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SCHOOL BULLIES' QUEST FOR POWER: IMPLICATIONS FOR GROUP DYNAMICS AND INTERVENTION

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ABSTRACT

Bullying is characterized by an inequality of power between perpetrator and target. Findings that bullies can be highly popular have helped redefine the old conception of the maladjusted school bully into a powerful individual exerting influence on his peers from the top of the peer status hierarchy. Study I is a conceptual paper that explores the conditions under which a skillful, socially powerful bully can use the peer group as a means of aggression and suggests that low cohesion and low quality of friendships make groups easier to manipulate. School bullies' high popularity should be a major obstacle for antibullying efforts, as bullies are unlikely to cease negative actions that are rewarding, and their powerful position could discourage bystanders from interfering. Using data from the Finnish program KiVa, Study II supported the hypothesis that antibullying interventions are less effective with popular bullies in comparison to their unpopular counterparts. In order to design interventions that can address the positive link between popularity and aggression, it is necessary to determine in which contexts bullies achieve higher status. Using an American sample, Study III examined the effects of five classroom features on the social status that peers accord to aggressive children, including classroom status hierarchy, academic level and grade level, controlling for classroom mean levels of aggression and ethnic distribution. Aggressive children were more popular and better liked in fifth grade relative to fourth grade and in classrooms of higher status hierarchy. Surprisingly, the natural emergence of status hierarchies in children's peer groups has long been assumed to minimize aggression. Whether status hierarchies hinder or promote bullying is a controversial question in the peer relations' literature. Study IV aimed at clarifying this debate by testing the effects of the degree of classroom status hierarchy on bullying. Higher

hierarchy was concurrently associated with bullying and predictive of higher bullying six months later. As bullies' quest for power is increasingly acknowledged, some researchers suggest teaching bullies to attain the elevated status they yearn for through prosocial acts. Study V cautions against such solutions by reviewing evidence that prosocial behaviors enacted with the intention of controlling others can be as harmful as aggression.

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- III. **Garandeau, C. F., Ahn, H-J., & Rodkin, P. C. (2011).** The social status of aggressive students across contexts: The role of classroom status hierarchy, academic achievement, and grade. *Developmental Psychology, 47*, 1699-1710.
- IV. **Garandeau, C. F., Lee, I. A., & Salmivalli, C. (2014).** Inequality matters: Classroom status hierarchy and adolescents' bullying. *Journal of Youth and Adolescence*. Advance online publication.
- V. **Garandeau, C. F., & Salmivalli, C. (under revision).** The quest for social power: When "prosocial" becomes "antisocial." *Psychological Review*.

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1. INTRODUCTION

The critical feature that distinguishes bullying from other forms of aggression is the inequality of power between perpetrators and their targets. Bullying consists of verbal, physical, or relational attacks that are repeated over time towards a peer who cannot readily defend him- or herself (Olweus, 1993). The stereotype of the school bully used to be a physically strong but otherwise impulsive, maladjusted, and marginalized young male. In the late 1990s, a renewed interest of peer relations' researchers in the concept of *popularity*, which they started to distinguish from *likeability*, led to a reappraisal of the typical bully profile. A growing number of studies have shown that many bullies or aggressive children are nominated as cool (Rodkin, Farmer, Pearl, & Van Acker, 2006) and popular (e.g., Cillessen & Mayeux, 2004), are admired by their peers (Becker & Luthar, 2007) and occupy a central position in the peer network (Faris & Femlee, 2011). It has now become evident that the power differential that characterizes bullying refers to social as much as physical power. This body of research has helped redefine the conception of the school bully as a powerful individual exerting influence on his or her peers from an elevated position in the peer status hierarchy.

For a long time, studies mentioning status hierarchies (or within-group variability in dominance or popularity) in children's or adolescents' peer groups have suggested that the establishment of hierarchies serves to minimize intra-group aggression through everyone's awareness of their rank, and by enhancing the stability of social relationships (e.g., Pellegrini & Long, 2002; Savin-Williams, 1979). This line of research cultivates the view that the emergence of informal status hierarchies in children's and adolescents' peer groups contributes to reductions in bullying behaviors.

In this thesis, my first goal is to investigate the implications of bullies' high popularity for group processes in bullying situations and anti-bullying intervention efforts. My second objective is to identify contextual features that have an effect on the association between aggression and popularity, with special attention to the hierarchical structure of the peer group. My third objective is to clarify the concurrent and longitudinal relations between the degree of status hierarchy in classrooms and the prevalence of bullying behaviors. Finally, I shift focus to the association between social status and prosocial behaviors; I suggest that some behaviors labelled as prosocial be considered as antisocial and discuss the implications of this reconception for interventions targeting popular bullies.

1.1 Why Do Bullies Bully? Bullying and the Quest for Power

Any attempt at eradicating a phenomenon should begin with an examination of its causes. What leads some children to initiate bullying against their peers? Various individual factors, such as lack of empathy and low social skills, have been discussed in the literature, but findings are rather inconsistent across studies (see Gini, 2006). However, most researchers now concur that bullying is a strategic behavior meant to increase or maintain one's status among peers (e.g., Salmivalli, 2010; Olthof, Goossens, Vermande, Aleva, & Meulen, 2011).

School bullies have been found to express a high desire for dominance and status (Caravita & Cillessen, 2012; Olthof et al., 2011; Sijtsema, Veenstra, Lindenberg, & Salmivalli, 2009). Similarly, studies focusing on aggressive behaviors and social goals among youth revealed positive associations between aggression and the endorsement of agentic goals, which reflect an aim towards power and status (Ojanen, Grönroos, & Salmivalli, 2005; Salmivalli, Ojanen, Haanpää, & Peets, 2005). When bullies are directly asked about the reasons for their actions, they confirm that concerns for the enhancement and maintenance of their reputation among peers motivate their behaviors (Houghton, Nathan, & Taylor, 2012).

1.2 Does it Work? Associations Between Status and Bullying

Until the late 1990s, the study of social status in school children was mostly limited to the examination of their degree of likeability. Status was assessed through peer nominations where participants were typically asked to check or provide the names of peers they liked the most and peers they liked the least within their classroom or grade. Children who were labeled *popular* were thus well-liked and well-adjusted. In the classification introduced by Coie, Dodge and Coppotelli (1982), which served as a reference in many subsequent studies, *popular* children were liked by many and disliked by few (i.e., high in social preference), as opposed to *rejected* children, who were liked by few and disliked by many (i.e., low in social preference). Those children who were liked and disliked by many were labelled *controversial* and were considered to have high social impact. This classification is summarized in Table 1.

Table 1.

Summary of the various status constructs with their respective measures and correlates

Construct	Peer nominations items	Main correlates	Study
<u>Perceived popularity</u>	Popular	Visible, central, influential, antisocial, physically attractive	II & IV
	Popular - Unpopular		III
<u>Sociometric popularity</u>			
Acceptance	Liked most	Cooperative, supportive, high social skills, friendly, kind	III & IV
Rejection	Liked least	Disruptive, impulsive, aggressive, withdrawn, submissive	III & IV
Social preference	Liked most – Liked least	See descriptions for acceptance and rejection	III
Social impact	Liked most + Liked least	High = Controversial. Combine positive and negative behaviors. Leaders, assertive, visible, but disruptive and aggressive	IV
		Low = Neglected. Neither aggressive nor prosocial. Lack visibility and influence	

An essential distinction in the concept of popularity appeared when researchers began to use the word “popular” in the questions addressed to the children. By comparing sociometric popularity scores (based on peer nominations of “who do you like the most?”) to peer-perceived popularity scores (based on peer nominations of “who is most popular?”), Parkhurst and Hopmeyer (1998) found that the constructs only partially overlapped, the correlation between the two variables being no more than .40. Sociometric popularity, also referred to as *social preference* and *peer*

acceptance, captures children's personal feelings of affection or liking of their peers. Perceived popularity, on the other hand, is an indicator of dominance and visibility; it reflects reputation and prestige.

Importantly, the correlates of these two types of status were found to differ significantly (LaFontana & Cillessen, 2002). Their relation to aggression in particular is what differentiates them. Early studies have established that young bullies or aggressive children are generally rejected by peers (i. e., have low levels of peer acceptance or social preference; Coie, Dodge, & Kupersmidt, 1990). Since perceived popularity began to be investigated more systematically, a consistent pattern of findings has emerged: Whereas school bullies tend to have low levels of peer acceptance or social preference, they enjoy high levels of perceived popularity (Caravita, Di Blasio, & Salmivalli, 2009; De Bruyn, Cillessen, & Wissink, 2010).

Longitudinal studies on the status-aggression links provide further insight into the evolution of these associations with age and, importantly, on the direction of effects. According to Cillessen and Mayeux's (2004) investigation of children from 5th to 9th grade, those who engaged in overt aggression became less disliked, while those engaging in relational aggression became more disliked with increasing age. Regardless of the form of aggression, the positive association between perceived popularity and aggressive behaviors became stronger with increasing age. With regard to prospective relations between aggression and perceived popularity, evidence was found for a bi-directional association: The achievement of a high level of perceived popularity predicts increases in aggression (Cillessen & Mayeux, 2004) and being aggressive allows youth to enhance their popularity (Cillessen & Borch, 2006). These findings illustrate the emergence of an alarming aggression-popularity cycle whereby children resort to coercive means, bullying in particular, in order to attain a high position in the peer hierarchy; once high popularity is achieved, they pursue or even increase their aggression in order to maintain their elevated status.

All the studies on aggression-status associations mentioned above are variable-oriented studies. However, a positive association between perceived popularity and bullying or aggression does not imply that all bullies are popular, nor that all popular students are bullies. Cluster analyses have revealed that popular children form a heterogeneous group. In a sample of elementary school boys, Rodkin and colleagues (2000) distinguished "model" boys, who were popular and prosocial (i.e., cooperative and non-aggressive), from "tough" boys, who were popular and antisocial. Both groups were perceived as cool and athletic. A similar distinction was observed for early adolescent girls (De Bruyn & Cillessen, 2006). Research focusing on perpetrators of bullying also pointed out the diversity within this group: Some bullies are high in social power and social intelligence, while others are much lower in these two dimensions (Peeters, Cillessen, & Scholte, 2010). Another line of research has also

revealed that the children and adolescents who are the most popular or socially powerful in the peer group are those who combine prosocial and coercive behaviors (Hawley, 2003; Pellegrini & Bartini, 2001). Although these two types of behaviors are usually thought of as opposite ends of a social behavior continuum, they can be enacted by the same individuals and serve the same purpose of accessing resources in the group. While not the main focus of the present thesis, these inter-individual differences among popular youths and among aggressive youths should be kept in mind.

1.3 Why Does Bullies' Popularity Matter?

Bullying has long been recognized by many scholars as a group phenomenon (see Salmivalli, 2010). Far from being limited to isolated bully-victim dyads, bullying episodes involve all peers who participate either as open reinforcers of the bully, passive reinforcers, or defenders of the victim. All these behaviors - or absence thereof - influence the likelihood that the bullying will persist (Salmivalli, Voeten, & Poskiparta, 2011). The positive association between aggression and perceived popularity gives a new dimension to the role of the group in bullying: Popular bullies derive their high status from the peer group and the peer group is essential to bullies' achievement of their social dominance goals.

For what reason should bullying researchers be concerned about bullies' popularity? Popularity confers to individuals a power of influence on their peers' attitudes and behaviors (Cohen & Prinstein, 2006). Therefore, it puts bullies in a position to manipulate the whole peer group, that is to engage in covert forms of aggression, such as excluding someone from the group, that are harder to detect by school authorities. These forms of attack may also be particularly damaging for the victims by increasing their self-blaming tendencies. Study I is a conceptual paper that explores the possibility that a skillful bully can use the peer group as a means of aggression. It hypothesizes that low cohesion and low quality of friendships might make groups easier to manipulate. The high popularity of bullies may exacerbate peers' fears of becoming victims themselves and increase the pressure to conform, thus allowing bullies to exert normative social influence. Conditions of informational social influence processes, by which a bully could convince his or her peers of the rightfulness of exclusionary strategies, are also considered.

Recent studies have highlighted the contagious nature of popularity (Marks, Cillessen, & Crick, 2012). The closer children's and adolescents' affiliation with popular peers, the higher their own popularity (Dijkstra, Cillessen, Lindenberg, & Veenstra, 2010). This effect has been demonstrated longitudinally (Marks et al., 2012). As popularity among peers is a widespread aspiration among youth (LaFontana & Cillessen, 2010), evidence of popularity contagion suggests that many students should

be tempted to behave in ways that ensure them closeness - and prevents distance from – their most popular classmates. This is especially worrisome with regard to their conduct during bullying incidents. Siding with the victim should appear even more costly when bullying is perpetrated by a highly popular classmate. At the same time, displaying clear support for the bully may seem like an efficient means to heighten one's own status. The positive reinforcement - and lack of negative response – that popular bullies most likely receive should enable the pursuit of their actions.

The consequences of popularity contagion combined with aggressive children's strong desire for high status suggest that the popularity of bullies may be a major obstacle for the success of anti-bullying programs. Many theorists emphasizing the adaptive nature of bullying have hypothesized that popularity makes young bullies resistant to anti-bullying intervention (Volk, Camilleri, Dane, & Marini, 2012). The objective of Study II is to test this hypothesis. We used data collected to evaluate the effectiveness of the KiVa program to examine whether decreases in bullying after nine months of program implementation varied depending on bullies' initial levels of perceived popularity.

1.4 Which Contexts Influence Bullies' Popularity?

In order to design interventions that can address the aggression-status reinforcing cycle, it is essential to determine under which conditions bullies achieve higher popularity, and conversely, which social contexts are least supportive of aggression perpetrators. Extant research indicates that the prevalence of aggressive or bullying behaviors in peer groups or classrooms is the primary contextual feature predictive of the association between status and those behaviors. Specifically, aggressive children and adolescents are less disliked in classrooms with a higher frequency of aggressive behaviors (Chang, 2004; Sentse, Scholte, Salmivalli, & Voeten, 2007; Stormshak et al., 1999). A limitation of the studies cited above however lies in their examination of a single form of status, peer acceptance.

Further studies have shed a new light on these findings by showing that the distribution of status or ties among classmates may be more relevant than the mere frequency of aggressive behaviors. Dijkstra and colleagues (2008) found that the bullying behavior of the popular students in a class mattered more for the bullying-peer acceptance association than the classroom overall prevalence of bullying. A study by Ahn, Garandau, and Rodkin (2011) investigated the effects of embeddedness (which refers to whether relationship ties are equally or unequally distributed in the classroom network) and density (number of actual affiliations relative to the number of possible affiliations in a network) on both social preference and perceived popularity of aggressive 3rd-and 4th-graders. Aggressive children were found to achieve highest popularity in classrooms that had both high density and high embeddedness (i.e. where

relationship ties were less equally distributed). The objective of Study III was to add to this literature by testing the effects of classroom status hierarchy (operationalized as the standard deviation of perceived popularity scores) on the social status of aggressive children, controlling for classroom mean levels of aggression. In addition, we tested for the effects of classroom academic level, as well as grade level (4th grade versus 5th grade), and controlled for the ethnic composition of the classroom in an ethnically diverse American sample. We hypothesized that aggressive students would have higher status (perceived popularity and social preference) in classrooms with higher levels of status hierarchy and in 5th grade relative to 4th grade; we also expected that they would be better liked in classrooms of lower academic achievement level.

1.5 Competing Views on Status Hierarchy

Although the imbalance of power involved in bullying would suggest that a hierarchical structure of peer relations favors bullying behaviors, the beneficial or detrimental nature of status hierarchies in children's and adolescents' peer groups remains a subject of controversy in the peer relations' literature. Research on hierarchies in adult populations is equally discordant, as emphasized by Anderson and Brown (2010) in their review titled "The functions and dysfunctions of hierarchy."

In a functionalist perspective, status hierarchies are believed to promote social order. First, their ubiquity and natural emergence in children's peer groups appear to speak in their favor, suggesting that they must fulfill some purpose (Fournier, 2009). Second, they should promote a better organization of activities by ascribing a role to group members (e.g., Bernstein, 1981). With regard to aggression specifically, it has been argued that they should serve as a deterrent by making aggression appear costly and useless: High-status individuals already enjoy a privileged position for accessing resources, and thus would have little to gain by attacking lower-positioned peers; individuals at the bottom of the hierarchy should perceive aggression targeted at higher-ups as risky and unlikely to result in a desirable outcome (Pellegrini and Long, 2002). This reasoning leads the authors to attribute declines in aggressive behaviors across a school year to stabilization of status hierarchies (Pellegrini & Long, 2002). To individuals at the top of the hierarchy, high status is enjoyable in and of itself, in addition to all the benefits it confers, while individuals at the bottom of the hierarchy may recognize that their subordinate position saves them from total exclusion from the group (Savin-Williams, 1979). In line with this view, some studies investigating dominance complementarity (when one interaction partner behaves in a dominant fashion while the other behaves in a submissive fashion) have shown that individuals tend to find asymmetrical relationships more enjoyable and productive than egalitarian relationships (Tiedens, Unzueta, & Young, 2007). Dominance complementarity was found in some studies to increase relationship satisfaction when discussing

interpersonal issues or solving a problem (Dryer & Horowitz, 1997; Tiedens and Fragale, 2003).

However, to my knowledge, no study has directly compared groups according to their degree of status hierarchy and found that higher levels of hierarchy were associated with lower intra-group aggression, bullying or victimization. On the contrary, Wolke, Woods and Samara (2009) have shown that children belonging to a classroom with a stronger status hierarchy (operationalized as the standard deviation of social impact scores; see Table 1) were more likely to become victims of relational aggression two to four years later. Moreover, recent research on inequalities in socio-economic status has extensively described how nationwide status inequalities fostered violence, insecurity, anxiety (Wilkinson & Pickett, 2009) as well as school bullying (Elgar, Craig, Boyce, Morgan, & Vella-Zarb, 2009).

Several mechanisms can explain why higher status hierarchy could be related to higher rates of bullying. First, hierarchical contexts make status itself more salient, as status is always relative to other group members. In hierarchical groups, the benefits associated with high status are not equally available to everyone, which should intensify competition for the achievement of high status. In turn, an increase in status competition may promote bullying, an instrumental behavior meant to enhance one's status. Second, hierarchical groups are characterized by a greater concentration of power. Many studies have demonstrated that holding a position of power could diminish individuals' compassion when faced with others' suffering (Van Kleef, Oveis, Van der Lowe, LuoKogan, Goetz, & Keltner, 2008) and could lead individuals to objectify others (Gruenfeld, Inesi, Magee, & Galinsky, 2008). Study IV aimed at clarifying the debate regarding the beneficial or deleterious impact of status hierarchy in youth' peer groups with a direct test of the effects of the degree of classroom status hierarchy on bullying. It was expected that higher hierarchy would be associated with higher bullying. In order to better understand the direction of effects, longitudinal analyses were conducted to determine whether initial hierarchy predicted future bullying and/or whether initial bullying predicted higher hierarchy over time.

1.6 Implications for Intervention: The Prosocial Solution?

The high popularity achieved by bullies, combined with findings that some bullies have high theory-of-mind skills (Sutton, Smith, & Swettenham, 1999), has led social scientists to reconsider the idea that bullying results from maladjustment. Evolutionary psychologists in particular highlight the adaptiveness of bullying behaviors (Ellis et al., 2012): Such behaviors allow access to resources in a competitive environment and thus contribute to the individual's survival. The benefits that bullies receive in response to their harmful behaviors most likely accounts for the mixed success of anti-bullying interventions.

In this perspective, an effective way to tackle bullying would be to demonstrate to bullies that they can reap the same rewards by acting prosocially. Extensive research has shown that prosocial behaviors, such as giving or helping, do entail increases in status (e.g., Bereczkei, Birkas, & Kerekes, 2010; Hardy & Van Vugt, 2006; Olthof et al., 2011), and perceived popularity is positively associated with prosociality among youth (Sandstrom & Cillessen, 2006). Studies on resource-control theory with children further indicate that social dominance results from prosocial strategies as much as coercive strategies (Hawley, 2003). The goal of such intervention is to convince bullies that they could cease their behavior and still attain the dominance that they yearn for.

Although the arguments for this approach are appealing, they rely on the assumption that prosocial behaviors enacted by power-aspiring youth are desirable. However, many studies show that prosocial actions may cause psychological distress to recipients (see Fisher, Nadler, & Whitcher-Alagna, 1982). Being on the receiving end of such behaviors can evoke feelings of indebtedness and inferiority that are damaging to the individual's well-being. When enacted with the intention of having better control over others, it is doubtful that prosocial behaviors truly improve peer relations. In Study V, I explore the idea that some behaviors labeled as "prosocial" actually are harmful and "antisocial".

2. AIMS OF THE THESIS

The main purpose of this thesis was to examine the consequences of bullies' pursuit of popularity for group mechanisms in bullying situations and for the effectiveness of anti-bullying interventions.

The specific questions to be addressed were as follows:

1. How can a bully use the peer group as a means of aggression? (Study I)
2. Are anti-bullying interventions as effective with popular bullies as they are with unpopular bullies? (Study II)
3. Which contextual features are associated with the popularity of aggressive children? (Study III)
4. What are the concurrent and longitudinal associations between the degree of status hierarchy in a classroom and levels of bullying? (Study IV)
5. Should bullies be encouraged to replace their aggressive behaviors with prosocial behaviors? (Study V)

3. METHOD

3.1 Participants and Procedure

3.1.1 *The KiVa Samples*

Each of the three empirical studies presented in this thesis utilizes data from a different sample of participants. The characteristics of each sample are summarized in Table 2. Participants in Studies II and IV were selected as part of the randomized controlled trial (RCT) of the Finnish antibullying program, KiVa. Study II uses the cohort of 4th- to 6th-graders who took part in the first phase of data collection (in 2007-2008), while Study IV uses the cohort of 7th- to 9th-graders who took part in the second phase of data collection (in 2008-2009). All Finnish schools providing comprehensive education received a letter with information on the KiVa program, inviting them to participate in the pilot evaluation. Among 275 volunteering schools, 76 were selected for the first phase and divided into 38 control and 38 intervention schools using stratified random sampling; this sampling method ensured that the sample were representative of the five provinces of mainland Finland and of the Swedish-speaking minority. Schools assigned to the control condition in the first phase could participate as intervention schools in the second phase of the evaluation. Among the 38 control schools, 31 chose that option. In addition to these 31 schools, 125 volunteering schools were stratified by province and language and randomly assigned to control condition (78 schools) and intervention condition (47 schools) for the second phase. This procedure resulted in 79 participating schools (40 control and 39 intervention) for Grades 1–3 and in 78 participating schools (39 control and 39 intervention) for Grades 7–9.

The KiVa data were collected across three waves of assessment. The first wave of data collection took place in May, at the end of the school year, prior to the beginning of the program implementation in the fall of the following school year. The second assessment took place in the middle of the school year, approximately 5 months into the program implementation. The third assessment took place in May, at the end of the school year, one year after the first wave of assessment. These three waves of assessment were conducted in 2007–2008 for Grades 4–6 and in 2008–2009 for Grades 1–3 and 7–9.

Participants received active parental consent prior to the beginning of data collection. Questionnaires were internet-based and administered during regular school hours, using individual single-use passwords. Teachers took their students to the school computer labs and made sure that the collection procedure was anonymous. The questionnaire started with demographic questions including questions on sex, age, and immigrant background, following by a definition of bullying as formulated in the

Revised Olweus' Bully/Victim Questionnaire (Olweus, 1996): "It is bullying when another student makes a child feel bad on purpose and repeatedly." The questionnaire was designed so that the order of the scales and the order of the items within each scale were randomized.

The full sample in Study II consisted of 7,975 third-, fourth-, and fifth-graders (50% male) ranging from 8 to 14 years of age ($M_{age} = 11.03$, $SD = .93$). They belonged to 401 classrooms in 77 schools (16% Swedish-speaking), including 39 intervention schools and 38 control schools. The mean participation rate was 90.67%. From this initial sample, we selected a subsample of 911 bullies (children scoring one standard deviation or higher on a peer-reported measure of bullying at Wave 1). Half of these bullies were in intervention schools; their age ranged from 9 to 14 years of age ($M = 11.37$, $SD = .92$) and boys were over-represented (89%). The analyses were conducted with this subsample of bullies. In Study IV, analyses were conducted on a sample of 11,296 eighth- and ninth-graders ($M_{age} = 14.57$, $SD = .79$; 50.6 % female). Data were provided by 9,723 participants, who belonged to 583 classrooms in 71 schools. The classrooms selected had a minimum 50% participation rate and consisted of a minimum of 14 students. The average participation rate of the sample was 86%.

3.1.2 The Illinois Sample

Study III was conducted with a diverse sample of American children from nine schools in Central Illinois. Three waves of data were collected: The first wave took place in the spring of one school year among 3rd- and 4th-graders. The second and third waves took place in the fall and spring of the following school year, when children were in grades 4 and 5. Information was also collected from school records and teachers.

Surveys were administered with a paper-and-pencil procedure. The questions and instructions were read aloud to the participants by trained graduate or undergraduate assistants. The anonymity of the questionnaires was ensured by the use of code numbers assigned to each student. All participants were informed of the confidentiality of their answers and of their right to stop participating at any time during the survey. Administrators asked the children not to communicate with their classmates and to keep their responses hidden from others. All children in the classrooms included in the study received a parental consent form in English or Spanish. Those who had received permission to participate from their parents were asked to indicate their willingness to answer the questionnaire by filling out an assent form.

The main analyses of Study III were conducted with the second wave of data only, on a sample of 968 fourth- and fifth-graders (50.4% male). The sample had the following ethnic composition: 50% African American, 35% European American, 6% Asian, 5% Hispanic. Peer nomination data were available for non-participants as

participants could nominate any of their classmates. The number of participants was 789 (48% male), with a mean age of 10.32 years ($SD = 0.78$). They belonged to 46 classrooms in nine elementary schools. Additional analyses were conducted with data from the third assessment wave (collected at the end of the school year), which included 904 of the 968 students of the second wave.

Table 2.

Description of the samples for the three empirical studies

	Study		
	II	III	IV
Data set	KiVa	Illinois	KiVa
Grades cohorts ^a	4–6	4–5	8–9
Data waves	W1 and W3	W2 and W3	W2 and W3
Schools, <i>N</i>	77 (39 KiVa)	9	71 (37 KiVa)
Classrooms, <i>N</i>	401	46	583
Students, <i>N</i>	7,975	789	11,296
Participation rate	90.7%	81.5%	86%
Further data restrictions	Classrooms participating at both time points or at W1 only.	> 6 students in class; at least 60% participation rate (T2)	> 14 students in class; at least 50% participation rate (T2)
Students in main analyses	911 bullies	968	9,723
Boys %	89%	50.4%	49.4%
Age at T1, <i>M</i>	11.1 years	10.32 years	14.57 years

^a Grade cohort refers to the grade level students were during the KiVa trial (at W2 and W3).

3.2 Measures

The main measures in the three empirical studies were peer status, aggression, and bullying. All these measures were obtained via peer nominations. Participants were presented with the list of all their classmates and were instructed to check off boxes adjacent to the names of the classmates they wished to nominate. They were informed that they could nominate an unlimited number of same-sex and other-sex peers. For each student in the sample, the number of received nominations was divided by the

number of participants, resulting in individual proportion scores. A summary of all the variables used in the studies is shown in Table 3.

3.2.1 Peer Status and Hierarchy

Perceived popularity was utilized in all three studies. In the studies using the KiVa data set (Studies II and IV), it was assessed using one item only: “Who are the most popular in your class?” In Study III, conducted with the Illinois sample, perceived popularity was obtained with a difference score of two items: “These are the most popular kids in my class” and “These are the kids in my class who are not popular.” The “not popular” proportion scores were then subtracted from the “popular” proportion scores.

Acceptance and rejection were assessed similarly in the three studies. In the KiVa studies, participants were asked to nominate who they liked the most and who they liked the least. In the Illinois study (III), the items used were: “These are the kids whom I would like most to play with” and “These are the kids whom I would like least to play with.” In that study, one of the main outcomes of interest was social preference. This measure of social preference was obtained by subtracting liked-least proportion scores from liked-most proportion scores. Study IV included a measure of social impact, which is conceptually closer to perceived popularity than social preference. Social impact was assessed by adding proportion scores for the liked-most and liked-least variables.

Status hierarchy was investigated in Studies III and IV. In both studies, it was operationalized as the within-classroom standard deviation of individual status scores. In Study III, status referred to perceived popularity and the status hierarchy variable was an observed variable. In Study IV, status hierarchy was a latent construct with two indicators, popularity (based on one item) and social impact.

3.2.2 Aggression and Bullying

Study III focused on an investigation of aggression, which was assessed from three peer nominations items. The correlations among the three items being very high (from .81 to .86), a composite score was created. Therefore, aggression was examined as a general construct; no distinction was made between physical, verbal, or relational aggression. In Studies II and IV, bullying was examined. The measure of bullying utilized in these studies came from the Participant Role Questionnaire (Salmivalli et al., 1996) and included three items.

Table 3.

Summary of Study Variables

Study	Level	Construct	Measures	Type
II	Individual	Gender	Male: 1, female: 0	Observed
		Age	In years	Observed
		Bullying	a) Starts bullying b) Makes others join in the bullying c) Always finds new ways of harassing victim	Latent
		Popularity	Who are the most popular?	Observed
	Classroom	Intervention status	Intervention: 1, control: 0	Observed
III	Individual	Gender	Female: 1, male: 0	Observed
		Ethnicity	Afric. Am.: 1, non-Afric. Am.: 0	Observed
		Aggression	a) Says mean things about others b) Makes fun of others c) Starts fights	Observed
	Classroom	Perceived popularity	Popular - unpopular	Observed
		Social preference	Liked most- liked least	Observed
		Status hierarchy	SD of popularity scores	Observed
		Academic level	Average of individual ISAT scores	Observed
		Grade level	Grade 5: 1, grade 4: 0	Observed
		Aggression	Average of individual aggression scores	Observed
	Ethnic distribution	Proportion of African Americans	Observed	

Study	Level	Construct	Measures	Type
IV	Individual	Gender	Male: 1, female: 0	Observed
		Bullying	a) Starts bullying	Latent
			b) Makes others join in the bullying	
	Classroom	Status hierarchy	c) Always finds new ways of harassing victim	Latent
			a) SD of popularity scores	
			b) SD of social impact scores	
	Size	Number of students	Observed	
	Gender distribution	Proportion of boys	Observed	
	Intervention status	Intervention: 1, control: 0	Observed	

3.2.3 Statistical Analyses

The objective of Studies III and IV was to examine the effects of classroom characteristics on individual behavior. Therefore, multilevel analyses were performed, with individual features at the within-level and classroom features at the between-level. In Study III, the primary interest was in testing the moderating effects of classroom-level variables on the association between two individual-level variables. These models were run using SAS PROC MIXED, which facilitates testing of several cross-level interactions simultaneously. Analyses in this study were cross-sectional.

In Study IV, the primary focus was on testing the main effect of a classroom-level variable on individual behavior. This was done using a multilevel structural equation modeling approach (MSEM; see Muthén and Asparouhov, 2008): The two main constructs of interest - hierarchy and bullying - were assessed with two and three observed variables respectively; these variables were used as indicators of the corresponding latent factors. Both concurrent and longitudinal effects between status hierarchy and bullying were tested in a panel model with cross-lagged relations at the classroom level to test for the effects of Time 1 hierarchy on Time 2 bullying and of Time 1 bullying on Time 2 hierarchy. Analyses were run using Mplus v.6.1 (Muthén and Muthén, 1998–2010).

In Study II, the objective was to compare the effects of a program at reducing bullying across groups of different levels of popularity. A multiple-group SEM approach was used to conduct longitudinal analyses: Pre-test bullying (Wave 1) and bullying after 9 months of implementation (Wave 3) were modeled as latent factors. Analyses were performed using Mplus v.6.1. We tested for measurement invariance across groups (low, medium, high popularity). In this study, as well as in Study IV, we also tested for measurement invariance of bullying across time. Measurement invariance was established in all cases.

4. OVERVIEW OF STUDIES

STUDY I

Garandeau, C. F., & Cillessen, A. H. N. (2006). From indirect aggression to invisible aggression: A conceptual view on bullying and peer group manipulation. *Aggression and Violent Behaviour, 11*, 612-625.

The purpose of this conceptual paper was to identify the conditions that make it possible for a whole group of children to harass an unprovocative peer. One line of research emphasizes the role of individual characteristics of victims and bullies, while another describes victimization as an inevitable by-product of group processes. We argue that school victimization against non-provocative targets rarely involves just a dyad, but might not be simply the product of group processes either. Recent research has emphasized the importance of indirect aggression in children's peer groups and has shown that bullies engaging in such forms of aggression typically have high levels of perceived popularity and social intelligence. Use of indirect aggression protects its instigators from possible retaliation from victims as well as interventions by the school authorities, and might increase the self-blaming tendencies of victims. This paper suggests that victimization may often result from the encounter between a skillful bully and a group that lacks true cohesiveness, through a process of normative social influence: Peers may not approve of the aggression, but nevertheless conform out of fear of being excluded from the group or being targeted themselves. Groups with low quality of friendships may be more likely than others to become instruments of aggression as victimization provides them with a common goal and an appearance of cohesion. We hypothesize that, in some cases, the manipulation of a healthy-functioning group is also possible but requires use of more subtle devices, such as rational-appearing aggression (Kaukiainen et al., 2001). We also suggest that, in such cases, the aggressive act is not only indirect, but invisible, and the influence exerted on the group might be informational instead of normative: Peers may internalize the negative information they receive about the victim. We discuss implications for the characteristics of the victim and suggestions for future experimental studies that could shed light on the group processes at work in situations of peer victimization.

STUDY II

Garandeau, C. F., Lee, I. A., & Salmivalli, C. (2014). Differential effects of the KiVa antibullying program on popular and unpopular bullies. *Journal of Applied Developmental Psychology, 34*, 44-50.

Young bullies' high perceived popularity at school is believed to be a major obstacle for the success of anti-bullying interventions: To popular bullies, bullying is socially rewarding and their popularity may deter other peers from challenging them. However, this assumption has never been directly tested. We hypothesized that the Finnish anti-bullying program KiVa would be less effective at reducing bullying among highly popular bullies than among unpopular ones. Multiple-group SEM analyses were conducted on a subsample of 911 bullies selected from a total sample of 7,975 third-, fourth-, and fifth-graders, in 77 Finnish schools, including 39 schools implementing the KiVa anti-bullying program and 38 control schools. Data on participants' levels of bullying and perceived popularity were collected at two points – before program implementation and one year later – via peer nominations. The subsample of bullies was divided into 3 groups according to their level of perceived popularity: low (scoring lower than -0.5 standard deviation on the perceived popularity variable, standardized across the whole sample), medium (scoring between -0.5 and +0.5 standard deviation) and high (scoring +0.5 standard deviation or higher). Controlling for the effects of gender, age, and initial levels of bullying, KiVa participation resulted in lower levels of bullying after one year for bullies of low popularity ($p = .035$) and medium popularity ($p < .001$). However, there was no significant effect of KiVa participation on bullying for those high in popularity ($p = .740$). This study shows that how popular bullies are does make a difference for the success of anti-bullying interventions. As expected, highly popular bullies were less responsive to the KiVa program than lower status bullies. Implications for intervention strategies are discussed.

STUDY III

Garandau, C. F., Ahn, H-J., & Rodkin, P. C. (2011). The social status of aggressive students across contexts: The role of classroom status hierarchy, academic achievement, and grade. *Developmental Psychology*, 47, 1699-1710

Reducing peer support for aggressive behaviors being essential to the improvement of school climates, the objective of this study was to identify classroom contextual characteristics that are associated with the social status (perceived popularity and social preference) of aggressive students in late elementary school. Previous research on this topic had highlighted the importance of the normativeness of aggressive behaviors - often operationalized as prevalence - in explaining variation in the relations between status and aggression. In this study, it was hypothesized that the structure of peer relations, specifically the degree of classroom status hierarchy, would matter more than the frequency of aggression. We examined whether classroom peer status hierarchy (operationalized as classroom standard deviation in perceived popularity), classroom academic level, and grade level moderated the effects of individual aggression on both forms of social status. In addition to these main predictors of interest, classroom aggression and ethnic composition were controlled for in the analyses. The sample included 968 fourth- and fifth-graders from 46 classrooms in 9 schools in Central Illinois. Half of the participants were African Americans. We conducted multilevel analyses and tested for cross-level interactions between the classroom-level variables and individual aggression in the prediction of social status. Separate models were run for social preference and perceived popularity. Associations between aggression and status differed greatly between classrooms. Aggressive children had higher levels of perceived popularity and social preference in classrooms with a higher degree of peer status hierarchy and in Grade 5 relative to Grade 4. They also had lower social preference in classrooms of higher academic level. Classroom academic level did not moderate the association between individual aggression and perceived popularity. Classroom aggression and ethnic composition had no significant effect on the association between individual aggression and either form of social status.

STUDY IV

Garandeau, C. F., Lee, I. A., & Salmivalli, C. (2014). Inequality matters: Classroom status hierarchy to adolescents' bullying. *Journal of Youth and Adolescence*.

The emergence of status hierarchies in adolescents' peer groups is a pervasive and natural phenomenon. Status hierarchies have long been assumed to help prevent future intragroup aggression by enhancing the predictability and stability of social relationships. However, this functionalist perspective has been recently challenged by studies showing that status inequality could promote victimization and bullying, which involves an imbalance of power. In the present study, we examined between-classroom differences in the degree of status hierarchy, defined as within-classroom variation in individual perceived popularity, and tested how they were associated with bullying. Multilevel structural equation modeling analyses were conducted on a sample of 11,296 eighth- and ninth-graders from 583 classes in 71 Finnish schools. Data used in the current report were collected as part of the randomized controlled trial of the KiVa antibullying program at two time points within the same school year (middle and end of the year). Bullying and perceived popularity were assessed with within-classroom peer nominations. The specific study goals were a) to determine whether the association between classroom degree of status hierarchy and bullying was positive or negative, and b) to investigate prospective relations between these two variables over a 6-month period. To address the question of directionality, we implemented a cross-lagged model (at the classroom level) to examine whether Time 1 status hierarchy predicted Time 2 bullying and whether Time 1 bullying predicted Time 2 status hierarchy. We found that higher levels of classroom status hierarchy were concurrently associated with higher levels of bullying at the end of the school year. Furthermore, higher hierarchy in the middle of the school year predicted higher bullying later in the year. However, there was no significant effect of initial bullying on future hierarchy. These results highlight the importance of a shared balance of power among classmates for the prevention of bullying in adolescence.

STUDY V

Garandeau, C. F., & Salmivalli, C. (under revision). The quest for social power: When “prosocial” becomes “antisocial.” *Psychological Review*.

Prosocial and aggressive behaviors are described in the literature as opposites on the social behavior continuum. Prosocial behaviors are defined as actions intended to benefit others, while aggression refers to behaviors intended to cause harm. Although the motives underlying prosocial and aggressive actions are assumed to be opposite, both types of behaviors are positively associated with various forms of social power. Evolutionary psychologists have proposed that individuals combining coercive and prosocial strategies - referred to as “bistrategics” (Hawley, 1999) - achieve highest resource control and status. In this paper, I argue that prosocial behaviors which are only meant to increase one’s power over others are not actually prosocial (intended to benefit others), and in some cases, should even be considered antisocial. A growing body of evidence - from studies of inter-individual as well as inter-group prosocial actions - suggests that prosocial behaviors do confer social power and can be enacted strategically mainly for the purpose of enhancing one’s status. Scientists have used the term “competitive altruism” to refer to the process through which individuals try to outcompete each other in demonstrations of generosity (e.g., Barclay, 2004). Others have described the phenomenon of “overhelping,” which refers to visible acts of helping that undermine the recipient’s reputation for competence (Gilbert & Silvera, 1996). Moreover, another line of research shows that recipients’ reactions to prosocial behaviors can be similar to their reactions to hostile actions (Fisher, Nadler, Whitcher-Alagna, 1982). Therefore, I advance the idea that a category a seemingly prosocial behaviors may in fact be aggressive (intended to cause harm). Important factors to consider in order to identify these behaviors are whether the prosocial act is needed, dependency-oriented, visible and allows reciprocation. I discuss the necessity for researchers to distinguish these Machiavellian prosocial behaviors from other prosocial behaviors, and provide suggestions for their assessment.

5. DISCUSSION

5.1 The Importance of Status in Bullying Processes: The Implicit Role of the Peer Group

Previous research has established that the peer group plays an explicit role in situations of bullying at school. Taking sides with the victim, openly supporting the bully, or staying out of the situation has an influence on the probability that the bullying will cease or continue (Salmivalli et al., 2011). The findings presented in this thesis bring further support to the view that anti-bullying interventions should involve all students by emphasizing the importance of a more implicit role of the peer group, that is the social power accorded to aggressive perpetrators by their peers in the form of high status. As shown in Study II, the high popularity of bullies does matter: Even an anti-bullying program that is overall effective at reducing bullying – the KiVa program - has no significant effect on the bullying behavior of highly popular perpetrators in elementary school. As described in Study I, one reason for this finding may be the possibility for highly popular bullies to engage in indirect forms of aggression by using the whole peer group as a means of aggression; this may allow them to go unnoticed by school authorities. The absence of negative consequences, combined with social rewards, should encourage bullying perpetrators to maintain their conduct.

The likelihood that a child or an adolescent engages in bullying depends both on personal and contextual characteristics. In extant literature, the main contextual factors predictive of engagement in bullying included the prevalence of bullying in the peer group (Espelage, Holt, & Henkel, 2003) and the conduct of bystanders (Salmivalli et al., 2011). In this thesis, I have demonstrated that the structure of peer relations, and specifically the inequality of status in a classroom, is a key factor in the emergence and perpetuation of bullying. When status is more unequally distributed in a classroom of adolescents in the middle of the school year, levels of bullying are higher at the end of the school year (Study IV). The degree of status hierarchy in classrooms is also associated with the social status of aggressive children. Few studies have identified contextual features linked with status rewards for aggressive perpetrators. Study III shows that the strength of the association between aggression and status does vary according to the degree of status hierarchy, the level of academic achievement, and the grade level of classrooms. Aggressive children are more popular and better liked in classrooms of higher status hierarchy and in 5th-grade (in comparison to 4th-grade). They also have lower social preference, albeit not lower perceived popularity, in classrooms of higher academic level.

The finding that the popularity of bullies impedes the success of antibullying interventions has implications for the development of new antibullying strategies. One

view on the issue - shared by evolutionary psychologists - is to consider that striving for status is natural and adaptive, and should not be discouraged. In this perspective, the solution would be to prompt bullies to replace their coercive actions with prosocial actions that would entail similar gains in status. The literature review of Study V suggests that caution is needed with such an approach. Prosocial behaviors can be enacted with the purpose of creating a power differential with the recipient. In particular, when prosocial acts are unneeded, dependency-oriented (versus autonomy-oriented), and do not allow reciprocation, they can restrict the target's freedom and entail feelings of indebtedness that can be as damaging as aggressive acts.

5.2 Strengths

One of the main strengths of this thesis lies in its investigation of classroom contextual effects through the use of multilevel and structural equation modeling techniques. By taking into account the nested structure of the data (students within classrooms), multilevel models allow the separate estimation of the effects of individual and classroom-level predictors, as well as cross-level interactions, which is a considerable improvement over classical regression techniques. The use of latent variables for the bullying and hierarchy constructs in the structural equation models is also a clear advantage; unlike observed variables, they do not have measurement error associated with them. Furthermore, analyses were conducted with large samples, from two different settings and two different age groups, and were longitudinal for two of the studies.

In addition, the findings of the current thesis have important practical implications. First, it reveals a significant moderator of the effectiveness of antibullying programs: the popularity level of bullying perpetrators. Very little research has investigated for whom antibullying interventions might be less effective, and such information is essential for improving antibullying programs. Second, this thesis emphasizes the need for teachers and other school professionals to pay attention to power inequality in the peer relations of their students. Present findings encourage them to shift focus from the problematic behaviors of individuals to the balance of power within whole groups or classrooms.

5.3 Limitations

5.3.1 Operationalization of Status Hierarchy

One main limitation of the current thesis lies in the operationalization of status hierarchy. I chose to use within-classroom standard deviation in peer-reported status, as it is an indicator of dispersion and variability in individual scores. In that regard, it

does capture inequality or imbalance of power to a certain extent. Moreover, this measure yields a continuous variable of scores for the sample of classrooms and is therefore appropriate for testing the effects of classroom differences in the degree of hierarchy. Previous studies examining these same effects also used within-classroom standard deviations (Schäfer et al., 2005; Wolke et al., 2009). The method of rank ordering individuals in a group, which was used by Savin-Williams (1979), is useful for examining the stability of hierarchy over time, but does not capture group differences in the level of hierarchy.

Despite its advantages, the classroom standard deviation may not always adequately reflect the variety in configurations of status distributions within classrooms. For classrooms that are considered egalitarian (i.e., with a low standard deviation), it remains unknown whether the majority of classmates received high, average, or low scores in peer-reported status. The social dynamics in a class where every student finds other students popular may differ significantly from the social dynamics in a class where no one finds anyone popular. Most importantly, with the use of the standard deviation, a classroom where the majority of students has low status and one student has high status will appear as relatively egalitarian, when in fact it is characterized by a high status discrepancy between one member and all the others. This gap in status may play an important role, especially in cases where one powerful bully targets many victims.

Similarly, in high-hierarchy classrooms, various configurations are possible. The ordering of individuals can be very gradual, with one third of students having low status, one third having average status, and one third having high status. Alternately, it is conceivable that about half of the students are very high in status and the other half very low. It would be informative to know if these various types of high-hierarchy classrooms, or low-hierarchy classrooms, differ in terms of consequences on the prevalence of bullying behaviors. This would certainly involve the creation of a categorical variable, and the measure would not be a measure of the degree of status hierarchy, but a measure of the type of hierarchical structure.

5.3.2 Hierarchy Within Gender

Another limitation of the empirical studies assessing status hierarchy (III and IV) is the absence of examination of within-gender classroom hierarchy. Although gender as an individual variable is controlled for in both studies and gender distribution is added as a classroom-level predictor in Study IV, status hierarchy is measured within whole classrooms. Even in adolescence, at least some degree of gender segregation can be expected, which implies that girls and boys interact more with peers of the same gender within each classroom. Gender segregation was not investigated in the samples used for the current studies. Nevertheless, we can assume that in highly-segregated

classrooms, the examination of within-gender hierarchy would be more relevant than the evaluation of the degree of hierarchy among all classmates. The assessment of within-gender hierarchy may also be useful to investigate intra-sexual competition (Vaillancourt & Sharma, 2011).

A recent study by Zwaan, Dijkstra, and Veenstra (2013) did investigate classroom status hierarchy within gender in relation to both physical and relational aggression. Hierarchy was operationalized as within-group standard deviation in individual status (using peer nominations of the item “Who do others want to be associated with?”). Their results do not support the findings of the current studies. There was no significant main effect of status hierarchy on either form of aggression. High-status adolescents were not more aggressive in high within-gender hierarchy classrooms than in low within-gender hierarchy classrooms. The disparity between my findings and theirs raises two questions: First, does the difference in the unit used for the measurement of classroom status hierarchy, namely within-gender or across-gender, accounts for the difference in the results? Second, which hierarchy is more valid? The answer to the second question depends on the sample. A test of the degree of classroom gender segregation would indicate which measure is the most appropriate.

5.4 Future Research

5.4.1 *Effects of Hierarchy on Mental Health*

The current studies have demonstrated the adverse effects of high status hierarchy on bullying behaviors. One avenue for future research is in investigating the effects of classroom status hierarchy on other behaviors or emotions. There is indication in the literature that strong hierarchies of status may be detrimental to individuals’ mental health, primarily because inequity in social relationships can lead to emotional distress (Adams, 1965).

In romantic partners, egalitarian influence is consistently associated with greater relationship satisfaction (e.g., Sprecher, Schmeekle, & Felmlee, 2006) and more positive emotion (Le & Agnew, 2001). In the workplace, more hierarchical environments are associated with lower satisfaction and self-esteem (e.g., Pfeffer & Langton, 1993). At the macro-level, nationwide analyses showed a strong positive relationship between inequalities in socio-economic status and the proportion of adults suffering from a mental illness, anxiety disorders in particular (Wilkinson & Pickett, 2009). Hierarchical contexts may also heighten people’s sensitivity to social comparisons and, more specifically, to the possibility of being judged negatively (Fiske, 2010). Social self preservation theory posits that situations which are threatening to the “social self” (the perception that one has of one’s status or value) entail increases in anxiety, as the preservation of the social self is a fundamental motivation for human

beings (Dickerson & Kemeny, 2004). Settings of social-evaluative threat, operationalized by the presence of an evaluative audience or a negative self-comparison, elicit more anxiety than other kinds of stressors (Dickerson & Kemeny, 2004). Contexts of high status hierarchy in children and adolescent peer groups may increase social comparisons and feelings of threat to one's social self, which in turn might evoke higher social anxiety. To my knowledge however, this has not yet been investigated.

An interesting question to examine is whether the negative impact of hierarchy on psychological adjustment, if shown, is limited to low-status individuals. On one hand, it would seem logical that only those at the bottom of the hierarchy find it distressful, as this position is associated with lower access to resources and lower self-esteem (see Adler, Epel, Castellazzo, & Ickovics, 2000). Adolescents who are high (or perceive themselves to be high) on a social hierarchy tend to experience much less depression than those with lower status (Destin, Richman, Varner, & Mandara, 2012; Fournier, 2009). Nevertheless, higher-ranked individuals may experience increased pressure to maintain their rank, as they have more to lose (Pettit, Yong, & Spataro, 2010). For this reason, status hierarchy may have a main effect on internalizing problems, such as depression and anxiety, and this effect might hold for individuals at both ends of the status hierarchy.

5.4.2 Other Forms of Inequalities

In this thesis, the focus was on the popularity of bullies and on inequalities in popular status within classrooms. The effects of inequalities in other dimensions would be worth investigating. Would variability in socio-economic status for instance within classrooms be also predictive of aggression or bullying? It has been demonstrated by Edgar and colleagues (2009) that nationwide inequalities in socio-economic status were associated with a higher prevalence of bullying among adolescents. An international survey by Due and colleagues (2009) has shown that disparities in affluence at the national level and at the school level were associated with an increased prevalence of bullying. However, to my knowledge, it has not been yet tested whether such inequalities at the level of the classroom have similar consequences. The effects of inequalities in academic achievement and physical attractiveness would also be worth examining. Are they as detrimental as inequalities in status, and if so, is the adverse influence limited to those at the bottom of the hierarchy? Zwaan and colleagues (2013) studied within-gender hierarchy in attractiveness in classrooms of early adolescents and found it to be negatively associated with relational aggression among girls, supporting their hypothesis that adolescents will increasingly use aggression when competitors become more equally equipped in their ability to control resources. More research is needed to clarify the links between various forms of

inequalities and their consequences on both aggressive behaviors and psychological adjustment.

In addition to the questions raised above, future research would advance our understanding of the impact on hierarchical social environments by examining a) correlations between these different types of hierarchies, and b) which one has the greatest influence after controlling for the effects of the others. Moreover, it would be useful to know the extent to which inequalities on the scale of the society are reflected in classrooms of children and adolescents. The association between the two may not be as obvious as one might think. Comparing peer relationships in secondary schools in two different cultural areas of India, Milner (2013) found that the more egalitarian the cultural ideology, the higher the inequality among adolescents at school, and conversely, the more the society emphasized hierarchy, the smaller the inequalities among peers. The main explanation for this counterintuitive finding lies in the solidarity among peers that results from being subjected to strong hierarchical relationships in the society. This idea would deserve further investigation in other cultures, and raises new questions. For instance, can a powerful bully foster solidarity among other classmates and can this be used in anti-bullying work?

5.4.3 Psychological Processes of Status-Aspiring Bullies

Much research is still needed to better understand the psychological processes underlying bullies' relation to status. For instance, research has consistently shown that bullies tend to be popular but not well-liked (e.g., De Bruyn et al., 2010) and that they have a strong desire for high popular status (e.g., Caravita & Cillessen, 2012). It remains to be determined whether they are aware of their low likeability but are unaffected by it, or whether they are unaware of it but value being liked by peers. One hypothesis is that the use of coercion and induction of fear could be guided by a belief that relationships are difficult to secure otherwise. Furthermore, while it has been documented that a stronger motivation for popular status exacerbates aggressive behaviors (Cillessen, Mayeux, Ha, de Bruyn, & LaFontana, 2014), less is known about the predictors of such motivation and whether it can be decreased via an intervention. A better understanding of these psychological processes may open doors for developing new tools for tackling school bullying.

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