

Casualties of Social Combat: School Networks of Peer Victimization and Their Consequences

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Abstract

We point to group processes of status conflict and norm enforcement as fundamental elements in the development of school-based victimization. Socially vulnerable youth are frequently harassed for violating norms, but the logic of status competition implies they are not the only victims: to the extent that aggression is instrumental for social climbing, increases in status should increase risk—at least until the pinnacle of the hierarchy is reached. Victimization causes serious harm, and, we argue, at the margin these consequences will be magnified by status. We test these ideas using longitudinal network data on friendship and victimization from 19 schools. For most students, status increases the risk of victimization. However, youth at the uppermost extremes of the school hierarchy—students in the top 5 percent of centrality and those with cross-gender friendships where such friendships are rare—sit just above the fray, unlikely to fall victim to their peers. As expected, females and physically or socially vulnerable youth are victimized at particularly high rates. Victims experience psychological distress and social marginalization, and these adverse effects are magnified by status. For most students, gains in status increase the likelihood of victimization and the severity of its consequences.

Keywords

bullying, peer victimization, social status, small group hierarchy

Do the strong attack the weak? Observational studies of dominance hierarchies among humans and animals suggest, with some exceptions, that the weakest members bear the brunt of abuse (Chase 1980; Levi Martin 2009). Bullies¹ strategically target their most defenseless classmates, selecting victims who are rejected and lack self-esteem (Saino et al. 2012; Veenstra et al. 2010). Exposing weakness during a confrontation can also trigger dramatic, panicked violence (Collins 2003). Such findings resonate with recent media accounts of bullying-related tragedies, which suggest great vulnerability on the part of victims.

Clearly it is the strong who do the attacking: recent scholarship has debunked the traditional view of aggressive youth as socially marginal and psychologically troubled. Indeed, aggressors often possess strong social

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skills (Sutton, Smith, and Swettenham 1999) and harass their peers, not to reenact their own troubled home lives, but to gain status (Faris and Ennett 2012; Sijtsema et al. 2009). Furthermore, as youth ascend school social hierarchies, their aggressive behavior increases, at least until they approach the pinnacle (Faris and Felmlee 2011). However, this provides little in the way of guidance regarding their victims: if the strong are doing the attacking, it is not at all clear *who* they attack, or from which social strata their targets are chosen. Furthermore, victimization by schoolmates causes a wide range of social, psychological, and physical health problems, but victims are invariably analyzed as a uniform category and research has not examined whether these adverse consequences vary based on victims' social status. Here, we examine (1) how status can increase the likelihood of victimization, and (2) how status might magnify the subsequent social psychological distress caused by victimization.

The empirical research on victimization suggests unequivocally that vulnerable, weak, or stigmatized youth comprise the victims of peer harassment (Graham and Juvonen 1998; Hay, Payne, and Chadwick 2004; Hodges and Perry 1999; Nansel et al. 2001). There is little doubt these students are abused and tormented with regularity, but probably not for instrumental reasons: harassing such targets poses few risks to tormentors, but, considering these students' vulnerability, also offers few benefits. We believe the focus on vulnerability, coupled with the traditional understanding of aggression as overt behavior, obscures the covert machinations of those jockeying for position. The struggle for status is subtle, and the ammunition of social combat includes not just taunts and shoves, but side glances, eye rolls, and text messages. Furthermore, the socially instrumental nature of much aggressive behavior implies the existence of a different (and previously overlooked) class of victims: to the extent that aggression is instrumental, increases in social status should be accompanied by *increased* risk of victimization. Targeting prominent rivals makes strategic sense; conversely,

harassing the weakest members of a group is singularly unimpressive. Sociological research on social status focuses almost exclusively on its (often unmerited) benefits, but we highlight its dark side, identifying the unnoticed victims of school-based aggression: popular students near the hub of school social life, hidden in plain sight.

Moreover, a given incident of victimization is apt to cause disproportionate suffering for these high-status victims, at least at the margin. Their now jeopardized social position, in which they have likely invested heavily, leads them to anticipate a long fall to the bottom. Without discounting the trauma experienced by the chronically vulnerable, these popular victims undergo more drastic identity changes than do students whose abuse only reinforces a lowly social position. Prevailing scholarship and popular perceptions construe the wallflower as the primary target of bullies, but we present reasons to anticipate the counterintuitive finding that *status increases both the risk of victimization and, crucially, the severity of its consequences.*

We advance these linked arguments by embracing social network theories of status and power, which identify individuals in the center of networks as more powerful than those at the margins (Friedkin 1991; Marsden and Laumann 1977). In particular, people who connect many others (others who would otherwise be disconnected or more distantly connected) have greater leverage, influence, and control over information and resources (Burt 1982; Freeman 1979). Experimental manipulation of networks demonstrates that these individuals diffuse behaviors as well as create tangible power imbalances (Cook et al. 1983; Emerson 1972; Molm 1990, 1997). Actors in advantageous network positions are likely to further increase their status (Gould 2002), and aggression is one tactic that can be effective toward that end (Faris 2012). We use longitudinal data on networks of both friendship and victimization to examine the risks associated with social status—as reflected by social network centrality, gender, and patterns of cross-gender friendships—as well as the manner in which high social status

exacerbates the adverse social psychological consequences of victimization. This article contributes to the literature as the first to show how social status can increase both the risk of victimization and the severity of its consequences. In so doing, it may inform sociological theories of small group hierarchies as well as practical efforts to reduce the harm done by school-based aggression.

THEORY AND LITERATURE ON VICTIMIZATION

Several recent studies have examined victimization over time (e.g., Bukowski, Laursen, and Hoza 2010; Juvonen, Wang, and Espinoza 2011; Kochenderfer and Ladd 1996). According to one investigation, victimization takes two developmental trajectories, with a small number of children being extremely victimized, and another, larger, group targeted less severely but at an increasing rate over time (Boivin et al. 2010). More than one group process, in other words, is implicated in peer victimization. Previous research has also investigated the relational nature of school-based victimization, underlining the inter-dyadic elements of aggressor–victim ties (e.g., Card, Isaacs, and Hodges 2009).

Criminological theories identify a host of individual, situational, and contextual risk factors of becoming the victim of a crime (Cohen, Kluegel, and Land 1981; Lauritsen, Sampson, and Laub 2006; Sampson 1985), which, although they may serve as guideposts, have limited applicability to school-based victimization. Certain criminological arguments, for example, focus on factors that bring offenders and their targets into contact with one another (e.g., Cohen and Felson 1979), a problem the school bully does not face. Additionally, criminal offending is arguably more “democratic” than aggression occurring in schools: weapons introduced into chance encounters on the street imply that the physically or socially weak can victimize the strong and prominent with relatively little fear of retaliation. Anyone capable of handling a gun or a knife is capable of a mugging, but as Arendt (1972) famously

observed, this reflects weakness rather than strength—true power lies in the “ability to act in concert.” This notion is exemplified in the coordinated campaigns of harassment that occur among adolescents; indeed, who else besides high school students can make life sufficiently miserable so as to compel the suicide of one of their own?

Here we articulate a theory of victimization rooted in sociological models of group processes and attempt to reconcile it with empirical research on youth aggression, which invariably finds strong associations between vulnerability and victimization (e.g., Juvonen, Graham, and Schuster 2003). We refer to this well-known pattern of victimization as “normative targeting,” and—while recognizing the devastation experienced by these victims—argue that a second, more subtle pattern of victimization has been overlooked. Just as vulnerability has been strongly linked to victimization, so has status been associated with security and protection: rarely does one expect the prom king to be thrown into a locker. Nonetheless, we believe the ways in which status can increase risk have been largely ignored, and we identify a new pattern of victimization, which we refer to as “instrumental targeting.”²

Normative Targeting

Research on the predictors of victimization frequently points to physical, social, and psychological vulnerabilities (e.g., Nansel et al. 2001), implying that the strong do indeed attack the weak. This is undoubtedly true, but we argue there is more to the vulnerability–victimization link than is apparent at first glance. In our view, aggressors who target the weakest members of the student body are not simply choosing the path of least resistance. They are also, intentionally or otherwise, creating and enforcing standards of what is acceptable and what is not. Norm formation is one of the fundamental projects of small groups (Homans 1950; Simmel 1950), and members voluntarily go to significant lengths to punish violations (Coleman 1990). Unsurprisingly, youths who run afoul of the myriad

unwritten rules governing teenage social life often face harassment and ostracism.

Many norms, of course, dictate the appearance and conduct of adolescents, but even more challenging to the teenager navigating high school social life is the changing nature of these expectations. Fashions shift quickly, and what is cool one day may be humiliating the next. The fluidity of norms is arguably driven by youths' attempts to cast themselves as acceptable and others as unacceptable, often in an effort to distract from their own shortcomings. Nonetheless, some basic expectations are less mercurial and widely shared across contexts. These include norms governing physical appearance (Goffman 1963), and the empirical literature on school aggression suggests adolescents who are physically less developed (especially males) (Batsche and Knoff 1994; Olweus 1993), overweight or underweight (Wang, Iannotti, and Luk 2010), disabled (Rose, Monda-Amaya, and Espelage 2011), or marked by acne (Sweeting and West 2001) are harassed by their peers at significantly higher rates. Equally if not more demanding are the norms governing sexuality and gender. LGBTQ youth, for example, often experience vicious harassment at the hands of their peers (Katz-Wise and Hyde 2012). Failure to conform to these expectations may lead to harassment and ostracism, and the resulting social isolation can further exacerbate the risk of victimization (de Bruyn, Cillessen, and Wissink 2010; Juvonen et al. 2003; Nansel et al. 2004; Nansel et al. 2001; Schäfer et al. 2004; Veenstra et al. 2010). We lack adequate data on sexual orientation, but the literature on school victimization leads us to anticipate higher rates of victimization among youth who are physically less developed, unhappy with their appearance, or socially isolated.

Hypothesis 1a: Delayed physical development increases the risk of victimization over time.

Hypothesis 1b: Poor self-image increases the risk of victimization over time.

Hypothesis 1c: Social isolation increases the risk of victimization over time.

However, we contend that the logic of social deviance implies that normative targeting cannot account for all, or perhaps even the majority, of peer harassment, because the prevalence of deviance is inversely proportional to the adverse social reaction to it. As Moynihan (1993) famously observed, deviance is "defined down" when it becomes commonplace. In most schools, we suspect only a small proportion of students are notably different and observably vulnerable to stigmatization, yet nearly one-fifth of U.S. adolescents report being bullied at school (Nansel et al. 2001). For these reasons, we expect many victims of school-based harassment will not fit the traditional profile of the stigmatized outcast, and hence, their plight may be less obvious.

Instrumental Targeting

While anticipating that some aggression will be directed, often relentlessly, toward socially marginal youth who stand in violation of one or more norms, we also suspect the emphasis on vulnerability and a traditionally narrow conception of victimization³ understates the instrumental aspects of aggression (Prinstein and Cillessen 2003; Sijtsema et al. 2009; Veenstra et al. 2007). We view aggression as fundamentally rooted in status processes, and we identify an overlooked class of victims, who, by virtue of their relatively lofty social positions, experience at least as much distress—at the margin—as do those for whom victimization is routine.

We share Gould's (2003) focus on status competition, which, he theorized, transforms trivial insults into status challenges of deadly significance, an argument supported by elevated rates of homicide among people whose relative rank is ambiguous, either due to role symmetry as roommates or friends, or status inconsistency, as when bosses are younger than their employees.⁴ However, we depart from Gould in both our emphasis on a target's social position within a meso-level social structure, and on the nature of the status competition at hand. For Gould, what matters is

dyadic status ambiguity, which transforms trivial insults into intolerable affronts. When a younger boss oversteps his bounds with an older employee, or one roommate cracks a joke about the other, the implicit status claim can acquire deadly significance and provoke a lethal response. Gould largely ignores the broader social networks in which dyadic conflicts are embedded, implying conflicts may occur at any level of a social hierarchy. In contrast, we locate status competition within a meso-level social structure, and we point to particularly risky locations in status hierarchies where we anticipate higher rates of victimization. Additionally, whereas competing status claims are met with abrupt and violent ends in Gould's model, our focus is on ongoing conflict in which teenage combatants, with tragic exceptions, live to fight another day.

In contrast to the hot-headed reactions analyzed by Gould, the ongoing nature of the conflicts examined here may be better understood in instrumental terms, as cold-blooded calculations. The background for our explanation rests on the argument that aggressive adolescents are not only reenacting family conflicts or reacting to psychopathy as historically suggested, but are behaving strategically. On a broad level, aggression is highly related to dominance and territoriality (Brown and Herrnstein 1975; Cairns 1979). Most adolescents desire status (LaFontana and Cillessen 2002), albeit to varying degrees, and this desire motivates much aggressive behavior: the more adolescents—or their friends—care about being popular, the more aggressive they become over time (Faris and Ennett 2012; see also Sijtsema et al. 2009). Bullies appear to pursue status, as well as affection, as goals (Veenstra et al. 2010).

Popularity is associated with increased physical and relational aggression, behavior used to maintain social dominance (Cillessen and Mayeux 2004; Garandeau, Ahn, and Rodkin 2011; Juvonen et al. 2003; Luthar and McMahon 1996). As social status increases, aggressive behavior escalates—at least until youth approach the pinnacle of the school

hierarchy, when such actions are no longer required and aggression again declines (Faris and Felmlee 2011). Evidence suggests that aggressors' campaigns of harassment and abuse are rewarded with increased prestige (Junvonen et al. 2012; Kreager 2007; Rodkin and Berger 2008; Xie et al. 2002), particularly when they target socially prominent rivals (Faris 2012). But if relatively high-status youth are acting instrumentally, harassing their schoolmates to augment their own standing, the question remains: *whom are they targeting?*

We suggest that instrumental, as opposed to normative, targeting will center on relatively high-status adolescents; the upper echelons of school status hierarchies will thus hold disproportionate numbers of both aggressors and victims. Social combat is not unilateral, and we suspect students will often be both aggressors and victims. Our argument is based on the following propositions: (1) aggressors derive greater social benefits from harassing high-status targets; (2) the social cost to the victim is greater than the social benefit to the aggressor; and (3) the social positions of many high-status actors are fragile. It is clear that aggression is harmful for victims in myriad ways (discussed in greater detail below); most salient for our argument here is the tendency for victims to become socially marginalized and isolated, effectively eliminated from the status competition, at least temporarily. However, we suggest the benefits to *aggressors* are generally modest in comparison to the costs to victims. The subject of a rumor started on Facebook may be devastated, but the originator is unlikely to experience a commensurate boost in status. In fact, aggression sometimes backfires, damaging the reputation of the aggressor as much as the victim, or can lead to dramatic retaliation. Pyrrhic victories may even occur with physical aggression, as excessive violence can quickly elicit bystanders' sympathies for the victim. Thus, a free-rider problem arises: benefits appear to be diffuse (status being relative, many will benefit in small amounts when one actor loses it), whereas risks are

specific to the aggressor and increase with the victim's stature. Aside from norm-enforcing activities of the sort discussed earlier, the free-rider problem should make instrumental aggression relatively uncommon.

The primary circumstance in which it makes sense to engage in instrumental aggression—from a social climbing perspective—is in challenging a high-status rival. Fundamentally, greater social benefits accrue to successfully harassing a prominent classmate than harassing a social isolate simply because it is more impressive to attack the strong than the weak. Recent research has found that aggressors who target high-status schoolmates reap greater social rewards than do those who harass socially marginal youth (Faris 2012). High-status rivals make mutually exclusive claims on scarce status positions, and one actor's fall frees another to pursue the contested role. There is (by definition) little room near the top of the pyramid, and the benefits of knocking off an occupant at that level increasingly outweigh the costs. At lower social strata, by contrast, many applicants are ready to claim a vacated position, reducing the incentive for any of them to act.

Additionally, some evidence shows that popularity makes adolescents increasingly vulnerable to peer pressure (Cillessen and Schwartz 2011; Haynie 2001; Schwartz and Gorman 2011), perhaps indicating some degree of desperation to maintain their social positions. More important, aggressive, high-status youth are often widely disliked by their classmates (Parkhurst and Hopmeyer 1998; Prinstein and Cillessen 2003). The scaffolding of popularity is likely structurally unsound, and friendships built upon it are fragile, rendering high-status youth less impervious to attacks than might be apparent at first glance.

We might expect a monotonic increase in victimization rates with increases in status (with the aforementioned exceptions of isolates or other marginal youth), but particularities of the upper distribution of status likely reverse this process. Status, by virtually any measure, is not distributed normally but is

highly skewed (Barabasi and Albert 1999; Gould 2002). This implies a much larger absolute difference between the most central student and the second-most central student than between the 33rd- and 34th-ranked students. At some point, these gaps likely become so vast that social climbers may not be able to reach the next rung on the ladder. Individuals at the top, in other words, are unlikely to have viable rivals. They also have the greatest capacity for retribution, and so sit comfortably above the fray, suggesting the following:

Hypothesis 2: Network centrality increases subsequent victimization until the highest levels of centrality are reached, when victimization rates decline.

Social network centrality is our primary indicator of status, but its calculation necessarily treats ties (friendships) equally, without regard for qualitative differences in their social implications. However, recent research has argued that boundary-crossing ties have status implications; specifically, “gender bridges”—youths with multiple ties to the other gender in contexts where such relationships are rare—occupy particularly privileged status positions (Faris and Felmlee 2011). Cross-gender ties become increasingly important for many adolescents (Coleman 1961; Connolly et al. 1999), in part because they often form the basis of romantic relationships (Feiring 1999). Most youth, however, fail to form substantial numbers of such cross-gender ties (Shrum, Cheek, and Hunter 1988), although they approve and value them (Felmlee, Sweet, and Sinclair 2012), and this scarcity has the potential to create status distinctions within schools. Generally, an increase in network centrality is associated with an increase in aggression (for all but the highest status youth); for gender bridges, this effect is especially pronounced, suggesting they may enjoy a degree of influence and prestige not fully reflected by their social network centrality (Faris and Felmlee 2011). To the extent that gender bridges occupy the upper extreme

of the status hierarchy, they should have few plausible rivals. Accordingly, we anticipate lower rates of victimization for gender bridges and the most central youth, while anticipating a generally positive relationship between centrality and victimization:

Hypothesis 3: Gender bridges are less likely to experience victimization over time.

Finally, we expect girls, compared to boys, will be overrepresented as victims of aggression, as found previously (Berger and Rodkin 2009). Girls tend to be positioned centrally in the peer hierarchy and therefore represent high-profile targets. But they are also more vulnerable targets than boys, in part due to social norms and sanctions that curtail aggressive behavior on the part of females. Feminine prescriptives suggest girls should “be nice” and avoid “mean” behavior, especially that of a physical nature. Social norms prohibiting boys from hitting girls, and against girls engaging in physical violence with each other, suggest girls are less likely to be physically attacked, even while they are harassed more frequently in other ways. The persistence of cultural gender inequality (Ridgeway 2009), and inequality within schools, where boys’ activities are celebrated to a larger extent than those of girls (Messner 2002), likely contributes to girls’ heightened susceptibility. Moreover, the sexual double standard for adolescents—whereby the number of sexual partners boosts status for boys and lowers it for girls (Kreager and Staff 2009)—underscores girls’ vulnerability within school settings.

Several prior studies find that girls are less aggressive than boys, and they are less likely to be victimized (e.g., Grotzinger and Crick 1996; Nansel et al. 2001; for a review, see Espelage and Swearer 2003). However, much prior research uses the term “bully” in survey questions, which youths tend to associate more strongly with overt physical and verbal abuse, as opposed to more subtle forms of aggression (Boulton 1997; Naylor et al. 2006; Smith et al. 2002; Smith and Madsen 1999).

Other studies find relatively equal bullying victimization rates of girls and boys (e.g., Veenstra et al. 2010), especially when using a broad measure of aggression (Faris and Felmlee 2011). However, we anticipate higher rates of victimization for girls because their reluctance to retaliate with physical violence (Putallaz et al. 2007), or even direct aggression, makes them easier targets than boys:

Hypothesis 4: Girls are more likely than boys to be victims of aggression, particularly non-physical aggression, over time.

Consequences for Victims

So far we have argued that social status, for all its benefits, may also make one an attractive target of gossip, harassment, and other torments perpetrated by Machiavellian social climbers. But action cannot be instrumental if it is ineffective, so we also explore whether victimization has the intended effect—whether it leads to psychological distress and social marginalization. Recent scholarship suggests aggressors do indeed improve their standing in the school social hierarchy, particularly if they target prominent schoolmates (Faris 2012), and a vast body of research has already documented that victims suffer greatly as a result, with higher rates of depression (Baldry 2004), anxiety (Sharp, Thompson, and Arora 2000), suicidal ideation (Carney 2000; Kim and Leventhal 2008), and depression later in life (Ttofi and Farrington 2011). Most salient for the instrumental argument, victims of peer harassment tend to avoid school (Hutzell and Payne 2012) and become more isolated and rejected over time (Nansel et al. 2001), often culminating in social phobia (Ranta et al. 2012). Furthermore, high levels of centralization of victimization, where there are relatively few victims per classroom and many aggressors, exacerbate the negative consequences (Huitsing et al. 2012). However, research has not yet considered how consequences of harassment may vary based on victims’ social status, implicitly treating victims as a homogenous class.

Unsurprisingly, we expect victimization to cause psychological distress and social marginalization, but we also explore the possibility that the marginal effects of victimization actually may be magnified, not mitigated, by status. That is, while we do not discount the *cumulative* impact of chronic victimization experienced by the vulnerable and isolated, a given incident of victimization is likely to hold greater consequence for a victim of high rather than low status. This may seem counterintuitive, considering that higher status youth have more friends to potentially defend or support them, which research shows significantly reduces the anxiety associated with victimization (Holt and Espelage 2007). For several reasons, however, status should exacerbate the psychological distress and marginalization accompanying victimization.

Fundamentally, we anticipate a social equivalent to the endowment effect in behavioral economics, whereby losses are more substantially painful than commensurate gains are pleasurable (Kahneman, Knetsch, and Thaler 1991). Simply put, high-status individuals have more to lose: victimization, painful in itself, also jeopardizes their valued social positions, in which they have invested heavily. For high-status victims, unaccustomed to peer victimization, a given incident likely takes on greater meaning, for what is at risk is not only social position, *but identity itself*. Transformation of the spoiled identity, from an “unblushing” person to a stigmatized one, is traumatic; individuals who are already of “a different and less desirable sort” experience less drastic shifts in self-concept (Goffman 1963). Additionally, the pain of victimization may be compounded as high-status youth—whose popularity does not necessarily translate into affection and often masks widespread dislike—discover their friends have secretly rooted for their downfall (Prinstein and Cillessen 2003; Rodkin et al. 2000). In a competitive status hierarchy, high-status youth face more rivals within their friendship group who will turn on them in the face of an attack. High school ethnographies document such cycles of betrayal and loss of status (e.g.,

Eder 1985). Accordingly, we test the following:

Hypothesis 5a: Victimization increases subsequent psychological distress and social marginalization.

Hypothesis 5b: Network centrality magnifies the adverse psychological and social consequences of victimization.

DATA, MEASURES, AND METHODS

Data for these analyses come from the Context of Adolescent Substance Use study, a longitudinal, semi-annual, in-school survey of middle and high school students in three counties in North Carolina. The study includes longitudinal social network data on friendships of a large number of adolescents (more than 8,000 in total) in 19 schools (these are thus considered complete or global school networks) and has been used to analyze the interplay of social networks and smoking (Ennett et al. 2010), drinking delinquency (Hipp, Faris, and Boessen 2012), and dating violence (Foshee et al. forthcoming). Such work has shown how different dimensions of social networks—their capacity to diffuse behaviors, differentiate status, and embed or isolate their members—are related to health risk behaviors.

At the first wave of data collection, all public school students in grades 6 through 8 in the three counties were eligible to participate (eligibility was extended to new students in the study grades). The study includes seven waves of data, but data on aggression only became available starting at Wave 4, and the largest county dropped out of the study (for unrelated reasons) after Wave 5. Accordingly, this sample includes the 4,214 8th, 9th, and 10th graders who participated in Waves 4 (Fall 2004) and 5 (Spring 2005) and who had not left the original schools (for more detail on the survey, see Ennett et al. 2006). The response rate was 79 and 76 percent for Waves 4 and 5, respectively. We address missing data with multiple imputation

procedures (10 imputations), although results do not differ substantively under listwise deletion.

Dependent Variables

To measure victimization, students were asked to nominate up to five schoolmates who “picked on or were mean to” them and up to five peers whom they “picked on or were mean to.” Students were instructed to consider only serious events and to disregard playful teasing. Recent research using these same questions with another sample included a request for descriptions of what happened, eliciting accounts ranging in severity from repeated verbal slurs (e.g., “fag” and “slut”) and harmful rumors (e.g., “People said that person A was pregnant when she was not. She got heavier and quit track. She went to guidance and told them with a friend what happened. She switched schools.”) to relentless use of multiple forms of harassment directed toward a victim, as well as physical assault (e.g., “[student A] punched him in the student’s broken elbow”) (Faris and Felmlee 2012). The two networks (the network according to victims, and the network according to aggressors) were combined such that a link from A to B was considered present if either A nominated B as a victim or B nominated A as an aggressor.⁵ We combined these networks because of possible underreporting, and also because previous research demonstrates the utility of multiple sources of information on aggression, such as self-reports and peer reports (Ladd and Kochenderfer-Ladd 2002). From this combined network, we calculated *victimization*, or the number of students who harassed or attacked the respondent. We then defined *cross-gender* and *same-gender victimization* as the number of other- and same-gender peers who were aggressive toward the respondent.

Our emphasis is on victimization itself, but we also examined several of its adverse consequences. *Anxiety* ($\alpha=.90$) is measured by a scale (Reynolds and Richmond 1979) of the following items: “I felt sick in my stomach,” “I got mad easily,” “I had trouble getting my

breath [don’t count asthma or exercise],” “I was tired a lot,” “I worried about what was going to happen,” “I worried when I went to bed at night,” and “I often worried about bad things happening to me.” *Depression* ($\alpha=.93$) is a scale (Angold et al. 1995) of the following items: “I hated myself,” “I was a bad person,” and “I did everything wrong.” *School attachment* ($\alpha=.87$) (Battistich and Hom 1997) was measured using the following items: “students in this school treat each other with respect,” “students at this school are willing to go out of their way to help someone,” and “my school is like a family.” Anxiety, depression, and school attachment were measured on a five-point scale, ranging from strongly agree to strongly disagree. *Anger* ($\alpha=.89$) was measured by the frequency, on a four-point scale (from “never or almost never” to “always or almost always”), with which an adolescent felt mad, angry, or furious in the past three months. Finally, we also examined the effect of victimization on social network position, specifically, *betweenness centrality*, described in detail below. All dependent variables were observed in Spring 2005 (Wave 5). We controlled for the prior level of each outcome by including the appropriate lagged, relevant measures from the beginning of that same school year (Fall 2004).

Independent Variables

The key independent variables were measured using friendship network data, where students were asked to name up to five of their best friends. From these nominations, we calculated measures of social network centrality. We examined *betweenness centrality*, which is calculated by first determining the shortest paths, or geodesics, between all pairs of actors, and then calculating the percentage of all geodesics that include the focal actor. There are multiple centrality measures, each emphasizing different structural properties (Borgatti and Everett 2006; Freeman 1979). We focus on betweenness centrality, because it best captures the brokerage position we associate with status in this context, and it also matches our conception of gender

bridges. Additionally, betweenness centrality, unlike other popular measures like Bonacich centrality, is strongly and positively related to the likelihood a student will subsequently attain elite status—for example, as prom or homecoming royalty or a notable in the high school yearbook (Faris 2012).

Isolates are defined here as students who did not receive a friendship nomination from any schoolmates. *Pubertal development* ($\alpha=.78$) was measured using questions about changes in overall physical development, skin, body hair, height, facial hair (boys), voice (boys), breasts (girls), and menstruation (girls), compared to others the same age (with the following response categories: “much earlier, somewhat earlier, about the same, somewhat later, or much later?”). *Appearance satisfaction* was measured using a single item, “most of the time I am happy with the way I look” (ranging from “strongly disagree” to “strongly agree”).

We also used friendship nominations to calculate *multiple cross-gender friendships*, a binary indicator of whether a respondent had at least two cross-gender friends. At the school level, we measured *gender segregation* using Freeman’s (1978) segregation index, which compares observed and expected patterns of ties across groups. The measure ranges from -1 to 1 , where a 1 is perfect segregation or homophily (i.e., all friendships were same-gender), a 0 indicates same- and cross-gender friendships are equally likely, and a -1 indicates perfect heterophily (i.e., all cross-gender friendships). *Gender bridge* refers to the interaction between having multiple cross-gender friendships and school gender segregation. High values imply a student has multiple cross-gender friends in a school where very few friendships cross gender lines; any student without multiple cross-gender friends has a value of zero.

Control Variables

In addition to more traditional control variables, a number of potentially confounding

factors bear mentioning. First, retaliation is one likely reason to expect aggression and victimization to follow similar patterns with respect to centrality. Consistent with recent research on school-based aggression (Salmivalli and Helteenvuori 2007) and criminal offending (Lauritsen et al. 2006), we anticipate a positive relationship between aggression and subsequent victimization and therefore control for *prior aggression* (the number of peers an adolescent was aggressive toward at Time 1) as well as prior victimization. Second, victimization risks associated with centrality may simply be due to having more friends who are in one way or another involved in aggression.⁶ We therefore control for *friends’ average aggression* and *friends’ average victimization*, defined as the average number of victims and aggressors, respectively, for a respondent’s friends (including the respondent’s nominations as well as students who nominate the respondent but do not receive a nomination in return; results do not change when only nominated friends are included). Romantic involvement and ensuing conflicts may also confound the relationship between status and victimization, so we include a binary indicator of whether a respondent had *ever been on a date*, defined as “informal activities like meeting someone at the mall, a park, or at a basketball game as well as more formal activities like going out to eat or to a movie together.”

Grade point average (*GPA*) was measured on a four-point scale based on a respondent’s self-reported grades in English, mathematics, science, and social studies or history. We included a binary indicator of participation in *school sports* because some sports are linked to fighting (Kreager 2007). *School size* likely influences certain social network characteristics, so we adjusted for that (our primary results were substantively the same when we estimated school fixed effects). We also incorporated conventional demographic and socioeconomic control variables, including race (African American, Latino, other minority, with white as the reference category), grade in school (9th or 10th grade, with 8th

grade as the reference), a binary indicator of a single-parent home, and a binary indicator of low educational attainment (1 if no parent attended college, 0 otherwise).

Methods

Because the primary dependent variables are counts of the number of peers who harassed or attacked each respondent, we estimated negative binomial models that include an overdispersion parameter (Long 1997). Coefficients can be interpreted such that a one-unit increase in X_{ij} multiplies the expected outcome measure by a factor of $\exp(B_j)$. Non-independence of data points is often a concern in analyses of students in schools, so we included school-level random effects for the dispersion parameter in all our models. All psychosocial outcomes (depression, anxiety, anger, school attachment, and centrality) were modeled with random-effects models with random intercepts at the school level. We measured all covariates, including the lagged dependent variable, at an initial time point (Fall 2004) and our dependent variables at a second time point approximately six months later (Spring 2005).

RESULTS: STATUS AND THE RISK OF VICTIMIZATION

The sample was predominantly white (56 percent) and African American (33 percent) and was roughly split between genders (see Table 1). Most students played sports, went on dates, and lived with two parents, at least one of whom attended college. The average student in the sample was harassed by .72 classmates during the spring period, but victimization focused on just one-third of all students. Among victims, the average number of attackers was 2.2 (not shown) and ranged as high as 12. One-quarter of all students were victimized by a schoolmate of their own gender, and 15 percent of students were victimized by a peer of the other gender (not shown). We find gender differences, with girls experiencing significantly higher rates

of victimization. This disparity may be produced by differences in same- or cross-gender victimization, and we find evidence that girls experienced higher rates of both. Girls were also more anxious, more depressed, less happy with their appearance, and less attached to school, compared to boys. However, girls were also less angry, more central in school social networks, and less apt to be isolates.

Multivariate Models of Victimization

We estimated random-effects negative binomial regressions of overall victimization at Time 2 on our independent variables, net of victimization at Time 1 (see Table 2).⁷ We find that females were indeed victimized at a rate nearly 30 percent higher than that of males, as expected (Model 1). We also find support for our hypotheses regarding norm violation. Social isolates were victimized 23 percent more often than other students. Students who “somewhat disagreed” that they were “happy with the way they look” were 6 percent more frequently victimized than students who somewhat agreed with that statement. Each standard deviation below the mean of pubertal development was associated with a 10 percent increase in the risk of victimization over time.

We find that centrality has a significant and curvilinear effect on victimization, increasing risk until the upper echelons of status are reached—where the effect reverses and becomes protective, as predicted. Figure 1 plots effects of social isolation (represented by the dotted line across the figure) and centrality, showing that centrality increases the risk of victimization until betweenness reaches approximately 3 (e.g., 3 percent of the geodesics include ego), which corresponds to the 94th percentile of the sample. Thereafter, additional increases in centrality are associated with decreased victimization, such that students at the 99th percentile are the targets of aggression only about one-quarter as frequently as those at the 94th percentile.

Table 1. Descriptive Statistics

	Means			SD	Min.	Max.
	Females	Males	Overall			
Overall victimization, Time 2	.81	.61	.72	1.39	.00	12.00
Overall victimization, Time 1	.94	.74	.85	1.56	.00	17.00
Same-gender victimization, Time 2	.51	.42	.47	1.05	.00	11.00
Same-gender victimization, Time 1	.60	.50	.55	1.14	.00	15.00
Cross-gender victimization, Time 2	.30	.20	.25	.70	.00	5.00
Cross-gender victimization, Time 1	.34	.24	.29	.79	.00	8.00
Physical victimization, Time 1	.25	.28	.27	.77	.00	7.00
Physical victimization, Time 2	.26	.35	.30	.82	.00	8.00
Nonphysical victimization, Time 1	.74	.56	.65	1.30	.00	8.00
Nonphysical victimization, Time 2	.92	.71	.83	1.47	.00	9.00
Anxiety (Time 2)	2.23	2.03	2.13	1.36	.00	4.00
Anxiety (Time 1)	2.15	1.93	2.04	1.30	.00	4.00
Depression (Time 2)	1.60	1.72	1.66	1.61	.00	4.00
Depression (Time 1)	1.45	1.56	1.50	1.54	.00	4.00
Anger (Time 2)	2.03	2.22	2.12	.87	.00	3.00
Anger (Time 1)	1.98	2.22	2.10	.83	.00	3.00
School attachment (Time 2)	1.43	1.76	1.59	1.36	.00	4.00
School attachment (Time 1)	1.44	1.74	1.58	1.31	.00	4.00
Betweenness centrality (Time 2)	1.02	.84	.93	1.37	.00	15.91
Betweenness centrality (Time 1)	1.01	.83	.92	1.26	.00	12.69
Isolate	.09	.14	.11	.29	.00	1.00
Pubertal development	2.99	2.84	2.91	.62	.75	4.00
Appearance satisfaction	2.29	2.51	2.40	.83	.00	3.00
Friends' average victimization	.83	.69	.77	.78	.00	7.83
Friends' average aggression	.80	.79	.79	.69	.00	6.00
Overall aggression	.82	.76	.79	1.33	.00	9.00
Same-gender aggression	.57	.47	.52	1.00	.00	7.00
Cross-gender aggression	.26	.29	.27	.65	.00	6.00
Has multiple cross-gender friendships	.16	.17	.17	.37	.00	1.00
School gender segregation	.62	.62	.62	.06	-.21	.35
Has been on a date	.60	.57	.59	.49	.00	1.00
GPA	3.05	2.94	3.00	.88	1.00	4.00
Sports	.55	.66	.60	.49	.00	1.00
School size	574.38	571.27	572.89	307.15	36	1005
Female			.52	.50	.00	1.00
Male			.48	.50	.00	1.00
African American	.35	.31	.33	.47	.00	1.00
Latino(a)	.04	.06	.05	.21	.00	1.00
Other minority	.07	.06	.07	.25	.00	1.00
White	.54	.57	.56	.50	.00	1.00
Grade 8	.37	.36	.36	.48	.00	1.00
Grade 9	.34	.33	.33	.47	.00	1.00
Grade 10	.29	.31	.30	.47	.00	1.00
No parent attended college	.36	.38	.37	.48	.00	1.00
N	2,196	2,018	4,214			

Note: Bold = statistically significant gender difference ($p < .05$).

Table 2. Random-Effects Negative Binomial Regression of Victimization at Time 2

	Model 1		Model 2		Model 3	
	β	SE	β	SE	β	SE
Female	.248***	.054	.236***	.054	.237***	.054
Centrality	.146**	.050	.143**	.049	.140**	.050
Centrality squared	-.024**	.009	-.023**	.009	-.024**	.009
Isolate	.201*	.085	.242**	.086	.239**	.086
Appearance satisfaction	-.053 [^]	.029	-.055 [^]	.029	-.051 [^]	.029
Pubertal development	-.156***	.044	-.150***	.044	-.147***	.044
Prior victimization	.249***	.009	.225***	.010	.227***	.010
Prior aggression			.088***	.016	.088***	.016
Friends' average victimization			.105***	.031	.112***	.031
Friends' average aggression			-.085*	.041	-.082*	.041
Multiple cross-gender friends					2.092*	.834
Level 2: school gender segregation					1.736***	.526
Multiple cross-gender friends x gender segregation					-3.338*	1.359
Has been on a date	.176***	.054	.146**	.055	.143**	.055
GPA	-.028	.031	-.033	.031	-.038	.031
Participates in sports	.060	.056	.064	.056	.068	.056
African American	-.046	.061	-.023	.062	-.024	.062
Latino(a)	.224*	.116	.233*	.116	.213	.116
Multiracial or other minority	-.044	.106	-.073	.106	-.060	.107
9th grade	.197	.108	.197	.108	.237*	.109
10th grade	.053	.110	.063	.111	.106	.111
Single-parent home	.126*	.056	.128*	.056	.133*	.056
No parent attended college	-.093	.056	-.095	.056	-.095	.056
School size (hundreds)	-.036*	.018	-.032	.018	-.030	.018
Constant	-.631***	.186	-.706***	.191	-1.850***	.398
Ln R	4.253	.595	4.189	.579	4.333	.590
Ln S	4.571	.595	4.488	.579	4.625	.592
F (df)	53.270***	(18)	47.010***	(21)	41.510***	(24)
N		4,210		4,210		4,210

[^] $p < .05$ (one-tail test); * $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed test).

The generally positive link between centrality and victimization is readily apparent just by looking at the social network diagrams from the schools, where we invariably find most aggressive links clustered in the dense cores of the friendship network, as opposed to the margins. For example, in one high school, aggressive ties cluster in the relatively central portions of the friendship network, with only a minority on the periphery (see Figure 2). Furthermore, almost no act of aggression extends from the core to the network edge, suggesting victims are often close status rivals, rather than distant, isolated targets.

In Model 2, we added three indicators of involvement in aggression (in addition to prior victimization): prior aggression, friends' average aggression, and friends' average victimization. In stark contrast to the stereotype of bullies attacking victims without fear, we find evidence of retribution. Social combat is not unilateral aggression: each classmate a respondent harassed at Time 1 increased the risk of victimization at Time 2 by 9 percent. Having friends who are aggressive, however, appears to have the opposite effect as being aggressive, decreasing the rate of victimization by 8 percent for each unit increase. Victimization

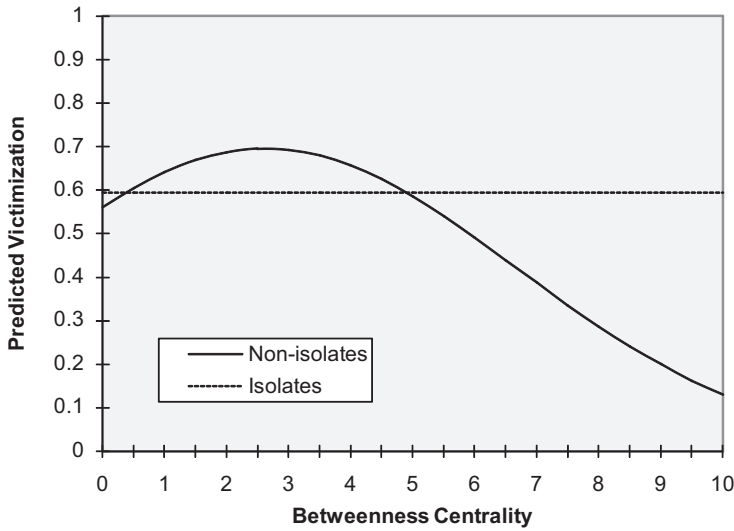


Figure 1. Predicted Victimization Rate, by Network Centrality

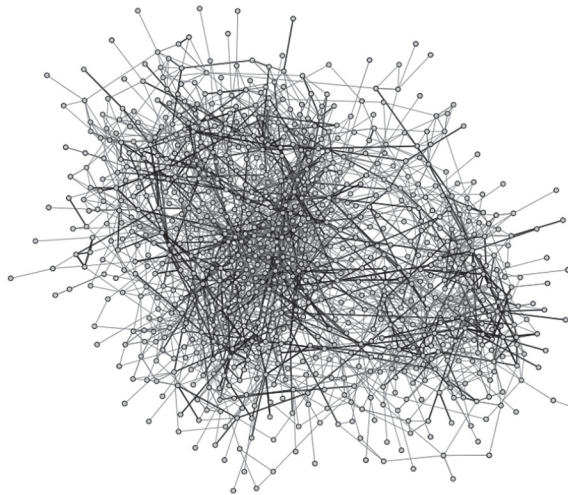


Figure 2. School Networks of Friendship and Aggression

appears to be somewhat contagious: having friends who are victimized—net of a respondent’s own involvement—significantly increased subsequent risks of victimization.

Model 3 explores the effect of cross-gender friendships at the individual and school levels. Having multiple cross-gender friendships and school-level gender segregation both increase the risk of victimization, but the effect of their interaction is negative (and protective). For students with multiple

cross-gender friendships in schools where such relationships are rare, the risk of victimization is less than one-fifth that experienced by their classmates with zero or one cross-gender friendship. For students with multiple cross-gender friendships (see Figure 3), victimization rates decline as gender-segregation increases, but the reverse is true for students with one or no such friendships.

Different subtypes of aggression have different etiologies (e.g., Card et al. 2008), but

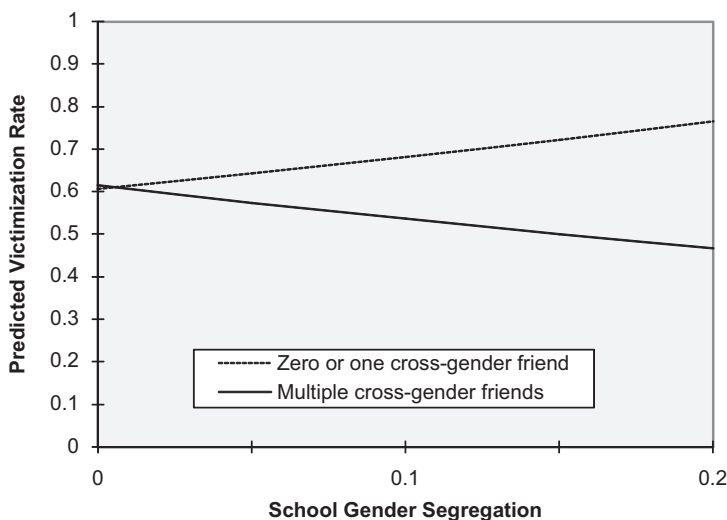


Figure 3. Predicted Victimization Rate, by School Gender Segregation

perhaps even more important, different consequences, with some evidence that nonphysical, or reputational, aggression yields greater social rewards for aggressors than does physical violence (Faris 2012). For this reason, we test whether our results are robust to type of victimization. There are many ways to categorize victimization, and here we simply distinguish between physical and nonphysical forms, because physical violence is more easily and objectively observed, more severely punished by schools and the criminal justice system, more impulsive, and yields fewer social rewards. Specifically, physical victimization refers to the number of schoolmates who physically attacked the respondent (e.g., hit, shoved, or kicked), regardless of whether these aggressors also used verbal abuse or indirect aggression. Nonphysical victimization refers to the number of schoolmates who engaged in verbal harassment or indirect aggression (e.g., gossip, spreading rumors, or ostracism) against the respondent, regardless of whether respondents were also victimized physically (results do not change if physical attackers are excluded from this measure). Despite this, we find few substantive differences between our models: consistent with an instrumental understanding of

aggression, the risk of both physical attacks and nonphysical victimization initially increase with network centrality, but ultimately decline as students approach the pinnacle of the school hierarchy (see Table 3). We also find evidence of normative targeting, as social isolates and youth who lag behind in pubertal development are victimized physically and nonphysically at higher rates than others (although appearance satisfaction did not have a significant effect).

Nonetheless, we find a few important differences in our models of nonphysical harassment and physical attacks. Consistent with prior research, the higher rate of victimization of girls (in the models of overall victimization) is attributable to higher rates of nonphysical harassment, not physical violence as girls experience equivalent changes in their levels of physical victimization as boys, conditional on their prior levels.⁸ Additionally, having multiple cross-gender friendships and occupying a gender bridge role in a segregated school did not significantly affect the risk of physical victimization. We suspect this null result might be explained in part by the more impulsive and not particularly strategic character of physical violence. Perhaps more important, gendered norms surrounding the

Table 3. Random-Effects Negative Binomial Regression of Physical and Nonphysical Victimization at Time 2

Time 1 Independent Variables	Physical Violence		Verbal and Indirect Harassment	
	β	SE	β	SE
Female	.012	.077	.222***	.054
Centrality	.241**	.079	.124*	.049
Centrality squared	-.051**	.017	-.021*	.009
Isolate	.326**	.123	.205*	.085
Appearance satisfaction	-.034	.042	-.032	.029
Pubertal development	-.173**	.060	-.128**	.044
Friends' average victimization	.169***	.041	.130***	.029
Friends' average aggression	-.025	.055	-.076	.040
Dependent variable at Time 1	.353***	.025	.275***	.013
Aggression	.113***	.023	.064***	.016
Multiple cross-gender friends	1.266	1.252	2.164**	.827
Level 2: school gender segregation	1.475*	.772	1.613**	.513
Multiple cross-gender friends x gender segregation	-2.207	2.034	-3.459**	1.349
Has been on a date	.175*	.078	.125*	.055
GPA	-.029	.044	-.041	.031
Participates in sports	.122	.081	.092	.056
African American	-.028	.089	-.015	.062
Latino(a)	.307*	.153	.196	.116
Multiracial or other minority	.093	.142	-.025	.106
9th grade	.023	.157	.235*	.105
10th grade	-.198	.162	.099	.108
Single-parent home	.178*	.079	.108*	.056
No parent attended college	.067	.078	-.107*	.055
School size (hundreds)	-.006	.026	-.035*	.017
Constant	-2.345***	.574	-1.836***	.388
Ln R	3.532	.554	4.606	.645
Ln S	3.569	.565	4.842	.648
F	17.930***	(24)	40.450***	(24)
N		4,210		4,210

[^] $p < .05$ (one-tail test); * $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed test).

use of physical force by, and against, females may weaken these associations with physical attacks.

Same- and Cross-Gender Victimization

Because we know the gender of both assailants and their victims, we are able to determine whether these patterns differ for same-versus cross-gender aggression. Popularity among members of the opposite gender increases the risk of cross-gender, but

not same-gender, bullying according to one recent study (Sainio et al. 2012). Here, using a broad measure of aggression, we find similarities, as well as some differences, between the processes of cross- and same-gender victimization (see Table 4). Crucially, centrality initially increases the risk of both same- and cross-gender victimization, until relatively high levels of centrality are reached (above the 90th percentile). In addition, females experienced higher rates of same- and cross-gender victimization (and to nearly the same degree). Social isolation increased the rate of

Table 4. Random-Effects Negative Binomial Regression of Same- and Cross-Gender Victimization at Time 2

Time 1 Independent Variables	(1) Same-Gender Victimization		(2) Cross-Gender Victimization		(3) Cross-Gender Outliers	
	β	SE	β	SE	β	SE
Female	.203***	.063	.246**	.082	.234**	.083
Centrality	.136*	.062	.185**	.071	.185**	.072
Centrality squared	-.030*	.012	-.022 [^]	.012	-.022 [^]	.012
Isolate	.316***	.098	.122	.136	.127	.136
Appearance satisfaction	-.050	.034	-.040	.045	-.046	.045
Pubertal development	-.155**	.051	-.178**	.067	-.171*	.068
Friends' average victimization	.104**	.035	.104*	.049	.105*	.049
Friends' average aggression	-.053	.047	-.144*	.065	-.141*	.065
Same-gender victimization	.266***	.016	.075**	.028	.078**	.028
Same-gender aggression	.118***	.024	.068*	.035	.064 [^]	.036
Cross-gender victimization	.161***	.028	.414***	.029	.412***	.030
Cross-gender aggression	.004	.043	.151***	.046	.153***	.046
Multiple cross-gender friends	2.388*	.964	1.686	1.166	2.500*	1.229
Level 2: school gender segregation	1.449*	.632	1.190	.733	1.190	.742
Multiple cross-gender friends x gender segregation	-3.854*	1.574	-2.530	1.896	-3.919*	2.013
Has been on a date	.146*	.064	.091	.084	.093	.084
GPA	-.064	.036	.013	.049	.015	.049
Participates in sports	.092	.065	.003	.086	.009	.086
African American	-.026	.072	-.027	.094	-.041	.095
Latino(a)	.367**	.129	-.032	.186	-.022	.186
Multiracial or other minority	-.131	.128	.062	.156	.036	.159
9th grade	.198	.126	.331*	.143	.298*	.147
10th grade	.004	.130	.314*	.148	.293*	.151
Single-parent home	.124	.065	.194*	.086	.211*	.086
No parent attended college	-.058	.065	-.101	.085	-.100	.085
School size (hundreds)	.000	.000	-.068**	.023	-.064**	.024
Constant	-1.834***	.472	-2.058***	.555	-2.058***	.561
Ln R	4.230	.620	4.949	1.189	4.789	1.062
Ln S	4.257	.621	4.873	1.204	4.690	1.077
F	35.160***	(26)	20.080***	(26)	19.580***	(26)
N		4,210		4,210		4,207

[^] $p < .05$ (one-tail test); * $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed test).

same-gender victimization, and delayed pubertal development was associated with increased victimization from both genders. Gender bridges were protected from same-gender victimization to a significant degree (and in the same pattern as overall victimization), but were not significantly protected against cross-gender victimization. However, the null result in the cross-gender model was

affected by three highly influential outliers—three females who scored extremely high on the gender bridge measure (over seven times as high as the overall mean) and were victimized by boys more than eight times as often as the overall mean. When these outliers were excluded, we found a significant protective effect of gender bridges for cross-gender victimization.

Having friends who were victimized increased victimization at the hands of either gender, and having aggressive friends protected only against cross-gender aggression. Each form of victimization increased the risk of the other. Same-gender aggression increased the risk of both same- and cross-gender victimization, but the effect of cross-gender aggression was limited to cross-gender victimization. Cross-gender victimization rates were highest among high school students, compared to 8th graders—although they were negatively related to school size. Adolescents raised in single-parent homes were victimized more frequently than students from two-parent homes. Dating activity increased the risk of same- but not cross-gender victimization.

RESULTS: CONSEQUENCES OF VICTIMIZATION

Finally, we estimated a series of random-effects models of a variety of well-known outcomes of victimization: anxiety, depression, anger, school attachment, and network centrality (see Table 5). These models include all the control variables discussed earlier (not shown, but available from the authors) as well as all the focal variables included in our full models.⁹ As expected, we found that victimization at Time 1 significantly *increased* subsequent levels of anxiety and depression, and significantly *decreased* school attachment and network centrality (Models 1, 3, 7, and 9). Contrary to our hypothesis, victimization did not significantly affect anger (Model 5).

Most important, with the exception of school attachment (Model 8), centrality in the school friendship network *magnified*, rather than mitigated, the adverse consequences of victimization. Compared to low-status victims, high-status victims experienced significantly larger increases in depression, anxiety, and anger, and subsequently lost significantly more centrality (Models 2, 4, 6, and 10). Thus, peer status not only increases the *risk* of victimization but also magnifies the severity of its consequences.¹⁰ Figures 4a through 4d plot the effect of victimization for six levels of centrality

(zero, or the 16th percentile; one, the approximate mean; two, the 85th percentile; three, the 94th percentile; four, the 97th percentile; and five, the 98th percentile). We tested for, but did not find any evidence of, curvilinear effects of victimization or centrality.¹¹

Social isolates experienced significant increases in anxiety and depression, but they were no more angry or less attached to school than their classmates. Adolescents unhappy with their looks were more anxious and depressed, but no more angry or isolated, and were significantly more attached to school. Youth who lagged behind in pubertal development were significantly more angry, but they were also more attached to school and less depressed. We found scant effects of cross-gender friendships, gender segregation, and gender bridge status: gender bridges were less anxious and depressed, but otherwise no different from their peers.

ROBUSTNESS

We chose to examine betweenness centrality for theoretical reasons, but we recognize there are many alternative measures of centrality and were concerned that our core finding may be sensitive to this choice. We therefore tested other centrality measures and found substantively identical results using Bonacich centrality (either symmetrized or calculated on incoming ties), closeness centrality, and school rankings (percentiles) of either Bonacich or betweenness centrality. Burt's (1992) measure of constraint (the extent to which an actor links otherwise disconnected alters) matches our conception of status as bridging, but it did not significantly affect the likelihood of victimization. However, constraint considers only relations among immediate alters, whereas betweenness considers longer paths linking different regions of a network. Despite the advantages created by structural holes, it seems likely that status is not fully reflected in the structure of an actor's immediate ego network, but instead in one's location in the larger network.

An additional methodological issue is introduced by the fact that status

Table 5. Random-Effects Regressions of Social Psychological Outcomes of Victimization

Time I Independent Variables	Anxiety			Depression			Anger			School Attachment			Centrality									
	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)		(10)			
	β	SE	β	SE	β	SE	β	SE	β	SE	β	SE	β	SE	β	SE	β	SE	β	SE		
Victimization	.026*	.012	.009	.015	.028*	.015	.007	.018	-.001	.006	-.008	.007	-.012	.013	-.028 [^]	.016	-.029*	.012	.004	.015		
Centrality	.003	.016	-.012	.018	.019	.019	.001	.021	-.001	.008	-.007	.008	.017	.017	.003	.018	.317***	.016	.347***	.018		
Victimization x centrality			.019*	.010			.025*	.012			.008 [^]	.005			.017	.010				-.036***	.010	
Isolate	.155*	.062	.161**	.062	.238***	.074	.247***	.074	.042	.029	.045	.029	.020	.064	.034	.064						
Appearance satisfaction	-.072**	.023	-.070**	.023	-.072**	.028	-.070*	.028	-.003	.011	-.003	.011	-.073**	.024	-.075**	.024	-.037	.024	-.041	.024		
Pubertal development	.030	.032	.030	.032	.066	.038	.065	.038	.044**	.015	.043**	.015	.057	.032	.056	.032	.009	.032	.010	.032		
Multiple cross-gender friends	1.323*	.604	1.347*	.604	1.204	.726	1.245	.726	.177	.283	.188	.283	-.026	.625	-.004	.625	.661	.623	.617	.623		
School gender segregation	-.390	.337	-.390	.337	-.474	.406	-.461	.405	-.398*	.157	-.399*	.157	.191	.348	.192	.348	.574	.347	.572	.347		
Cross-gender friends x gender segregation	-2.050*	.982	-2.092*	.982	-1.859	1.180	-1.932	1.180	-.251	.459	-.270	.459	.050	1.015	.011	1.015	-.883	1.012	-.807	1.011		
F (df)	59.360***	(21)	56.880***	(22)	53.110***	(21)	50.920***	(22)	38.050***	(21)	36.480***	(22)	46.560***	(21)	44.600***	(22)	53.080***	(20)	51.27***	(21)		
N	4,210		4,210		4,212		4,212		4,212		4,212		4,213		4,213		4,212		4,212		4,212	

[^] $p < .05$ (one-tail test); * $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed test).

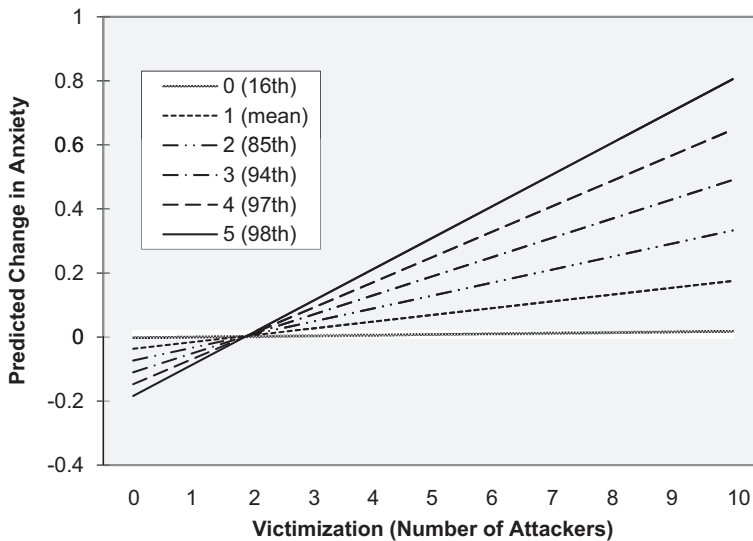


Figure 4a. Predicted Change in Anxiety, by Victimization and Network Centrality

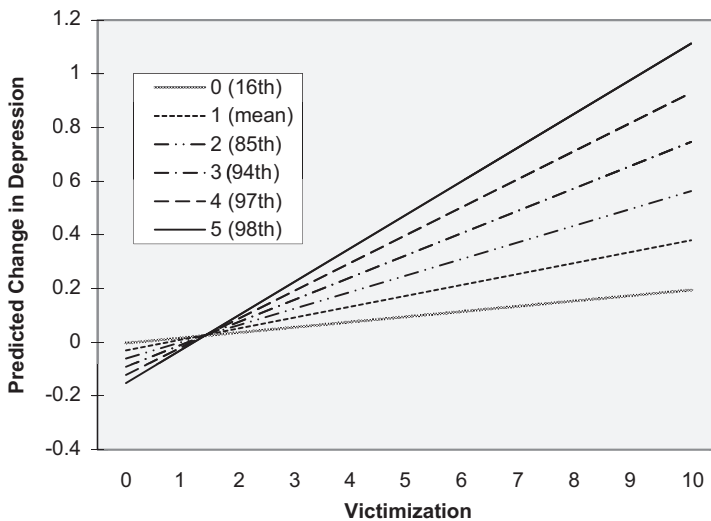


Figure 4b. Predicted Change in Depression, by Victimization and Network Centrality

affects victimization, and victimization in turn affects status (albeit in different directions). Results might be biased by correlated errors, so we also estimated Seemingly Unrelated Regressions that adjust for this possibility. We found no substantive differences in results for either equation (not shown).

One advantage of our study is that it contains information about harassment from the

perspectives of the aggressor and the victim. For reasons discussed earlier, we combined these two matrices. However, we also considered whether this decision obscured important differences between these two perspectives. We found significant but imperfect overlap between the two matrices. Where there was disagreement about a tie, it was more common for the aggressor (versus the victim) to fail to report

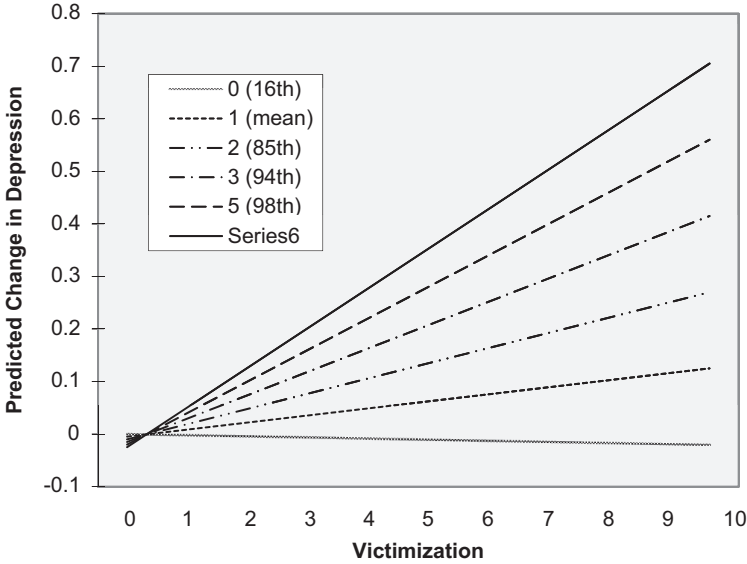


Figure 4c. Predicted Change in Anger, by Victimization and Network Centrality

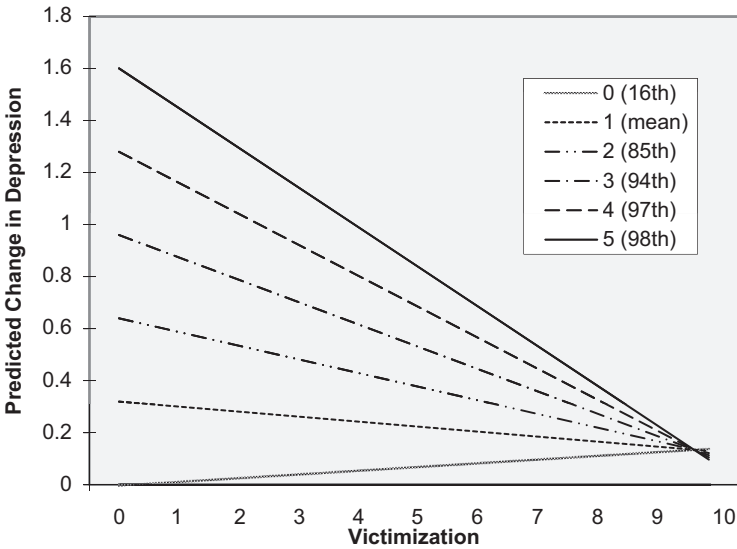


Figure 4d. Predicted Change in Network Centrality, by Victimization and T1 Centrality

harassment. However, with one exception, the substantive findings are unchanged when the measure of victimization draws exclusively from either aggressors or victims: coefficients for betweenness centrality and betweenness squared are .12 and $-.02$, respectively, when

using victims' reports exclusively, and .15 and $-.02$ when using aggressors' reports. The only exception was that betweenness squared in the model using aggressors' reports was only significant at the $p < .10$ level. All other results were substantively identical.

One additional concern is whether the link between status and victimization is actually an effect of differential exposure to peers, rather than a status effect per se. Differences in exposure or opportunity may form part of the explanation, but note that this is inconsistent with the substantial decrease in victimization rates among the very most central youth, who presumably interact with the most schoolmates. We reestimated our models, this time controlling for involvement in activities with peers, both supervised (including the total number of extracurricular activities, as well as specific ones, such as sports, service clubs, performing arts, school newspaper or yearbook, honor societies, and anti-drug use groups) and unstructured (the number of friends the student hung out with outside of school in the past week) (results available from the authors). None of these extracurricular activities had a significant effect on victimization, nor did they affect any key independent variables.

Finally, we were attentive to the possibility of exceptions to our theoretical model. We first considered whether the fundamental processes described operate differently for boys and girls by including interaction effects between gender and our key independent variables. None were statistically significant. We also tested whether influential outliers unduly affected our results, particularly with respect to centrality considering its severe skewness. As described in note 7, we excluded two highly influential outliers from our models of victimization. However, reversal of the effect of centrality on victimization at high levels of centrality is not dependent on a handful of extremely central cases: we found a significant and negative quadratic coefficient for centrality even when we excluded all cases with centrality scores greater than 3 (or the top 6 percent of the sample). We also considered the possibility that some schools may be outliers, especially with respect to gender segregation, so we estimated models dropping the three most extreme schools (at both the top and bottom range of gender segregation). Results were unchanged.

DISCUSSION AND CONCLUSIONS

Do aggressors attack the weak? According to our findings, the answer to this question is: not as often as they attack the strong. Aside from a few isolated students, the highest rates of victimization are observed among students of relatively high social standing. Social network centrality significantly increases the propensity to become a victim over time, at least until students rise to the very pinnacle of the hierarchy where they can rest comfortably above the fray. Gender bridges, students with multiple cross-gender friends in schools where such friendships are rare, also occupy extreme status positions and are unlikely to emerge as targets of harmful attacks.

Girls are significantly overrepresented as victims of aggression from both boys and other girls. What processes account for this pattern? First, girls are apt to be easier targets, for both girls and boys. They face normative constraints not just in their romantic conduct, but also in their repertoire of retaliation: some girls are physically aggressive, but such conduct is generally less socially acceptable for girls than for boys, who may feel a greater need to defend their honor with brute force. The prospect that male–male gossip or verbal taunts could escalate into a fight likely explains the lower rate of male–male aggression overall. Female gossip is comparatively unchecked. The higher rate of male-to-female aggression versus female-to-male aggression may be indicative of the greater normative constraints placed on girls, including the sexual double standard (Kreager and Staff 2009), whereby girls risk finding themselves socially marginalized as a result of their romantic activities. It also is certainly rooted in the greater institutional and cultural prestige enjoyed by males, whose activities are celebrated to a much greater extent in most schools, and who enjoy higher status within the larger society.

Given the sexual double standard, we explored whether the effect of gender varied, depending on dating involvement, by adding

an interaction effect between female and ever having been on a date (not shown, but available from the authors). We found that, compared to girls who are not dating, girls who date are at increased risk of physical violence—at equivalent levels as boys. We also found a significant and positive effect on same-gender victimization, suggesting that girls do not harass other girls generally, but focus their harassment on girls who date. Girls who date may pose particular threats to other female students' social standing and represent potential rivals when it comes to securing a boyfriend. Girls thus display aggression toward their own gender more frequently because some girls represent easy, yet potentially rewarding, victims who can constitute direct social rivals.¹²

An additional finding of note is the significant increase in the likelihood of becoming a victim associated with the prior victimization of a person's friends, for both same- and cross-gender models. Victimization appears to spread through groups of friends in a negative type of social contagion. Different sets of friends may represent rival groups that compete for social status within the school system, such that when one group member is targeted successfully, another member emerges as the subsequent target. Possessing an aggressive friend, on the other hand, provides some significant degree of protection from becoming a victim, especially at the hands of the opposite gender, providing further evidence that sets of peers engage in aggressive interactions. We see here, then, the fundamental relational nature (Felmlee and Sprecher 2000) of the group processes involved. Victimization in school aggression often consists not simply of single acts on the part of one individual harassing another, but evolves in a context in which sets of friends target and protect their own in the process of establishing hierarchies.

Moreover, our results support the idea that school aggression unfolds via more than one social process (Boivin et al. 2010), processes we identify here as normative and instrumental targeting. Youth who are social isolates, in

particular, are victimized at significantly high rates over time, as are students with delayed physical development or a poor physical self-image. These marginal adolescents are apt to be the targets of normative harassment. Our findings regarding the critical role of social network centrality in school aggression, on the other hand, provide evidence that processes of instrumental, or tactical, harassment also result in at least as much youth victimization. The positive and curvilinear effects of network centrality on the risks of becoming a target are quite robust and remain statistically significant whether victimization is physical or nonphysical, and whether it develops between those of the same or opposite gender. Taken together, our findings demonstrate how fundamental group processes like stratification and conformity produce school aggression.

Finally, consistent with prior research, we document that becoming a target of school aggression has serious consequences over time for adolescents. Specifically, victimization increases anxiety and depression, and it decreases school attachment (for lower status students) and social network centrality. This alone is significant in that it underscores the substantial, personal costs experienced by youth at the receiving end of school aggression. Note, too, that this finding bolsters the validity of our measure of victimization. Furthermore, because prior victimization is significantly associated with future victimization in our models, the negative outcomes of becoming a target may be experienced repeatedly and relentlessly.

We also believed it was important to determine whether victimization of high-status adolescents, in particular, was consequential. Our results suggest it is. In fact, most of the adverse consequences (anxiety, depression, anger, and social marginalization) became increasingly severe as a victim's centrality increased. Peer status not only fails to protect students from several harmful outcomes associated with becoming a victim of aggression, but it appears to heighten them. Highly central individuals may have more to lose

than someone who already occupies a position of relative social isolation, or perhaps central students are more unsuspecting victims than those on the periphery, and therefore react particularly strongly. At the same time, these findings do not discount the trauma experienced by the chronically vulnerable, nor are they meant to pit the consequences of one type of undeserving victim against another. The important point here remains that the positive and curvilinear association we find between centrality and victimization is not trivial. Moderately central students experience substantial costs associated with their relatively high rates of victimization, and they respond to their experiences with heightened feelings of anxiety, depression, and anger as well as increased marginalization. There may also be practical ramifications of this finding regarding central students. Some popular targets may escape the radar of concerned educators and parents who focus their attention on relatively solitary victims of adolescent harassment. In addition, programs intended to minimize school aggression may differ in design when they focus on victimization in the middle, as well as the outskirts, of the school social milieu.

Among the strengths of this study is the use of a broad, relational measure of aggression that enables us to examine the targets of aggression and includes its more subtle forms. We also have the advantage of a longitudinal study design, which allows us to examine change in the propensity to become a victim over time, and information on both friendship and aggression social networks, enabling us to determine victims' network locations. Yet there are limitations to the study. The findings derive from a sample of small towns and rural schools in North Carolina and may not generalize to other locales, although the curvilinear effect of centrality on victimization has recently been observed in an elite public school in the suburbs of New York (Faris and Felmlee 2012). We examined patterns among these students for a period of only one academic year and cannot examine longer, or shorter, consequences of victimization. Effects of some acts of aggression may fade relatively

quickly with time, whereas others, as we know from too many news reports, accelerate into much more costly outcomes. Although we analyzed data from a relatively large number of schools (19) and adjusted for school-level random effects (and also estimated fixed-effects models without substantive changes), we were nonetheless unable to include many school-level factors that may be of interest. Further investigation of school characteristics remains a noteworthy task for future research on this topic.

Nonetheless, our findings have practical as well as theoretical implications. The national discourse on bullying highlights a predominant, tragic pattern of vulnerable, socially marginal youth who are harassed, sometimes to death. Yet the ranks of victims contain many students who are relatively popular and seemingly well-adjusted, but for whom incidents of victimization are disproportionately painful. That status generally increases both the risk of victimization and the pain of its consequences may shed some light on the perception, widespread among adults, that this period of middle adolescence is particularly anguishing. No matter how painful, many people, young and old alike, would not identify these incidents as bullying, and perhaps the lack of such a label—and the accompanying sense that one is alone in this ordeal—make the experience more distressing. The closest approximation for such a concept is “drama,” but this is a linguistic maneuver intended to downplay, rather than recognize, the suffering experienced (boyd and Marwick 2011). We hope these more central victims, hidden in plain sight, are acknowledged in the national dialogue, and that the current focus on bullying expands to include the more subtle forms of harassment and cruelty prevalent among even popular adolescents.

More pragmatically, our results may provide new avenues to explore in school bullying prevention programs, programs whose effectiveness has been questioned (Merrell et al. 2008). Bullying prevention programs are often premised on social skills deficits, empathy shortages, and emotional dysregulation being the root causes of youth aggression.

Status competition, however, has never been a focus of prevention programs. One useful strategy might be for prevention programs to explore ways to deemphasize school status hierarchies, perhaps by fostering more activity or interest-based niches in place of the traditional social pyramids topped by high-profile athletes and cheerleaders. Our findings also bolster existing calls for more peer bystander intervention: if aggression is intended to push one up the social ladder, audience disapproval should be particularly inhibitive. Any student has the potential to intervene in an incident of harassment, but the relatively low risk of victimization for the very highest status students, combined with their low levels of aggressive behavior (Faris and Felmlee 2011), may make them highly influential in such situations. Finally, instead of focusing exclusively on reducing the prevalence of victimization, prevention efforts should also try to mitigate the adverse consequences of aggression when it does occur. Programs that help youth develop resilience are needed.

We hope our core results—that status, for all but the most elite youth, not only increases the risk of victimization but also magnifies its adverse consequences—spur further investigation in two key areas. First, future research should identify *pairs* of youth, who, based on their relative social positions, are especially likely to come into conflict. This will inform sociological theory on status competition in small groups, and also introduces the prospect of truly targeted interventions, which could be more effective than generalized approaches. Second, we suspect network centrality is not the only factor that conditions the effects of peer victimization, and additional research is needed to identify other factors that magnify or mitigate the adverse consequences of peer victimization among adolescents. Finally, we hope new investigations will explore more fully how friendly, aggressive, and romantic relationships are intertwined, with particular attention to variation by sexual orientation, socioeconomic status, and race. Social class and race are fundamental characteristics that are probably as

important as gender in structuring social hierarchies and conditioning their consequences. Schools vary widely in their racial and socioeconomic composition, diversity that we hope future studies will reflect. LGBTQ youth often face severe harassment and rejection, and research should investigate how to increase tolerance and also mitigate the negative consequences of harassment when it does occur.

Here, in one of the few longitudinal, network studies of the process of becoming a target of school-based aggression, we see that victimization is a relational process in which adolescents interact, enforce norms, and compete for power and status. Our findings call into question the assumption that a constellation of individual traits or family background is primarily accountable for explaining peer victimization. Instead, they underscore the argument that peer victimization arises in the midst of fundamental stratification processes located within the dense webs of shifting relationships that are forged and broken in school hallways, cafeterias, and locker bays.

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Notes

1. The definition of bullying is contested (Espelage and Swearer 2003), but the most popular version requires a power difference between individuals and that the harmful actions be repeated over time (Olweus 1993). We are interested in a wider range of malicious activity—which may be one-time events or perpetrated by actors who appear weak—so we sidestep this issue, instead using the terms “victimization,” “aggression,” and “harassment.” Each of these refer to a wide range of behaviors, and we use them interchangeably. Aside from brief discussions of stereotypes, we restrict our use of “bullying” to reference other studies or programs that use that term, rather than impose terminology on other scholars.
2. Unlike the criminological concept of instrumental crimes, which are oriented toward material gains, “instrumental targeting” refers to a process of choosing targets who will offer the greatest social rewards in the eyes of the intended audience.

3. For example, many survey instruments explicitly ask about “bullying,” which students primarily associate with physical aggression, and thus understate the role of more subtle forms of aggression like gossip and ostracism (Boulton 1997; Naylor et al. 2006; Smith et al. 2002; Smith and Madsen 1999).
4. Gould’s analysis was limited by the failure of homicide data to adjust for risk exposure—he had no data on the distribution of insults that did not lead to homicides—but his theory received support in Levi Martin’s (2009) analysis of summer camp, which found boys’ dominance challenges are directed toward rivals of similar status.
5. This decision rule is appropriate not only because of underreporting concerns, but because one party’s failure to agree on the nature of the relationship is not necessarily a denial: with a restriction on the number of possible aggressors and victims a respondent can nominate (five each), the number six victim would not be nominated by the aggressor, but the aggressor might nonetheless be the primary aggressor for victim six.
6. A process akin to “courtesy stigma” might apply to victimization, and having friends who are victimized might increase one’s risk of subsequent victimization—by extension, highly connected actors are at greater risk by chance alone. An epidemiological analogy applies: highly connected people are more likely to catch the flu, but net of exposure, are no more vulnerable than the average person. This would not mean that status fails to increase risk, just that risk is purely a function of exposure. If, however, we find that, net of exposure, highly central actors are still at elevated risk, then, as we argue, something else makes them attractive targets.
7. We excluded two influential outliers from these models. These cases were extremely central (in the top-10 of the entire sample) female students who were highly victimized. Including them reduces the effect of the squared centrality term to statistically marginal levels ($p < .10$). All other substantive variables were unaffected. See our Robustness section for a discussion of the quadratic effect.
8. Additional analyses available from the authors indicate that this equivalence is due to significantly higher rates of physical victimization among girls who are dating, whereas girls who are not actively dating are physically attacked significantly less often than boys.
9. We did not include the indicator for social isolation in the model of centrality because isolates by definition have a centrality score of zero. For each model, we dropped between one and four influential outliers who experienced very high levels of victimization without adverse consequences.
10. We also tested an interaction between isolate status and victimization, but we found no evidence that victimization was especially harmful for isolates.
11. We tested for effects of same- and cross-gender victimization separately, and their interactions with centrality at Time 1 (results not shown, but available from the authors). Same-gender victimization increased anxiety ($p < .10$) and depression ($p < .10$) and decreased school attachment. Cross-gender victimization increased anxiety ($p < .10$) and depression and decreased centrality ($p < .10$). Centrality magnified the adverse effects of same-gender victimization on centrality. Centrality significantly magnified the adverse effects of cross-gender victimization on anxiety, depression, school attachment ($p < .10$), anger, and centrality. Centrality never mitigated any of the adverse consequences of victimization.
12. We also explored whether dating activity moderated other substantive variables and found no other significant effects.

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