

## ARTICLE

# School punishment and interpersonal exclusion: Rejection, withdrawal, and separation from friends\*

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**Abstract**

School suspension is a common form of punishment in the United States that is disproportionately concentrated among racial minority and disadvantaged youth. In labeling theories, the implication is that such stigmatized sanctions may lead to interpersonal exclusion from normative others and to greater involvement with antisocial peers. I test this implication in the context of rural schools by 1) examining the association between suspension and discontinuity in same-grade friendship ties, focusing on three mechanisms implied in labeling theories: rejection, withdrawal, and physical separation; 2) testing the association between suspension and increased involvement with antisocial peers; and (3) assessing whether these associations are stronger in smaller schools. Consistent with labeling theories, I find suspension associated with greater discontinuity in friendship ties, based on changes in the respondents' friendship preferences and self-reports of their peers. My findings are also consistent with changes in perceptual measures of exclusion. Additionally, I find suspension associated with greater involvement with substance-using peers. Some but not all of these associations are stronger in smaller rural schools. Given the disproportionate distribution of suspension, my findings indicate that an excessive reliance on this exclusionary form of punishment may foster inequality among these youth.

**KEYWORDS**

labeling theory, peer networks, school suspension, social exclusion

The emphasis on crime control over much of the past half-century did more than fill our penal institutions; it also left empty desks in our classrooms. School suspension is a common response to classroom misbehavior in the United States that is heavily concentrated among racial minority and disadvantaged youth (Hirschfield, 2018a; Payne & Welch, 2010). Excessive reliance on suspension is problematic because it excludes students from school activities and puts a mark on their academic records, potentially leading to further disengagement and lower educational attainment (Balfanz, Byrnes, & Fox, 2015; Pyne, 2019).

This weakened institutional attachment after suspension is consistent with labeling theories (Goffman, 1963; Lemert, 1951, 1967; Paternoster & Iovanni, 1989). In labeling theories, it is implied that stigmatizing sanctions can foster social exclusion, which is defined as being “pushed out” of conventional society (Foster & Hagan, 2015). A focus on institutional exclusion is important, but in labeling theories, it is clear that exclusion may also be interpersonal. I refer to *interpersonal exclusion* as a deterioration of relationships with normative others as a result of punishment. The relationship most relevant to students involves the friendships with peers they interact with most—those in their grade. Such friendships are the medium by which children develop social skills and learn age-graded tasks. Indeed, having normative friends in one’s grade may be an early source of social capital (Coleman, 1988; Crosnoe, Cavanagh, & Elder, 2003), promoting outcomes like school achievement, emotional well-being, and behavioral adjustment (Crosnoe, 2000; Hartup & Stevens, 1997). In contrast, exclusion from such friends may be accompanied by greater involvement with antisocial peers (Dishion, Patterson, Stoolmiller, & Skinner, 1991).

If suspension is associated with exclusion from same-grade friends, this should be more apparent in settings where it is more stigmatizing. In disadvantaged urban areas, the findings from prior research indicate that juvenile sanctions are “normalized” experiences (Hirschfield, 2008; Nolan, 2011). Small-town or rural areas, on the other hand, are often characterized by factors that reinforce social norms and may increase costs of a deviant label. These factors include greater network density or closure, more time with neighbors, and a larger share of ties to family and kin (Beggs, Haines, & Hurlbert, 1996; Marsden & Srivastava, 2012; Smith, 2003). To capture such a setting, I depart from the urban focus in prior suspension research (e.g., Mittleman, 2018) by relying on a predominantly rural sample. Rural schools vary in size, but smaller rural schools offer less anonymity compared with larger rural schools. Thus, I also assess the extent to which associations between suspension and friendship outcomes are greater in smaller rural schools.

In this study, I extend prior labeling research in school contexts by moving beyond a focus on weakened institutional attachment or behavior outcomes (i.e., secondary deviance; Lemert, 1951; Wolf & Kupchik, 2017) to test whether suspension in a rural sample is followed by interpersonal exclusion from same-grade friends. I use a unique data set of self-reported behavior and friendship preferences, of students and their peers. First, I examine the association between suspension and discontinuity in friendship ties. In doing so, I focus on three mechanisms of interpersonal exclusion implied in labeling theories: *rejection*, *withdrawal*, and *separation*. Second, I test the association between suspension and involvement with antisocial peers. Third, I assess the extent to which these associations are stronger in smaller schools.

## 1 | BACKGROUND

### 1.1 | School suspension and social exclusion

Suspension is not a rare experience in the United States. Each year, 2.6 million children and adolescents are temporarily removed from school as a result of out-of-school suspension and 2.7 million are

excluded from class as a result of in-school suspension (Office of Civil Rights, 2018). Reform efforts have led to recent declines in some states (Loveless, 2017), but overall rates are still high, particularly for disadvantaged and racial minority students, not because juvenile crime rates are high but because suspension is often in response to minor misbehavior like classroom disruptions and attendance problems (Kupchik, 2010; Morris & Perry, 2017; Skiba et al., 2014). This is problematic because in a growing body of research, scholars have suggested that suspension may be harmful for child and adolescent development (Cuellar & Markowitz, 2015; Jacobsen, Pace, & Ramirez, 2019; Mittleman, 2018; Morris & Perry, 2016).

One way suspension may be harmful is through social exclusion, which has been conceptualized as weakened attachment to important institutions after an official sanction. Prior research on this topic has often been focused on institutional rejection of those with a criminal history. For example, formerly incarcerated individuals may be barred from legal employment or stable housing (Geller & Curtis, 2011; Pager, 2003). They may also exclude themselves (institutional withdrawal or “system avoidance”) by minimizing involvement with schools, hospitals, or other record-keeping institutions for fear of apprehension or having their record discovered (Brayne, 2014; Goffman, 2009; Haskins & Jacobsen, 2017; Lageson, 2016).

Suspension also involves institutional exclusion. Not only are students physically separated from their classroom or school, but also they are formally excluded by a mark on their academic records. School personnel who become aware of a student’s suspension may lower their expectations or increase surveillance of the student (Ferguson, 2001; Weissman, 2015). Sensing or fearing these administrative reactions, suspended students may lower their trust in school personnel (Pyne, 2019) or disengage from school activities. These exclusionary processes may then be perpetuated into later grades and even beyond secondary school. For example, many high schools send discipline information to colleges (Weissman & NaPier, 2015), and college admissions offices often inquire about suspension history. Thus, suspension is often associated with a lesser likelihood of school completion and postsecondary enrollment (Balfanz et al., 2015; Noltemeyer, Ward, & Mcloughlin, 2015).

## 1.2 | Interpersonal exclusion

This institution-focused conceptualization of social exclusion is important for understanding consequences of excessive crime control for social inequality; however, another type of exclusion is left out that is often implied by theorists but rarely examined empirically. Lemert (1967, p. 252) described exclusion as a “process that begins with persistent interpersonal difficulties between the individual and ... other persons in the community.” Whereas institutional exclusion refers to a person’s weakened bonds to institutions, I refer to *interpersonal exclusion* as a weakening of ties to members of an individual’s social network after punishment. For example, some researchers have suggested that suspension strains family relationships through stress (e.g., by interrupting parent work schedules) or embarrassment (Dunning-Lozano, 2018; Kupchik, 2016; Mowen, 2017). I extend this work by examining suspended students’ weakened ties to friends in their school. School friends are important because they provide the context in which youth learn social and behavioral skills that are critical for healthy development. Conforming friends encourage school adjustment and achievement; they may transmit knowledge from parents and mentors about appropriate classroom behavior or share information such as how to prepare for college (Coleman, 1988; Crosnoe, 2000; Crosnoe et al., 2003). Such friends may be particularly important in rural areas where families and schools often have fewer economic or institutional resources (Gottfredson & Gottfredson, 2001; Nelson, 2016; Roscigno, Tomaskovic-Devey, & Crowley, 2006). I focus on friendships among same-grade peers because they represent a consistently present audience and pool of potential friends in which to examine changes in ties from year to year.

I distinguish three ways interpersonal exclusion may occur after suspension: *rejection*, *withdrawal*, and physical *separation*.

### 1.2.1 | Rejection

In labeling theories, rejection refers to reactions of conforming individuals toward stigmatized others. It occurs when “normals” circumvent encounters with sanctioned individuals out of uneasiness or to avoid guilt by association (Goffman, 1963). It also occurs when interactions with formerly sanctioned persons become less friendly or more restrictive to protect individual or group values (Lemert, 1967). Consistent with this idea, the findings from prior research indicate suspension may be more common among students with lower status among peers (Kupersmidt & Coie, 1990). Importantly, rejection is a response to the sanctioned individuals rather than a reaction to their behavior (Link, Cullen, Frank, & Wozniak, 1987). It would be evident if classmates A and B respond to student C’s suspension by no longer considering themselves to be C’s friends because C is a “bad kid,” not because C’s misbehavior was inappropriate.

### 1.2.2 | Withdrawal

The concept of withdrawal characterizes the behavior of a stigmatized individual toward others, either out of fear of rejection or to avoid uncomfortable encounters (Goffman, 1963; Link, Cullen, Struening, Shrout, & Dohrenwend, 1989). People are often socialized to believe sanctioned individuals are dangerous or dishonest (Hirschfield & Piquero, 2010; McNulty & Roseboro, 2009). Youth may witness the exclusion of suspended peers and come to believe suspension is for troublemakers. These stereotypes take on personal significance when youth are suspended; they may anticipate strained interactions with normative peers and withdraw as a means of defense. Withdrawal would be evident if, after a suspension, student C no longer prefers classmates A or B as friends because C fears they now view C as a troublemaker.

Rejection and withdrawal may be more likely if suspension is repeated. Lemert (1951, p. 76) suggested repeated sanctions for minor misbehavior facilitate “ingrouping and outgrouping” between sanctioned individuals and normative others until “a stigmatizing of the deviant occurs in the form of name calling, labeling, or stereotyping.” Thus, societal reactions accumulate as the sanction is repeated, amplifying the deviant label (Sampson & Laub, 1997). Most suspensions last no more than a few days (Shollenberger, 2015), but nationally, approximately four in ten suspended youth experience multiple suspensions within a year (Office of Civil Rights, 2018). Having multiple suspensions could be a stronger signal that peers should avoid a suspended student, or it may reify the student’s expectations of rejection, increasing his or her likelihood of withdrawal. Therefore, suspension may be more strongly associated with rejection and withdrawal for students who experience it multiple times.

### 1.2.3 | Separation

Rejection and withdrawal are responses to stigma, but interpersonal exclusion may also occur as a result of the physical separation the sanction entails. For example, the results of prior research indicate that lengthy or repeated prison or jail stays, which involve separation from family, are associated with weakened family ties (Massoglia, Remster, & King, 2011; Turney & Wildeman, 2013). Suspension is not jail, but it involves separating students from school peers by removing them from school grounds or segregating them in an alternative classroom. Long or reoccurring suspensions cause students to miss out on shared experiences with other students. For example, in a qualitative study of suspended youth, one boy reported that time away from school during suspension caused him to lose contact with school peers (Kupchik, 2016, p. 58). Suspension may therefore weaken relationships with school

friends, independent of the level of stigma. In sum, suspension should be associated with discontinuity in friendships from the previous year, and some of this may be a result of rejection and withdrawal, but part of it should also be explained by lengthy or repeated separation from friends.

### **1.3 | Increased involvement with antisocial peers**

The processes described thus far indicate that stigmatizing sanctions result in pushing an individual away from normative networks and in increasing the attractiveness, or pull, of marginalized and delinquent networks (Bernburg, Krohn, & Rivera, 2006). Therefore, suspension may be associated with less involvement with peers who promote normative development and more involvement with peers who, according to researchers on peer influence, facilitate delinquency (Ragan, 2014; Sutherland, 1947). Peers who are already involved in antisocial behavior may be more accepting of the deviant label ascribed by the suspension. These may be current antisocial friends or other suspended peers with whom the student interacts during an in-school suspension, including from other grades. They may also be youth the student spends time with during an out-of-school suspension (Quin & Hemphill, 2014), such as older youth not in school, which some researchers have associated with deviance (Harding, 2009). These changes should be evident in the behavioral composition of networks after punishment. If suspension is followed by interpersonal exclusion from normative peers and by greater involvement with suspended or delinquent youth, it should be associated with an increase in the average level of antisocial behavior among friends, such as would occur if more of the suspended student's friends were involved in antisocial behavior than before.

### **1.4 | Stronger associations among students in smaller schools**

Suspension may not be associated with peer exclusion equally across rural youth. In particular, students suspended in smaller schools may be more affected by stigma. Rural schools are on average smaller than urban schools (Lippman, Burns, & McArthur, 1996), but within rural settings, school sizes vary widely.<sup>1</sup> As school size declines, the level of anonymity diminishes. In smaller rural schools, more peers likely know each other as classmates, friends, or in other ways. They may be relatives or members of the same religious congregation, or their parents may be co-workers. Indeed, the results of prior research reveal greater connectedness in smaller relative to larger rural schools (Temkin, Gest, & Osgood, 2018). More ties among peers facilitates spreading of news of the suspension and could mean higher social costs for suspended youth in smaller schools. For example, parents may discourage their child from spending time with peers whom they heard were suspended. In sum, suspension may be more strongly associated with peer exclusion among students in smaller rural schools. It may also be more strongly associated with involvement with antisocial peers because in smaller grades, exclusion from conforming friends leaves suspended youth with even greater constraints in friendship selection, potentially amplifying involvement with antisocial peers.

### **1.5 | Alternative explanations**

#### **1.5.1 | Weakened institutional attachment**

It is possible that friendship discontinuity after suspension is a result of weakened institutional attachment instead of the mechanisms I have described. Students may be less likely to maintain ties to

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<sup>1</sup>The results of my analysis of regular public schools with at least one sixth-grade student (National Center for Education Statistics; <https://nces.ed.gov/ccd/elsi/tableGenerator.aspx>) indicate that in 2016–2017, the mean sixth-grade enrollment for rural schools was 68, with a standard deviation of 79. The mean enrollment for nonrural schools was 135, with a standard deviation of 115.

conforming peers (and vice versa) not because of the stigma or separation associated with suspension but because of negative effects suspension may have on school engagement and achievement (Morris & Perry, 2016; Pyne, 2019; but see Kinsler, 2013). Lower achieving youth experience more peer exclusion and have fewer friends, although the evidence in rural schools is mixed (Austin & Draper, 1984; Flashman, 2012). Thus, weakened institutional attachment should be accounted for in an examination of suspension and interpersonal exclusion.

### 1.5.2 | Spuriousness

An association between suspension and friendship discontinuity may also be a result of spuriousness rather than of an effect of the former on the latter. Friendship ties change year to year for many reasons, such as transferring schools (Felmlee, McMillan, Rodis, & Osgood, 2018), joining a sports team (Eder & Kinney, 1995), or engaging in certain behaviors. Some behaviors like substance use are associated with popularity or increases in friendship ties (Moody, Brynildsen, Osgood, Feinberg, & Gest, 2011), but others like delinquency and physical aggression are associated with fewer friends (Dodge, 1983; Rulison, Kreager, & Osgood, 2014) and increase risk of suspension. Thus, discontinuity in friendship ties after suspension may not be a result of suspension itself but of characteristics correlated with suspension. Indeed, students at risk of suspension already feel less connected or accepted by school peers (Pyne, 2019). They are also more disadvantaged and may have difficulty maintaining ties as a result of issues like residential mobility (South, Haynie, & Bose, 2007), longer travel distances (particularly in rural communities; Fox, 1996), or other stigmas already present. For example, parental criminal justice involvement is associated with peer exclusion and suspension (Bryan, 2017; Cochran, Siennick, & Mears, 2018; Jacobsen, 2019).

Such spuriousness could also apply to an association between suspension and increased involvement with antisocial peers. Youth prefer friendships with peers who share similar characteristics, including behavior problems (McPherson, Smith-Lovin, & Cook, 2001; Osgood, Feinberg, & Ragan, 2015). Suspended youth may become more involved with antisocial peers, not because of suspension but because their behavior problems make them more compatible with antisocial peers or less so with conforming peers. Therefore, in examining the associations of suspension with changes in friendship preferences and friends' behavioral composition, the ability to account for a wide range of potential confounders is critical.

## 1.6 | Longitudinal network approach

Examining the exclusionary processes I have described requires the ability to identify 1) which peers consider the respondent to be a friend, separately from 2) which peers the respondent considers to be a friend. Discontinuity in the former should capture rejection (as much as it is associated with suspension), and discontinuity in the latter should capture withdrawal. Therefore, such an examination also requires that this information be longitudinal, tracking the same respondents and peers over time. Most prior studies of labeling or peer exclusion have been reliant on perceptions of exclusion or on general peer preferences, rather than on changes in specific friendships over time (Dodge et al., 2003; Wiley, Slocum, & Esbensen, 2013). In at least one longitudinal study, the researchers focused on suspension specifically. Pyne (2019) found suspended students perceived lower social belonging or connectedness to peers but little evidence that suspension led to declines in such perceptions. I revisit this by focusing on changes in ties among actors in a network rather than on less specific perceptions. Using nomination data ("name your closest friends"), ties are based on nominations of respondents toward peers (outgoing ties) or of peers toward respondents (incoming ties). A more complete picture of student networks is, therefore, provided (Young, Barnes, Meldrum, & Weerman, 2011) that allows for

operationalizing rejection and withdrawal as within-person changes in nominations (Schaefer, Kornienko, & Fox, 2011).

## 2 | STUDY CONTRIBUTIONS

In this work, I extend the results of prior research on the consequences of excessive crime control for social exclusion and inequality by focusing on school suspension, which many have suggested is a precursor to criminal justice involvement (Hirschfield, 2018b; Kupchik, 2010; Mittleman, 2018; Mowen & Brent, 2016; Ramey, 2016). Moreover, I aim to advance knowledge of the prevalence and outcomes of suspension in rural schools. I also join others in shifting the focus dominating prior labeling research from diminished institutional attachment and secondary deviance to the micro-level processes of interpersonal exclusion implied in labeling theories (Cochran et al., 2018; Mowen, 2017; Rengifo & DeWitt, 2019). Additionally, I show one way these network processes may be observed over time (also Schaefer et al., 2011), which is a particularly important contribution in the context of suspension because of the limited availability of individual-level school discipline information combined with longitudinal network data.

First, I examine descriptive differences in network size and other characteristics between suspended and nonsuspended students. Second, I test the association between suspension and the deterioration of incoming ties (rejection) and outgoing ties (withdrawal) from one wave or grade to the next. Third, I assess the extent to which school absence (an indicator of separation from school friends) explains this association. As a sensitivity check, I compare results using alternative outcome measures based on changes in *perceptions* of peer exclusion. Finding the results of analyses of perceptions consistent with the main results would be evidence of the reliability of my network approach. Fourth, I assess changes in the self-reported behavioral composition (substance use and delinquency) of sets of friends comprised separately of incoming and outgoing ties. Finally, I test whether the associations of suspension with interpersonal exclusion and increased involvement with antisocial peers are stronger in smaller schools.

## 3 | DATA AND METHOD

### 3.1 | Data

#### 3.1.1 | Rural sample

Data were collected as part of the test of the PROSPER partnership model, a project for delivering community-focused interventions for reducing adolescent substance use and risky behavior (Spoth et al., 2007). The project included all sixth-grade students in 28 predominantly rural public school districts, with 14 each in Iowa and Pennsylvania (~11,000 participants at baseline, with 162 to 792 per school district). To be eligible, districts had to have between 1,300 and 5,200 students, with no less than 15 percent eligible for free or reduced-price lunch. These enrollment-specific criteria result in schools being considerably larger on average than rural schools nationally, and even than U.S. schools overall (appendix A at the end of the article). Two successive cohorts of students participated, completing baseline surveys in school during the fall of sixth grade (2002 and 2003). They then completed follow-up surveys in the spring of the same year and every year after to ninth grade (five waves).<sup>2</sup> As part of

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<sup>2</sup>Seventy-four percent of the student body participated in the in-school survey at the first wave, 86 percent by ninth grade. Seventy-three percent of first-wave respondents participated at ninth grade.

this in-school survey, students were asked to list the names of their two closest friends and up to five other close friends in their same grade and school. Ninety-six percent of participating students provided nomination data for at least one wave. Eighty-three percent of nominations were matched successfully to class rosters, with an average of four names per student-wave. Unsuccessful matches occurred when nominations were not on the rosters (15 percent) or there were multiple plausible names (2 percent).

Suspension data were collected from additional in-home questionnaires administered to a random subset of students from the 2003 cohort and their parents. Interviewers contacted families via mail and telephone, followed by an in-person recruitment visit. Of 2,267 families invited, 979 (43 percent) participated (Lippold, Greenberg, & Collins, 2013). This low rate resulted in an in-home subsample with small but statistically significant differences from the larger PROSPER data set. Compared with students in the full 2003 cohort, students in the in-home subsample were more likely to be White. They had more school friends and were somewhat less likely to report delinquency or substance use; however, they were similar in terms of socioeconomic status (free or reduced-price lunch) and proportion male or female (appendix A). Students and their mothers, and fathers when present (70 percent at baseline), completed written questionnaires concurrently with the five waves of the larger in-school survey. By ninth grade, 75 percent of students were still participating (average approximately three waves per student; appendix B).

I limited my analytic sample to 2,915 in-home participant observations in the spring of grades six to nine. I did not include baseline observations as cases in the analyses because my focus was on discontinuity in friendship ties from the prior to the current wave. Baseline data contributed, however, because control variables were lagged to the previous wave to establish the appropriate temporal ordering with key variables. In addition, I excluded follow-up observations of 140 students who continued participating in the in-home survey but moved away from a PROSPER school district, leaving no basis for assessing rejection and withdrawal. Of these 2,915 remaining observations, I excluded 378 in which students did not finish the in-school survey as a result of refusal, incompleteness, or absence (approximately the same number for each reason). I also dropped 164 cases as a result of nonresponse on suspension items, resulting in an analytic sample of  $N = 2,373$  observations from 766 students. At baseline, no notable differences were found between my analytic sample and the in-home subsample from which it was drawn, but there were disproportionately fewer racial minorities compared with the full PROSPER 2003 cohort (12 percent vs. 16 percent) and with the entire U.S. population of rural, regular, public-school sixth-graders in the same year (21 percent; appendix A). Forty-one percent of racial minorities in my sample were Hispanic and 17 percent were non-Hispanic Black. Therefore, my analyses may not be generalized to all minority youth in these school districts.

### 3.1.2 | Variables

#### *Outcome variables*

Friends were defined by respondent nominations of peers (maximum of seven) or by peer nominations of the respondent (could be nominated by anyone in grade). I examined disparities in the number of nominations made and received, but my main outcome of interest was a within-individual discontinuity in or loss of nominations from one wave to the next. I focused on same-grade peers because they provided a consistent pool of potential friends as students advanced through middle school and into high school. They were also the most relevant audience likely to learn of and respond to suspension. Peers beyond this pool should be considered as well, but they are not as easily incorporated into a full network analysis. To provide some perspective beyond same-grade peers, in descriptive analyses, I also considered the number of close friends the respondent reported to have had in other grades and schools.

Discontinuity in friendship nominations was represented in two ways. Withdrawal represented the number of nominations the respondent made in the previous wave but did not repeat in the current wave. Rejection represented the number of nominations the respondent received in the previous wave but lost (did not receive) again in the current wave.<sup>3</sup>

In examining whether suspension was associated with increased involvement with antisocial peers, I focused on two behaviors of friends: substance use and delinquency. Both were based on self-reports of peers who participated in the in-school survey and were nominated by the respondent or nominated the respondent as a friend. Substance use was based on four items about the frequency of smoking, drinking alcohol, getting drunk, and using marijuana in the past month ( $\alpha = .76$ ). Delinquency was based on 12 items about the frequency of such behaviors as theft, fighting, and vandalism in the past year (full list in appendix C;  $\alpha = .82$ ). To address issues with skewness in combining items, each measure was constructed using the graded response model from item response theory (extension of the two-parameter logistic model; Samejima, 1969). Therefore, each measure was transformed into an equal-interval scale with a mean of 0 and a standard deviation of 1 (Osgood, McMorris, & Potenza, 2002). The results of principle component analyses for each measure indicated support for the IRT assumption that a single dominant latent variable underlies the respective items. Final measures represented the mean substance use and mean delinquency across the respondent's friends. One version of each pertained to outgoing ties and another to incoming ties.

#### *Explanatory variable*

Suspension data represented student self-reports on the number of times they were "suspended from school for disciplinary reasons" in the past 12 months. To minimize underreporting, these were combined with responses from up to two participating parents ("In the past year, has this child ever been suspended from school for disciplinary reasons? How many times?"). The number of suspensions was based on the maximum indicated by any of the three potential reporters. For example, if the student reported two suspensions but the mother and father each reported only one, I counted this as two suspensions. In my sample, 155 families, or 20 percent, reported at least one suspension between fifth and ninth grade. Of these, slightly more than half reported multiple suspensions, and one third reported at least three. Eight percent were suspended ten or more times or an average of more than twice per grade. For multivariable analyses, I collapsed these suspension counts into a set of three time-varying dummy variables. The first represented the reference category and included students who were never suspended between fifth grade and a given subsequent grade. The second referred to students who were suspended once and the third to students suspended multiple times. These were time varying because students in each category at a given wave could report a new suspension at a subsequent wave. This way, the measure was indicative of a label carried across years—one that should become more salient the more times a student is suspended.

This measure was limited because it did not include suspensions prior to baseline, meaning the analyses were designed with the assumption that suspensions in fifth grade were first-time suspensions. This assumption, however, seemed to be a safe one because few students or parents (4 percent) reported suspensions in fifth grade, and by sixth grade, the prevalence (8 percent) was consistent with cumulative risk between *first* and sixth grade for rural students nationally (as detailed in the Results section). The measure was also limited because it did not allow for assessing other differences in suspension (e.g.,

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<sup>3</sup>Nine percent of cases pertained to students who did not nominate anyone in the previous wave and 15 percent to students who did not receive nominations. A separate set of models for these students is presented in the online supporting information. Additional supporting information can be found in the full text tab for this article in the Wiley Online Library at <http://onlinelibrary.wiley.com/doi/10.1111/crim.2020.58.issue-1/issuetoc>.

in-school or out-of-school) or other exclusionary forms of school punishment such as expulsion. Some sanctions may have more or less impact than others, but unfortunately few large-scale data sets distinguish between types.

#### *School absence*

Absence, a measure of separation, was based on in-school self-reports on the number of days the student missed last year (1 = none, 2 = 1 to 2 days, 3 = 3 to 6 days, 4 = 7 to 15 days, and 5 = 16 or more days).<sup>4</sup> Data on the length of suspensions or reasons for missing school were not available. I combined the last two categories (only 5 percent missed 16 or more days) and constructed a set of dummy variables with the reference group representing those who never missed 7 or more days in a given wave or any previous wave. The second group included students who missed 7 or more days (not necessarily consecutively), and the third group referred to students who missed this amount more than once since sixth grade. In analyses not shown, I compared results using measures based on other cut-offs (3 or more, 16 or more), but the 7-day cut-off explained a larger portion of the association between suspension and friendship tie discontinuity than the others did. Among students who missed 7 days in a single year, 42 percent did this in more than one wave. These may be at greater risk of weakened ties among school peers.

#### *Weakened institutional attachment*

Two indicators of weakened institutional attachment included low school attachment and low academic achievement. Low school attachment represented the average of five in-home survey items ranging from 1 = not at all true to 5 = really true. Examples include “I wish I could move to another school,” “I like being in my school” (reverse coded), and “I wish I could stay home from school” (alpha = .83). For increased reliability, low achievement was based on combined reports of students and participating parents about the student’s usual grades in school, ranging from 1 = mostly A’s to 9 = mostly F’s. The final measure represented the average across the standardized ( $z$  score) individual reports (alpha = .91).

#### *School size and other control variables*

As the most relevant aspect of school size, I used the number of students per grade as a control and for examining whether associations with friendship discontinuity were stronger in smaller schools. I also addressed concerns with selection on observed characteristics by including a rich set of controls from both the in-school and in-home surveys (full list in table 1). Among these were behavioral antecedents to suspension, each measured prior to the current wave (one-wave lags). These included school misbehavior (disrupting class, talking back to teachers, breaking rules, etc.), delinquency, substance use, and risk and sensation seeking. Controlling for antisocial behaviors eases concerns about reverse causality because labeling theories indicate the effects of peer exclusion on suspension (the reverse relationship) would operate through increases in antisocial behavior. Other controls included indicators of economic disadvantage, residential mobility, parenting behaviors, after-school activities, and other reasons for friendship changes such as when friends drop out, move away, or choose not to participate in the survey (coding described in appendix D). I also controlled for current wave (grade) to account for trends in behavior and friendship selection. All but four variables were missing less than 10 percent of observations. These four included parent arrest history (self-reports) collected only at ninth grade (21 percent), the racial composition of nominations made (15 percent), special education services (11 percent), and risk and sensation seeking (11 percent). I used multiple imputation with chained equations to address missing data (analyses included 20 imputed data sets) and to preserve a

<sup>4</sup>Suspension items refer to the past 12 months or past year, but the question about absence refers to last year; therefore, the period of time captured by my measure of suspension may not overlap completely with my measure of absence.

TABLE 1 Descriptive statistics for sixth-grade observations

Variable	Never Suspended During Study		Suspended by Sixth Grade		Suspended During Study		Suspended After Sixth Grade		Full Sample at Sixth Grade	
	M	SD	M	SD	M	SD	M	SD	M	SD
Friendship Nominations Lost Since Last Wave										
Number of nominations made last wave (0 to 7)	3.69*	2.57	3.44	2.62	2.83	2.41	3.58	2.57		
Mean proportion lost since last wave <sup>a</sup> (0 to 1)	.33*	.27	.46	.28	.36	.33	.34	.28		
Number of nominations received last wave (0 to 16)	3.47*	2.72	2.62	2.40	2.42	2.65	3.29	2.71		
Mean proportion lost since last wave <sup>b</sup> (0 to 1)	.36**	.32	.60	.34	.38	.37	.38	.33		
School Absence (ref: Never Missed 7+ days)										
Missed 7+ days of school in a year since fall of 6th grade	.19	.40	.20	.40	.22	.42	.20	.40		
Missed 7+ days of school in a year more than once since fall of 6th grade	—	—	—	—	—	—	—	—		
Weakened Institutional Attachment										
Low school attachment current wave (1 to 5)	2.11**	.85	2.50	.83	2.31	.97	2.16	.87		
Low academic achievement current wave (z score)	-.22*	.81	.35	.91	.19	.95	-.13	.86		
Control Variables										
Male (ref: Female)	.43***	.50	.76	.43	.57	.50	.47	.50		
Non-White (ref: Non-Hispanic White)	.10**	.30	.20	.40	.21	.41	.12	.33		
Nominations made last wave no longer in school/study (log)	.17	.34	.26	.41	.20	.38	.18	.35		
Nominations received last wave no longer in school/study (log)	.22*	.36	.11	.27	.17	.35	.21	.36		
Racial composition of nominations made last wave all White	.69*	.46	.51	.50	.63	.49	.67	.47		
Racial composition of nominations received last wave all White	.71	.45	.62	.49	.74	.44	.71	.46		
Number of students in grade last wave (6 to 470)	167.30	105.62	177.75	126.84	163.63	99.76	167.75	106.75		
Transitioned to new school last wave										
Miles to school last wave (log)	1.23	.62	1.18	.59	1.12	.54	1.22	.61		
Special education services last wave	.17***	.38	.44	.50	.26	.44	.20	.40		
Structured activities after school last wave (z score)	-.09	1.02	-.08	.85	-.29	.78	-.11	.98		

(Continues)

TABLE 1 (Continued)

Variable	Never Suspended During Study		Suspended During Study				Full Sample at Sixth Grade	
	M	SD	M	SD	Suspended by Sixth Grade	Suspended After Sixth Grade	M	SD
Unstructured socializing after school last wave (z score)	-.12***	.97	.26	1.10	.22	1.17	-.06	1.01
Any substance use last wave	.05**	.21	.13	.34	.11	.32	.06	.68
Delinquency variety score last wave (log)	.25***	.45	.73	.67	.44	.60	.31	.51
Frequency of school misbehavior last wave (log)	.27***	.25	.67	.33	.51	.33	.33	.30
Risk and sensation seeking last wave (1 to 5)	1.82***	.82	2.29	.95	2.05	.98	1.88	.86
Frequency of bully victimization last wave (log)	.27***	.30	.38	.36	.40	.38	.29	.32
Parental discipline last wave (1 to 5)	3.73***	.89	3.20	1.12	3.52	.94	3.66	.92
Parental monitoring last wave (1 to 5)	4.61***	.51	4.28	.65	4.48	.51	4.57	.53
Parent education last wave (z score)	-.01***	1.02	-.28	1.15	-.47	.79	-.07	1.02
Household income last wave (log)	10.78***	.79	10.42	.86	10.32	.86	10.70	.82
Parent unemployment last wave	.11***	.31	.16	.37	.28	.45	.13	.34
Parent ever arrested (ninth grade only)	.14***	.35	.42	.50	.29	.46	.18	.38
Mother relationship transitions last wave (0 to 8)	1.97	1.45	2.24	1.71	2.17	1.39	2.01	1.46
Children in household last wave (0 to 8)	2.45	1.03	2.75	1.32	2.31	.91	2.46	1.05
Mother depression last wave	.23***	.42	.40	.49	.40	.49	.26	.44
Religiosity last wave (1 to 6)	3.98***	1.77	3.53	1.73	3.22	1.81	3.86	1.78
Years in current residence last wave (0 to 19)	6.40***	4.08	5.16	3.93	4.93	3.69	6.15	4.06
Community cohesion last wave (z score)	-.01**	1.03	.17	1.09	.39	1.04	.05	1.04
<i>n</i> of Students (Unweighted)	561		55		72		688	

Notes: PROSPER sample limited to 2,373 observations of 766 in-home survey participants meeting the following criteria: attending participating school district, participated in the in-school survey, and valid data on suspension. Only sixth-grade observations are shown here ( $n = 688$ ). Control variable for current grade not shown. Results based on first of 20 multiply imputed datasets. Independent samples  $t$  tests were used to compare ever-suspended students (those in either of the middle two categories) to never-suspended students.

<sup>a</sup>Of those who made nominations last wave ( $n = 444$  nonsuspended, 42 suspended by sixth, 53 suspended after sixth, 539 total).

<sup>b</sup>Of those who received nominations last wave ( $n = 500$  nonsuspended, 44 suspended by sixth, 57 suspended after sixth, 601 total).

Abbreviations: M = mean; SD = standard deviation.

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$  (two-tailed).

consistent sample size when comparing across nested models. In supplemental analyses not shown, I used listwise deletion instead of multiple imputation; with this approach, multivariable regression coefficients were similar in terms of size and direction, but models relied on smaller portions of the sample.

### 3.1.3 | Analytic strategy

After examining descriptive statistics by suspension, I conducted the analyses in the order of my three main hypotheses: 1) interpersonal exclusion, 2) increased involvement with antisocial peers, and 3) stronger associations in smaller rural schools.

#### *Interpersonal exclusion*

To estimate the risk of losing a specific friend, I relied on generalized estimating equations (Liang & Zeger, 1986), an extension of generalized linear models representing a semiparametric approach to analyses of panel data with a categorical outcome. I used a logit link function and binomial probability distribution to estimate differences in the odds of losing a friend from one wave to the next, which is similar to a random-effects logistic regression approach, but a population-averaged effect was estimated rather than the effect of a change in suspension status. A key benefit of this strategy for network analysis is that using the binomial probability allowed for me to account for variation in the number of possible friends to lose across students and waves (the “trials” for this application of the binomial). In the analyses, the odds of discontinuity in nominations among suspended students compared with their nonsuspended counterparts were estimated. I tested the overall association with friendship discontinuity and then estimated the proportion of this association explained by lengthy or repeated school absence.

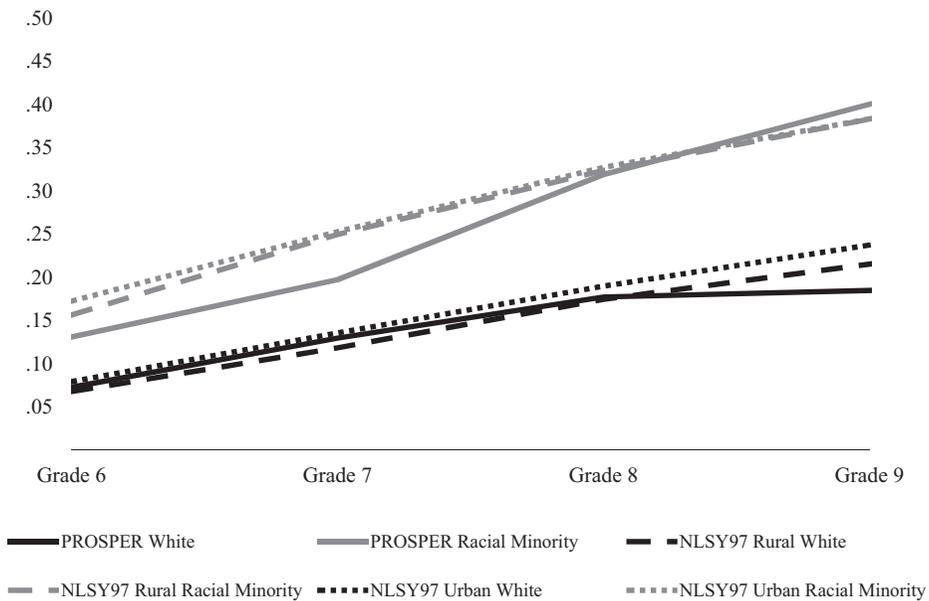
After accounting for absence, a remaining association may be a result of rejection or withdrawal but could also be a result of unobserved heterogeneity. My focus on discontinuity in friendship ties, a type of within-individual change, should have partially addressed this concern. To address it even further, though, I respecified my models among students with high levels of school misbehavior, delinquency, or substance use (above median in grade). Next, I checked the robustness of my results to alternative measures of peer exclusion based on perceptions rather than on network data. For greater reliability, I used both student self-reports and parent perceptions of the student’s exclusion from school peers. I analyzed these outcomes with within-individual, fixed-effects models (Allison, 2009).<sup>5</sup> An important benefit of this approach was that all observed and unobserved time-stable differences were adjusted for between suspended and nonsuspended students. A limitation was that it was still subject to bias as a result of unobserved time-varying characteristics and did not provide between-person estimates.

#### *Increased involvement with antisocial peers*

In examining associations between suspension and changes in network composition, I focused on friends’ past-month substance use and past-year delinquency. I observed changes in mean levels of substance use and delinquency across outgoing and incoming ties. Individual fixed-effects were once again included in the analyses, as were all time-varying controls, to minimize concerns with unobserved heterogeneity and selection.

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<sup>5</sup>In this article, the term “fixed-effects” refers to this basic equation (Firebaugh, Warner, & Massoglia, 2013):  $y_{it} = \alpha_t + \mu_i + \beta x_{it} + \varepsilon_{it}$ , where  $y_{it}$  is the outcome for person  $i$  at time  $t$ ,  $\alpha_t$  is a fixed effect for time,  $\mu_i$  is a fixed effect for individuals,  $x_{it}$  is a vector of explanatory variables that vary over time,  $\beta$  is a vector of coefficients, and  $\varepsilon_{it}$  is a within-person error term.



**FIGURE 1** Cumulative risk of suspension for Whites and racial minorities in PROSPER and the National Longitudinal Survey of Youth, 1997 cohort

*Notes:* PROSPER N = 766 students (unweighted) with some variation across waves. NLSY97 N = 8,984 youth, but 380 excluded due to unknown urban/rural status. Grades 6, 7, 8, and 9 in PROSPER correspond to ages 12, 13, 14, and 15 in the NLSY97. NLSY97 data are weighted to represent adolescents at each age nationally. Urban/rural defined by Census, based on respondent's 1997 residence. PROSPER includes disproportionately more Hispanics and fewer blacks than NLSY97

### *Stronger associations in smaller schools*

To examine heterogeneity by school size, I tested for an interaction between suspension and the number of students in the respondent's grade. I first tested for heterogeneity in the association of suspension with friendship discontinuity and then in the association with behavioral composition of friendship networks.

## 4 | RESULTS

### 4.1 | Descriptive statistics by suspension status

Figure 1 illustrates how suspensions accumulated in my sample as students advanced from sixth to ninth grade. For reference, I compared these with a nationally representative sample of rural and urban students in the National Longitudinal Survey of Youth 1997 (NLSY97). I combined racial minorities (Hispanic or non-White) because there were so few in rural areas relative to non-Hispanic Whites (12 percent in my sample vs. 17 percent of rural youth in the NLSY97). Little is known about the prevalence of suspension among rural youth. My results indicate cumulative risk is about as high in rural areas as it is in urban areas, particularly after seventh grade. Also striking is the consistency across samples of the difference between Whites and racial minorities. Nearly 15 percent of minority youth had already been suspended by sixth grade compared with slightly more than 5 percent of Whites. By about the

time they transitioned into high school, 40 percent of minorities had been suspended compared with fewer than 20 percent of Whites.

Descriptive statistics in table 1 show a comparison between suspended students and their nonsuspended counterparts. Means and standard deviations are presented for the full sample and by three categories of suspension: never suspended during study, suspended by sixth grade, and suspended after sixth grade. Independent-samples *t* tests compare means between 1) nonsuspended students and 2) students in either of the latter two suspension subgroups. Splitting the sample this way reveals important correlates of suspension. Suspended youth (especially if suspended in sixth grade) come from more disadvantaged backgrounds than do nonsuspended youth. They are more likely to have experienced stressful life circumstances such as residential mobility, parental unemployment, maternal depression, and parental justice involvement. Perhaps in part as a result of these family conditions, they exhibit more school misbehavior and lower achievement. Additionally, their parents monitor and discipline their behavior with less consistency, providing more opportunities for unstructured socializing and greater involvement in substance use, delinquency, and other risky behaviors (for more summary statistics, see appendix E).

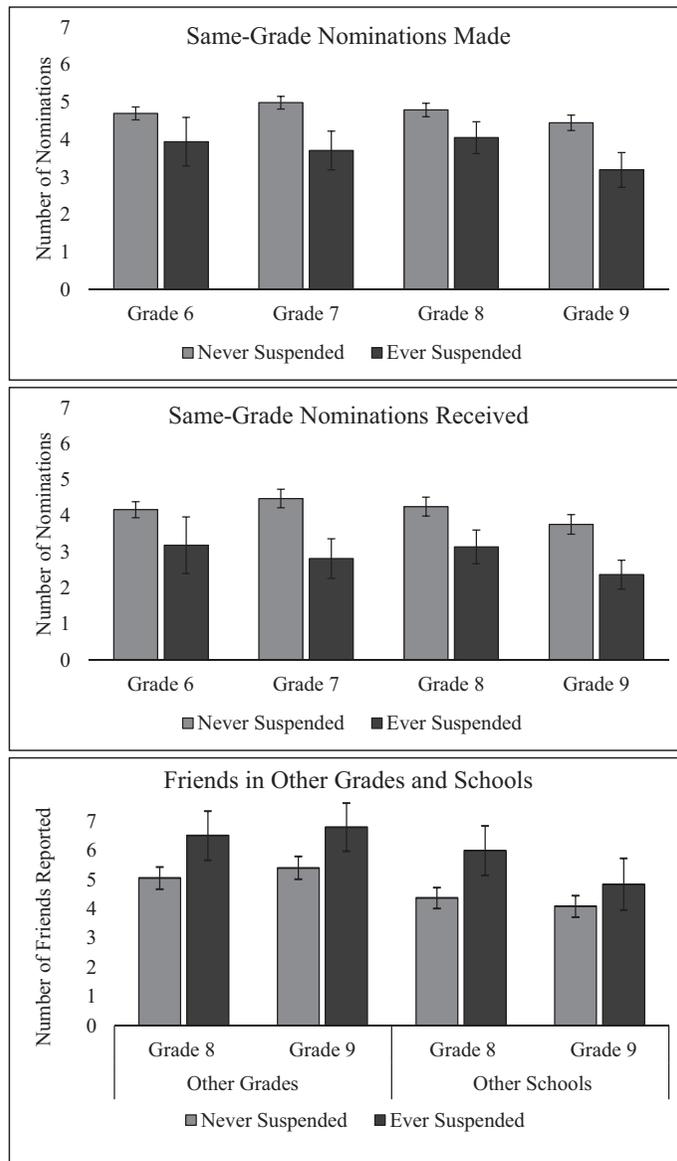
Figure 2 presents the average number of friends for students who were suspended by a given wave relative to those who were not. In sixth grade, suspended students nominate four same-grade peers and receive about three nominations. On average, this is one nomination less than nonsuspended students make or receive. By ninth grade, this difference approaches two friends partly as a result of greater decline in friends among suspended students. Whereas nonsuspended students still nominate a little less than five peers and receive nominations from four, suspended students make only three nominations and receive a little more than two. Some of this difference may be a result of suspension, but some may also be a result of more disadvantaged students already having fewer friends. Indeed, students with lower household incomes (below median) make and receive fewer nominations than do those with higher incomes (3 made and 3 received vs. 4 made and 4 received), and racial minorities make and receive fewer nominations than do Whites (3 made and 3 received vs. 4 made and slightly more than 3 received). If suspension is associated with interpersonal exclusion, even if the overall association is not large, it may be especially consequential for students who already have fewer same-grade friends. It may also provide opportunities for shared experiences with youth in other grades during in-school suspension or youth outside school during out-of-school suspension. Indeed, the bottom panel of Figure 2 indicates that compared with other students by the end of middle school, suspended youth have more friends in other grades (6 compared with 5) and other schools (6 compared with 4). The results of supplemental analyses also indicate a greater proportion of their friends are older than they are.<sup>6</sup>

## 4.2 | Interpersonal exclusion

Suspended students have fewer friends in their grade than do their peers, but assessing the extent to which they are excluded from particular peers requires moving beyond the basic question of network size to examine discontinuity in friendships over time. Table 2 presents multivariable results for discontinuity in outgoing and incoming ties (the full results are presented in the online supporting information). Because observations of students with no nominations in the preceding wave were excluded from the analyses, the number of students varies from the full sample of 766 (down to  $n = 697$  for analyses of nominations made and  $n = 734$  for nominations received). The first column on the left

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<sup>6</sup>Parents were asked how many of their child's friends were older (1 = very few to 5 = almost all), and in each grade, parents of suspended youth reported a higher level. For example, in eighth grade, suspended youth had a mean of 1.64 versus 1.44 for other students ( $p < .01$ ).



**FIGURE 2** Network size by suspension status, grades 6 to 9

*Notes:* PROSPER sample limited to observations of in-home survey participants meeting the following criteria: attending participating school district, participated in the in-school survey, and valid data on suspension.  $N = 2,373$  observations from 766 students. Data on friends in other grades and schools are only available in later waves ( $n = 1,059$ )

presents models that include suspension variables without controls. The second column includes control variables, the third adds controls for weakened institutional attachment, and the fourth accounts for school absence. In the fifth, I repeat the analyses in the fourth column after limiting the sample to cases with the highest levels of antisocial behavior.

In panel A, the likelihood of discontinuing a nomination *made* in the previous wave is examined. Results indicate that among suspended students, the odds of discontinuing a nomination are 31 percent greater [ $(e^{.27} - 1) \times 100$ ] than the odds among nonsuspended students ( $p < .01$ ). This association is

**TABLE 2** Binomial generalized estimating equations: Log odds of losing a friendship nomination associated with suspension

Model	Suspension		Add Control Variables		Add Weakened Institutional Attachment		Add School Absence		High Antisocial Observations	
	<i>b</i>	(SE)	<i>b</i>	(SE)	<i>b</i>	(SE)	<i>b</i>	(SE)	<i>b</i>	(SE)
<b>Panel A: Friendship Nomination Made</b>										
School suspension (ref: Never suspended in study)										
Suspended by current wave	.27**	(.09)	.20*	(.09)	.19*	(.09)	.18	(.09)	.24*	(.11)
Suspended more than once by current wave	.39***	(.09)	.25*	(.11)	.25*	(.11)	.22*	(.11)	.29*	(.11)
Weakened institutional attachment										
Low school attachment current wave					.06*	(.03)	.06*	(.03)	.01	(.04)
Low academic achievement current wave					.03	(.03)	.02	(.03)	.03	(.04)
School Absence (ref: Never missed 7+ days in study)										
Missed 7+ days of school in a year by current wave					.04	(.07)	.04	(.07)	-.01	(.09)
Missed 7+ days of school more than once by current wave					.24**	(.07)	.24**	(.07)	.23*	(.09)
Observations	2,022		2,022		2,022		2,022		1,110	
Students	697		697		697		697		497	

(Continues)

TABLE 2 (Continued)

Model	Suspension		Add Control Variables		Add Weakened Institutional Attachment		Add School Absence		High Antisocial Observations	
	<i>b</i>	(SE)	<i>b</i>	(SE)	<i>b</i>	(SE)	<i>b</i>	(SE)	<i>b</i>	(SE)
<b>Panel B: Friendship Nomination Received</b>										
School suspension (ref: Never suspended in study)										
Suspended by current wave	.25**	(.09)	.09	(.10)	.09	(.10)	.09	(.10)	.13	(.12)
Suspended more than once by current wave	.46***	(.10)	.25*	(.11)	.23*	(.11)	.21	(.11)	.24	(.13)
Weakened institutional attachment										
Low school attachment current wave					-.03	(.03)	-.03	(.03)	-.07	(.05)
Low academic achievement current wave					.02	(.03)	.01	(.03)	.04	(.04)
School Absence (ref: Never missed 7+ days in study)										
Missed 7+ days of school in a year by current wave							.06	(.07)	.08	(.09)
Missed 7+ days of school more than once by current wave							.15	(.08)	.02	(.10)
Observations	2,154		2,154		2,154		2,154		1,044	
Students	734		734		734		734		483	

Notes: PROSPER sample limited to observations of in-home survey participants meeting the following criteria: attending participating school district, participated in the in-school survey, and valid data on suspension. Models of nominations made exclude 351 observations of students who did not make a nomination last wave. Models of nominations received exclude 219 observations of students who did not receive a nomination last wave. Suspension and absences observed beginning fall of sixth grade. Control variables are not shown for brevity. High antisocial observations have higher than median substance use, delinquency, or school misbehavior. Results combined across 20 multiply imputed data sets.

Abbreviations: *b* = log odds coefficient; ref = reference category; SE = standard error.

\**p* < .05; \*\**p* < .01; \*\*\**p* < .001 (two-tailed).

stronger for students with multiple suspensions. Among these, the odds of discontinuing a nomination are 47 percent greater ( $p < .001$ ). When controls are added, associations for both groups remain positive and statistically significant. Among students with one suspension, the odds of discontinuing a nomination are 22 percent greater, and among those with multiple suspensions, the odds are 29 percent greater. When controls for low school attachment and achievement are also added, their associations with the outcome are weak, and only low attachment is statistically significant. One unit of low attachment is associated with a 7 percent greater odds of discontinuing a nomination ( $p < .05$ ). Adding these variables reduces the coefficient for one suspension by only 4 percent and does not affect the coefficient for multiple suspensions.<sup>7</sup> After adjusting for all of these controls, converting the log odds coefficients for suspension to fitted probabilities reveals an increase of .05 (from .42 to .47) in the probability of discontinuing a nomination made for students with one suspension, and a difference of .06 for multiple.

Next, school absence is added to the model and coefficients for suspension decline further, by 5 percent for students with one suspension and by 13 percent for students with multiple. Students who missed 7 or more days in a year are no more likely to discontinue a nomination than are those who never had this degree of absence. Among students with such absences at multiple waves, however, the odds of discontinuing a nomination are 27 percent greater ( $p < .01$ ). Finally, these models are respecified after retaining only cases with above-median antisocial behaviors in the preceding wave ( $n = 1,110$ ). If results to this point have been biased by unobserved heterogeneity, I would expect the association to decrease substantially. The final column of table 2, however, indicates the opposite—effect sizes increase slightly and remain statistically significant.

Looking at panel B of table 2, the association between suspension and the likelihood of losing a nomination *received* in the previous wave can be examined. Without accounting for controls, the odds of suspended students losing a nomination are 29 percent greater than the odds among nonsuspended students ( $p < .01$ ). This association is larger for students with multiple suspensions, among whom the odds are 58 percent greater ( $p < .001$ ). When controls are added, the coefficients decline substantially (by 63 percent for students suspended once, 46 percent for students suspended multiple times), indicating much of this association was driven by selection on observed characteristics. The log-odds coefficient for students suspended only once approaches zero, but the coefficient for multiple suspensions remains positive and statistically significant. For this category, the odds of losing a nomination are 29 percent greater than the odds among nonsuspended students ( $p < .05$ ). Now I focus on multiple suspensions because associations for students suspended only once were not statistically significant in the previous model. When controls for low school attachment and achievement are added neither is significantly associated with discontinuity in nominations received, and these variables reduce the size of the coefficient for multiple suspensions by only 5 percent. After adjusting for all of these controls, converting the log odds for multiple suspensions to a fitted probability reveals an increase of .06 (from .47 to .53) in the probability of discontinuing a nomination received.

Next, school absence is added to the model, and again only a small part (9 percent) of the association between suspension and the odds of losing a nomination is explained. For students who missed 7 or more days per year in multiple waves, the odds of losing a nomination are 16 percent greater than the odds among students without such absences ( $p < .10$ ). Accounting for absence causes the coefficient for multiple suspensions to decline below statistical significance but remain stable in size ( $b = .21$ ;  $p < .10$ ). The robustness of these models is checked by limiting the sample to observations with above-median antisocial behaviors ( $n = 1,044$ ). Again, the log-odds coefficient for students with multiple

<sup>7</sup>I also examined associations between suspension and these indicators of weakened institutional attachment using fixed-effects linear regression including all controls. Suspension was associated with low achievement ( $b = .29$ ,  $p < .001$  for one suspension;  $b = .51$ ,  $p < .001$  for multiple) but less so with school attachment ( $b = .16$ ,  $p < .10$  for one; not significant for multiple).

**TABLE 3** Results of within-individual, fixed-effects linear regression models: Changes in three measures of perceptions of peer exclusion associated with suspension

Model	Suspension		Add Control Variables	
	<i>b</i>	(SE)	<i>b</i>	(SE)
<b>Panel A: Student-Perceived Loneliness at School</b>				
School suspension (ref: Never suspended in study)				
Suspended by current wave	.04	(.13)	-.05	(.12)
Suspended more than once by current wave	.12	(.14)	.03	(.14)
<b>Panel B: Student-Perceived Poor Relationships with School Friends</b>				
School suspension (ref: Never suspended in study)				
Suspended by current wave	.26**	(.09)	.22*	(.09)
Suspended more than once by current wave	.36**	(.13)	.28*	(.13)
<b>Panel C: Parent-Perceived Rejection by School Friends</b>				
School suspension (ref: Never suspended in study)				
Suspended by current wave	.22**	(.07)	.22**	(.09)
Suspended more than once by current wave	.30**	(.09)	.27**	(.09)

*Notes:* PROSPER sample limited to observations of in-home survey participants meeting the following criteria: attending participating school district, participated in the in-school survey, and valid data on suspension.  $N = 2,373$  observations from 766 students. Suspension observed beginning fall of sixth grade. Results for controls are omitted for brevity. Each outcome variable is measured on a 5-point Likert scale. Results are combined across 20 multiply imputed data sets.

*Abbreviations:* *b* = log odds coefficient; ref = reference category; SE = standard error.

\* $p < .05$ ; \*\* $p < .01$  (two-tailed).

suspensions remains stable ( $b = .24$ ;  $p < .10$ ). In models not shown, I explored variation by race and gender. I found no significant differences for boys relative to girls or racial minorities relative to Whites in associations with discontinuity in nominations made or received (other sensitivity analyses can be found in the online supporting information).

#### 4.2.1 | Alternative measures of peer exclusion

I examined the robustness of my results to three alternative measures based on perceptions of exclusion: loneliness at school, poor relationships with school friends, and parent-perceived rejection by school friends. Loneliness represented the mean of three items adapted from the Children's Loneliness Scale (Asher & Wheeler, 1985), each ranging from 1 = not at all true to 5 = really true. Examples included "I feel left out of things at school" and "I feel lonely at school" ( $\alpha = .93$ ). Poor relationships were also represented by the mean of three items, each asking about relationships in the past year (1 = never true to 5 = always true). Examples included "My school friends and I got along well" (reverse coded)" and "I had a hard time making friends at school" ( $\alpha = .66$ ). Parent-perceived rejection was constructed from two items asking parents what percentage of their child's school friends 1) like and accept him or her (reverse coded) and 2) dislike and reject him or her. Responses ranged from 1 = very few (less than 25 percent) to 5 = almost all (more than 75 percent). Responses were averaged across both items and across reports of both parents ( $\alpha = .77$ ). I then focused on within-individual change by relying on fixed-effects linear regression models and included the same list of time-varying controls incorporated into earlier analyses.

Table 3 presents the results first without controls and then with their addition. The results reveal no statistically significant associations between suspension and loneliness at school (panel A)

**TABLE 4** Results of within-individual, fixed-effects linear regression models: Standard deviation-unit change in the mean-level of friends' substance use and delinquency associated with suspension

Model	Mean Past-Month Substance Use of Friends				Mean Past-Year Delinquency of Friends			
			Add Control				Add Control	
	Suspension	Variables	Suspension	Variables	Suspension	Variables	Suspension	Variables
	<i>b</i>	(SE)	<i>b</i>	(SE)	<i>b</i>	(SE)	<i>b</i>	(SE)
<b>Panel A: Friendship Nominations Made</b>								
School suspension (ref: Never suspended in study)								
Suspended by current wave	.92***	(.18)	.37*	(.18)	.43**	(.16)	.15	(.17)
Suspended more than once by current wave	1.69***	(.18)	.69**	(.25)	.90**	(.26)	.35	(.26)
Observations	2,237		2,237		2,237		2,237	
Students	744		744		744		744	
<b>Panel B: Friendship Nominations Received</b>								
School suspension (ref: Never suspended in study)								
Suspended by current wave	.74***	(.16)	.22	(.16)	.25	(.17)	-.05	(.17)
Suspended more than once by current wave	1.18***	(.24)	.34	(.23)	.60*	(.27)	.00	(.27)
Observations	2,175		2,175		2,175		2,175	
Students	744		744		744		744	

Notes: PROSPER sample limited to observations of in-home survey participants meeting the following criteria: attending participating school district, participated in the in-school survey, and valid data on suspension. Models of nominations made exclude 351 observations of students who did not make a nomination last wave. Models of nominations received exclude 219 cases of students who did not receive a nomination last wave. Suspension observed beginning fall of sixth grade. Controls not shown for brevity. Results combined across 20 multiply imputed data sets.

Abbreviations: *b* = log odds coefficient; ref = reference category; SE = standard error.

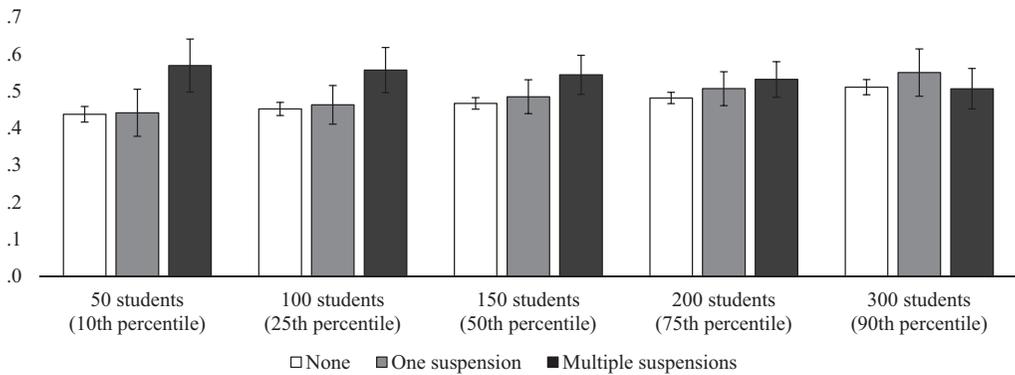
\**p* < .05; \*\**p* < .01; \*\*\**p* < .001 (two-tailed).

but moderately sized positive associations with poor relationships (panel B) and parent-perceived rejection (panel C). Students suspended once have poorer relationships with school friends (*b* = .22; *p* < .05) and higher levels of parent-reported exclusion from school friends (*b* = .22; *p* < .01) after their suspension than they did before. Furthermore, associations are larger with multiple suspensions (*b* = .28, *p* < .05 and *b* = .27, *p* < .01, respectively).

### 4.3 | Increased involvement with antisocial peers

Table 4 presents the results of fixed-effects models of the association between suspension and network behavioral composition. Coefficients represent a standard-deviation unit change in the mean level of substance use or delinquency among friends after the respondent's suspension. Results in panel A indicate that one suspension is associated with almost 1 standard-deviation increase in substance use among outgoing ties (*b* = .92; *p* < .001) and with slightly less than a .5 standard-deviation increase in their delinquency (*b* = .43; *p* < .01). When time-varying controls are added, however, these coefficients are reduced by more than 60 percent, remaining statistically significant for substance use (*b* = .37; *p* < .05) but not delinquency. The results for multiple suspensions are larger for substance use (*b* = 1.69; *p* < .001) and delinquency (*b* = .90; *p* < .01), but only estimates for substance use are robust to controls. After multiple suspensions, students experience an increase of more than a .66 standard deviation in substance use among outgoing ties (*b* = .69; *p* < .01).

The results for behavior among incoming ties are weaker for levels of substance use and delinquency (panel B). There is a positive and statistically significant association with substance use (*b* = .74,



**FIGURE 3** Fitted probabilities of losing a friendship nomination received in previous wave, by grade size  
*Notes:* PROSPER sample limited to observations of in-home survey participants meeting the following criteria: attending participating school district, participated in the in-school survey, and valid data on suspension ( $N = 2,373$  observations of 766 students). Results of binomial generalized estimating equation model with controls. The model excludes 219 observations that did not receive a nomination last year. Results are combined across 20 multiply imputed datasets. Percentiles are approximate

$p < .001$ ) that is larger with multiple suspensions ( $b = 1.18, p < .001$ ), but each of these falls below statistical significance when controls are added. There is a smaller positive association with delinquency, but it only reaches statistical significance after multiple suspensions ( $b = .60; p < .001$ ) and is rendered null with the addition of controls.

#### 4.4 | Stronger associations among students in smaller schools

The results in table 2 reveal that grade size was associated with greater friendship discontinuity but that associations were weak; an increase of 10 students was associated with only a 1 percent increase in the odds of losing a nomination ( $p < .001$ ; full models are provided in the online supporting information). When the interaction terms described previously are added to these models, the results reveal no statistically significant interactions between grade size and suspension in models of outgoing ties. Additionally, I found no significant interaction in models of incoming ties if students have only been suspended once. The interaction term for students with multiple suspensions is statistically significant ( $p < .01$ ), however. Figure 3 provides a summary of these results with a series of fitted probabilities, shown for respondents with grade sizes of 50, 100, 150, 200, and 300 students. These grade sizes correspond to the tenth, twenty-fifth, fiftieth, seventy-fifth, and ninetieth percentiles of the sample. The results indicate that for students attending a grade of only 50 students, the probability of losing a nomination received last year is expected to be .13 higher after multiple suspensions than it is for nonsuspended students (.57 compared with .44). This difference declines to .07 among students with the median grade size (.54 for multiple suspensions, .47 for no suspension) but remains statistically significant. Among students in the upper grades, however, those with multiple suspensions seem similar to other youth in their probability of losing a nomination.

I also checked for interactions with grade size in associations with network behavioral composition. I focused on the substance use of peers nominated by the respondent because it was the only statistically significant association after accounting for controls. The results reveal no significant variation by grade cohort size in associations with friends' substance use.

## 5 | DISCUSSION AND CONCLUSION

In this article, I tested key propositions of labeling theories that move beyond a focus on weakened institutional attachment or secondary deviance (Paternoster & Iovanni, 1989) to examine interpersonal exclusion. Using a sample of predominantly rural students and their same-grade peers, I assessed 1) the association between suspension and exclusion from school friends, or discontinuity in friendship nominations from one wave to the next; 2) the association between suspension and increased involvement with antisocial peers; and 3) the extent to which these associations are stronger for students in smaller versus larger rural schools.

### 5.1 | Interpersonal exclusion

#### 5.1.1 | Overall findings

In regard to interpersonal exclusion, I found that suspended students experience greater discontinuity in friendship with same-grade peers based on changes in their own preferences and, for those suspended multiple times, changes in the preferences of their peers. These results are robust to a long list of controls for antisocial behaviors and other factors that might alter friendship preferences; they also hold up among the most antisocial youth in the sample. The association between suspension and friendship discontinuity does not seem to be driven by weakened institutional attachment or by student disengagement after suspension. Moreover, the results are consistent with models of perceived exclusion, in the form of poor relationships with school friends (student-perceived) and rejection (parent-perceived). The one exception was student-perceived loneliness, which does not seem to increase after suspension. This null finding seems consistent with the results of prior research on associations between suspension and feelings of connectedness (Pyne, 2019). As suspended students lose ties to former friends, perhaps they replace them with peers in other grades or schools, such as other suspended youth. Indeed, suspended students in eighth and ninth grades reported having more friends in other grades and schools than did their nonsuspended peers, which could explain why suspension is not associated with increased loneliness even though it is associated with friendship discontinuity and increased discordance with school friends.

Taken together, the associations with network-based measures are not particularly large but they may be harmful, especially for racial minorities and the poor who already have smaller social networks in these rural schools. I found no significant variation in these results by race or gender, but minority girls and boys are much more likely to be suspended and are thus at greater risk of experiencing deterioration of friendship ties. Overall, these findings support labeling theories, in which it is suggested that formal sanctions may weaken or disrupt ties to nonstigmatized or conforming others (Goffman, 1963; Lemert, 1967) and that multiple sanctions may exacerbate already existing disadvantages (Sampson & Laub, 1997).

#### 5.1.2 | Rejection, withdrawal, and separation from friends

Additionally, I found lengthy or repeated absences can be used to explain a small part (5 percent to 13 percent) of the association between suspension and friendship discontinuity. The likelihood of discontinuing a nomination made in the previous wave and the likelihood of losing a nomination received in the previous wave are greater for students with multiple periods of lengthy or repeated absence than they are for students with no such absences. Suspension involves temporarily removing students from school activities and interactions. Therefore, long or repeated suspensions limit shared experiences among school friends, likely weakening relationships. My results indicate separation plays much less

of a role in the deterioration of interpersonal ties during suspension than it does during formal sanctions of much greater magnitude, such as incarceration (e.g. Massoglia et al., 2011).

After accounting for school absence, the remaining associations with friendship discontinuity are consistent with my conceptualizations of rejection and withdrawal. The odds of discontinuity in nominations made are 20 percent greater with one suspension and 25 percent greater with multiple suspensions (consistent with withdrawal). The odds of discontinuity in nominations received are 23 percent greater with multiple suspensions (consistent with rejection). Taken together, these findings show support for both processes, but the results for withdrawal are more consistent compared with those for rejection, across categories of suspension and across sensitivity analyses. All of these results should be interpreted with caution because I have not measured rejection or withdrawal directly. Doing so would require such measures as attitudes toward suspended youth or changes in self-reported attitudes of friends toward the respondent and vice versa. It would also require even greater attention to ruling out potential alternative explanations, including those for which I have not accounted. Nevertheless, my findings are bolstered by my fixed-effects results for student- and parent-perceived exclusion. Future research should be aimed at applying a similar longitudinal network approach to examining these exclusionary processes after formal sanctions by other institutions, including the criminal justice system (Bryan, 2017; Cochran et al., 2018).

## 5.2 | Increased involvement with antisocial peers

In regard to antisocial peers, the results indicate students' friendship networks exhibit greater substance use and delinquency after their suspension. For peers who nominate the suspended student as a friend, much or all of this association appears as a result of other characteristics, such as behavioral trends that occur with age, or the suspended student's own antisocial behaviors. For peers nominated by the suspended student as a friend, however, this association holds even after accounting for such characteristics. In particular, one suspension is associated with an increase of more than one third of a standard deviation in average substance use across friends, and multiple suspensions are associated with more than two thirds of a standard deviation. Average delinquency also increased, but the association was not statistically significant after accounting for controls. The latter seems inconsistent with the findings of prior research in which greater involvement with delinquent peers after justice involvement is documented (Bernburg et al., 2006; Wiley et al., 2013), but these studies were focused on city-based samples and on more serious sanctions. Future research should be aimed at examining whether suspension in urban schools is associated with interpersonal exclusion and greater involvement with delinquent peers.

In my nonurban sample, finding suspension associated with increased involvement with substance-using friends seems important given the drug crisis in some rural communities. Perhaps suspension provides opportunities for friendships with substance-using peers, either outside school or during in-school suspension. Given that prior research findings show consistent evidence for peer influence in delinquency (e.g., Ragan, 2014), future research should be focused on investigating the extent to which involvement with substance-using peers can be used to explain associations of suspension with justice involvement and secondary deviance (Mowen & Brent, 2016).

## 5.3 | Stronger associations among students in smaller schools

In regard to interactions with school size, I found some evidence that the association between suspension and discontinuity in received nominations is stronger among students in smaller grade cohorts, but this does not seem to be the case for nominations made by the respondent. Nor does it seem to be the case if the student has only been suspended once. If suspension were more stigmatizing in smaller

schools because of less anonymity, it seems there would be larger effect sizes for one suspension as well, and for discontinuity in nominations made by respondents. Perhaps smaller schools are characterized not only by less anonymity but also by more social cohesion and trust among peers. In such a setting, it is possible that friends are forgiving after one suspension, but after multiple suspensions, negative reactions accumulate and shaming becomes more severe. The results of supplemental analyses, however, did not reveal interactions by grade size in associations with perceptual measures of exclusion, so this finding warrants further investigation. In addition, future research should be aimed at examining the extent to which peer reactions to suspension vary across different contexts. Juvenile justice researchers have found negative outcomes of justice involvement (Wiley et al., 2013), but some have argued that juvenile justice stigma may not be as salient in disadvantaged urban areas where it is heavily concentrated (Hirschfield, 2008). I found suspension in this rural sample to be about as common as it is in a national sample, but its effects could vary by contextual-level factors like concentrated disadvantage or school punitiveness. In future studies, researchers should explore these potential sources of heterogeneity.

## 5.4 | Conclusion

Before concluding, several limitations should be reiterated. Although the findings of prior research have indicated that most suspensions are for minor classroom misbehavior and attendance problems (Skiba et al., 2014), I did not have administrative or other data on the specific incidents that led to suspension. Additionally, the questionnaire wording prevented me from examining heterogeneity across types of suspension. Perhaps in-school suspension is less influential for peer networks compared with out-of-school suspension, but few large-scale surveys distinguish between types. Moreover, the results of all my analyses are based on observational data; therefore, I cannot rule out the possibility that they are driven by unobserved heterogeneity between suspended and nonsuspended youth. Finally, although the use of PROSPER contributes to knowledge about suspension in some rural schools, my results may not generalize beyond these youth. Future work should be aimed at extending these analyses among youth in more racially diverse communities, more representative samples, and in school districts that do not meet PROSPER's enrollment criteria, such as smaller schools more similar in size to rural schools nationally.

Taken together, these findings are consistent with labeling theories, in which it is implied that stigmatizing sanctions may be followed by more constrained social networks and greater involvement with deviant peers. In my sample of rural youth, suspension is associated with a loss of friends in one's grade and with greater involvement with substance-using peers. Suspended youth also reported having more friends in other grades and schools. These findings have implications for school policy. Suspension may be like other youth-based interventions that involve segregating antisocial youth or providing them opportunities to interact, which may have negative behavioral consequences (Dishion, McCord, & Poulin, 1999). Furthermore, racial minority and disadvantaged youth, who are at greater risk of suspension, are already more marginalized in their school networks; therefore, reliance on suspension may foster social inequality by stratifying access to friends who are important for healthy development and academic success (Crosnoe, 2000). As states and schools consider evidence-based alternatives to suspension, such as substance use interventions or restorative justice programs (Owen, Wettach, & Hoffman, 2015), their students may benefit from an emphasis on inclusion over exclusion.

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## SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

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## APPENDIX A: SAMPLE COMPARISONS AT BASELINE, FALL OF SIXTH GRADE 2003

Variable	PROSPER (Iowa and Pennsylvania)			United States		
	Full 2003 Cohort	In-home Subsample	Analytic Sample	Rural Sixth-Grade Students	PROSPER-Criteria <sup>a</sup> Sixth-Grade Students	All Sixth-Grade Students
Receives free or reduced-price lunch	.34	.35	.33	.37 <sup>b</sup>	.47 <sup>b</sup>	.41 <sup>b</sup>
Racial minority	.16	.13 <sup>**</sup>	.12 <sup>***</sup>	.21	.29	.41
Male	.49	.47	.48	.47	.47	.48
Friendship nominations made	4.14	4.32 <sup>*</sup>	4.33 <sup>*</sup>	—	—	—
Friendship nominations received	2.80	3.20 <sup>***</sup>	3.23 <sup>***</sup>	—	—	—
Past-year delinquency	.07	-.02 <sup>***</sup>	-.03 <sup>***</sup>	—	—	—
Past-month substance use	.07	.03 <sup>**</sup>	.02 <sup>***</sup>	—	—	—
Sixth-grade students	6,165	977	766	789,494	624,864	3,746,944
Sixth-grade students per school (median)	105	105	104	42	93	77

*Notes:* PROSPER descriptive statistics shown here are based on baseline respondents only. The median number of PROSPER students per school is based on school roster data (regardless of participation). The analytic sample is limited to observations from in-home survey respondents who met the following criteria: attending participating school district, participated in the in-school survey, and valid data on suspension. U.S. data come from the National Center for Education Statistics (NCES) 2003–2004 and include students from regular public schools with at least two sixth-grade students (minimum for comparison to network study). “Rural” refers to NCES locale codes (census-defined) and is based on school address. PROSPER data are unweighted. Mean comparisons represent dependent-sample *t* tests between each of the smaller PROSPER samples and the full 2003 cohort.

<sup>a</sup>Students attending school districts with enrollments between 1,300 and 5,200 students, at least 15% of which are eligible for free or reduced-price lunch (Spoth et al., 2007).

<sup>b</sup>National data on lunch status are not available by grade. These represent the proportion of all public school students.

\**p* < .05; \*\**p* < .01; \*\*\**p* < .001 (two-tailed).

## APPENDIX B: PROSPER IN-HOME SUBSAMPLE PARTICIPATION BY WAVE

Wave	Percent Baseline Respondents Participating	Percent Respondents at Wave With Participating Mother	Percent Respondents at Wave With Participating Father
Fall, Sixth Grade	100	97	70
Spring, Sixth Grade	82	97	68
Spring, Seventh Grade	81	97	67
Spring, Eighth Grade	79	96	66
Spring, Ninth Grade	75	95	64

**APPENDIX C: SURVEY ITEMS USED IN THE CONSTRUCTION OF MEASURES FOR FRIENDS' SUBSTANCE USE AND DELINQUENCY**

Questionnaire Item	Response Options
<b>Substance use</b>	
<ol style="list-style-type: none"> <li>1. During the past month, how many times have you smoked any cigarettes?</li> <li>2. During the past month, how many times have you had beer, wine, wine coolers, or other liquor?</li> <li>3. During the past month, how many times have you been drunk from drinking wine, wine coolers, or other liquor?</li> <li>4. During the past month, how many times have you smoked marijuana (pot, reefer, weed, blunts)?</li> </ol>	<ol style="list-style-type: none"> <li>(1) Not at all</li> <li>(2) One time</li> <li>(3) A few times</li> <li>(4) About once a week</li> <li>(5) More than once a week</li> </ol>
<b>Delinquency</b>	
<ol style="list-style-type: none"> <li>1. During the past 12 months, how many times have you taken something worth less than \$25 that didn't belong to you?</li> <li>2. During the past 12 months, how many times have you taken something worth \$25 or more that didn't belong to you?</li> <li>3. During the past 12 months, how many times have you beat up someone or physically fought with someone because they made you angry (other than just playing around)?</li> <li>4. During the past 12 months, how many times have you purposely damaged or destroyed property that did not belong to you?</li> <li>5. During the past 12 months, how many times have you broken into or tried to break into a building just for fun or to look around?</li> <li>6. During the past 12 months, how many times have you thrown objects such as rocks or bottles at people to hurt or scare them?</li> <li>7. During the past 12 months, how many times have you been picked up by the police for breaking a law?</li> <li>8. During the past 12 months, how many times have you run away from home?</li> <li>9. During the past 12 months, how many times have you skipped school or classes without an excuse?</li> <li>10. During the past 12 months, how many times have you carried a hidden weapon?</li> <li>11. During the past 12 months, how many times have you avoided paying for things such as movies, rides, food, or computer services?</li> <li>12. During the past 12 months, how many times have you taken something from a store that you did not pay for?</li> </ol>	<ol style="list-style-type: none"> <li>(1) Never</li> <li>(2) Once</li> <li>(3) Twice</li> <li>(4) Three or four times</li> <li>(5) Five or more times</li> </ol>

## APPENDIX D: CODING INFORMATION FOR CONTROL VARIABLES

Control Variable	Description	Survey
Nominations made last wave no longer in school/study	Number of nominations respondent made last wave for friends who are no longer in the study or did not participate in the current wave.	IS
Nominations received last wave no longer in school/study	Number of nominations respondent received last wave for friends who are no longer in the study or did not participate in the current wave.	IS
Racial composition of nominations made last wave all White	All nominations made last wave were White based on self-reports.	IS
Racial composition of nominations received last wave all White	All nominations received last wave were White based on self-reports.	IS
Number of students in grade last wave	Count of number of students on roster in grade at school.	NA
Transitioned to new school last wave	Student on rosters of new school since previous wave.	NA
Miles to school last wave	Parent reports of number of miles from home to youth's school.	IH
Special education services last wave	Either parent reported that the child received special education services.	IH
Structured activities after school last wave	Combination of two scales: (1) structured after-school activities and (2) part-time work. Structured after-school activities based on combined reports of mothers, fathers, and student about student's frequency of programs, lessons, practices, after school ( $\alpha = .63$ ). Part-time work based on combined reports of mothers, fathers, and student about student's frequency of work after school ( $\alpha = .61$ ). Response options for both scales range from 1 = never to 5 = always. Each is standardized and then the two are summed.	IH
Unstructured socializing after school last wave	Mean composite of mother, father, and student reports about frequency at which student spends free time after school hanging out with friends ( $\alpha = .59$ ). Response options originally ranged from 1 = never to 5 = always.	IH
Any substance use last wave	Student reported smoking, drinking, getting drunk, or using marijuana in the past month. Based on dichotomized responses originally ranging from 1 = not at all to 5 = more than once per week.	IS
Delinquency variety score last wave	Variety score based on 10 items about frequency of various delinquent behaviors in past year. Responses range from 1 = never to 5 = five or more times.	IS
Frequency of school misbehavior last wave	Mean composite of mother, father, and student reports about frequency at which student engages in various forms of misbehavior at school (e.g., disrupting class, talking back to teachers; $\alpha = .76$ ). Response options range from 1 = never to 5 = more than 5 times in past year.	IH

Control Variable	Description	Survey
Risk and sensation seeking last wave	Mean of three items about student's tendency to engage in risky behaviors for fun (alpha = .79). Responses range from 1 = never to 5 = always.	IS
Frequency of bully victimization last wave	Mean of five items about frequency of student's victimization in past two months (e.g., pushing or shoving, telling rumors or lies; alpha = .80). Responses range from 1 = never to 4 = always.	IH
Parental discipline last wave	Mean of student reports to five items about more consistent and less harsh discipline parental discipline (alpha = .83). Response options range from 1 = always to 5 = never.	IH
Parental monitoring last wave	Mean of five items about frequency of parental monitoring (alpha = .85). Response options range from 1 = always to 5 = never.	IH
Parent education last wave	Parent reports of highest grade of school completed. Items for each parent are standardized and then averaged together (alpha = .66).	IH
Household income last wave	Mean of mother-reported total household income and father-reported total household income, each adjusted for inflation.	IH
Parent unemployment last wave	Either parent reports being currently unemployed or temporarily laid off, or unemployed past year.	IH
Parent ever arrested	Mother reports at Wave 5 (ninth grade) of whether either parent had ever been arrested for driving under the influence or anything other than a traffic offense.	IH
Mother relationship transitions last wave	Count of number of times mother has ever married, cohabited, or divorced.	IH
Children in household last wave	Parent reports of number of children living in household more than half the time.	IH
Mother depression last wave	Mother reports of whether she experienced any symptoms of depression (feeling sad, blue, depressed, losing interest) for two continuous weeks or more in past 12 months.	IH
Religiosity last wave	Student self-reports of frequency of attendance at religious services. Responses range from 1 = never to 6 = more than once per week.	IH
Years in current residence last wave	Data from household form about the number of years respondent has lived in current residence.	IH
Community cohesion last wave	Mean of parent reports on 10 items about community cohesion. Separate scales for fathers (alpha = .85) and mothers (alpha = .88) are averaged together (alpha = .56).	IH

*Abbreviations:* IH = in-home survey; IS = in-school survey; NA = not applicable.

**APPENDIX E: SUMMARY STATISTICS FOR EXPLANATORY VARIABLES USED IN ANALYSES, INCLUDING OVERALL, BETWEEN-INDIVIDUAL, AND WITHIN-INDIVIDUAL STANDARD DEVIATIONS**

Variable	Overall		Decomposed	
	M	SD	Between SD	Within SD
School suspension (ref: Never suspended in study)				
Suspended by current wave	.07	.26	.23	.15
Suspended more than once by current wave	.08	.27	.25	.12
School Absence (ref: Never Missed 7+ days)				
Missed 7+ days of school in a year since fall of 6th grade	.19	.39	.33	.24
Missed 7+ days of school in a year more than once since fall of 6th grade	.14	.34	.26	.20
Weakened Institutional Attachment				
Low school attachment current wave (1 to 5)	2.25	.86	.73	.48
Low academic achievement current wave (z score)	.00	1.01	.95	.43
Control Variables				
Male (ref: Female)	.48	—	—	—
Non-White (ref: Non-Hispanic White)	.12	—	—	—
Nominations made last wave no longer in school/study (log)	.28	.41	.26	.34
Nominations received last wave no longer in school/study (log)	.29	.41	.27	.33
Racial composition of nominations made last wave all White	.68	.47	.35	.32
Racial composition of nominations received last wave all White	.69	.46	.36	.31
Number of students in grade last wave (6 to 470)	185.12	109.46	105.41	38.91
Transitioned to new school last wave	.09	.29	.15	.25
Miles to school last wave (log)	1.25	.64	.59	.24
Special education services last wave	.18	.39	.35	.21
Structured activities after school last wave (z score)	.00	1.00	.81	.66
Unstructured socializing after school last wave (z score)	.00	1.00	.90	.54
Any substance use last wave	.11	.31	.21	.23
Delinquency variety score last wave (log)	.32	.53	.45	.32
Frequency of school misbehavior last wave (log)	.34	.31	.29	.13
Risk and sensation seeking last wave (1 to 5)	1.89	.90	.73	.57
Frequency of bully victimization last wave (log)	.30	.31	.25	.19
Parental discipline last wave (1 to 5)	3.72	.95	.79	.57
Parental monitoring last wave (1 to 5)	4.51	.61	.50	.37

Variable	Overall		Decomposed	
	M	SD	Between SD	Within SD
Parent education last wave (z score)	.00	1.00	1.02	.27
Household income last wave (log)	10.74	.84	.79	.37
Parent unemployment last wave	.19	.39	.30	.27
Parent ever arrested (ninth grade only)	.17	.38	.37	.13
Mother relationship transitions last wave (0 to 8)	1.96	1.45	1.42	.44
Children in household last wave (0 to 8)	2.40	1.05	1.01	.38
Mother depression last wave	.22	.42	.34	.27
Religiosity last wave (1 to 6)	3.83	1.75	1.59	.82
Years in current residence last wave (0 to 19)	6.88	4.31	4.09	1.47
Community cohesion last wave (z score)	-.01	1.00	.94	.44
Observations			2,373	
Students			766	

*Notes:* PROSPER sample limited to observations of in-home survey participants meeting the following criteria: attending participating school district, participated in the in-school survey, and valid data on suspension. Control variable for current grade not shown. Results based on first of 20 multiply imputed data sets.

*Abbreviations:* M = mean; SD = standard deviation.