Birds of a feather ... Selection and socialization processes in youths' social networks

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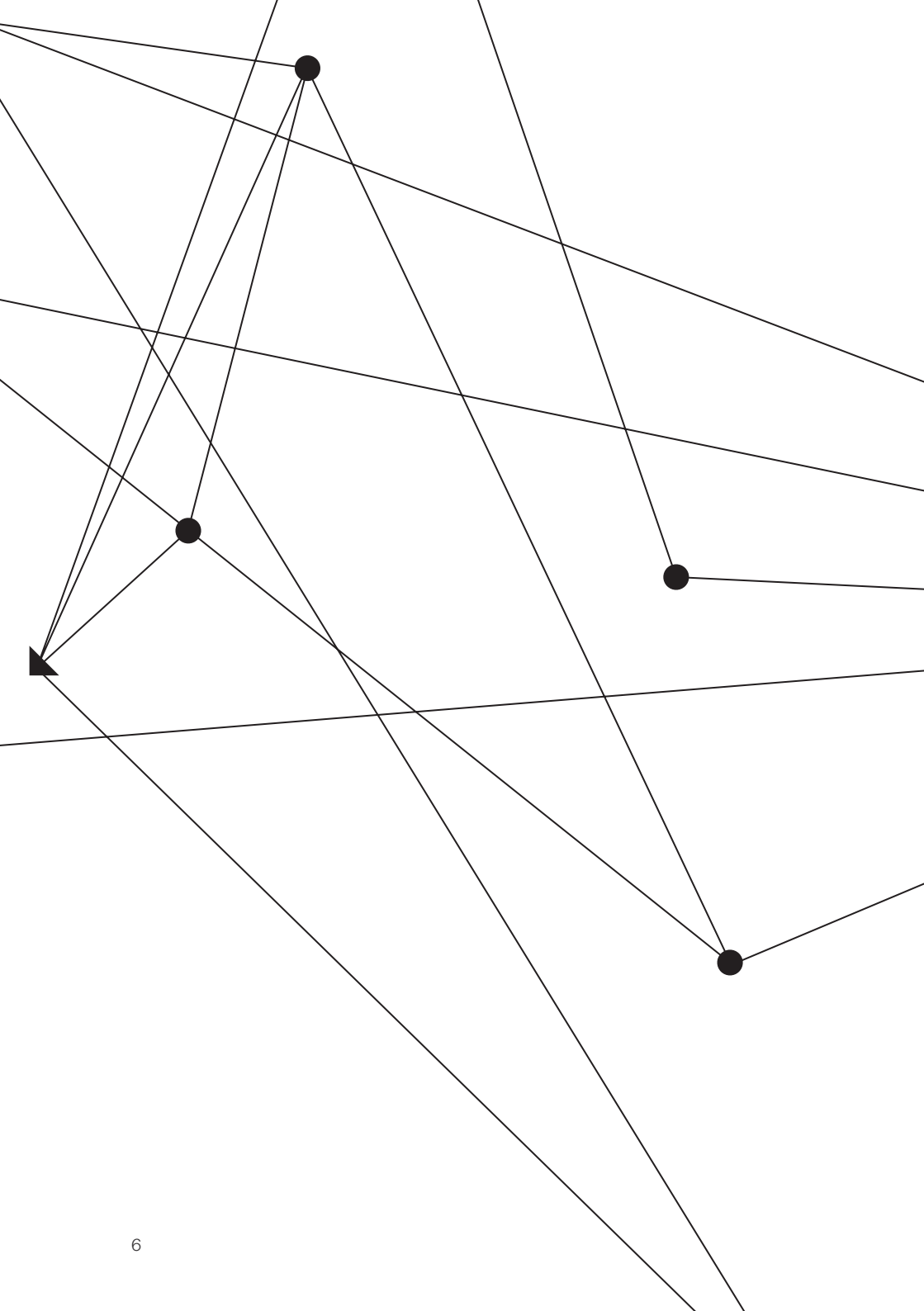
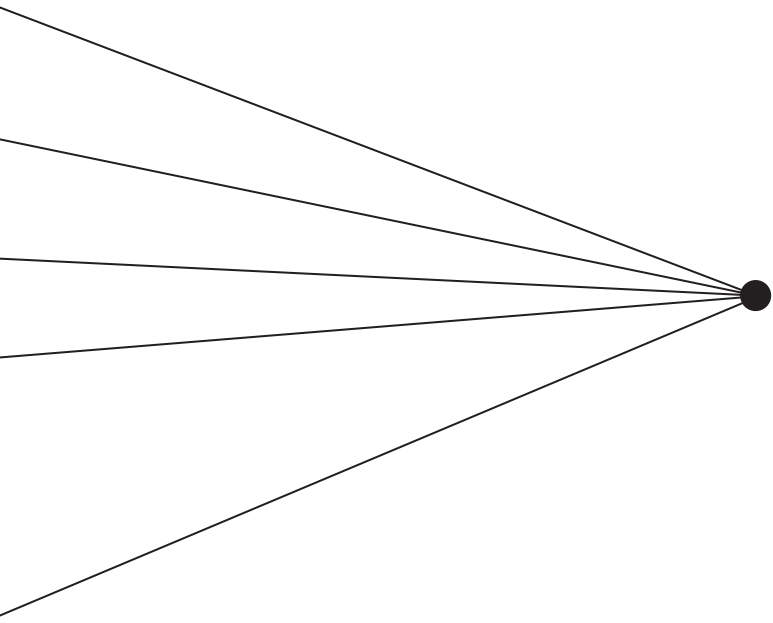


CHAPTER 1

Introduction



The studies in this thesis focus on factors that both influence peer relationships and are influenced by peer relationships. Although we focus on the school context, it is possible that these factors are also important beyond school in students' future lives. Peer relationships are essential for children and adolescents: developing and maintaining peer relationships is a prime developmental task (Masten & Coatsworth, 1998). Through (peer) relationships, children and adolescents learn and practice age-appropriate social skills, experience group bonding, and develop a sense of identity by both identifying with and differentiating themselves from others (Vedder & Van Geel, in press). Peer contacts allow children and adolescents to experiment with a variety of alternative behaviors, and to experience the effects of such behaviors on others as well as on themselves (Kwon & Lease, 2014; Ladd, 2005). The focus of this thesis is on factors that determine with whom adolescents make contact (also known as selection factors), and on the effects of peer contacts (also known as socialization factors) on these factors.

1 Homophily, Selection and Socialization

During adolescence, the importance of peer relations is often assumed to increase while the relative influence of parents and teachers decreases (Masten, Juvonen, & Spatzier, 2009). The peer group becomes more influential, at least with respect to specific functions like developing social competence and intimate relationships (Rice & Mulkeen, 1995). Given the importance of peer relationships, researchers have studied not just their role in the development of social competence, but also to what extent peer relationships impact other aspects of young people's lives, such as their cognitive and academic development and psychological wellbeing (Parker, Rubin, Erath, Wojslawowicz, & Buskirk, 2006; Ryan, 2000). Likewise, researchers have wondered whether adolescents' choices to start, maintain or end relationships with peers are formed on the basis of particular manifestations of their development (specifically, certain behaviors or characteristics), or whether such choices depend on opportunity. If behaviors and characteristics do play a role in relationship choices, the question is which

behaviors and characteristics (Fortuin, Van Geel, & Vedder, 2015)? A quality that may influence adolescents' choices about starting, maintaining, or ending relationships is similarity between the adolescents and peers; a phenomenon also referred to as homophily (e.g., Mercer & DeRosier, 2010). Being or becoming similar with regard to characteristics (that matter to adolescents) contributes to mutual acceptance and popularity (Laursen, Hafen, Kerr, & Stattin, 2012). Friends tend to be alike on many characteristics such as ethnic background (Kupersmidt, DeRosier, & Patterson, 1995; Moody, 2001), age and sex (McPherson, Smith-Lovin, & Cook, 2001) academic achievement (Kiuru, Nurmi, Aunola, & Salmela-Aro, 2009, Wentzel, Barry, & Caldwell, 2004), academic focus (Barth, Dunlap, Dane, Lochman, & Wells, 2004), achievement motivation (Hafen, Laursen, Burk, Kerr, & Stattin, 2011; Ryan, 2000), deviant behavior (Berndt & Keefe, 1995; Jaccard, Blanton, & Dodge, 2005), delinquency (Burk, Kerr, & Stattin, 2008; Hafen et al., 2011), alcohol use (Knecht, Burk, Weesie, & Steglich, 2011), and depressive symptoms (Kiuru, Burk, Laursen, Nurmi, & Salmela-Aro, 2012; Van Zalk, Kerr, Branje, Stattin, & Meeus, 2010).

In this thesis, we focus on characteristics that have specific relevance for school success; that is, characteristics that might predict the selection of peers within school and those that might hinder or stimulate developments relevant for students' school careers. We begin by focusing on interethnic contact. This characteristic is deemed so important for student interaction and students' future that schools are being stipulated by law to take this characteristic carefully into consideration (e.g., Besluit vernieuwde kerndoelen Wet Primair Onderwijs, 2015; http://wetten.overheid.nl/BWBR0018844/geldigheidsdatum_29-10-2015). Students grow up in a multicultural society and thus need to learn about cultural diversity. Schools can contribute to social integration, social cohesion and respect for cultural diversity in society (Berlet et al., 2008). It has even been suggested that schools are the most important context for establishing social cohesion and for preparing students for participation in a multicultural society (Masson & Verkuyten, 1993).

An important characteristic of social cohesion and participation is the focus of chapter two, viz. positive interethnic contact between students in a classroom. Interethnic contact has been found to be effective in reducing intergroup prejudice (Beelmann & Heinemann, 2014; Pettigrew & Tropp, 2006). However, many studies have found that merely being in the same classroom is not enough to establish interethnic contact; oftentimes, students prefer to have contact with students of similar ethnic backgrounds (Kupersmidt et al., 1995; Moody, 2001). In the study in Chapter 2 we focus on a distinction between majority and minority students, firstly because there are often too few students of a particular immigrant background (e.g., Turkish, Moroccan, and Surinamese) in a classroom to allow for meaningful analyses of intra-ethnic contact in these groups. Secondly majority members' prejudice towards ethnic minorities emerges at a young age when they do not or hardly distinguish between specific ethnic groups, while ethnic minorities' prejudice towards the ethnic majority begins generally much later but referring to the same common majority group, when they are adolescents (Raabe & Beelmann, 2011). A possible explanation may be that for ethnic minority children, contact with ethnic majority children in and through school may provide valuable cultural learning opportunities, needed to participate successfully in the majority culture (Horenczyk & Tatar, 1998). Thus while we cannot analyze every form of intra-ethnic contact, we do address what is arguably the most important ethnic division in the classroom, and we analyze this for friendship and more casual contacts. It is important to note that we do not test the underlying mechanisms that could explain *why* children prefer or do not prefer same ethnic friendships. However, potential mechanisms that may explain ethnic homophily include hidden homophily (McPherson, Smith-Lovin, & Cook, 2001), which suggests that people who share an ethnicity also share other traits such as values, attitudes and tastes, making it easier for them to become friends. Another potential mechanism to explain ethnic homophily is *aversive racism* (Gaertner & Dovidion, 1986; Dovidio & Gaertner, 2004,) that is, that people today hold an egalitarian set of values, but still feel (unconscious) negative attitudes towards people of other ethnicities. Though the egalitarian values may prohibit blatant acts of discrimination, negative

attitudes may subtly influence behavior, and may make interethnic friendship less likely.

In our second study (chapter three), we focused on characteristics that are more specifically akin to students' school lives, viz., students' academic achievements. Although students in peer networks have previously been found to be similar in academic achievement (Chen, Chang, & He, 2003; Kiuru et al., 2009; Kurdek & Sinclair, 2000; Liu & Chen, 2003, Wentzel et al., 2004), academic focus (Barth et al., 2004), and the values they attach to academic standards (Rydell Altermatt & Pomerantz, 2003), little is known about why students are similar with regard to academic achievement. In this study, we address socialization and selection as two possible explanations. Again, we do not propose to study the underlying mechanisms, but it is known that adolescents social groups often have their own set of values, and some groups of friends may favor learning, good grades and a compliant attitude towards the teacher, whereas other social groups promote rule breaking behavior, deviancy against adult standards, and do not value school achievement. Such peer groups may use a variety of mechanisms, such as teasing or direct confrontation, to ensure that members adhere to the rules of the social group (England & Petro, 1998; Portes & Zhou, 1993). In our study, we determine whether similarity in academic achievement is the result of selection or socialization processes.

In our last study (chapter four) we focus on similarity between peers on internalizing and externalizing problem behavior. Problem behaviors frequently lead to expulsion or suspensions (Coskun, Van Geel, & Vedder, 2015); thus, it important in the light of educational attainment to describe the role of peers as regards these types of problem behaviors. Similarity of peers with regard to externalizing behaviors (e.g., Burk et al., 2008; Burk, Steglich, & Snijders, 2007; Steglich, Snijders, & West, 2006; Svensson, Burk, Stattin, & Kerr, 2012; Urberg, Degirmencioglu, & Tolson, 1998; Weerman, 2011) and internalizing behaviors (e.g., Kiuru et al., 2012; Reitz, Dekovic, Meijer, & Engels, 2006; Stevens & Prinstein, 2005) have previously been reported.

Similarities in externalizing behaviors may be explained using the differential association theory (Matsueda, 2001), which states that individuals in a group with a favorable attitude towards problematic behaviors, will have access to opportunities to learn and use such behaviors. Hirschi (1969) suggests that adolescents with weak ties to society and conventional institutions may engage in antisocial behaviors, and select like-minded friends. Dishion and Dodge (2005) suggest that adolescents' antisocial behavior will increase as a result of peer approval expressed when adolescents share, discuss or plan aggressive and antisocial behaviors. Similarities in internalizing behavior may be explained by co-rumination. Co-rumination refers to the excessive discussion of problems between peers. It may simultaneously strengthen friendships, and contribute to an increase in internalizing problems (Rose, 2002; Rose, Carlson, & Waller, 2007). Withdrawal and avoidance have been suggested as other explanations for the similarity of peer groups in terms of internalizing problems (Schaefer, Kornieko, & Fox, 2011). Avoidance here refers to a process wherein adolescents tend not to befriend peers with a certain characteristic (for example internalizing problems), whereas withdrawal here refers to a process wherein adolescents with a certain characteristic tend to withdraw themselves from a group of peers. Because adolescents with internalizing (or externalizing) problems may be avoided by, or withdraw themselves from groups of dissimilar peers, they may eventually be left with a group of peers that are similar in terms of problem behavior. In this study, we test selection, socialization, avoidance and withdrawal as possible explanations for similarity in both internalizing and externalizing problems.

The aim of the studies described in this thesis is to explore which of these characteristics function as *selection* factors for peer relations and which characteristics are *influenced* by the peer group. These two effects, known respectively as selection and socialization, have been the source of debate about the similarity of friends. If adolescents form a group sharing characteristics, how did this shared similarity between the adolescents come about? Adolescents who were already alike could select one another, and

by doing so a homogeneous peer group would be established (Kadushin, 2012). This effect is defined as selection. If peers influence one another to become more alike with respect to particular behaviors or characteristics, the end result is also a peer group which will become more homogeneous over time, as regards those behaviors and characteristics. This effect is known as socialization. Kandel (1978) was one of the first researchers to differentiate between selection and socialization. Both effects, and specifically the interplay between selection and socialization, are important in studying the peer context. Other researchers have conceptualized individuals as agents that actively create their own social context (e.g., Scarr & McCartney, 1983). In this way, students both define their context by selecting peers and in turn are influenced by said contexts. In our first study, on ethnic background, we studied solely selection effects, because ethnic background is a given characteristic not prone to socialization. In our second study, on academic achievement, we studied both selection and socialization. In our third study, on internalizing and externalizing problem behavior, we studied selection, socialization, avoidance and withdrawal. We found no studies reporting students being rejected by peers on the basis of academic achievement, or of students withdrawing based on their achievement. However, there is some evidence that problem behavior of students might lead to avoidance of these students and withdrawal of these students from 'regular' peer contact (Schaefer et al., 2011), which is why we chose to include all four effects in the last study.

2 Types of Peer Relations and Networks

The volume of literature on peer relations is huge, and not all results of different studies are instantly comparable, as different definitions of friendship, liking, positive contact and popularity (among others) are often used, and different forms of peer relations are the focus of different studies. Two important distinctions to be made in peer relation research are the *kind of peer relation* that the study focuses on and the type of network studied. As regards the kind of peer relations, researchers study a broad variety, ranging from casual

acquaintances to intimate friends, from peers who associate with each other to peers who collaboratively work on an assignment or project, and from a dyad to a larger social network or peer group. There are many differences between the different types of peer relationships, such as average size of the peer group or average number of friends, kind of activities undertaken together, and perhaps characteristics that function as selection criteria or that are influenced by said relationship (Zimmer-Gembeck & Kindermann, 2010). In this thesis, we describe two different forms of peer relationships. In the first study, we describe both friendship networks and networks of peers that interact frequently, without specifying what 'label' is applicable to this interaction. In studies 2 and 3, we focus solely on networks based on the 'liking' of students. We coin these 'friendship networks' as well although of course there is a conceptual difference between liking and friendship. Friendship is often defined as an intimate and enduring tie between peers (Kindermann & Skinner, 2012). Some researchers define 'friendship' as reciprocated ties between peers, because reciprocity rises when persons feel closer to each other (Buunk & Prins, 1998), and unilateral peer nominations function more as a personal preference than as a strong mutual bond (for a discussion and empirical evidence, see Kuhnt & Brust, 2014). When students name who their friends are, they in fact voice their opinion that a certain friendship exists, even though studies on the reciprocity of friendship show that not all friendship nominations are reciprocated. The question arises whether 'true' friendship only exists if both parties agree on the existence of the bond, and which 'friendship' is more influential, a friendship that is reciprocated, or a friendship that is unilaterally desired by one party. There is evidence for both of the latter possibilities, at least with regard to alcohol use and depression (Giletta et al., 2012). Some researchers have coined unilateral friendships as 'preferred' or 'desired friendships' (e.g., Sijtsema, Lindenberg, & Veenstra, 2010). Kindermann and Gest (2009) state that the definition partly depends on the researchers' field: "developmentalists see reciprocity as a requirement: A friendship exists when both individuals agree on the friendship: sociologists tend to view unreciprocated friendship as key reference-groups or as links that connect larger groups" (p. 103). When comparing results from different

studies, it is important to determine which definition of friendship is used in the studies. In fact, authors of studies into selection and socialization effects have used different measurements of 'friends'. These range from "who are your best friends in class" (Knecht et al., 2011), "nominate up to three same-grade peers with whom you most like to spend time" (Kiuru et al., 2012) to "participants identified up to three important peers, who were defined as someone you talk with, hang out with, and do things with."....Participants also indicated whether those nominated were friends, siblings, romantic partners, or others (Popp, Laursen, Kerr, Stattin, & Burk, 2008). In our second and third study, we chose to define 'friendship' networks based on unilateral liking nominations ("name which classmates you like best"). We will return to the distinction between reciprocated friendship and unilateral 'liking' in the general discussion of this thesis.

Larger networks or groups of friends can be identified by asking, for instance, each student in a class to name all of her or his friends. Typically, in studies focusing on larger friendship or peer groups, unilateral ties are used to describe the complex dynamics within these groups (see for example Dijkstra, Cillessen, & Borch, 2013; Sentse, Kiuru, Veenstra, & Salmivalli, 2014; Sijtsema, Ojanen et al., 2010). Using unilateral nominations allows us to study effects such as alter and ego effects. Alter effects describe whether students with certain characteristics are more sought out as friends, hence are more popular. Ego effects describe whether students with certain characteristics are students who are more active in seeking out friendships.

As mentioned earlier, the second important distinction in peer relations studies is the *type of network* studied. If unilateral nominations of individual students are used (nominations of friends, acquaintances, classmates that are liked), the resulting network of relationships is *directed*. This implies that the flow or direction of relations is visible, e.g., that student A might like student B, whereas student B does not reciprocate. This type of network is especially interesting when studying socialization, as influence in this example might flow from student B towards student A, but not from student A towards B, as

student B does not consider student A his friend. It is also possible to define *undirected* networks, where ties between two students do or do not exist, but if they exist the direction is unspecified (Scott, 2000; Wasserman & Faust, 1994). One way to define these networks is to use individual nominations and only include ties where both parties agree on the existence of the relation, i.e. reciprocated ties. Another, and in our eyes more interesting, way to define undirected networks, is to ask *all* students in a classroom, to name "who hangs out with whom". In this approach, students function as informants on the social structure in a class. This method is called social-cognitive mapping. Social-cognitive mapping studies overlap with, but also differ from friendship studies (Kindermann & Skinner, 2012). The latter do not try to get hold of the social structure of a group of adolescents, but of a particular quality represented in a social network, viz., who is befriended with whom, what is the significance of the relationship, or what are particular developmental or educational outcomes or consequences of the characteristics, aspirations, and attitudes represented in the social network. Social interaction networks or social cognitive maps are non-directed networks. In these networks, the direction of the relation is not visible. However, the fact that these networks can be visualized based on the information of all classmates instead of personal nominations, makes them very interesting from our point of view. They represent the general opinion about the social structure of the class and as such are more 'inter-subjective' than networks based on personal nominations. These networks are more reliable in this sense, because they are based on multiple observations of the same peers (Kindermann, 2007). Indeed, Kindermann and Gest (2009) indicate that, although larger groups or networks could be identified via self-reports, students tend to exaggerate associations with popular peers, whereas basing networks on the multiple observations of classmates leads to a shared consensus about the social structure in a class. An added benefit of this technique is that the network can be adequately described even when some of the students are missing on the day(s) of data collection or do not partake in the study. An important distinction between peer networks based on social cognitive mapping and those based on self-report, is that social cognitive mapping give us information about the

(frequent) interactions in the classroom, whereas self-reports generally give us information about the friendship or liking networks, rather than interactions (Zimmer-Gembeck & Kindermann, 2010). The two represent different contexts that are both worthy of exploration. In the first study of this thesis, we use both types of approaches to class-related social networks: unilateral nominations, resulting in directed networks of friendship, and social cognitive mapping, resulting in undirected social interaction networks of interaction partners. In this study, one of the aims was to explore the role of certain selection characteristics, most importantly ethnic background, in different peer contexts and found similar findings for both approaches. This similarity and the wish to keep the designs used in the other studies sufficiently simple, allowing for a clear presentation of findings in one paper, made us decide to focus in the second and third study on directed networks based on unilateral liking nominations only.

3 Statistical Challenges

Statistical analyses often assume independent observations, which are per definition problematic in a shared group environment. Furthermore, it has for long been a challenge to disentangle selection and socialization effects. However, advances in the last decade in statistical techniques allow analyses that do not assume independent observations, and can disentangle socialization and selection effects. Exponential Random Graph Modelling (ERGM) can be used to describe networks of students. Furthermore, stochastic actor-oriented analysis (SIENA) allows for distinguishing and simultaneously testing both selection and socialization effects, but also avoidance and withdrawal effects which allows to further our understanding of the interplay of these effects, and does not assume independence of observations. The many advantages and options of these analyses are described in numerous studies (e.g., Burk et al., 2007; Veenstra, Dijkstra, Steglich, & Van Zalk, 2013; Veenstra & Steglich, 2012). In this thesis, both ERGM and SIENA are used to study selection, and SIENA also was used to study socialization, avoidance and withdrawal within peer relationships.

4 The Structure of this Thesis

The first study in this thesis, in which we used a cross-sectional design, primarily deals with ethnicity and cultural diversity. In this first study we worked with children in their last year of primary schooling. We compared two forms of peer relations: friendships and social networks. Friendships were identified by asking all students to name classmates that were their friends. The children themselves determined the criteria for friendship. The social networks were identified by asking all children in a classroom, "Who hangs out with whom". This study was cross-sectional and characterized by a single wave of data-collection, and as such it did not focus on developmental processes. Given the nature of ethnic background as a fixed characteristic this study is not intended to disentangle socialization and selection effects. What it did, however, is to control for children's sociometric status as popular or rejected children. This is important, to make sure that choosing friends or identifying a casual contact is not attributed to similarity in ethnic background, while children's choices actually are the result of their sociometric status.

For the second and third studies we used a longitudinal design. During one school year, we asked all students at three different time points, viz., at the start of the school year, in the winter and at the end of the school year, to complete questionnaires measuring a range of different variables. We also asked each student to name peers whom they liked. From these nominations, we constructed tables that signaled whether students selected others as peers whom they liked and whether they were selected as liked peers themselves. We collected our data in second year groups in secondary school. We visited 542 students in 24 classes in four different schools. Classes ranged from the lowest regular educational level in the Netherlands (VMBO) to the highest (VWO). This design allowed us to analyze and disentangle socialization and selection effects. During our analyses, it became clear that analyzing the data separately for each classroom hindered our aim to analyze multiple variables in the analyses. Crudely stated, trying to analyze 30 or so variables using data with 25 students in a class proved difficult. To enhance the possibility

to model more variables in a model, we merged the classroom data to school levels, creating data for five distinct schools; five, instead of four schools, because in one of the four schools, students from two different educational levels were analyzed separately.

The second study, reported in chapter 3, is entitled “Peers and academic achievement: a longitudinal study on selection and socialization effects of in-class friends.” Both common sense notions and many studies on cooperative learning (e.g., Gommans, Seger, Burk, & Scholte, 2015; Rohrbeck, Ginsburg-Block, Fantuzzo, & Miller, 2003)) and studies on class disruptive behavior (Salmivalli, 2009; Wilson & Lipsey, 2007) demonstrate that classmates can influence each other for better and for worse. We use these studies as the basis for our expectation that peers may socialize each other towards negative or positive changes in school achievements. Chapter four entitled “Peer influences on internalizing and externalizing problems among adolescents: a longitudinal social network analysis”, focused on challenging youth behaviors This study is not just substantively different in that it focusses on problem behavior, but also because next to selection and socialization, avoidance and withdrawal were analyzed. As a result of withdrawal and avoidance, youth may end up with a peer group of similarly neglected or rejected youth (Schaefer et al., 2011).

The final chapter in this thesis is a general discussion. A summary of findings is followed by reflections on the theoretical implications, substantive issues that await further or even new studies, a discussion of methodological challenges and their link with substantive discussions, and, a short theoretical evaluation of the practical implications that were presented at the end of each of the chapters 2, 3 and 4.

5 References

Barth, J. M., Dunlap, S. T., Dane, H., Lochman, J. E., & Wells, K. C. (2004). Classroom environment influences on aggression, peer relations, and academic focus. *Journal of School Psychology, 42,* 115-133.

Beelmann, A., & Heinemann, K.S. (2014). Preventing prejudice and improving intergroup attitudes: A meta-analysis of child and adolescent training programs. *Journal of Applied Developmental Psychology, 35*, 10-24.

Berlet, I., Bulthuis, F., Jacobs, H., Langberg, M., Wanner, P. & Thijs, A. (2008). *Omgaan met culturele diversiteit in het onderwijs*. [Dealing with cultural diversity in schools]. Enschede: SLO.

Berndt, T. J. & Keefe, K. (1995). Friends' influence on adolescents' adjustment to school. *Child Development, 66*, 1312-1329.

Besluit vernieuwde kerndoelen Wet Primair Onderwijs, 2015; http://wetten.overheid.nl/BWBR0018844/geldigheidsdatum_29-10-2015

Burk, W. J., Kerr, M., & Stattin, H. (2008). The co-evolution of early adolescent friendship networks, school involvement, and delinquent behaviors. *Revue Français Sociologie, 49*, 499-522.

Burk, W. J., Steglich, C. E. G., & Snijders, T. A. B. (2007). Beyond dyadic interdependence: Actor-oriented models for co-evolving social networks and individual behaviors. *International Journal of Behavioral Development, 31*, 397-404.

Buunk. B., & Prins, K.S. (1998). Loneliness, exchange orientation, and reciprocity in friendships. *Personal Relationships, 5,* 1-14.

Chen, X., Chang. L., & He, Y. (2003). The peer group as a context: Mediating and moderating effects on relations between academic achievement and social functioning in Chinese children. *Child Development, 74,* 710-727.

Coskun, B., Van Geel, M., & Vedder, P. (2015). Exclusionary practices in secondary schools in the Netherlands: A comparison between students sent to out-of-school facilities and their non-referred peers. *Youth & Society, 47*, 615-633.

Dijkstra, J. K., Cillessen, A. H., & Borch, C. (2013). Popularity and adolescent friendship networks: Selection and influence dynamics. *Developmental Psychology*, *49*, 1242-1252.

Dishion, T. J., & Dodge, K. A. (2005). Peer contagion in interventions for children and adolescents: Moving towards an understanding of the ecology and dynamics of change. *Journal of Abnormal Child Psychology*, *33*, 395-400.

Dovidio, J. F., & Gaertner, S. L. (2004). Aversive racism. *Advances in experimental social psychology, 36,* 1-52.

England, E. M., & Petro, K. D. (1998). Middle School Students' Perceptions of Peer Groups Relative Judgments about Group Characteristics. *The Journal of Early Adolescence*, *18*, 349-373.

Fortuin, J., Van Geel, M., & Vedder, P. (2015). Peer influences on internalizing and externalizing problems among adolescents: a longitudinal social network analysis. *Journal of Youth and Adolescence, 54*, 887-897.

Gaertner, S. L., & Dovidio, J. F. (1986). *The aversive form of racism*. Academic Press.

Giletta, M., Scholte, R., Prinstein, M., Engels, R., Rabaglietti, E., & Burk, W.J. (2012). Friendship context matters: examining the domain specificity of alcohol and depression socialization among adolescents. *Journal of Abnormal Child Psychology, 40*, 1027-1043.

Gommans, R., Segers, E., Burk, W. J., & Scholte, R. H. J. (2015). The role of perceived popularity on collaborative learning: A dyadic perspective. *Journal of Educational Psychology, 107,* 599-608.

Hafen, C. A., Laursen, B., Burk, W. J., Kerr, M., & Stattin, H. (2011). Stable friends, unstable friends, and homophily: Similarity breeds constancy. *Personality and Individual Differences, 51,* 607-612.

Hirschi, T. (1969). *Causes of Delinquency.* University of California Press, Berkeley.

Horenczyk, G., & Tatar, M. (1998). Friendship expectations among immigrant adolescents and their host peers. *Journal of Adolescence, 21*, 69-82.

Jaccard, J., Blanton, H., & Dodge, T. (2005). Peer influences on risky behavior: An analysis of the effects of a close friend. *Developmental Psychology, 41,* 135-147.

Kadushin, C. (2012). *Understanding social network; theories, concepts and findings.* New York: Oxford University Press.

Kandel, D. (1978). Homophily, selection and socialization in adolescent friendships. *American Journal of Sociology, 84*, 427-436.

Kindermann, T. A. (2007). Effects of naturally existing peer groups on changes in academic engagement in a cohort of sixth graders. *Child Development, 78,* 1186-1203.

Kindermann, T. A., & Gest, S. D. (2009). Assessment of the peer group: Identifying social networks in natural settings and measuring their influence. In K. H. Rubin., W. Bukowski, & B. Laursen (Eds.). *Handbook of peer interactions, relationships, and group*s. New York, NY: Guilford.

Kindermann, T.A. & Skinner, E.A. (2012). Will the real peer group please stand up? A 'tensegrity' approach to examining the synergistic influences of per groups and friendship networks on academic development. In F. Pajares & T. Urdan (Series Eds.), *Adolescents and Education*, A. Ryan & G. Ladd (Volume Eds.), *Peer Relationships and Adjustment at School* (pp. 51-78). New York: Information Age Publishing.

Kiuru, N., Burk, W. J., Laursen, B., Nurmi, J. E., & Salmela-Aro, K. (2012). Is depression contagious? A test of alternative peer socialization mechanisms of depressive symptoms in adolescent peer networks. *Journal of Adolescent Health, 50*, 250-255.

Kiuru, N., Nurmi, J. E., Aunola, K., & Salmela-Aro, K. (2009). Peer group homogeneity in adolescents' school adjustment varies according to peer group type and gender. *International Journal of Behavioral Development, 33,* 65-76.

Knecht, A., Burk, W. J., Weesie, J., & Steglich, C. (2011). Friendship and alcohol use in early adolescence: a multilevel social network approach. *Journal of Research on Adolescence, 21,* 475-487.

Kuhnt, M., & Brust, O. (2014). Low reciprocity rates in acquaintance networks of young adults: Fact or artifact? *Social Network Analysis and Mining, 4*, 1-16.

Kupersmidt, J. B., deRosier, M. E., & Patterson, C. P. (1995). Similarity as the basis for children's friendships: the roles of sociometric status, aggressive and withdrawn behavior, academic achievement and demographic characteristics. *Journal of Social and Personal Relationships, 12*, 439-452.

Kurdek, L. A., & Sinclair, R. J. (2000). Psychological, family, and peer predictors of academic outcomes in first-through fifth-grade children. *Journal of Educational Psychology, 92,* 449-457.

Kwon, K., & Lease, A. M. (2014). Perceived influence of close friends, well-liked peers, and popular peers: Reputational or personal influence? *Journal of Social and Personal Relationships, 31*, 1116-1133.

Ladd, G. W. (2005). *Children's peer relations and social competence: A century of progress.* New Haven, CT: Yale University Press.

Laursen, B., Hafen, C. A., Kerr, M., & Stattin, H. (2012). Friend influence over adolescent problem behaviors as a function of relative peer acceptance: To be liked is to be emulated. *Journal of Abnormal Psychology, 121*, 88-94.

Liu, M. & Chen, X. (2003). Friendship networks and social, school and psychological adjustment in Chinese junior high school students. *Psychology in the Schools, 40*, 5-17.

Masson, C. N., & Verkuyten, M. (1993). Prejudice, ethnic identity, contact and ethnic group preferences among Dutch young adolescents. *Journal of Applied Social Psychology, 23*, 156-168.

Masten, A. S., & Coatsworth, J. D. (1998). The development of competence in favorable and unfavorable environments: Lessons from research on successful children. *American Psychologist, 53*, 205-220.

Masten, C. L., Juvonen, J., & Spatzier, A. (2009). Relative importance of parents and peers: Differences in academic and social behaviors at three grade levels spanning late childhood and early adolescence. *The Journal of Early Adolescence, 29*, 773-799.

Matsueda, R. L. (2001). Differential association theory. *Encyclopedia of Criminology and Deviant Behavior*, *1*, 125-130.

McPherson, M., Smith-Lovin, L., & Cook, J. M. (2001). Birds of a feather: Homophily in social networks. *Annual Review of Sociology, 27,* 415-444.

Mercer, S. H., & DeRosier, M. E. (2010). Selection and socialization of internalizing problems in middle childhood. *Journal of Social and Clinical Psychology, 29*, 1031-1056.

Moody, J. (2001). Race, school integration, and friendship segregation in America. *American Journal of Sociology, 107*, 679–716.

Parker, J. G., Rubin, K. H., Erath, S. A., Wojslawowicz, J. C., & Buskirk, A. A. (2006). Peer relationships, child development, and adjustment: A developmental psychopathology perspective. In D. Cicchetti & D. J. Cohen (Eds), *Developmental Psychopathology,* (pp. 419-493). Hoboken: John Wiley & Sons Inc.

Pettigrew, T., & Tropp, L. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology, 90*, 751-783.

Popp, D., Laursen, B. Kerr, M., Stattin, H., & Burk, W. J. (2008). Modeling homophily over time with an actor-partner interdependence model. *Developmental Psychology, 44,* 1028-1039.

Portes, A., & Zhou, M. (1993). The new second generation: Segmented assimilation and its variants. *The Annals of the American Academy of Political and Social Science*, *530*, 74-96.

Raabe, T., & Beelmann, A. (2011). Development of ethnic, racial, and national prejudice in childhood and adolescence: A multinational meta-analysis of age differences. *Child Development, 82*, 1715-1737.

Reitz, E., Deković, M., Meijer, A. M., & Engels, R. C. M. E. (2006). Longitudinal relations among parenting, best friends, and early adolescent problem behavior: Testing bidirectional effects. *The Journal of Early Adolescence, 26*, 272-295.

Rice, K. G., & Mulkeen, P. (1995). Relationships with parents and peers: A longitudinal study of adolescent intimacy. *Journal of Adolescent Research, 10*, 338-357.

Rohrbeck, C. A., Ginsburg-Block, M., Fantuzzo, J., & Miller, T. (2003). Peer-assisted learning interventions with elementary school students: A meta-analytic review. *Journal of Educational Psychology, 95*, 240-257.

Rose, A. J. (2002). Co-rumination in the friendships of girls and boys. *Child Development, 73,* 1830-1843.

Rose, A. J., Carlson, W., & Waller, E. M. (2007). Prospective associations of co-rumination with friendship and emotional adjustment: considering the socioemotional trade-offs of co-rumination. *Developmental Psychology*, *43*, 1019-1031.

Ryan, A. (2000). Peer groups as a context for the socialization of adolescents' motivation, engagement, and achievement in school. *Educational Psychologist, 35,* 101-111.

Rydell Altermatt, E., & Pomerantz, E. (2003). The development of competence-related and motivational beliefs: An investigation of similarity and influence among friends. *Journal of Educational Psychology, 95*, 111-123.

Salmivalli, C. (2009). Bullying and the peer group: A review. *Aggression and Violent Behavior, 15*, 112–120.

Scarr, S., & McCartney, K. (1983). How people make their own environments: A theory of genotype> environment effects. *Child Development, 54,* 424-435.

Schaefer, D., Kornieko, O., & Fox, A. (2011). Misery does not love company: network selection mechanisms and depression homophily. *American Sociological Review, 76*, 764-785.

Scott, J. (2000). *Social network analysis: A handbook*. Londen: Sage.

Sentse, M., Kiuru, N., Veenstra, R., & Salmivalli, C. (2014). A social network approach to the interplay between adolescents' bullying and likeability over time. *Journal of Youth and Adolescence*, *43*, 1409-1420.

Sijtsema, J. J., Lindenberg, S. M., & Veenstra, R. (2010). Do they get what they want or are they stuck with what they can get? Testing homophily against default selection for friendships of highly aggressive boys. The TRAILS study. *Journal of Abnormal Child Psychology, 38,* 803-813.

Sijtsema, J. J., Ojanen, T., Veenstra, R., Lindenberg, S., Hawley, P. H., & Little, T. D. (2010). Forms and functions of aggression in adolescent friendship selection and influence: A longitudinal social network analysis. *Social Development*, *19*, 515-534.

Steglich, C. E. G., Snijders, T. A. B., & West, P. (2006). Applying SIENA: An illustrative analysis of the coevolution of adolescent' friendship networks, taste in music, and alcohol consumption. *Methodology, 2*, 48-56.

Stevens, E., & Prinstein, M. J. (2005). Peer contagion of depressogenic attributional styles among adolescents: A longitudinal study. *Journal of Abnormal Child Psychology, 33*, 25–37.

Svensson, Y., Burk, W. J., Stattin, H., & Kerr, M. (2012). Peer selection and influence of delinquent behavior of immigrant and nonimmigrant youths: Does context matter? *International Journal of Behavioral Development*, *36*, 178-185.

Urberg, K. A., Degirmencioglu, S. M., & Tolson, J. M. (1998). Adolescent friendship selection and termination: The role of similarity*. Journal of Social and Personal Relationships, 15*, 703–710.

Van Zalk, M. H. W., Kerr, M. ,Branje, S. J. T., Stattin, H., & Meeus, W. (2010). It takes three: Selection, influence, and de-selection processes of depression in adolescent friendship networks. *Developmental Psychology,46*, 927-938.

Vedder, P., & Van Geel, M. (in press). Cultural identity development as a developmental resource. In N.J. Cabrera & B. Leyendecker (Eds.), *Handbook of Positive Development of Minority Children*. Amsterdam: Springer, Netherlands.

Veenstra, R., & Steglich, C. (2012). Actor-based model for network and behavior dynamics. In B. Laursen, T. D. Little, & N. A. Cards (Eds.), *Handbook of developmental research methods* (pp. 598-618). New York: Guilford.

Veenstra, R., Dijkstra, J. K., Steglich, C., & Van Zalk, M. H. W. (2013). Network-behavior dynamics. *Journal of Research on Adole*scence, *23*, 399-412.

Warr, M. (2005). Making delinquent friends: Adult supervision and children's affiliations. *Criminology, 43,* 77-106.

Weerman, F. M. (2011). Delinquent peers in context: A Longitudinal network analysis of selection and influence effects. *Criminology*, *49*, 253-286.

Wentzel, K. R., Barry, C., & Caldwell, K. A. (2004). Friendships in middle school; Influences on motivation and school adjustment. *Journal of Educational Psychology, 96*, 195-203.

Wasserman, S., & Faust, K. (1994). Social network analysis: Methods and applications. Cambridge: Cambridge University Press.

Wilson, S. J., & Lipsey, M. W. (2007). School-Based Interventions for Aggressive and Disruptive Behavior: Update of a Meta-Analysis. *American Journal of Preventive Medicine, 33*, 130–143.

Zimmer-Gembeck, M., & Kindermann, T. A. (Eds.). (2010). Capturing the peer context. [Special issue]. *Journal of Adolescence, 33.*