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Dyadic nominations of bullying: Comparing types of bullies and their victims

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Email: sarah.malamut@utu.fi**Abstract**

Previous studies indicate that when identifying individuals involved in bullying, the concordance between self- and peer- reports is low to moderate. There is support that self- and peer- identified victims constitute distinct types of victims and differ in adjustment. Likewise, differentiating between self- and peer- reports of bullying may also reveal distinct types of bullies. The goal of this study was to examine differences between types of bullies identified via dyadic nominations (self-identified, victim-identified, and self/victim identified). First, we examined the concordance between dyadic nominations of bullying and traditional measures of bullying (i.e., self- and peer-reports). Second, we compared the behavioral profiles of the bully types to nonbullies, with a focus on aggressive behaviors and social status. Third, we examined whether the types of bullies targeted victims with different levels of popularity, as well as the role of their own popularity and prioritizing of popularity. Participants were 1,008 Dutch adolescents (50.1% male, $M_{age} = 14.14$ years, standard deviation [SD] = 1.30) who completed a classroom assessment of dyadic nominations, peer nominations, and self-report items. Results indicated that victim identified and self/victim identified bullies were more aggressive, more popular, and less socially preferred than self-identified bullies and nonbullies. Self/victim identified bullies targeted victims with the highest social status. The association between bully type and victims' popularity was further qualified by bullies' own popularity and the degree to which they prioritized popularity. Implications for the implementation of dyadic nominations are discussed.

KEYWORDS

adolescence, aggression, dyadic nominations, popularity, victimization

1 | INTRODUCTION

Peer victimization has been studied extensively in youth, as it is associated with negative outcomes for both perpetrators (e.g., externalizing problems and social maladjustment) and victims

(e.g., internalizing problems; Branson & Cornell, 2009). A large proportion of research on bullying utilizes either self-report measures or peer nominations to identify perpetrators and victims in the peer group (e.g., Volk, Veenstra, & Espelage, 2017). Yet there is generally low to moderate agreement between

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self- and peer-reports (e.g., Branson & Cornell, 2009). In addition, past research indicates that victims identified via self- or peer-reports are characterized by different patterns of adjustment (e.g., Dawes, Chen, Farmer, & Hamm, 2017; Juvonen, Nishina, & Graham, 2001; Scholte, Burk, & Overbeek, 2013). However, it is not yet clear whether self- and peer-identified bullies also constitute distinct types of bullies, as has been found for victims.

Bullies and victims may not agree on whether bullying has occurred for several reasons. One of the explanations may lie in theories on self- and other-perceptions. Indeed, individuals' own self-perceptions are not always congruent with others' perceptions (e.g., self-other agreement; Carlson, Vazire, & Furr, 2011). According to an attributional bias framework, individuals are typically more likely to attribute their behaviors to situational or contextual factors, whereas observers of an individual are more likely to attribute the individual's behavior to stable personal dispositions (Jones, 1976; Jones & Nisbett, 1971). One explanation for this phenomenon is that actors are more familiar with their own experiences and can compare their current behavior with past behavior, and therefore may attribute any differences in behaviors to situational factors. Observers, however, do not have this additional information, and seem to view behaviors as indicative of someone's disposition. For example, if two youth are engaged in a conflict, the actor may not interpret his or her aggressive behavior as bullying and instead attribute the behavior to contextual factors, whereas an observer may be more likely to perceive the actor as a bully.

Relatedly, individuals are more likely to give themselves credit or the benefit of the doubt based on their intentions (e.g., Kruger & Gilovich, 2004). With regard to bullying, bullies and victims may interpret the same interaction differently (e.g., Kowalski, 2000). Some perpetrators may not view their behaviors as bullying because they did not intend to harm the victim or thought they were "joking around" (Kowalski, 2000). However, within the same interaction, an adolescent who identifies as a victim may be more likely to view the peer as a bully based on the victim's past personal experiences, rather than based on the actual interactions with the peer (Lansu, van Noorden, & Deutz, 2017). Discrepancies between self- and peer-reports may also arise because some adolescents may be more cognizant of their self-presentation and avoid reporting bullying due to social desirability biases (e.g., Pellegrini, 2001).

Given what is known about the discordance between self- and peer-reports of bullying (e.g., Branson & Cornell, 2009), it is likely that self and victim nominations identify different bullies, perhaps with distinct characteristics. Some youth (self-identified bullies) may more easily admit to bullying others as they do not disapprove the behavior that strongly or are more likely to view themselves as an aggressor because they are critical about the moral justness of their own behavior. On the other hand, other youth (peer-identified bullies) may be hesitant to identify themselves as a bully because they are aware of the antibullying norms or because they have biased perceptions of their aggressive interactions with their peer. Youth who admit to bullying and youth who deny bullying likely will have differences both in how they see themselves, as well as how they are seen by their peers. Furthermore, bullies identified by both self and victim nominations may represent a third, distinct group.

To this end, the current investigation had three key goals. We examined and compared the characteristics of adolescents who reported targeting specific peers via dyadic nominations (self-identified bullies), youth who were nominated by specific peers via dyadic nominations as bullying them (victim-identified bullies), and youth who both reported being a bully and were nominated by a victim as a bully via dyadic nominations (self/victim identified bullies). First, we examined how these bully types related to traditional measures of bullying. Second, we examined the aggressive behaviors and social status profiles of the bully types. Lastly, we examined whether the types of bullies targeted victims who differed in status and whether bullies' victim choice was predicted by their own popularity and prioritizing of popularity.

1.1 | Dyadic nominations of bullying

In addition to self- and peer-reports of bullying, researchers have recently begun to utilize a dyadic framework, which provides more insight into who bullies whom (Rodkin & Berger, 2008). Moreover, dyadic nominations assessing specific bully-victim dyads may address some limitations of self-reports and peer nominations. Unlike peer nominations, they are reports from youth who are personally involved in the bullying and can identify aggression that may go unnoticed by peers. They may also help avoid potential biases of self-reports by requiring youth to name a specific peer as his/her bully or victim (Casper, Meter, & Card, 2015). Although dyadic nominations provide an exciting opportunity to delve deeper into the dynamics of bully-victim relationships, surprisingly little is known about the characteristics of bullies identified via these measures, or who bullies whom.

Dyadic nominations of bullying were first used by Veenstra et al. (2007). Since then, dyadic nominations have been used in different ways. Of the studies implementing a dyadic framework, dyads typically have been identified either by uninvolved peers (e.g., *Who bullies whom*; Rodkin & Berger, 2008) or by youth actually involved in the bullying as a bully or victim (e.g., *Who do you bully, Who bullies you*; Veenstra et al., 2007). There are potential advantages to each method. Using reports of adolescents who acknowledge participation in bullying as either a bully or a victim may identify bullies or victims whose involvement in victimization is not visible or salient in the peer group. This is important, as some instances of bullying are intended to be covert (e.g., Volk et al., 2017). In fact, Hanish et al. (2016) found that only approximately half of adolescents were aware enough of bullying incidents to be able to identify at least one classmate who was a bully or victim. With this in mind, the current investigation utilized a dyadic measure to identify perpetrators from the perspective of bullies and victims.

1.2 | Differences in bullying involvement

Our first goal was to examine how self, victim, and self/victim identified bullies differ on traditional measures of bullying (individual peer nominations and self-reports) and involvement in bullying in other roles (i.e., as an assistant or reinforcer to the bully). Youth who are willing to admit

to bullying a specific peer (i.e., dyadic nominations) are more likely to view themselves as an aggressor in the peer group in general. In other words, these adolescents are likely to have self-perceptions of being a bully, regardless of their peers' perceptions. Therefore, self and self/victim identified bullies were expected to report higher levels of bullying behaviors on a self-report questionnaire than bullies identified by victims only and nonbullies. That is, adolescents who self-reported bullying any of their peers on the dyadic nominations were expected to score high on other self-report ratings of bullying as well.

Second, bullies who are identified by their victim (i.e., victim-identified and self/victim identified) may have a reputation for being aggressive amongst other classmates as well (e.g., Rodkin & Berger, 2008). Therefore, victim-identified and self/victim identified bullies are expected to be more strongly viewed by their peers as a bully (i.e., peer nominations) than self-identified bullies and nonbullies.

Third, distinct from actual bullying is participation in aggressive interactions in a role other than the bully (e.g., Salmivalli & Voeten, 2004). In particular, assistants (e.g., those who join a bully) and reinforcers (e.g., those who laugh when a bully attacks a victim) represent youth who may not always be the perpetrator of bullying but nonetheless help or encourage the bully. When victims report who bullies them, they may not distinguish assistants or reinforcers from the ringleader bully, given their involvement in bullying perpetration (e.g., Pouwels, Lansu, & Cillessen, 2016). Therefore, we expected that adolescents who are identified by victims as their bully might in fact also be considered assistants or reinforcers by others in the peer group and that this is more likely for victim-identified bullies than for self-identified bullies and nonbullies.

1.3 | Differences in aggressive behavior, social status, and popularity motives

Next, we examined how dyadic nominations of bullying were related to other social behaviors that are known to be associated with bullying, namely, aggression, social standing, and popularity motivations. Bullying is generally thought of as intentional, goal-directed behavior, similar to proactive aggression (i.e., unprovoked and goal-oriented; Volk, Dane, & Marini, 2014). Although a substantial amount of research has indicated a stronger association of bullying with proactive aggression (see Volk et al., 2014, for a brief review), there is also evidence for an association of bullying with reactive aggression (e.g., Salmivalli & Nieminen, 2002). Youth may only admit to bullying (i.e., self and self/victim identified bullies) when their aggressive behavior is very obvious and openly observable, consistent with a reactively aggressive profile (e.g., Salmivalli & Nieminen, 2002). Peers may perceive a youth's behavior as deliberate, goal-intended aggression (i.e., proactive), but that youth may attribute different motives or intent to his or her behavior. Youth who are proactively aggressive may not consider their behavior bullying, or may not admit to being a bully. Therefore, we expected victim-identified bullies to exhibit more proactive aggression than self-identified and self/victim identified bullies, and for all bullies (irrespective of the reporter) to be more reactively aggressive than nonbullies.

Although bullies in adolescence are a heterogeneous group with varying levels of social skills and status, bullies typically are disliked in the peer group despite potentially being popular (e.g., powerful and visible; Peeters, Cillessen, & Scholte, 2010). Therefore, we expected all types of bullies to be less preferred than nonbullies. Furthermore, because victim and self/victim identified bullies may be perceived more clearly as a bully by their classmates, their classmates may think less positively of them due to their aversive behavior. Therefore, we expected victim-identified and self/victim identified bullies to be less preferred than self-identified bullies and nonbullies.

Besides bullies' social standing in terms of being liked and preferred by the peer group, we also looked at social standing in terms of popularity. To compare bully types on popularity, we considered three indicators: peer- and self-reported popularity, and prioritizing popularity. Peer-nominated popularity indicates adolescents' social reputation and visibility in the peer group. Past research has indicated a positive association between bullying and peer-nominated popularity (e.g., Peeters et al., 2010). In fact, some youth may bully as a means to maintain or gain popularity (e.g., Volk, Camilleri, Dane, & Marini, 2012). Thus, we expected bullies to be more popular with peers than nonbullies. In addition, we expected victim- and self/victim identified bullies to be more popular than self-identified bullies, because they are perceived more clearly as a bully by their peers which implies they are being recognized by classmates as aggressive and in a position of power.

Self-reported popularity indicates the youth's perception of themselves. The association between self-reported popularity and bullying is less established. Conceptually, youth who are seen as a bully, either by themselves or their peers, may see themselves as more popular than nonbullies, but perhaps for different reasons. Vaillancourt, Hymel, and McDougall (2003) found that, compared with nonbullies, peer-identified bullies viewed themselves as more socially competent and efficacious. It is possible that victim-identified bullies receive external signals from their peers that they are socially successful, which in turn may be associated with higher self-reported levels of popularity. On the other hand, as other researchers have posited (e.g., Mayeux & Cillessen, 2008), adolescents' self-perceptions of their social situation may influence their behaviors (and vice versa). Therefore, we speculated that adolescents who see themselves as a bully may also see themselves as powerful in the peer group (i.e., higher levels of self-reported popularity).

Third, bullies may value popularity more than nonbullies, as bullying behaviors can help to achieve or maintain popularity (e.g., Duffy, Penn, Nesdale, & Zimmer-Gembeck, 2017; Juvonen & Galván, 2008). Although there are other reasons why youth bully (e.g., Thornberg & Knutsen, 2011), valuing popularity is consistently related to youth's aggression (e.g., Cillessen, Mayeux, Ha, de Bruyn, & LaFontana, 2014; Dawes & Xie, 2014). For youth who want to be popular, being aggressive may serve to demonstrate his/her dominance or to hurt a social competitor. To measure prioritizing popularity, we considered both how important adolescents think it is to be popular, as well as the degree to which they prioritize popularity over other social domains (e.g., friendship and romantic relationships).

Given the associations between aggression and popularity motivations, we expected all three types of bullies to value popularity more than nonbullies.

1.4 | Differences in bullies' victims

In addition to potential differences in traditional measures of bullying (goal 1) as well as social status and behavior (goal 2), we examined whether self-identified, victim-identified, and self/victim identified bullies target different types of victims. Broadly, two key theoretical models have emerged to explain the selection of victims. The first model (i.e., "easy" or "normative" targeting) depicts victims as weak and socially marginalized youth who are targeted by more powerful and popular peers (e.g., Andrews, Hanish, Updegraff, Martin, & Santos, 2016). The second model (i.e., "challenging" or "instrumental" targeting) argues that an aggressor chooses a victim with relatively high status (Andrews et al., 2016). This model can be understood from the perspective of social dominance theory. A fundamental principle of social dominance is that only a few individuals can be at the top of the peer group hierarchy (Hawley, 1999), and bullying thus may be used to challenge competitors for the high-status positions.

We examined if the popularity levels of victims targeted by each of the three bully types supported the easy target or the challenging target perspective. In line with the challenging target model, we hypothesized that adolescents who are at the top (are popular) or who want to be (prioritize popularity) will target social competitors and thus select victims with high status. We expected the same pattern for youth identified by victims as a bully (victim- and self/victim identified), but not self-identified bullies, as peer-identified bullies are recognized by classmates as aggressive and/or in a position of power.

We also examined the interaction between bully type, bullies' actual popularity, and bullies' priority to be(come) popular in victim selection. Specifically, we expected that for more powerful bullies (i.e., highly popular and victim- or self/victim identified) who greatly prioritize popularity, even at the expense of other priorities (e.g., friendship), the hypothesized process of selecting high-status victims to increase their own popularity is even more important.

2 | METHODS

2.1 | Participants and procedure

Participants were part of the Kandinsky Longitudinal Study, a longitudinal study of the psychosocial well-being of youth in secondary school (van den Berg, Burk, & Cillessen, 2019). Since its origination, this project has completed nine waves (Wave 1 in 2010 through Wave 9 in 2018). The current investigation focused on a cohort of adolescents who participated in the 7th wave of data collection (year 2016), as this wave included all the measures relevant to this study. All students in Grades 7–10 were assessed, which are the first 4

years of secondary education in The Netherlands. Of the 1,066 participants, 58 did not complete the dyadic nominations, which resulted in a final sample of 1,008 adolescents (50.1% male). The average age in Grade 7 was 12.61 years (standard deviation [SD] = 0.43; range 11.29–14.31) and 15.90 years in Grade 10 (SD = 0.63; range 14.10–17.80). Most students were born in the Netherlands (90.2%).

The Kandinsky Longitudinal Study was conducted by the request of the head of school, who claimed responsibility for the parental consent procedure. Parents received a letter describing the purpose and procedures of the assessment. Parents were asked whether they wanted to exclude their child from participation. All parents allowed their children to participate. Adolescents were also asked to give assent at the beginning of the assessment. All students agreed to participate. The Institutional Review Board of the Behavioural Science Institute at Radboud University approved of this procedure.

2.2 | Measures

2.2.1 | Sociometric and peer assessments

Peer nominations, dyadic nominations, and self-reports were assessed using a computerized questionnaire (for full procedure, see van den Berg & Cillessen, 2013). For each peer nomination, participants could nominate an unlimited number of same- and cross-gender classmates, with a minimum of one, excluding themselves. For dyadic nominations, participants also could nominate an unlimited number of same- and cross-gender classmates, but were not required to make any nominations. A list of all measures is available in Supporting Information 1.

2.2.2 | Dyadic nominations of bullying

Dyadic nominations were used to identify victim-, self-, and self/victim identified bullies. Participants were asked to nominate specific classmates who they bully (i.e., *Who do you bully*) as well as classmates who bully them (i.e., *Who bullies you?*).

Self-identified bully

If a participant reported bullying at least one classmate but was not nominated by a victim as a bully, they were coded as "1" (self-identified).

Victim-identified bully

If a participant was nominated by at least one peer as a bully but did not report bullying any classmate, they were coded as "2" (victim identified).

Self/victim identified bully

Self/victim identified bullies were identified by combining the two dyadic nomination questions (e.g., *Who do you bully*; *Who bullies you*). If a participant reported bullying at least one classmate and was also

nominated by at least one peer as a bully, the participant was coded as “3” (self/victim identified).

2.2.3 | Bullying involvement

Self-report and traditional peer nominations were used to examine bullying involvement. For each peer nomination question, participants could nominate an unlimited number of same- and cross-gender classmates, with a minimum of one. They could not nominate themselves. The number of nominations received for each question was standardized within classrooms.

Self-reported bullying

Participants completed the six-item bully scale of the revised Olweus Bully-Victim questionnaire (e.g., “How often do you hit, kick, or threaten classmates?”; Solberg & Olweus, 2003). The items were rated on a 5-point scale, ranging from 0 (“never”) to 4 (“several times a week”).

Peer-nominated bullying

To assess peer-nominated bullying, participants nominated classmates “who bully others.”

Reinforcing

To measure reinforcement of bullying behavior, participants were asked “There are youths who encourage bullies, for example, by laughing or giggling. Who in your class does this?”

Assistance

To measure assistance in bullying and assistant participants were asked “There are youths who participate in bullying after another begins bullying. Who in your class does this?”

2.2.4 | Proactive and reactive aggression

Peer nominations were used to measure aggressive behavior. Unlimited, same-sex and cross-sex nominations were allowed. For each item, the number of nominations received was counted and standardized within classrooms.

Proactive aggression

Participants were asked to nominate classmates “who try to reach their goals by using aggressive behavior. These classmates intimidate, manipulate or bully others to get admiration, respect or objects” (van den Berg et al., 2019).

Reactive aggression

Participants were asked to nominate classmates “who feel threatened or attacked easily (even though this might not have been intended). These classmates are not able to control their behavior and feelings and react with aggressive behavior, like yelling or hitting” (van den Berg et al., 2019).

2.2.5 | Social status

The social status of the participants was assessed using a self-report measure as well as peer nomination questions. For the peer nomination questions, participants were allowed to name as many as they wanted, with a minimum of one. Again, both same-sex and cross-sex nominations were allowed and participants were unable to nominate themselves.

Preference

Participants were asked who were “most liked” and “least liked.” For each participant, the number of nominations received for each item was counted and standardized within classrooms (Cillessen & Marks, 2011). A score for social preference was computed by subtracting “least liked” scores from “most liked” scores, again standardizing the resulting difference score within classrooms.

Popularity

Participants were asked who were “most popular” and “least popular.” Popularity was calculated by taking the difference score between the “most” and “least” popular scores, again standardizing the difference within classrooms.

Self-reported popularity

Participants rated their own popularity (“How popular are you in your class?”), using a Likert scale ranging from –3 (“very unpopular”) to 3 (“very popular”).

Victim popularity

To assess victim popularity, we first had to identify the victims. If the participant nominated a person as their victim, that person was considered a victim (i.e., they were nominated for the question “Who do you bully”). If a participant said themselves that they were victimized (i.e., they nominated classmates as their bully on “Who bullies you”), they were also considered a victim. For each victim, we then computed their peer-nominated popularity score. If a bully was linked to more than one victim (e.g., they were named by more than one victim as a bully), we retained the highest popularity score of the bully's victims.

2.2.6 | Prioritizing popularity

Prioritizing popularity was measured with two different measures to assess both the importance of popularity as the priority of popularity over other social goals.

Importance of popularity

Adolescents were asked how important they found popularity with the question “How important is it for you to be popular in your class?” They could answer this question on a 6-point Likert scale ranging from –3 (“not important at all”) to 3 (“very important”).

Priority of popularity

Adolescents completed the 20-item measure of priority of popularity (LaFontana & Cillessen, 2010). Participants were presented with 10 vignettes describing a dilemma. For each vignette, adolescents rated the likelihood they would behave in two different ways. One action always demonstrated popularity priority, and the second action represented one of five other themes (e.g., friendship, romance, rule adherence, achievement, and altruism). Adolescents gave a rating from 1 ("definitely not") to 6 ("definitely") describing how likely they would be to choose each option (prioritizing popularity vs. prioritizing the alternative theme), with the order of the themes counter-balanced. This measure resulted in 20 ratings, which were reverse-coded and averaged to form a continuous score ($\alpha = .80$). The final score represented each participant's prioritization of popularity across the five themes combined.

3 | RESULTS

3.1 | Descriptive statistics

A total of 237 bullies were identified by the dyadic nominations. Of these, 55.7% were victim identified, 32.1% were self-identified, and 12.2% were identified by both victim and self. Thus, there was a relatively low agreement between bullies and victims. All variables were significantly correlated with all other variables, with the exceptions of reactive aggression, prioritizing popularity, and the rating of popularity importance (see Table 1 for more details).

To ensure that differences between types were not due to the number of victims of each bully type, we compared the number of self-reported victims (according to the dyadic nominations) with self-identified and self/victim identified bullies and the number of peer-reported victims (according to the dyadic nominations) with

victim-identified and self/victim identified bullies (Table 2). There were no significant differences between the overall number of self-reported or peer-reported victims.

3.2 | Dyadic nominations of bullying

A series of one-way ANOVAs were conducted to examine differences in bullying, aggression, social standing, and prioritizing popularity between the three bully types and nonbullies, with gender controlled. Due to the number of ANOVAs conducted, models were only considered significant at $p < .001$. Bonferroni post hoc tests were used to account for multiple comparisons. Results and effect sizes are presented in Table 2. Namely, there was a significant main effect of bully type on peer-nominated bullying, self-reported bullying, reinforcers, and assistants. Victim-identified and self/victim identified bullies scored higher on peer-nominated bullying, assisting and reinforcing than self-identified bullies and nonbullies. For self-reported bullying, self/victim identified bullies scored highest, followed by self-identified bullies, followed by both victim-identified bullies as well as nonbullies.

Given that the bullying indices are correlated, we also tested the differences between types of bullies and nonbullies in a structural equation modeling (SEM) framework. Using a SEM framework accounted for the covariance between the outcomes. Dummy codes were created for each bully type and nonbullies. For the first SEM model, we used nonbullies as the reference group. To ensure that each group was compared with all other groups, we then analyzed the SEM model again with each bully type as the reference group. Each of these models had adequate fit, Comparative Fit Index (CFI) > 0.99 , root mean square error of approximation (RMSEA) < 0.09 , standardized root mean square residual (SRMR) < 0.04 . The same results emerged as in the series of one-way ANOVAs (more details can be found in Supporting Information 2).

TABLE 1 Bivariate associations between continuous study variables

Variable	1	2	3	4	5	6	7	8	9	10
1. Peer-nominated bully	-									
2. Self-reported bully	.128***	-								
3. Bully assistant	.584***	.137***	-							
4. Bully reinforcer	.543***	.181***	.686***	-						
5. Proactive aggression	.601***	.158***	.466***	.453***	-					
6. Reactive aggression	.184***	.036	.100**	.045	.313***	-				
7. Social preference	-.338***	-.096**	-.222***	-.175***	-.396***	-.401***	-			
8. Peer-nominated popularity	.340***	.117***	.422***	.500***	.198***	-.238***	.306***	-		
9. Self-reported popularity	.224***	.100**	.289***	.337***	.145***	-.149***	.153***	.549***	-	
10. Priority of popularity	.094**	.136***	.170***	.152***	.062	-.069*	-.012	.138***	.168***	-
11. Popularity importance rating	.041	.125***	.103**	.128***	.040	-.080*	.107**	.248***	.392***	.319***

* $p < .05$.

** $p < .01$.

*** $p < .001$.

TABLE 2 Comparison of study variables by the bully informant: Means (standard deviations)

	Bully type				t	
	Self identified	Victim identified	Self/victim identified	Nonbully		
Number of victims (self-reported)	1.71 (2.21)	–	1.17 (0.38)	–	1.30	
Number of victims (peer reported)	–	1.39 (0.80)	1.76 (1.12)	–	–1.69	
	Self identified	Victim identified	Self/victim identified	Nonbully	F	ηp^2
Peer-nominated bully	–0.09 ^b (0.91)	1.07 ^a (1.36)	1.36 ^a (1.26)	–0.24 ^b (0.65)	116.25 ^{***}	.26
Self-reported bully	9.49 ^b (3.67)	7.25 ^c (1.71)	10.72 ^a (3.28)	7.01 ^c (1.47)	75.61 ^{***}	.19
Bully assistant	–0.04 ^b (0.94)	0.94 ^a (1.25)	1.24 ^a (1.29)	–0.19 ^b (0.79)	71.33 ^{***}	.18
Bully reinforcer	–0.08 ^b (0.73)	0.89 ^a (1.21)	1.08 ^a (1.54)	–0.18 ^b (0.82)	58.98 ^{***}	.15
Proactive aggression	–0.16 ^c (0.76)	0.74 ^b (1.38)	1.38 ^a (1.81)	–0.17 ^c (0.70)	54.52 ^{***}	.15
Reactive aggression	–0.04 (0.82)	0.16 (1.22)	0.22 (1.31)	–0.05 (0.91)	1.77	.01
Social preference	0.00 ^b (1.74)	–0.76 ^a (1.97)	–1.29 ^a (1.82)	0.19 ^b (1.50)	18.21 ^{***}	.05
Peer-nominated popularity	0.08 ^{b,c} (1.64)	0.91 ^a (1.75)	0.89 ^{a,c} (1.59)	–0.17 ^b (1.57)	19.48 ^{***}	.06
Self-reported popularity	3.96 ^b (1.16)	4.48 ^a (0.98)	4.52 ^{a,b} (1.30)	4.06 ^b (1.00)	6.89 ^{***}	.02
Priority of popularity	2.81 ^a (0.68)	2.72 ^{a,b} (0.63)	2.82 ^{a,b} (0.71)	2.57 ^b (0.60)	4.58 ^{**}	.02
Importance of popularity	3.11 (1.49)	2.96 (1.60)	4.00 (1.49)	3.07(1.40)	4.24	.01

Note: Means in the same row that do not share superscripts differ at $p < .05$ using Bonferroni's post hoc comparison. The overall ANOVA tests for reactive aggression and importance of popularity were not significant at $p < .001$; therefore, any mean differences on these variables are not reported.

Abbreviation: ANOVA, analysis of variance.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

3.3 | Differences in aggression, social status, and popularity motives

Next, we compared the different types of bullies on proactive and reactive aggression, social status, and prioritizing popularity (see Table 2 for results). There was a significant main effect of bully type on proactive aggression, social preference, peer-nominated popularity, self-reported popularity, and priority of popularity. Victim-identified and self/victim identified bullies were higher in proactive aggression and lower in social preference than both self-identified bullies and nonbullies and were more popular than nonbullies. Victim-identified bullies also self-reported higher levels of popularity than self-identified bullies and nonbullies. Self-identified bullies prioritized popularity more than nonbullies. There, however, were no significant effects of bully type on reactive aggression or importance of popularity at $p < .001$.

Due to the overlap between aggression, social status, and prioritizing popularity, we again tested for differences between types of bullies and nonbullies in SEM, using the same procedure as described above. These models also had an adequate fit, CFI > 0.98, RMSEA < 0.09, and SRMR < 0.03. As with the bullying indices, the results were largely identical as with the ANOVAs, with one exception. Using the SEM framework, self/victim identified bullies were less preferred than victim-identified bullies. All other findings were the same (see Supporting Information 2).

3.4 | Differences in bullies' victims

To examine how the bully types, their popularity, and their prioritizing of popularity were related to the status of their victims, linear regressions were run. For the first set of regressions (see Table 3 Panel A), two dummy codes were created to test differences between self/victim identified, victim-identified, and self-identified bullies, with self-identified bullies as the reference group. To ensure that all bully types were compared, we performed a second set of regressions (Table 3 Panel B) with new dummy codes and self/victim identified bullies as the reference group. Gender was controlled for in each model.

We conducted a multiple linear regression with victim popularity as the outcome, and the main effects of gender, the dummy-coded bully types, bully popularity, and bully prioritizing of popularity as the predictors, $F(5, 201) = 3.62$, $p = .004$, adjusted $R^2 = .060$ (see Table 3 for more information regarding the predictors). Self-identified bullies were less likely to target high-status victims than victim-identified ($p = .049$) and self/victim identified bullies ($p = .009$). Next, we added the interaction of bully type by bully's popularity and by bully's prioritization of popularity to the prediction of victim popularity for each dummy-coded bully type, $F(12, 194) = 2.54$, $p = .004$, adjusted $R^2 = .082$ (see Table 3 for list of predictors).

To clarify this interaction, we plotted the interaction between bully popularity and bully prioritizing of popularity for each bully type (see Figure 1). The association between bully popularity and bully prioritizing

TABLE 3 Predicting victim's popularity from bully type, bullies' popularity, and bullies' prioritization of popularity

Bullies characteristics	Model 1		Model 2	
	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>
Panel A				
Gender	-0.20	0.29	-0.11	0.29
Popularity	0.18*	0.08	0.25	0.14
Prioritization of popularity	0.09	0.21	-0.10	0.36
Victim identified bully	0.61*	0.31	0.61	0.33
Self/victim identified bully	1.17**	0.45	1.31**	0.50
Popularity × prioritization of popularity			0.73*	0.29
Popularity × victim-identified bully			-0.09	0.17
Popularity × self/victim identified bully			-0.16	0.27
Prioritization of popularity × victim-identified bully			0.31	0.48
Prioritization of popularity × self/victim identified bully			0.30	0.81
Popularity × prioritization of popularity × victim-identified bully			-0.56	0.34
Popularity × prioritization of popularity × self/victim identified bully			-1.18**	0.44
Panel B				
Gender	-0.20	0.29	-0.11	0.29
Popularity	0.18*	0.08	0.09	0.22
Prioritization of popularity	0.09	0.21	0.20	0.73
Self-identified bully	-1.17**	0.45	-1.31**	0.50
Victim identified bully	-0.56	0.41	-0.70	0.47
Popularity × prioritization of popularity			-0.45	0.34
Popularity × self-identified bully			0.16	0.27
Popularity × victim-identified bully			0.07	0.25
Prioritization of popularity × self-identified bully			-0.30	0.81
Prioritization of popularity × victim-identified bully			0.01	0.80
Popularity × prioritization of popularity × self-identified bully			1.18**	0.44
Popularity × prioritization of popularity × victim-identified bully			0.62	0.38

Note: $N = 207$. In Panel A, two dummy codes were created to test differences between self/victim identified, victim-identified, and self-identified bullies, with self-identified bullies as the reference group. In Panel B, new dummy codes were created with self/victim identified bullies as the reference group.

Abbreviation: *SE*, standard error.

* $p < .05$.

** $p < .01$.

of popularity was significantly different between self-identified bullies and self/victim identified bullies ($p = .008$), but not between victim-identified bullies and self/victim identified bullies or victim-identified bullies and self-identified bullies. To further understand this interaction, we tested the two-way interaction of bully's popularity by bully type separately for different levels of popularity prioritizing. Self/victim identified bullies and self-identified bullies significantly differed ($p = .012$) at high levels of popularity prioritizing. At high levels of popularity prioritizing, self/victim identified bullies who were high in popularity targeted victims with lower status than self/victim identified bullies who were low in popularity. Self-identified bullies with high popularity prioritizing and high popularity targeted victims with higher status than self-identified bullies with high popularity prioritizing and low popularity. Simple slopes analysis revealed significant slopes for self-identified bullies with high popularity prioritizing ($p = .01$) and victim-identified bullies with high popularity prioritizing ($p = .04$).

4 | DISCUSSION

By using dyadic nominations of bullying, we were able to examine behavioral differences in bullies, as well as how characteristics of bullies (bully type, popularity, and popularity prioritizing) were related to the victims chosen. Our examination revealed several important findings. Concordance of dyadic nominations with traditional measures of bullying varied across bully types, which has important implications for the implementation of dyadic nominations. Potential discrepancies between informants are particularly relevant for the use of dyadic nominations. Future studies using dyadic nominations should be cognizant that only a small proportion of bullies may be both self- and victim-identified, making it important to consider the dyadic nominations from the perspectives of both bullies and victims separately. Moreover, we found that the bully types varied considerably in terms of aggression and social standing. Lastly, bullies' characteristics were significantly associated with their victims' popularity, adding to growing evidence that there is heterogeneity in the social status of victims of aggression (e.g., Andrews et al., 2016; Dawes & Malamut, 2018).

4.1 | Differences in bully types

To examine the association between characteristics of bullies and their victims, we first sought to understand differences in bullies identified via dyadic nominations (self-identified, victim-identified, and self/victim identified), with nonbullies as a comparison group. Most bullies were victim-identified (55.7%) or self-identified (32.1%), with only a small proportion of bullies as self/victim identified, which supports past research indicating low agreement between self and peer reports of bullying (e.g., Branson & Cornell, 2009). A large number of victim-identified bullies and relatively low number of

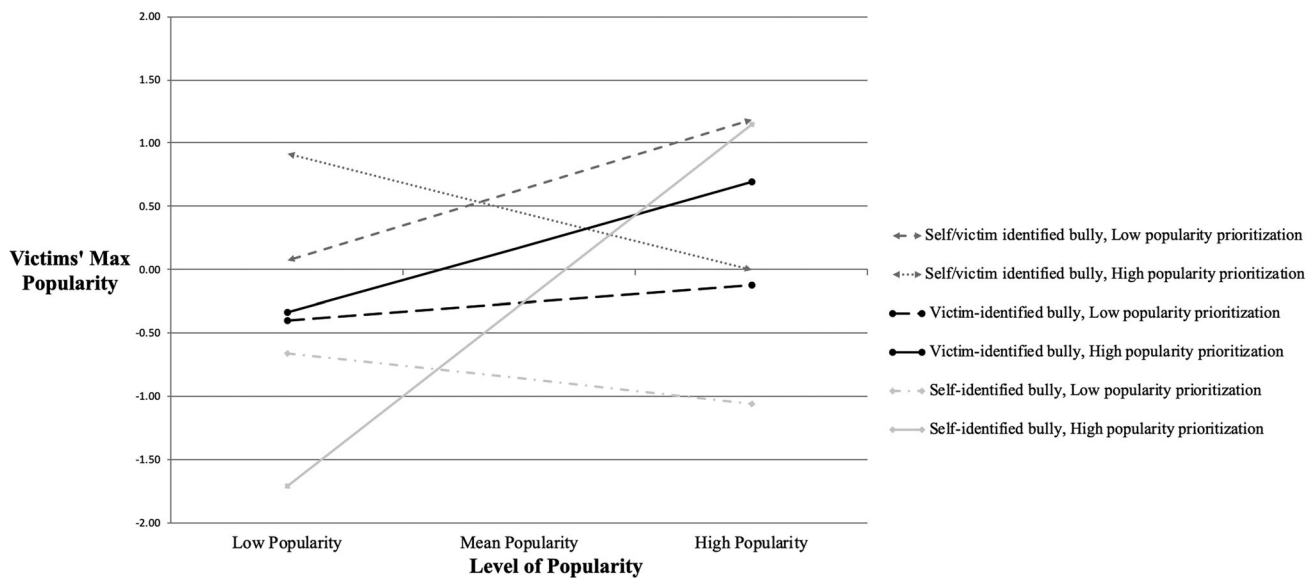


FIGURE 1 Predicting max popularity of victim(s) from bully type, bullies' popularity, and bullies' popularity prioritization with gender controlled

self/victim identified bullies is not surprising. According to an attributional bias framework, individuals are likely to interpret the same behavior in different ways. For example, a victim-identified bully may have been involved in a conflict or aggressive interaction with another peer. The victim-identified bully will perceive that interaction through the lens of his/her past behaviors and may attribute the interaction to contextual factors (or even blame the victim). On the other hand, the victim is less likely to view the interaction as context-dependent. Alternatively, victim-identified bullies may simply be aware of the negative perceptions towards bullying, and therefore are hesitant to admit to bullying. To our knowledge, this is the first study to systematically compare self-identified, peer-identified, and self/victim identified bullies. Similar to past research differentiating between victim types based on the informant, we identified distinct behavior profiles across bully type.

In general, victim-identified and self/victim identified bullies fit the typical profile of bullies in terms of aggressive behaviors and social standing more than self-identified bullies. Peer-identified bullies (victim-identified and self/victim identified) had higher peer nominations for being bullies, reinforcers, and assistants. On average, bullies only targeted one or two classmates. Although this number is small, youth who were identified by a classmate as a bully via dyadic nominations were still known in the peer group as a bully. This supports that peers generally are a reliable source of their classmates' bullying behaviors. Our findings also support previous research indicating a moderate overlap between bullies and reinforcers/assistants (e.g., Pouwels et al., 2016). One reason for this is that adolescents may conflate the roles of reinforcers and assistants with bullying. In other words, youth may name peers as bullies who are often present as a reinforcer or assistant during bullying. Another explanation is that bullies tend to be affiliated with one another (e.g., Espelage & Holt, 2001), and perhaps act as a bully in

some incidents and a reinforcer or assistant to their friends in other situations.

For aggression, we found more differences in proactive aggression across bully type than in reactive aggression. As we predicted, self-identified bullies were less proactively aggressive than victim-identified bullies. Contrary to our expectations, self/victim identified bullies were more proactively aggressive than victim-identified bullies. Self/victim identified bullies are a subset of youth who both admit to being a bully and are seen by peers as a bully, which appears to be reflected in their reputations as being goal-directed and intentionally aggressive. In contrast to proactive aggression, no significant differences emerged for reactive aggression. Taken together, these results support past findings that bullying is more strongly associated with proactive aggression than with reactive aggression (e.g., Volk et al., 2014), regardless of the informant. This suggests that youths' are more likely to factor in whether a behavior seems goal-oriented when classifying behavior as bullying, rather than simply whether a behavior was aggressive or not.

Adolescents' social standing not only influences their likelihood to engage in aggressive behaviors, but aggression can also be used strategically to gain or maintain status (e.g., Juvonen & Galván, 2008). Given that social status and aggression are strongly intertwined in adolescence, it is important to understand the social standing of bullies. Peer-identified bullies fit the perception of bullies as popular and disliked (Peeters et al., 2010). We expected all peer-identified bullies to also see themselves as powerful (i.e., self-reported popularity). Indeed, victim-identified bullies rated themselves as more popular than self-identified bullies and nonbullies. However, seeing oneself as a bully (i.e., self-identified and self/victim identified) was not associated with higher levels of self-perceived popularity. Popularity and bullying are correlated (e.g., Peeters et al., 2010); however, youth who admitted to being aggressors did not think they were especially popular in the peer group.

Although popularity is a powerful indicator of social status, it is also important to consider youths' motivation to be popular. Popularity and popularity motivations are correlated but are uniquely related to aggression (e.g., Cillessen et al., 2014). The groups did not significantly differ in how important they rated popularity. However, self-identified bullies prioritized popularity more than nonbullies. These findings suggest that popularity motivations may be related to aggression, but are not strong predictors of bullying by themselves. Future research should examine whether bullying is more likely to occur when adolescents strive for popularity and believe that aggression is an effective means to obtain status. Whether or not youth believe aggressive behaviors will successfully help their popularity will likely influence which classmates they target with aggression. Moreover, some youth may want to be popular, yet do not have the social resources to successfully use aggression for achieving popularity and therefore are aware that bullying will not be effective for them.

Of note, self-identified bullies and nonbullies only differed on self-reported bullying and prioritizing popularity. This is an interesting group that should be studied more, as they consider themselves bullies without being seen as bullies by their peers and without the typical characteristics of bullies. The existence of this group raises an important question: Is it still bullying if only the "perpetrator" considers it as such? It is possible that these adolescents are not actually bullies, and simply are misinterpreting their actions as bullying. It is also possible that they are in an aggressive dyadic relationship with one or two classmates, but are not seen as aggressive or a bully by the peer group at large. It is important to better understand the profile of self-identified bullies, as they made up a substantial proportion of bullies in our study (32.1%). Future research should further investigate the relationships between self-identified bullies and the classmates who they report bullying. For example, do self-identified bullies target classmates they dislike? Are these dyadic relationships unilateral or mutual antipathies? The answers to such questions will provide more insight into whether self-identified bullies are misinterpreting their own behaviors (e.g., nominating classmates with whom they have positive or neutral relationships) or if they are involved in serious negative relationships that may get worse over time and pose a significant risk for both youths involved.

4.2 | Differences in bullies' victims

We further extended our knowledge of differences in bully types by focusing on the associations of type of bully, bullies' popularity, and bullies' prioritizing of popularity with the popularity of their victims. Our findings add to a growing body of research suggesting that not all victims of aggression have low social status (e.g., Andrews et al., 2016; Malamut, Dawes, & Xie, 2018). Furthermore, our results suggest that different types of bullies may choose different targets. Popular bullies were more likely to target at least one high-status victim, consistent with social dominance theory. Popular youth may target other popular youth to challenge competitors, as they have the social resources needed to target a peer with status. This is also consistent with work

by Lansu, Cillessen, and Karremans (2012) showing that popular adolescents are particularly likely to pay attention to each other as if they are keeping an eye on the competition.

When controlling for bullies' popularity and prioritizing popularity, there was a significant association between bully type and victims' popularity. As we expected, peer-identified bullies targeted victims with a higher popularity than self-identified bullies. Overall, our findings suggest that victim-identified and self/victim identified bullies represent a more powerful type of bullies than self-identified bullies. Peer-identified bullies appear to be more aggressive and to have more social resources, which may provide them with more opportunities than self-identified bullies to target high-status peers. This suggests that peer-identified bullies are more likely than self-identified bullies to choose targets consistent with the "challenging" model. Taken together, our results build on past research by identifying distinct profiles of bullies (e.g., Vaillancourt et al., 2003) who may differentially use aggression.

Nonetheless, the associations between popularity and aggression appeared to be complex and were related to aggressors' prioritizing of popularity (e.g., Cillessen et al., 2014). Self/victim identified bullies typically targeted higher status victims than the other types. However, self/victim identified bullies with high popularity prioritization chose targets with lower popularity than self/victim bullies with low popularity prioritization. This suggests that although self/victim identified bullies, in general, were more likely to target high-status victims, they may be more careful who they aggress against when they do not want to risk or lose their popularity (i.e., have high popularity prioritization). Self-identified bullies with low popularity prioritization targeted victims with low status, regardless of their own popularity. On the other hand, self-identified bullies with high popularity prioritization were more likely to choose higher status victims if they themselves had high status than if they had low status. When victim-identified bullies did not prioritize popularity, bullies' popularity did not relate to the status of their victims. If victim-identified bullies had high popularity prioritization, the status of their victims increased as the bullies' own popularity increased.

Moreover, the range in victims' popularity across the bully types was smaller when bullies were more popular and had high popularity prioritization. This suggests that if a bully is popular and cares about being popular, the bully type may not have as much influence on a target's status as when the bully either is not popular or does not care about being popular. Together, these findings suggest that whether bullies choose normative targeting (against a depowered youth) or instrumental targeting (against youth with social power) may depend on an assortment of bullies' characteristics, including their type, popularity, and popularity prioritization.

4.3 | Study limitations and conclusions

To our knowledge, this is one of the first studies on types of bullies identified via dyadic nominations in a large sample of adolescents. As dyadic nominations can be used to ask interesting questions

regarding who victimizes whom, it is important to understand the characteristics of youth who are identified as bullies by dyadic nominations. Furthermore, this study adds to research suggesting that there is variation in victims' popularity, and helps elucidate the association between bullies' characteristics and their victims' social status. Despite these strengths, there are limitations that should be addressed.

First, we cannot make any claims regarding longitudinal associations between bullies' and victims' characteristics. This study provided novel information regarding concurrent links between different types of bullies and their victims. However, future research should examine the characteristics of individuals that longitudinally predict the formation of bully-victim dyads.

Second, the nomination procedures in this study were within classrooms, not within grades. We were able to identify youth who were a self or peer-reported bully of a classmate, but not in the larger grade or entire school. In the Dutch school system, youth spend the vast majority of the day with the same class of peers, and most relationships are formed within this group. However, it is possible that some youth were involved in bully-victim dyads with peers outside of their classroom, which could have implications for the identification of bullies.

In general, our findings support that dyadic nominations identify different profiles of bullies, depending on how the measure is used. The self-identified and self/victim identified groups are of particular interest. As self-identified bullies did not exhibit many traits that are commonly associated with bullies, more research is needed to understand this group. Given known gender differences in bullying (e.g., Vaillancourt et al., 2003), another progression of this study is to examine boys and girls identified as bullies separately. Future studies should investigate further differences in bully types identified by dyadic nominations (e.g., friendships and academic outcomes). Furthermore, different types of bullies appear to choose different targets. By utilizing dyadic nominations, researchers can better understand the characteristics of youth that predict their involvement in bully-victim relationships.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

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