund generellt inte blir vän med fler ungdomar med inhemsk bakgrund enbart genom att de träffar ungdomar med inhemsk bakgrund i skolan. Social integration är alltså inget som sker automatiskt enbart för att ungdomar med olika bakgrund "blandas" i samma skolor. Denna slutsats får stöd av samtliga studier, som visade att ungdomar med olika bakgrund inte spontant blev vän med varandra i högre utsträckning. I stället visade åtminstone den tredje studien att ungdomarna med tiden fick färre vänner med en annan bakgrund än deras egen, trots att de hade skolkamrater med andra bakgrunder.

Denna slutsats går på tvärs med antaganden som görs i politiska förslag och utredningar, som antyder att social integration kan åstadkommas genom att personer med olika bakgrund "blandas" i samma bostadsområden, skolor

och arbetsplatser. Jag menar inte att det är fel att ungdomar med olika bakgrund blandas. Tvärtom hävdar jag att det är nödvändigt att ungdomar med olika bakgrunder blandas, eftersom det annars inte finns någon möjlighet att de kan bli vänner. Dock hävdar jag att det inte räcker att de möts i olika sammanhang, utan det krävs ytterligare insatser för att möjliggöra att ungdomarna ska kunna bli vänner med varandra. Denna slutsats stöds av annan forskning som nyligen har gjorts baserad på data från flera europeiska länder. Tidigare forskning har också visat att personer med olika bakgrund som träffas och möts utan att bli vänner inte behöver bli mindre fördomsfulla. Ungdomar med olika bakgrund som blir vänner med varandra tycks däremot bli mindre fördomsfulla. Det är därför viktigt att ungdomar med olika bakgrund inte bara blandas i samma skolor och bostadsområden utan också får möjligheten att bli vänner.

Den andra övergripande slutsatsen är att vuxna måste engagera sig och stötta ungdomar för att social integration av ungdomar med utländsk bakgrund ska vara möjlig. Denna slutsats är nära kopplad till den första. Eftersom ungdomar med olika bakgrund inte per automatik blir vänner med varandra över tid bara för att de träffas i samma skolor och bostadsområden så behövs vuxna som kan hjälpa till att underlätta för ungdomarna att bli vänner. Studierna i avhandlingen visade att ungdomarna oftare blir vänner med kamrater med en annan bakgrund om de har stöttande föräldrar och om vuxna engagerar sig som ledare i organiserade fritidsaktiviteter. Sociala miljöer som hade en mindre tydlig närvaro av vuxna—såsom fritidsgårdar och digitala fritidssysselsättningar—underlättade däremot inte vänskap mellan ungdomar med olika bakgrund. Det framgick också att kontrollerande föräldrar gjorde det svårare för ungdomarna att bli vänner med kamrater med en annan bakgrund. Alla dessa resultat tyder på att stöttande och engagerade vuxna är nödvändiga för att möjliggöra vänskap mellan ungdomar med olika bakgrund.

Avhandlingen har flera tydliga styrkor och begränsningar, varav åtminstone de viktigaste bör nämnas. Till att börja med var det en styrka att deltagarna från forskningsprojekten Familjens anpassningsstrategier och LoRDIA kompletterade varandra. Deltagarna i Familjens anpassningsstrategier var första generationens flyktingar bosatta i områden med låg socioekonomisk status och ett större antal invånare med utländsk bakgrund. Deltagarna i LoRDIA var däremot andra generationens immigranter bosatta i områden med relativt högre socioekonomisk status och färre invånare med utländsk bakgrund. Det faktum att deltagarna

kompletterade varandra gav möjligheter att undersöka förutsättningar för social integration för olika grupper, i olika kontexter.

En svårighet som jag har behövt ta hänsyn till i arbetet med avhandlingen är begreppet *utländsk bakgrund*. Detta begrepp ”klumpar samman” personer med vitt olika bakgrund, från många olika länder. Det kan vara problematiskt att klumpa samman personer med olika bakgrunder, eftersom det till exempel är stor skillnad mellan livserfarenheterna hos personer med ursprung i Norge och Peru. Dock var det nödvändigt att använda detta breda begrepp i avhandlingen på grund av den stora mångfalden av bakgrunder som deltagarna hade.

Avslutningsvis var det en styrka att avhandlingen analyserade longitudinella data som hade samlats in över tid, eftersom detta gjorde det mer rimligt att dra slutsatser om möjliga orsakssamband. Analyser av longitudinella data kan nämligen visa vad som kom först (orsaken) och vad som skedde därefter (resultatet). Dock är det alltid mycket svårt att dra säkra slutsatser om orsakssamband, så avhandlingens resultat måste tolkas försiktigt.

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Appendix 1: Scale items

Study II

Scale	Items
Supportive parent-child relationships	I know that mom is there for me when I need her.
	I know that dad is there for me when I need him.
	I know that I can try, mom supports me.
	I know that I can try, dad supports me.
	Mom makes me feel better.
	Dad makes me feel better.
	Mom encourages me to fulfill my dreams.
	Dad encourages me to fulfill my dreams.

Study III

Scale	Items
Substance use	Have you smoked tobacco?
	Have you used snuff tobacco?
	Have you drunk alcohol, more than a single sip? (Do not count low-alcohol beer or cider.)
	Have you become drunk?
	Have you used pot, marijuana, spice, or cannabis?
	Have you used other drugs? (This includes e.g. ecstasy, GHB, amphetamine, heroin, cocaine, or narcotics-labeled drugs.)

Understanding the social integration of adolescents of foreign origin:

Longitudinal investigations of inter-origin friendship formation

The present dissertation aims to understand some of the opportunities for, and influences on, the social integration of adolescents of foreign origin in Sweden. Informed by previous research, the dissertation suggests that successful social integration involves friendship formation between peers of similar origins (intra-origin friendship formation) as well as friendship formation between peers of different origins (inter-origin friendship formation). Social integration can be difficult to achieve in practice because most individuals tend to be homophilic and form intra-origin friendships rather than inter-origin friendships.

Four studies based on longitudinal data are presented in the dissertation. The first study seeks to widen the understanding of refugee girls' friendship formation through a qualitative analysis of interviews with refugee girls. The second study estimates stochastic actor-oriented models to investigate the friendship formation of adolescents with supportive and/or controlling parent-child relationships. The third article presents cross-lagged panel models for the reciprocal longitudinal associations between friendship formation and two forms of leisure: visits to youth centers and participation in structured leisure activities. Finally, the fourth study uses stochastic actor-oriented models to analyze with whom adolescents form friendships when they are involved in different forms of digital leisure, including online communication, video watching, and digital gaming.

All four studies indicate that the social integration of adolescents of foreign origin is not an automatic process that invariably happens when adolescents of different origins are mixed in the same location. When adolescents organize their own social lives away from the involvement of adults, they seem to remain or become more homophilic and form more friendships with peers of their own origin. By contrast, native and foreign adolescents tend to form more inter-origin friendships when adults provide them with support and structured social activities. In other words, the social integration of foreign adolescents seems to require supportive and committed adults, who contribute to facilitating inter-origin friendship formation.



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