

University of Groningen

A social network perspective on bullying

Huitsing, Gijs

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version

Publisher's PDF, also known as Version of record

Publication date:

2014

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Huitsing, G. (2014). *A social network perspective on bullying*. [Thesis fully internal (DIV), University of Groningen]. University of Groningen.

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

Chapter 1

A social network perspective on bullying

1.1 Introduction

Since the pioneering work of Olweus (1978; 1993), the number of scholars that have been investigating bullying has increased tremendously. A simple search on *web of science* shows that from 2010 to 2014 (May), 2,736 articles were published with “bully*” in the title, whereas the same search results in 745 studies from 2000 to 2005 and 1,377 studies from 2005 to 2010. That bullying is studied so intensively can be understood because systematic victimization by peers may have severe consequences for victims (see for an overview of studies: Arseneault, Bowes, & Shakoor, 2009; see for meta-analyses: Hawker & Boulton, 2000; Reijntjes, Kamphuis, Prinzie, & Telch, 2010). Also bullies may face negative consequences such as heightened risk of violent, aggressive, or criminal behaviors (see for meta-analytic reviews: Ttofi, Farrington, Lösel, & Loeber, 2011; Ttofi, Farrington, & Lösel, 2012). If insights generated by research on bullying are successfully implemented in anti-bullying programs (which are on average successful in reducing bullying by 20-23 percent, see Ttofi & Farrington, 2011), investments in bullying research can be regarded as preventing both crime and health care costs for societies.

Despite the growing number of studies on bullying and victimization, the mechanisms behind bullying are not yet fully understood. One reason is that many investigations have approached bullying from an individual perspective. Children are categorized as bullies, victims, bully/victims (being both a bully and a victim), or uninvolved, and their bullying status is related to, for example, the home environment, school climate, or peer status, and to several other individual outcomes, such as depression, anxiety, school adjustment, or delinquency (see for meta-analyses: Cook, Williams, Guerra, Kim, & Sadek, 2010; Hong & Espelage, 2012b). Bullying, however, is a more complex phenomenon that takes place in a broader context. Bullying occurs by nature at the level of relationships, where a bully targets one or more specific victims. Moreover, bullies and victims are embedded in a larger peer group, where other children not directly involved have a role in influencing the bullying (participant role approach to bullying in schools, see for an overview: Salmivalli, 2010). Numerous studies have shown that the larger context is important for understanding bullying (a short overview is given by Salmivalli & Peets, 2009; Salmivalli, 2010). Hence, bullying is in essence a group process, and investigations into bullying should account for this larger peer context.

This dissertation approaches bullying in schools from a social network perspective. This means that bullying networks are studied, in which it is known *who is bullied by whom*. Bullying networks comprise relations between victims and bullies in so-called victim-bully dyads. In social network terminology, a dyad consists of a pair of actors and the ties between them. The dyads are investigated in the wider context of different ties to other children. The

combination of dyads at a higher analytical level can be typified as an emergent process: relatively simple interactions between children lead to complex patterns because children can be involved in several victim-bully dyads as well as other relations. Social network analyses capture the processes that occur at the individual, dyadic, and group level. Investigating bullying through social network analysis will help to understand bullying processes in the larger group context, while accounting for individual and dyadic processes. In this way, the research field is moving from an individual perspective to a perspective that adheres to the complex group phenomenon of bullying.

The final aim of research on bullying is for the insights to find their way to implementation in anti-bullying interventions. Many school-based prevention programs are based on assumptions of changing group-level social dynamics, but effectiveness analyses are often reduced to aggregation of children's relations at the individual level, thereby ignoring the complex interdependencies of network data, as pointed out explicitly by Gest, Osgood, Feinberg, Bierman, and Moody (2011). The social network perspective on bullying applied in this dissertation may generate new insights on our understanding of bullying in the group context. These insights hopefully will contribute to both the effectiveness analyses and further development of anti-bullying programs.

1.2 Bullying and Social Networks

Bullying and other negative experiences. Bullying is a topic on which almost everyone has an opinion, given that most people have had to deal with it during their own school time – as victim, bully, or bystander. There are, however, many misunderstandings about bullying. Bullying is easily confused with teasing, conflicts, fights, or aggression. In research on bullying, the most common definition was formulated by Olweus (1993). This definition is presented to children in the revised Olweus Bully/Victim Questionnaire (Olweus, 1996):

We say a student is being bullied when another student, or several other students, say mean and hurtful things [...], completely ignore or exclude [...], hit kick, or push [...], or tell lies or spread false rumors [...] about someone else, and other hurtful things like that.

We call it bullying when these negative behaviors happen repeatedly, and it is difficult for victimized students to defend themselves. We also call it bullying when students are teased repeatedly in a mean and hurtful way. But we do not call it bullying when the teasing is done in a friendly and playful way. It is also not bullying when two students of about equal strength or power argue or fight.

Olweus' definition contains three elements that distinguish bullying from other negative experiences. First, bullying is negative behavior that happens systematically. Just one or two incidental negative interpersonal experiences are not regarded as bullying. Second, there is a power difference between bullies and victims, meaning that bullies are stronger than victims, either physically or socially (e.g., having many friends). As a consequence, victims have difficulties in defending themselves. Finally, bullying is intentional behavior, meaning that bullies purposely harm victims in order to gain something from it. Therefore, bullying can be seen as strategic behavior (Veenstra, Lindenberg, Munniksmä, & Dijkstra, 2010; Volk, Camilleri, Dane, & Marini, 2012).

The power imbalance and repetitiveness can help to distinguish bullying from other negative acts. Being a victim of a single act of aggression is often confused with bullying. Moreover, being involved in a fight or conflict is usually temporary and it does not have to be in the context of a power imbalance (both parties can be equally strong). Although Olweus' definition helps to define bullying, the thin line between acceptable and unacceptable behavior remains. For example, with teasing, two parties have equal strength and do not have the intention to hurt each other. Teasing, however, can become unpleasant when it continues or gradually leads to a power imbalance between both parties. Therefore, whether behavior towards a person is positively or negatively evaluated can probably best be defined by the person experiencing the action.

Forms of bullying. Bullying can take various forms. A distinction is often made between direct and indirect bullying or aggression (Card, Stucky, Sawalani, & Little, 2008). Direct bullying is directly targeted at victims, in physical, verbal, or material forms. Indirect bullying is more subtle and aimed at damaging relationships, for instance through gossiping, rumor spreading, or excluding others (see for more information about forms of bullying: Mynard & Joseph, 2000; Salmivalli, Kärnä, & Poskiparta, 2011). A form of bullying that can occur both directly and indirectly is bullying through electronic means: cyberbullying. Cyberbullying is, relative to other forms of bullying, rare and victims of cyberbullying are very often victimized in multiple ways (Olweus, 2013; Salmivalli, Sainio, & Hodges, 2013). Contrary to the main belief that boys are bullying more directly and girls are bullying more indirectly, meta-analyses showed that boys are indeed more directly aggressive than girls but they do not differ in their levels of indirect aggression (Card et al., 2008).

This dissertation follows Olweus' definition when investigating bullying. Because bullying is a form of aggression (Olweus, 1993), lessons learned from research on aggression are sometimes applicable to bullying situations. Therefore, studies on aggression that are relevant for understanding and explaining bullying are referred to in this dissertation. Moreover, in this dissertation a general question is used to identify bullying ("By which classmates are you victimized?") without specifying any particular form of bullying. Using a

measure of bullying that was preceded by the definition provided by Olweus, children could indicate by whom they were victimized in any way.

Data collection methods. Several methods may be used to collect data to investigate bullying. Researchers have used observations (e.g., Hawkins, Pepler, & Craig, 2001; O'Connell, Pepler, & Craig, 1999), daily assessments in combination with diaries (e.g., Nishina & Juvonen, 2005), or child interviews (Perren & Alsaker, 2006). These methods can provide rich and detailed information about children's experiences, but they are costly and time-consuming. Others have used teacher-reports or parent-reports on bullying (e.g., Ladd & Kochenderfer-Ladd, 2002). Even when adults have regular opportunities to observe children (for example, in the classroom or in play settings), they may not always be aware of bullying incidents and are not necessarily informed by children. Children can also be asked themselves about bullying. This can be through self-reports (e.g., Olweus, 1996) or peer-reports (e.g., Salmivalli, Lagerspetz, Björkqvist, Österman, & Kaukiainen, 1996). Self-reports on bullying provide information on children's subjective experiences, whereas peer-reports (e.g., "Which classmates are bullying others?") provide information about the reputation a child has within the peer group. Children can be restricted in the number of nominations they are allowed to make (fixed number of nominations), but they can also be allowed to report as many peers as they want (unlimited number of peer nominations). In this dissertation, social network data were used to investigate bullying (obtained through questionnaires and child interviews), based on questions like "By which classmates are you victimized?" with children being allowed to make an unlimited number of nominations. These network questions are a combination of self- and peer-reports, because children report their own experiences ("I am victimized by ...") about their relations with their peers. The combination of the network questions on the dyadic level provide information about children's position within the larger social network.

Bullying in the larger context of a set of social networks. A social network is a representation of relations between actors (see for an introduction: Carrington, Scott, & Wasserman, 2005; Wasserman & Faust, 1994). The (regular) patterns in relationships can be regarded as structure and therefore, a social network perspective is also called a structural perspective. An important feature of social networks is that actors and their relations are interdependent, rather than being autonomous. Actors within a network influence and select each other, based on certain characteristics (Steglich, Snijders, & Pearson, 2010). This in turn influences their relations with other actors as well as their behaviors. Moreover, network environments provide opportunities and constraints for individual decisions. For example, friendships can be beneficial for exchange, whereas bullies can diminish children's opportunities to form friendships within a classroom.

This means that bullying ties do not occur in isolation. Children form diverse ties to

others. These ties can be positive, neutral, or negative. It is a natural assumption that the formation of negative ties depends partly on positive ties, and vice versa. For example, being bullied by someone may hinder a friendship between those actors, whereas friendships can protect against bullying. Because of these interdependencies in social networks, in this dissertation bullying ties were not only investigated separately, but also studied in their interplay with positive ties. In that way, it is possible to examine bullying relations within a larger peer group, to examine the group processes that may underlie the existence and formation of bullying ties between children.

1.3 Research Questions and Overview of this Dissertation

This dissertation was set up to study bullying from a social network perspective. The main research question was twofold. On the one hand, a substantive question was addressed: *which insights into bullying as a relational and group process are given by a social network perspective?* On the other hand, a methodological research question was proposed: *how can models for social network analysis be specified to investigate negative networks?* Significant improvements have been made over the years in social network analytical methods (e.g., Carrington et al., 2005; Lusher, Koskinen, & Robins, 2013; Snijders, Van de Bunt, & Steglich, 2010), and a general aim was to find out *how to apply these methods to bullying relations in schools?* Four main aspects were addressed in this dissertation, that are presented in four studies: the structure of bullying networks in classrooms (with a cross-sectional model specification for negative networks, Chapters 2 and 4); the interplay with positive networks (Chapters 2, 3, and 5); the perspectives of different informants on these bullying networks (Chapter 4); and the longitudinal evolution of bullying networks, also in interplay with positive networks (Chapter 5).

In this dissertation, the **data** stem from four different sources. An overview is given in Table 1.1. The data come from three countries (Finland, the Netherlands, and Switzerland) and span a broad age range (5- to 12-years-old). All datasets have in common that children were presented with network questions to acquire information about who bullies whom. The use of four different datasets allows detecting variability over countries and/or age groups in the bullying networks, and as such, contributes to the robustness of study findings.

Different social **network analytical methods** were used. In Chapters 2-4, Exponential Random Graph Models (ERGMs) were used. Cross-sectional ERGMs are probability models for networks on a given set of actors, representing the network structure beyond dyadic interdependence (Lusher et al., 2013; Robins, Pattison, Kalish, & Lusher, 2007a). ERGMs are *tie-based*, meaning that the focus is on pairs of actors and the ties between them, not on individuals. Network models with (structural) parameters are formed

Table 1.1. Overview of the data and network questions used in this dissertation

	Country of origin (date of data collection)	Number of schools, classrooms, and students	Age range	Network questions
Chapter 2	Finland (May 2008)	3 schools from the KiVa-data, 18 classrooms, and 393 students	Finnish grades 4-6; 10- to 12-years-old	<ul style="list-style-type: none"> ○ Bullying: <i>By which classmates are you victimized? (only allowed to answer if children indicated on any of the eleven Olweus' bully/victim items that they were victimized at least once)</i> ○ General dislike: <i>Whom do you like the least?</i> ○ General like: <i>Whom do you like the most?</i>
Chapter 3	The Netherlands (October 2005 – March 2007)	25 schools (one classroom per school), and 494 children	Dutch grades 5-8; 8- to 12-years-old	<ul style="list-style-type: none"> ○ Bullying: <i>Who starts when you are victimized?</i> ○ Assisting: <i>Which classmates assist the bully when you are victimized?</i> <p>Reinforcing: <i>Which classmates are usually present when you are victimized [they watch or start to laugh]?</i></p> <ul style="list-style-type: none"> ○ Defending: <i>Which classmates defend you when you are victimized?</i>
Chapter 4	Switzerland (January 2005)	25 kindergartens from the Pathways-data, 402 children	Swiss kindergartens, 5- to 7-years-old	<ul style="list-style-type: none"> ○ Self-reports bullying (child interview): <i>By whom are you bullied?</i> ○ Peer-reports bullying (child interview): <i>Which classmates are bullies? Who do they bully?</i> ○ Combination of teacher-reports bullying (questionnaire): <i>Which children are bullies? Who do they bully? and Which children are victimized? By whom are they victimized?</i>
Chapter 5	The Netherlands (May and October 2012, May 2013)	Three waves of 3 schools from the Dutch KiVa-data, 354 students	Dutch grades 4-7 at T1 (7- to 11-years-old) and grades 5-8 at T2 and T3 (8- to 12-years-old)	<p>Children were only allowed to answer these questions if they indicated on any of eleven Olweus' bully/victim items that they were victimized at least once.</p> <ul style="list-style-type: none"> ○ Bullying (classroom level): <i>Who starts when you are victimized?</i> ○ Bullying (school level): <i>By which students are you victimized?</i> ○ Defending (classroom level): <i>Which classmates defend you when you are victimized?</i> ○ Defending (school level): <i>Which children from other classrooms defend you when you are victimized?</i>

that represent the dependencies in the networks. In Chapter 5, Stochastic Actor-Based Models (SABM) were used to investigate the network dynamics of bullying in longitudinal models. Although ERGMs and SABMs use comparable terminology in network parameters, SABMs use an *actor-based* network simulation approach, in which every actor has a so-called objective function (Snijders et al., 2010). Actors are assumed to behave purposefully in determining the network changes. They control their outgoing ties (i.e., creating, maintaining, or dissolving a tie), while being limited by structural constraints of the network (e.g., their own and others' attributes, their network position, and perceptions about the rest of the network). For each study, a large number of networks was investigated and results were combined through meta-analyses.

In Chapter 3, stochastic blockmodeling was used (Nowicki & Snijders, 2001). With blockmodels, structure in social network data is found by identifying groups of actors with the same pattern of relationships. A stochastic version of blockmodeling assumes that probabilities of relationships depend on the latent group to which an individual belongs, with actors assigned a posteriori to a group for which their membership probability is maximal.

The study in **Chapter 2** was set up to gain insights into the typical structural patterns observed in positive and negative relations, without accounting for individual member characteristics. Negative ties were studied simultaneously with positive ties (general like) to investigate how those networks are related. Two negative networks were included to achieve greater generalizability in representing negative networks: general dislike and bullying. A multiplex (or multivariate) statistical cross-sectional social network approach was used (ERGMs). This study provided further insights into the interdependence between positive and negative networks. Investigating positive and negative networks simultaneously, this study connects to the longstanding history on structural balance theory (Cartwright & Harary, 1956; Heider, 1946; see for an overview: Hummon & Doreian, 2003).

In order to perform the multiplex approach, it was first necessary to gain knowledge on the network structures of the positive and negative ties separately in a so-called univariate approach. To this end, the network structure of positive and negative social networks was identified by determining the structural parameters that are required to model the network data of positive and negative networks. It was investigated whether positive and negative networks have different structures in the univariate analyses, and whether general dislike and bullying networks differ in their typical network structure. With this in mind, this study can be seen as a starting point for further empirical research about negative ties in a single (univariate) and multiplex approach when studying the interplay with positive relations.

The study in **Chapter 3** applied the insights from Chapter 2 in a mixed-method study to the participant role approach to bullying in schools. The participant role approach proposes that most students are involved in bullying in some way, even if they do not bully

themselves (see for a review: Salmivalli, 2010). In addition to bullies who initiate the harassment of victims, there are assistants who actively help bullies, reinforcers who provide bullies with positive feedback, defenders who try to support victims, and outsiders who observe that there is a bullying problem but do not intervene and may pretend that nothing is going on. Previously, these participant roles were examined using general peer nominations. It was this study's aim to investigate if and how the participant roles can be examined using a social network perspective.

In the first part of Chapter 3, a detailed social network perspective was used to graphically explore the group structure of one classroom. The structure of the network was examined using blockmodeling analysis. With this qualitative social network approach, more understanding was gained about the participant roles within a larger social network. Mixed methods studies can be useful for explaining results, and for guiding further analyses (Hong & Espelage, 2012a). The insights from the illustrative findings were used to generate hypotheses that were tested in a larger sample of 25 classrooms in the second part of Chapter 3. These hypotheses concerned defending between victims as well as defending between bullies. The multiplex social network approach developed in Chapter 2 was employed as the modeling framework.

In **Chapter 4**, it was aimed to investigate if and how children and teachers differ in their recognition of victims and their bullies. For this study, self-, peer-, and teacher-reports on *who bullies whom* were used to investigate the agreement between several informants on bullying networks. In addition, this study aimed to investigate whether children's characteristics are related to informants' observations. It was investigated whether children's gender and internalizing and externalizing problem behaviors influence the extent to which informants observe victimization and/or bullying. This study used data from 25 kindergartens with 5- to 7-year-olds (whereas the studies in Chapters 2, 3, and 5 were performed in upper elementary schools). Thus, a third aim was to investigate whether the typical network structures of bullying that emerged in upper elementary schools could also be found in classrooms with younger children. The modeling approach of Chapter 2 was again used to investigate the bullying networks.

The complex interplay between bullying, victimization, and defending was studied in **Chapter 5** by disentangling the co-evolution of these networks in the upper grades of three elementary schools. The multiplex network dynamics of combined positive-negative networks were investigated through a longitudinal social network approach. The hypotheses generated and investigated in the cross-sectional setting in Chapter 3 were further tested longitudinally. It was investigated whether defending among victims originated from two different processes: being victimized by the same bully may lead to defending among victims (*social support-hypothesis*), although bullies may also target the defenders of the children they

victimize, suggesting that defending is a risky strategy because defenders may become victimized (*retaliation-hypothesis*). In addition, it was investigated whether defending among bullies originated from two different processes: bullies who target the same victims may start to defend each other (*defending among bullies hypothesis*), whereas bullies who defend other bullies may start to harass those bullies' victims (*initiating bullying hypothesis*). Contrary to the studies in Chapters 2-4 that examined bullying networks at the classroom level, this study investigated school-level networks of bullying and defending. Therefore, it was also possible to investigate whether group processes concerning bullying, victimization, and defending cross grade-boundaries.

In the final chapter 6, a general discussion is given of the four studies. Moreover, scientific and societal implications of this dissertation are discussed, and directions for future research are given.