

The Social Structure of Criminalized and Medicalized School Discipline

David M. Ramey¹

Abstract

In this article, the author examines how school- and district-level racial/ethnic and socioeconomic compositions influence schools' use of different types of criminalized and medicalized school discipline. Using a large data set containing information on over 60,000 schools in over 6,000 districts, the authors uses multilevel modeling and a group-mean modeling strategy to answer several important questions about school discipline. First, how do school- and district-level racial and ethnic compositions influence criminalized school discipline and medicalization? Second, how do levels of school and district economic disadvantage influence criminalized school discipline and medicalization? Third, how does district-level economic disadvantage moderate the relationship between school racial/ethnic composition and criminalized school discipline and medicalization? The results generally support hypotheses that schools and districts with relatively larger minority and poor populations are more likely to implement criminalized disciplinary policies, including suspensions and expulsion or police referrals or arrests, and less likely to medicalize students through behavioral plans put in place through laws such as Section 504 of the Rehabilitation Act and the Individuals with Disabilities Education Act. However, results from cross-level interaction models suggest that district-level economic disadvantage moderates the influence of school racial composition on criminalized school discipline and medicalization.

Keywords

discipline, suspensions, criminalization, medicalization, Section 504, racial disparities

Under growing public scrutiny and legal pressure to provide safe and effective learning environments, U.S. public schools have intensified social control efforts through the criminalization and medicalization of student misbehavior (Conrad 2007; Simon 2007). Schools criminalize behavior through zero-tolerance mandatory suspension and expulsion policies, employing on-campus law enforcement, and arresting students on campus (Hirschfield 2008a; Simon 2007). At the same time, schools engage in medicalization by defining some misbehavior in medical or psychological terms and implementing systems of behavior management based on therapy and rehabilitation. Through programs established by federal laws pertaining to student disabilities, schools offer

assistance in the classroom, modified curricula, and extra time on coursework. Furthermore, schools are required to consider any underlying behavior disorders when disciplining these students (Gius 2007). Despite the widespread use of both criminalized school discipline and medicalization, there is scant research on the

¹Department of Sociology and Criminology, The Pennsylvania State University, University Park, PA, USA

Corresponding Author:

David Ramey, The Pennsylvania State University,
Department of Sociology and Criminology, 414 Oswald
Tower, University Park, PA 16802, USA.
Email: dmr45@psu.edu

social forces behind these different approaches to misbehavior.

Drawing on social reproduction perspectives and research on inequalities in criminal justice and health care, I consider the association between school- and district-level racial/ethnic and socioeconomic compositions and schools' use of criminalization and medicalization. Using a large, multilevel data set, I answer several important questions about school discipline. First, how are school- and district-level racial and ethnic compositions associated with criminalized school discipline and medicalization? Second, how are levels of school and district economic disadvantage associated with criminalized school discipline and medicalization? Third, how does district-level economic disadvantage moderate the relationship between school racial/ethnic composition and criminalized school discipline and medicalization?

Social Reproduction and Social Control

As one of the primary socializing agents outside the family, schools are an important site for instilling moral and civic norms and reinforcing social structure (Bowles and Gintis 1976). In the early twentieth century, this meant reproducing the organization and principles of industrial and corporate capitalism (Bowles and Gintis 1976; Kupchik and Monahan 2006). For example, middle-class students followed a college-preparatory track focusing heavily on academics, whereas working-class students were placed in vocational tracks that stressed job-related skills and training (Bowles and Gintis 1976). More important, schools' nonacademic priorities, particularly socialization, also reflected the priorities of the labor market, with an emphasis on order, compliance, and efficiency (Bowles and Gintis 1976; Kupchik and Monahan 2006).

For these schools, school discipline was an effective tool for promoting order and compliance (Hirschfield 2008a; Kupchik and Monahan 2006). For example, a strict adherence to standards of order and uniformity prepared working-class students for long hours in blue-collar labor, where consistency and efficiency are essential to productivity (Kupchik and Monahan 2006). Additionally, school discipline codified and enforced a rigid hierarchical structure similar to that of the

industrial workforce (Bowles and Gintis 1976; Hirschfield 2008a). Not only did schools ensure an orderly and safe learning environment, they also produced a steady and replenishing supply of prepared workers for the labor market.

Amid massive global economic changes during the second half of the twentieth century, the role of manufacturing declined significantly in the United States (Kupchik and Monahan 2006; Wilson 1996). As the economy transitioned from producing goods to providing services and information, blue-collar jobs shifted from manufacturing to the service sector (Wilson 1996). For the poor and working class, this economy is marked by increasing privatization of public goods and services, unstable employment, and stagnating wages (Kupchik and Monahan 2006; Wilson 1996). As the nation looks for answers to the social problems associated with these trends, two institutions of social control have emerged with solutions: the criminal justice and medical and health care systems (Conrad 1992a; Kupchik and Monahan 2006; Simon 2007). Similar to the industrial factory system a half century earlier, these institutions provide useful templates for schools charged with preparing students for their positions in a new global economy.

Criminalization of School Discipline

During the late twentieth century, images of violent crime in inner-city schools filled television sets across the country (Lyons and Drew 2006; Simon 2007). More recently, widespread reports of brutal school shootings have left parents feeling scared for their children's safety on school grounds (Hirschfield 2008a; Kupchik and Ward 2014). Concerned parents demanded accountability from school boards and administrators that schools were safe and secure (Lyons and Drew 2006; Simon 2007). In response to this concern, Congress and state legislatures passed legislation establishing criteria for student safety and crime prevention in U.S. schools (Simon 2007). Laws such as the Safe Schools Act of 1994 and analogous state-level laws explicitly tied funding to a school's or district's ability to demonstrate compliance with legislative standards (Lyons and Drew 2006; Simon 2007). To meet these demands, the nonacademic priorities of many public schools shifted heavily toward discipline and social control. Alongside an increase in the use of traditional

punishments such as suspension and expulsion, schools adopted the surveillance (metal detectors and random searches), supervision (school resource officers), and punishment and deterrence (zero-tolerance policies) measures of the criminal justice system (Hirschfield 2008a; Kupchik 2010; Simon 2007). This criminalization of the daily school routine has turned some public schools into surveillance environments modeled on high-crime areas or prisons (Noguera 2003).

Criminalization of school discipline includes the direct involvement of criminal justice employees and sanctions, such as arrests and referrals, as well as the adoption and implementation of zero-tolerance suspension and expulsion policies (Hirschfield 2008a; Simon 2007). In addition to clear legal violations committed on school grounds, children can be referred to law enforcement or even arrested for transgressions such as disrespecting authority or minor disputes with other students (Hirschfield 2010; Theriot 2009). Furthermore, the consequences of school punishment mirror many sanctions in the criminal justice system. For example, children who break the rules are isolated from their classmates and miss out on important social and educational resources (Bowditch 1993). For children who display severe behavior problems, repeated involvement with criminalized forms of school discipline at early ages creates the perception among teachers and peers that these children are repeat offenders destined for involvement in the criminal justice system (Ferguson 2001).

Medicalization of School Discipline

The criminal justice model is not the only approach that schools take to the social control of misbehavior. Recently, problem behaviors such as inattention, hyperactivity, and defiance of adult authority have received increased attention from medical and psychological professionals (Conrad 2007). Many doctors and psychologists define such behaviors as symptoms of conditions such as attention-deficit/hyperactivity disorder ADHD or conduct disorder and then describe them using medical, as opposed to moral or legal, terminology (Conrad 1992a, 2007; Frick and Nigg 2012). By prescribing therapy or medication to control these symptoms, medical professionals affirm their position in defining and managing deviant behavior (Conrad 1992a, 1992b, 2007).

Other institutions and organizations can now approach, and attempt to control, these behavior problems using a medical model (Conrad 1992b, 2007; Medina and McCranie 2011). For a growing number of U.S. public schools, this means adopting the language and strategies of the mental health system to manage student misbehavior.

Schools do not directly diagnose students, but they are important gatekeepers for the therapy and treatment of medically defined behavior problems. For example, teachers and school administrators are more likely than any other adult outside one's family to suggest that misbehavior may be a symptom of a medical disorder (Hinshaw and Scheffler 2014; Philips 2006). Indeed, parents of children with ADHD or conduct disorders often report that teachers first recommended placing their children on medication (Hinshaw and Scheffler 2014; Rafalovich 2013; Slade 2004). In addition to influencing parents' decisions about therapy and medication, schools supervise and control the movement of students whose behavior problems are considered symptoms of medical disorders.

Medicalization in schools takes place through the implementation of services for children who meet the criteria for specific behavior disorders mandated by two federal laws, the Individuals with Disabilities Education Act (IDEA) of 1990 and Section 504 of the Rehabilitation Act of 1973 (Gius 2007; Holler and Zirkel 2008). The guidelines put forward by these two pieces of legislation codify certain behaviors as symptoms of medical disorders that interfere with a student's education and provide legal procedures for the supervision of children with behavior problems (Holler and Zirkel 2008; Kim, Losen, and Hewitt 2010). Rather than mandatory removal from the classroom, however, these laws stipulate that schools provide, among other things, individualized education plans with modified curricula, enhanced learning environments, and extra school personnel to assist with behavioral and educational needs (Gius 2007; Holler and Zirkel 2008; Kim et al. 2010). By codifying medical and psychological causes and remedies for some misbehavior, IDEA and Section 504 reflect medicalization of social control through a diagnostic and therapeutic approach to school discipline.

Both IDEA and Section 504 establish guidelines for schools to consider and make accommodations for students' behavior disorders, but two key differences between them have significant

implications for the present study. First, the two statutes differ with respect to how they define disorders (Zirkel 2011). To qualify for IDEA, students must meet the diagnostic criteria for 1 of 13 disability categories (Holler and Zirkel 2008). For example, children with an “inability to build or maintain satisfactory interpersonal relationships with peers and teachers” may be classified as having emotional disturbances and provided specialized services on the basis of their ability to get along in a normal classroom (National Dissemination Center for Children with Disabilities 2004). Similarly, students clinically diagnosed with ADHD are often covered under “other health impairments” and given assistance with note and test taking, as well as other necessary services (Hinshaw and Scheffler 2014; Holler and Zirkel 2008). Children whose primary disorders fall outside these behavior categories (e.g., those with autism or deafness) are provided services that best meet the needs associated with those impairments (e.g., interpreter services for children who use sign language), services that would not be provided to children with behavior disorders.¹

Instead of a formal diagnosis from a medical or mental health professional, eligibility for coverage under Section 504 requires that students display “physical or mental impairment that substantially limits one or more major life activities” (Holler and Zirkel 2008:20). Unlike IDEA, these major life activities extend to areas outside of learning, including behavior problems that do not always interfere with classroom performance (Gius 2007; Holler and Zirkel 2008). Thus, if a child is not diagnosed with a behavior disorder as defined under IDEA, schools can still provide similar services and coverage (Gius 2007; Holler and Zirkel 2008).

Second, the two statutes differ in how provided services are funded. IDEA explicitly sets aside funds for special education services, whereas Section 504 is an unfunded mandate requiring schools and districts to use their own resources to cover students (Holler and Zirkel 2008; Kim et al. 2010). Because Section 504 does not require an official diagnosis, and services rely on resources provided by the school or district, enrolling children in a Section 504 plan can be costly (Gius 2007; Kim et al. 2010; Zirkel 2011). Enrollment in these plans involves teachers’ perceptions of student behavior and the availability of social and economic resources such as extra time, classroom space, and dedicated school personnel. As

a result, Section 504 plans involve a greater deal of discretion on the part of schools and districts, as opposed to medical and psychiatric professionals (Gius 2007; Kim et al. 2010).

Despite their widespread adoption, criminalized and medicalized disciplinary policies are not evenly distributed across U.S. schools and districts. Criminalized school discipline and the medicalization of childhood problem behavior reflect long-standing social structural patterns in the United States.

Race, Socioeconomic Status, and School Discipline

Racial and ethnic minorities are routinely exposed to more punitive social control environments than whites, with childhood being no exception (Kupchik and Monahan 2006; Rios 2009; Soung 2011). For young black children in particular, a history of racial subjugation and recent patterns of mass incarceration contribute to a criminalized view of their daily conduct and behavior (Irwin, Davidson, and Hall-Sanchez 2013; Rios 2009; Wacquant 2001). The nation’s incarceration boom had an especially large impact in poor and minority communities, with some local areas experiencing incarceration rates well over 25 percent (Kupchik and Monahan 2006; Western 2006). As a result, a strong law enforcement presence has been normalized in minority communities (Kupchik and Monahan 2006; Rios 2011; Wacquant 2001). In contrast to criminalized stereotypes of racial and ethnic minorities, medicalization and the use of mental health services remains extremely low among blacks and Hispanics in the United States.

Unlike white parents, the families of black and Hispanic children are less likely to blame their children’s behavior on medical or psychological causes (Bailey et al. 2010; Bussing et al. 2012; Miller, Nigg, and Miller 2009). The legacy of the Tuskegee experiments has left many black families skeptical of medical and mental health research, particularly contested and controversial issues like ADHD (Bailey et al. 2010; Shavers, Lynch, and Burmeister 2000). Factors such as immigration status, lack of language services providers, and misinformation about disorders contributes to apprehension and distrust of the mental health system among Hispanic families (Gerdes et al. 2013). Furthermore, discrimination in the

educational system has left many black and Hispanic families distrustful of teachers' recommendations regarding their children's behavior (Alegría et al. 2011; Davison and Ford 2000). As a result, mothers of racial and ethnic minorities are skeptical of how behavior disorders such as ADHD are constructed by professionals (Davison and Ford 2000; Gerdes et al. 2013; Miller et al. 2009).

These disparate, racialized perspectives of the criminal justice and mental health systems are reflected in schools' attributions of child misbehavior. According to attribution theory, teachers ascribe different causal factors to minority children's misbehavior than they do that of white children. Specifically, teachers view the locus, stability, and controllability of blacks and Hispanics in ways that make criminalization likely and medicalization unlikely (Weiner 1979). Research suggests that schools view young black and Hispanic boys' misbehavior as the result of poor parenting, cultural deficiencies, or poor character (Ferguson 2001; Skiba et al. 2011). Furthermore, school officials have lower expectations of minority children and often view their misbehavior as stable and unchanging, openly opining that these children are destined for criminal activity and prison (Ferguson 2001; Rios 2011). Many administrators and teachers believe problems such as poor character and stable antisocial behavior are best handled through swift and certain punishment, which they hope will deter poor choices and isolate students who pose a threat to the classroom (Irwin et al. 2013; Kupchik and Monahan 2006).

On the other hand, teachers and administrators are less likely to attribute minority students' misbehavior to underlying behavior disorders (Ferguson 2001; Hibel, Farkas, and Morgan 2010; Kim et al. 2010; Weiner 1979). Although they are overrepresented in school punishment numbers, non-Hispanic black² and Hispanic children remain underrepresented nationwide in special education programs that cater to children with behavior problems such as ADHD (Hibel et al. 2010; Morgan et al. 2012). In their examination of a nationally representative, multilevel data set, Hibel et al. (2010) found evidence that children in predominately minority schools were less likely to be placed in special education programs, regardless of race or ethnicity. Furthermore, underuse of such services in predominately minority schools explains individual-level disparities in special education programs between black and Hispanic children and white children nationwide (Hibel et al. 2010).

Hypothesis 1: Schools with relatively larger black populations will have higher suspension or expulsion and arrest or referral rates and lower IDEA and Section 504 rates than schools with smaller black populations.

Hypothesis 2: Schools with relatively larger Hispanic populations will have higher suspension or expulsion and arrest or referral rates and lower IDEA and Section 504 rates than schools with smaller Hispanic populations.

Research also demonstrates how criminalization and medicalization disproportionately affect poor and working-class communities (Bowles and Gintis 1976; Irwin et al. 2013). Schools and districts with greater levels of disadvantage have higher rates of student misbehavior (Lyons and Drew 2006) and test failure (Logan, Minca, and Adar 2012). Faced with having to demonstrate student safety and performance with few social and economic resources, economically disadvantaged schools and districts often implement formal social control policies that identify and manage children with behavior problems (Hinshaw and Scheffler 2014; Hirschfield 2010; Kupchik 2010; Lyons and Drew 2006). These policies include both criminalized and medicalized social control. Unlike historical systems of racialized crime control, the reproduction of class inequalities involves the perpetuation of a compliant, accountable, and easily controlled workforce (Bowles and Gintis 1976). Although criminalized school discipline accomplishes this through deterrence and exclusion, medicalization can meet these same goals through individualized education plans, records of disorders and treatments, and therapy and medication (Conrad 1992b, 2007; Gius 2007; Hinshaw and Scheffler 2014). In the context of growing pressure to meet state and federal standards, disadvantaged schools and districts implement multiple strategies to improve the test performance of children from poor and working-class families (Figlio 2006; Figlio and Winicki 2005).

Deviant behaviors such as classroom disruption and minor spans of inattention can be viewed as particularly threatening to overall test scores (Hinshaw and Scheffler 2014; Lyons and Drew 2006). Not only do students with behavior problems score lower on standardized tests than students without behavior problems, but their disruptive and inattentive behavior has a negative impact on their classmates' performance, threatening school and district averages (Figlio 2006; Hinshaw

and Scheffler 2014). To handle misbehavior, many disadvantaged schools and districts use punishment to remove disruptive students with low test scores from the school (Figlio 2006). In addition to school punishment, schools may pressure working-class parents to get help for their children and encourage them to seek ADHD diagnoses so that their children are eligible for services under IDEA (Hinshaw and Scheffler 2014; Malacrida 2004; Rafalovich 2005, 2013). The ability to provide services to children under IDEA is seen as a tool disadvantaged districts can use to avoid being sanctioned for their students' poor test performance (Hinshaw and Scheffler 2014). For example, most districts offer extra preparation and test-taking time for students with behavioral disabilities and, in many states, children with certain disabilities are exempt from testing altogether (Gius 2007; Hinshaw and Scheffler 2014; Kim et al. 2010; Zirkel 2011).

Schools can medicalize discipline using either IDEA or Section 504 services, but disadvantaged schools and districts may favor the former over the latter. Schools and districts with inadequate local resources and insufficient personnel to meet the needs of students with behavior disabilities are more likely to require outside assistance (Hinshaw and Scheffler 2014; Kim et al. 2010). Because no federal funds accompany Section 504 guidelines, these schools and districts may be unable or unwilling to provide resources and services for behavior disorders without a formal diagnosis and explicit coverage under IDEA (Kim et al. 2010). As a result, schools and districts with greater levels of economic disadvantage should have higher rates of IDEA enrollment and lower rates of Section 504 enrollment.

Hypothesis 3: Schools and districts with greater levels of economic disadvantage will have higher punishment or expulsion and referral or arrest rates than schools and districts with lower levels of economic disadvantage.

Hypothesis 4: Schools and districts with greater levels of economic disadvantage will have higher rates of IDEA enrollment and lower rates of Section 504 enrollment than schools and districts with lower levels of economic disadvantage.

The standards implemented by laws such as the No Child Left Behind Act and the Safe Schools Act of 1994 are more salient in economically

disadvantaged school districts (Figlio 2006; Heuer and Stullich 2011; Hinshaw and Scheffler 2014; Simon 2007). These districts are also more likely to face budgetary restraints, forcing them to rely on outside funding from state and federal sources (Figlio 2003; Heuer and Stullich 2011). Because these laws tie federal education funds to student safety and performance on standardized tests, it is increasingly important that disadvantaged school districts demonstrate safe and secure schools and sufficient student performance on standardized tests (Simon 2007). This pressure to adhere to federal guidelines likely conditions the within-district effects of school racial composition on the use of school discipline and medicalization. Specifically, because authority in economically disadvantaged school districts is centralized in the hands of district- or statewide policy makers, within-district relationships between racial and ethnic composition and criminalization or medicalization should be less pronounced than in school districts with lower levels of disadvantage. This is particularly true for discipline and disability policies that involve federal and state resources.

In disadvantaged school districts, choices regarding discipline and disability policies are often top-down decisions made by centralized authorities, including school boards and mayors (Hinshaw and Scheffler 2014; Hirschfield 2010). Once decisions are made, schools throughout the district adopt the policies relatively quickly and uniformly (Conrad 2007; Hirschfield 2010; Simon 2007). When principals and teachers push back against exclusionary disciplinary policies, such as zero tolerance or use of police officers on campus, central decision makers can use their power and authority to pressure schools into compliance (Hirschfield 2010). Similarly, officials in disadvantaged districts may use threats of failure and grade retention to pressure reluctant black and Hispanic parents into seeking official diagnoses for disorders such as ADHD (Hinshaw and Scheffler 2014; Malacrida 2004).

In less disadvantaged districts, administrators and teachers are given much greater leeway to implement and enforce school disciplinary policies and medicalized services for children with behavior problems (Hinshaw and Scheffler 2014; Hirschfield 2010; Kim et al. 2010). For example, both affluent and disadvantaged school districts have adopted punitive policies such as zero tolerance or on-campus, uniformed police (Hirschfield

2010) and disability policies designed to handle medicalized behavior problems (Conrad 2007; Hinshaw and Scheffler 2014; Kim et al. 2010). In affluent districts, however, implementation of these policies is inconsistent, resulting in greater within-district variation in school discipline and disability policies (Hinshaw and Scheffler 2014; Hirschfield 2010; Kim et al. 2010). Because principals and teachers are given greater discretion in more advantaged districts, decisions involving punishment or medicalization in these schools are more susceptible to prejudices and stereotypes (Hirschfield 2008b; Kupchik 2010; Lyons and Drew 2006).

Hypothesis 5: The positive association between percentage black or percentage Hispanic and suspension or expulsion and referral or arrest, and the negative association between percentage black or percentage Hispanic and medicalization, will be less pronounced in districts with more disadvantage and more pronounced in schools with less disadvantage.

DATA AND METHODS

Data for this study come from multiple existing secondary sources. I took information on school disciplinary practices from part 2 of the 2009–2010 U.S. Department of Education Civil Rights Data Collection (U.S. Department of Education, Office of Civil Rights 2012), a federally mandated data collection effort³ containing cumulative, end-of-year reports from school administrators on an assortment of information regarding educational programs and services for 85 percent of U.S. schools and districts. All other school-level variables are from the National Center for Education Statistics Common Core of Data Elementary/Secondary School Universe Survey: School Year 2009–2010 (National Center for Education Statistics 2012). I obtained district-level indicators from the School District Demographics System American Community Survey Profiles, 2006–2010 (National Center for Education Statistics 2013b),⁴ and the National Center for Education Statistics Common Core of Data School District Finance Survey, School Year 2009–2010 (National Center for Education Statistics 2013a).

The final sample includes all participating public schools in the 48 contiguous states with at least

30 students that were not considered alternative schools for students with learning and behavior problems.⁵ After dropping schools that did not meet the criteria and the small proportion of schools with missing data on outcome and predictor variables, the final sample size is 59,699 schools nested within 6,315 districts.

Dependent Variables

I examine two approaches to the control of misbehavior in schools: criminalization and medicalization. Criminalization is captured using two separate variables. I measure suspension or expulsion using the number of students receiving at least one suspension (in school or out of school) or expulsion per 1,000 students during the school year. I measure referrals or arrest using the number of arrests made on school grounds per 1,000 students during the school year. I capture medicalization using the number of students who were provided services under IDEA for either emotional disturbances or “other health impairment” per 1,000 students and the number of students who were covered under Section 504 per 1,000 students. These four dependent variables capture measures of school discipline used during the same school year. Furthermore, decisions regarding suspension or expulsion and enrollment in Section 504 are made almost entirely by school actors at the school and district levels, whereas arrests and coverage under IDEA require the involvement of professionals employed in the criminal justice and medical systems, respectively. The analysis thus addresses multiple tiers of layered social control.⁶ Because the dependent variables are heavily skewed, I use a natural logarithmic transformation.

Independent Variables

My goal is to examine the relationships between school- and district-level racial/ethnic composition and economic disadvantage and rates of criminalized and medicalized school discipline. I capture racial and ethnic composition at the school and district levels using the proportion of the school or district that is black (percentage black) and Hispanic (percentage Hispanic). Because choices about medicalization and criminalization often involve noneconomic and economic resources, I include both school- and district-level

measures of disadvantage that capture multiple dimensions of social and economic structure. Following prior school-level research (Kupchik and Ward 2014; Logan et al. 2012; Payne and Welch 2010; Welch and Payne 2010, 2012), I measure school disadvantage using the percentage of students in a school receiving free or reduced-price lunch (school percentage free and reduced-price lunch). At the district level, I use a district disadvantage index composed of the mean of the summed z scores for six highly correlated variables that capture different aspects of socioeconomic status: median family income, percentage of residents with high school degrees, percentage of working-age residents out of the labor force, percentage of single-mother households, percentage of working-age residents working in professional or managerial occupations (finance, information, professional, or managerial employment), and percentage of working-age residents working in the secondary sector (sales and retail) ($\alpha = .85$). Finally, to ease interpretation, all racial and ethnic composition variables are standardized.

Control Variables

At the school level, I control for percentage male, school size (logged), elementary school, and school locality (dummy variables indicate large urban, small or medium urban, small town, or rural area; suburb is the reference). I include percentage male because boys have significantly higher rates of school punishment than girls (Bertrand and Pan 2011). School size is in the models to control for its influence on students' academic achievement and behavior, as well as the internal organizations of school administration and faculty (Gottfredson and DiPietro 2011). Elementary schools have significantly lower rates of school discipline than middle or high schools (Kupchik and Ward 2014). The locality variables control for differences in punishment and medicalization across rural, suburban, and urban contexts (Welch and Payne 2010).

A number of control variables capture the social and economic conditions of the districts in which schools are embedded. Because early arguments involving the social reproduction of inequality involved the replication of factory labor in schools, I include a measure that captures the percentage of the school district employed in the manufacturing sector (district percentage manufacturing). The

most effective disciplinary regimes emerge when schools and communities are cooperative. However, relationships between parents and residents and teachers and administrators require time to develop. If children and families have not lived in a district for a long time, they may have difficulty adapting to school expectations of behavior and performance. Moreover, school employees are not familiar with these children's behavioral patterns and thus are more reliant on explicit formal guidelines set forth in policy (Kim et al. 2010). I control for this using a measure of district residential instability created with an index composed of the average of the summed z scores for the percentage of the school district that is renter occupied and the percentage of the district residents who lived in different districts prior to 2005 ($\alpha = .78$). Finally, models contain logged measures of funding from the federal government (IDEA funding and Safe Schools Act funding), state governments (special education funding), and local coffers (local funding). I also include dummy variables to capture census region (Midwest is the reference category). Several independent and control variables are correlated with one another (see Appendix A online), raising potential multicollinearity problems. However, sensitivity analyses and tests of variance inflation reveal that multicollinearity is not an issue.⁷

Analytic Strategy

To examine criminalized and medicalized school discipline as a function of school- and district-level racial composition and economic status, I use multilevel linear regression models with schools at level 1 and districts at level 2, estimating robust standard errors clustered at the district level. Because I am interested in the effects of variables at both the school and district levels, key school-level independent variables are group-mean centered (Enders and Tofiqhi 2007; Kreft and de Leeuw 1998; Raudenbush and Bryk 2002). In group-mean centering, the values of level 1 explanatory variables are centered on the mean value for each level 2 group.

$$\ln(\lambda_{ij}) = \beta_0 + \beta_1(X_{ij} - \bar{X}_{\cdot j}) + \beta_2(X_{\cdot j}) + e_{ij}.$$

In the example, all values of X are centered on the mean value of X for all schools in district j . Here,

Y_{ij} represents expected rates of Section 504, IDEA, punishment, or arrest per 1,000 students for school i in district j . Using percentage black as an example, X_{ij} represents the percentage of black students in school i in district j , and $X_{.j}$ represents the percentage of black residents in district j . As a result, β_1 represents the within-district relationship between school-level percentage black and school discipline, or the expected difference between two schools in the same district whose black composition varies by 1 *SD*. Additionally, β_2 represents the between-district association between percentage black and school discipline, or the expected difference in the dependent variable between the average schools in two different districts whose black composition varies by 1 *SD*.

Unlike level 1 variables that are measured in their original metrics or centered on the overall mean (grand-mean centering), group-mean-centered variables are uncorrelated with all level 2 variables (Enders and Tofighi 2007; Kreft and de Leeuw 1998; Raudenbush and Bryk 2002). In the case of highly correlated level 1 and level 2 variables, coefficients for uncentered or grand-mean-centered variables represent difficult-to-interpret effects of the combination of level 1 and level 2 variables (Enders and Tofighi 2007; Kreft and de Leeuw 1998; Raudenbush and Bryk 2002). This is particularly true when level 1 and level 2 measures represent slightly different concepts (Enders and Tofighi 2007). Furthermore, interactions between level 1 and level 2 predictors measured in their original metrics or grand-mean-centered variables may confound correlation with moderation, presenting statistically significant findings when there are none (Enders and Tofighi 2007; Hoffman and Gavin 1998). Because there is no correlation between level 1 and level 2 variables using the group-centered approach, interaction models represent the true moderating influence of level 2 variables on the association between level 1 independent and dependent variables (Enders and Tofighi 2007).

RESULTS

Table 1 presents descriptive statistics for all variables used in the analysis. These descriptive statistics reveal several telling patterns regarding discipline in U.S. public schools. Looking first at rates of medicalized school discipline, public schools had average Section 504 coverage rates of 12

per 1,000 students, and schools provided services for emotional disturbances or ADHD under IDEA to almost 120 of 1,000 students. The relatively lower levels of Section 504 coverage speak to the discretionary nature of this form of medicalized school discipline, whereby schools provide medicalized services without formal diagnoses. Turning to criminalized forms of school discipline, U.S. public schools suspended or expelled, on average, approximately 138 of 1,000 students during the 2009–2010 school year. The on-campus rate of police referrals or arrests was about 5 per 1,000 students.

During the 2009–2010 school year, the average U.S. public school's student body was 18 percent black and 21 percent Hispanic. The average school district in the United States was about 12 percent black and over 15 percent Hispanic. In the average U.S. public school, about 50 percent of the student body qualified for the free or reduced-price lunch program.

Turning to the funding control variables, an interesting pattern emerges. School districts received just \$1.17 per student in Safe Schools Act funding, but they received, on average, \$46.26 per student in federal IDEA funding and \$57.52 per student in additional state funding for services. These differences speak to the relative affordability of school punishment compared with medicalization and other institutions' ability to absorb the cost of criminalized school discipline. For example, local police departments cover the cost of on-campus law enforcement and other surveillance procedures, reducing the need for additional funds (Theriot 2009).

Table 2 presents coefficients and standard errors from multilevel linear regression models of criminalized (suspension or expulsion and arrest) and medicalized (IDEA or Section 504) school discipline in U.S. public schools. The results in Table 2 indicate that schools and districts with relatively larger black populations had lower enrollment rates for both Section 504 and IDEA and higher rates of school punishment and police contact with students.⁸ For example, a 1-*SD* difference in within-district percentage black was associated with 12.5 percent ($100 \times [e^{-.134}] - 1$) and 4 ($100 \times [e^{-.041}] - 1$) percent lower rates of Section 504 and IDEA coverage, respectively. Similar differences in school-level percentage black within districts were associated with 19.5 percent ($100 \times [e^{.178}] - 1$) higher punishment rates and 8.7 percent ($100 \times [e^{.083}] - 1$) higher referral and arrest

Table 1. Descriptive Statistics for Dependent and Key Independent Variables Used in Analysis (all data for the 2009–2010 school year).

Variable	Mean	SD
Dependent variables		
Section 504 plans per 1,000 students	12.11	22.55
Individualized behavior plan under IDEA per 1,000 students	120.43	60.83
Suspensions/expulsions per 1,000 students	138.42	239.13
Police referrals/arrests per 1,000 students	5.30	33.25
Independent variables		
School percentage non-Hispanic black	17.93	25.33
District percentage non-Hispanic black	12.19	15.54
School percentage Hispanic	20.74	26.49
District percentage Hispanic	15.42	18.92
School percentage free and reduced-price lunch	50.36	27.55
District disadvantage index ($\alpha = .78$)	0.00	0.68
Median per capita income (U.S. dollars)	26,725.95	8,920.37
Percentage less than high school degree	5.22	4.17
Percentage out of labor force	34.88	6.53
Percentage single-mother households	11.31	5.09
Percentage professional/managerial employment	46.38	6.64
Percentage service sector employment	48.38	14.95
School-level control variables		
Percentage male	50.81	3.46
School size (total students)	634.32	455.13
School level		
Elementary	64.25%	
Middle School	19.33%	
High School	16.43%	

(continued)

**Table 1.
(Continued)**

Variable	Mean	SD
School locality		
Suburban	33.24%	
Large urban	13.55%	
Small or medium urban	15.72%	
Small town	12.26%	
Rural	25.23%	
District-level control variables		
District percentage manufacturing	10.55	5.37
District residential instability ($\alpha = .78$)	0.00	0.91
Percentage renters	32.00	12.73
Percentage recent movers	34.81	8.41
Federal IDEA funding (U.S. dollars per student)	52.04	47.59
Federal Safe Schools Act funding (U.S. dollars per student)	2.08	3.59
State special education funding (U.S. dollars per student)	56.56	87.77
District local funding (U.S. dollars per student)	1,100.65	750.55
Census region		
South	25.40%	
Midwest	14.32%	
Northeast	37.53%	
West	22.74%	
<i>n</i> (schools)	59,699	
<i>n</i> (districts)	6,315	

Note: Unweighted results obtained for all participating U.S. schools with populations over 30, excluding schools on Native American reservations and in Alaska and Hawai'i. Schools with missing data were removed using listwise deletion. ACS = American Community Survey; CRDC = Civil Rights Data Collection; IDEA = Individuals with Disabilities Education Act; NCES = National Center for Education Statistics.

Table 2. Results from Multilevel OLS Regression Models of Medicalized School Discipline (IDEA—behavior or attention problems or Section 504) and Criminalized School Discipline (suspension or expulsion and police referral or arrest), U.S. Public Schools, 2009–2010 School Year.

Variable	Section 504		IDEA		Suspension or Expulsion		Referrals or Arrests	
	<i>b</i>	SE	<i>b</i>	SE	<i>b</i>	SE	<i>b</i>	SE
Independent variables								
School percentage black	-0.134***	0.021	-0.041***	0.011	0.178***	0.022	0.083***	0.012
District percentage black	-0.169**	0.050	-0.011	0.023	0.260***	0.066	-0.007	0.027
School percentage Hispanic	-0.141***	0.020	-0.095***	0.011	-0.098***	0.021	-0.002	0.012
District percentage Hispanic	0.001	0.078	-0.242***	0.065	-0.235***	0.052	-0.034	0.026
School percent free and reduced-price lunch	-0.100***	0.019	0.190***	0.018	0.603***	0.023	0.035*	0.015
District disadvantage index	-0.180*	0.083	0.166**	0.050	1.163***	0.087	0.170***	0.041
School control variables								
Percentage male	0.018***	0.004	0.048***	0.005	0.031***	0.005	0.009***	0.002
Student body size (logged)	0.887***	0.035	0.315***	0.043	1.201***	0.047	0.615***	0.028
Elementary school	-1.151***	0.039	0.093***	0.025	-3.050***	0.042	-1.300***	0.039
School locality								
Large urban	-0.241	0.180	0.110	0.106	-0.101	0.243	-0.029	0.096
Small or medium urban	0.118	0.089	0.040	0.038	0.119	0.073	0.109*	0.047
Small town	0.107	0.082	0.125***	0.034	-0.176*	0.070	0.096*	0.041
Rural	-0.001	0.069	0.034	0.037	0.143*	0.067	0.120***	0.034
District control variables								
Residential instability	-0.070	0.054	0.017	0.025	0.163***	0.039	-0.031	0.023
Percentage manufacturing	-0.006	0.007	0.021***	0.004	0.003	0.005	-0.017***	0.004
Federal IDEA funding per student (logged)	0.067**	0.024	-0.022**	0.008	-0.016	0.022	-0.006	0.015
Federal Safe Schools Act funding per student (logged)	-0.115	0.080	0.031	0.034	-0.097	0.155	-0.056	0.035
State special education funding per student (logged)	-0.104**	0.024	-0.087***	0.018	-0.006	0.037	0.041***	0.011
Local funding per student (logged)	0.187*	0.074	0.052	0.042	-0.011	0.066	-0.066 +	0.039
Census region								
Northeast	-1.687***	0.123	-0.138***	0.046	0.518***	0.133	0.139 +	0.072
South	-1.099***	0.176	-0.778***	0.117	1.041***	0.189	0.090	0.084
West	-1.873***	0.161	-0.153***	0.065	0.849***	0.181	0.023	0.078
Intercept	1.985***		4.774***		3.855***		-0.902***	
<i>n</i> (schools)	59,699		59,699		59,699		59,699	
<i>n</i> (districts)	6,315		6,315		6,315		6,315	

Data Sources: Part 2 of the 2009–2010 U.S. Department of Education Civil Rights Data Collection; NCES Common Core of Data Elementary/Secondary School Universe Survey: School Year 2009–2010; School District Demographics System American Community Survey Profiles, 2006–2010; and NCES Common Core of Data School District Finance Survey, School Year 2009–2010.

Note: Unweighted results obtained for all participating U.S. schools with populations over 30, excluding schools on Native American reservations and in Alaska and Hawai'i. Schools with missing data were removed using listwise deletion. School percentage non-Hispanic black, school percentage Hispanic, and school percentage free and reduced-price lunch are all group-mean centered. All other continuous variables are grand-mean centered. Reference for school locality is suburban, and reference for census region is Midwest. IDEA = Individuals with Disabilities Education Act; NCES = National Center for Education Statistics; OLS = ordinary least squares.

+ $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

rates. Similarly, a 1-*SD* difference in between-district percentage black was associated with 15.5 percent ($100 \times [e^{-.169}] - 1$) lower rates of Section 504 coverage and 29.7 percent ($100 \times [e^{.260}] - 1$) higher punishment rates.

Schools and districts with relatively larger Hispanic populations were less likely to medicalize

students with behavior problems, but they were not more likely to implement criminalized school discipline. Indeed, schools and districts with larger Hispanic populations had significantly lower rates of school punishment. For example, a 1-*SD* difference in within-district percentage Hispanic was associated with 9.3 percent ($100 \times [e^{-.098}] - 1$)

lower punishment rates, and a 1-*SD* difference in between-district percentage Hispanic was associated with 20.9 percent ($100 \times [e^{-.235}] - 1$) lower rates of suspension and expulsion.

Turning next to the association between economic disadvantage and criminalized and medicalized discipline, schools and districts with greater proportions of students receiving free or reduced-price lunch had lower rates of Section 504 coverage and higher levels of IDEA coverage, school punishment, and police referral or arrest. Within the same district, a 1-*SD* difference in the proportion of children receiving free or reduced-price lunch was associated with 9.5 percent ($100 \times [e^{-1.00}] - 1$) lower rates of Section 504, but 22 percent ($100 \times [e^{.190}] - 1$) higher rates of IDEA coverage. A similar 1-*SD* difference in the proportion of children receiving free or reduced-price lunch yielded 82 percent ($100 \times [e^{.603}] - 1$) higher punishment rates and 3.6 percent ($100 \times [e^{.035}] - 1$) higher rates of police referral and arrest. Between-district differences in disadvantage were also associated with different levels of medicalized and criminalized school discipline. Schools in more disadvantaged districts did not have significantly different rates of Section 504, but they had significantly higher rates of IDEA coverage. Furthermore, a 1-*SD* difference in between-district disadvantage was associated with 219 percent ($100 \times [e^{1.163}] - 1$) and 18 percent ($100 \times [e^{.170}] - 1$) higher rates of punishment and referral or arrest, respectively.

Although a number of control variables are associated with different types of school discipline, the findings for local, state, and federal funding measures deserve mention. At the federal level, schools in districts that received larger IDEA funds per pupil had lower rates of students receiving services under IDEA and higher rates of enrollment under Section 504. Schools in districts that received larger amounts of state funding for special education services had lower rates of Section 504 enrollment and higher referral or arrest rates. When levels of state and federal funding are included, the effects of school- and district-level racial composition and disadvantage on school criminalization and medicalization remain significant.

To examine how district-level economic disadvantage moderates the relationship between school-level racial composition and school discipline, Table 3 presents results from linear regression models including cross-level interactions

between school percentage black and district-level disadvantage.⁹ The coefficient representing the main effect of school percentage black is significant and consistent with the findings from models presented in Table 1. In districts with mean levels of disadvantage, schools with relatively larger black populations had lower rates of Section 504 and IDEA enrollment and higher suspension or expulsion and referral or arrest rates than schools in their districts with smaller black populations. Notably, the coefficient for the cross-level interaction between district disadvantage and school racial composition is significant and negative in the model predicting Section 504 and suspension or expulsion, but it is significant and positive in the model predicting IDEA enrollment. To help facilitate a discussion of the level 1 and cross-level interactions between school racial composition and school- and district-level economic disadvantage, Table 4 displays marginal effects, or the expected percentage differences in rates of criminalized school discipline and medicalization for a 1-*SD* difference in within-district school percentage black for school districts at low disadvantage (-1 *SD*), mean disadvantage, and high disadvantage ($+1$ *SD*).

The expected differences in school discipline rates presented in Table 4 provide compelling evidence that the relationship between school racial composition and the use of school discipline and medicalized behavior services varies significantly across schools districts with varying levels of disadvantage. Looking at the first row in Table 4, a 1-*SD* difference in school percentage black was associated with 7.3 percent ($\{e^{[-.124 + (-.048 \times -1)]} - 1\} \times 100$) lower expected rates of Section 504 services in low-disadvantage districts. However, a similar difference in school racial composition in high-disadvantage districts yielded 15.8 percent ($\{e^{[-.124 + (-.048 \times 1)]} - 1\} \times 100$) lower expected rates of Section 504 services. Turning to the other measure of medicalization, unlike Section 504 services, the association between school-level percentage black and IDEA enrollment was less pronounced in high-disadvantage districts than in low-disadvantage districts. A 1-*SD* difference in school percentage black was associated with 9 percent ($\{e^{[-.050 + (.045 \times -1)]} - 1\} \times 100$) and 0.5 percent ($\{e^{[-.050 + (.045 \times 1)]} - 1\} \times 100$) lower expected rates of IDEA services in low- versus high-disadvantage districts, respectively. Furthermore, the relationship between school percentage black and use of IDEA services in high-disadvantaged

Table 3. Results from Multilevel OLS Regression Models of Medicalized School Discipline (IDEA—behavior or attention problems or Section 504) and Criminalized School Discipline (suspension or expulsion and police referral or arrest) Including Interactions between School Percentage Non-Hispanic Black and District Disadvantage, U.S. Public Schools, 2009–2010 School Year.

Variable	Section 504		IDEA		Suspension or Expulsion		Referrals or Arrests	
	<i>b</i>	SE	<i>b</i>	SE	<i>b</i>	SE	<i>b</i>	SE
Independent variables								
School percentage black	-0.124***	0.023	-0.050***	0.011	0.192***	0.024	0.085***	0.013
District percentage black	-0.168**	0.050	-0.011	0.023	0.260***	0.066	-0.007	0.027
School percentage free and reduced-price lunch	-0.104***	0.019	0.193**	0.018	0.598***	0.023	0.035*	0.015
District disadvantage index	-0.180*	0.083	0.166**	0.050	1.162***	0.087	0.170***	0.041
Cross-level interaction								
School Percentage Black * District Disadvantage Index	-0.048*	0.022	0.045**	0.013	-0.072**	0.026	-0.008	0.021
School control variables								
Percentage male	0.018***	0.004	0.048***	0.005	0.032***	0.005	0.009***	0.002
Student body size (logged)	0.887***	0.035	0.316***	0.043	1.201***	0.047	0.615***	0.028
Elementary school	-1.149***	0.039	0.092***	0.025	-3.048***	0.042	-1.300***	0.039
School locality								
Large urban	-0.242	0.180	0.110	0.106	-0.102	0.243	-0.029	0.097
Small or medium urban	0.118	0.089	0.040	0.038	0.120	0.073	0.109*	0.047
Small town	0.109	0.082	0.124***	0.034	-0.174*	0.070	0.096*	0.041
Rural	-0.002	0.069	0.034	0.037	0.143*	0.067	0.119***	0.034
District control variables								
Residential instability	-0.070	0.054	0.017	0.025	0.163***	0.039	-0.031	0.023
Percentage manufacturing	-0.006	0.007	0.021***	0.004	0.003	0.005	-0.017***	0.004
Federal IDEA funding per student (logged)	0.067**	0.024	-0.022**	0.008	-0.016	0.022	-0.006	0.015
Federal Safe Schools Act funding per student (logged)	-0.115	0.080	0.031	0.034	-0.097	0.155	-0.056	0.035
State special education funding per student (logged)	-0.104***	0.024	-0.087***	0.018	-0.006	0.037	0.041***	0.011
Local funding per student (logged)	0.187*	0.074	0.052	0.042	-0.011	0.066	-0.066 +	0.039
Census region								
Northeast	-1.687 ***	0.123	-0.138**	0.046	0.518***	0.133	0.139 +	0.072
South	-1.099***	0.176	-0.778	0.117	1.041***	0.189	0.090	0.084
West	-1.873***	0.161	-0.153*	0.065	0.849***	0.181	0.023	0.078
Intercept	1.984***		4.775***		3.853***		-0.902	
<i>n</i> (schools)	59,699		59,699		59,699		59,699	
<i>n</i> (districts)	6,315		6,315		6,315		6,315	

Data Sources: Part 2 of the 2009–2010 U.S. Department of Education Civil Rights Data Collection; NCES Common Core of Data Elementary/Secondary School Universe Survey: School Year 2009–2010; School District Demographics System American Community Survey Profiles, 2006–2010; and NCES Common Core of Data School District Finance Survey, School Year 2009–2010.

Note: Unweighted results obtained for all participating U.S. schools with populations over 30, excluding schools on Native American reservations and in Alaska and Hawai'i. Schools with missing data were removed using listwise deletion. School percentage non-Hispanic black, school percentage Hispanic, and school percentage free and reduced-price lunch are all group-mean centered. All other continuous variables are grand-mean centered. Reference for school locality is suburban, and reference for census region is Midwest. IDEA = Individuals with Disabilities Education Act; NCES = National Center for Education Statistics; OLS = ordinary least squares.

+ $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

districts was statistically indistinguishable from zero ($p < .05$).

Turning to my measures of criminalized school discipline, in low-disadvantage districts, a 1-SD difference in school percentage black was

associated with 30.3 percent ($\{e^{[.192 + (-.072 \times -1)]} - 1\} \times 100$) higher expected suspension and expulsion rates. A similar 1-SD difference in school percentage black in high-disadvantage districts was associated with just 12.8 percent ($\{e^{[.192 + (-.072 \times 1)]}$

Table 4. Expected Percentage Difference in School Rates of Section 504, IDEA, Suspension or Expulsion, and Police Referral or Arrest for a 1-SD Difference in School Percentage Black for Schools at Different Levels of District-level Disadvantage.

Variable	Low Disadvantage (-1 SD)	Mean Disadvantage	High Disadvantage (+1 SD)
Section 504	-7.335*	-11.689*	-15.839*
IDEA	-9.059*	-4.895*	-0.540
Suspension or expulsion	30.321*	21.223*	12.759*
Referral or arrest	9.659*	8.832*	8.011*

Data Sources: Part 2 of the 2009–2010 U.S. Department of Education Civil Rights Data Collection; NCES Common Core of Data Elementary/Secondary School Universe Survey; School Year 2009–2010; School District Demographics System American Community Survey Profiles, 2006–2010; and NCES Common Core of Data School District Finance Survey, School Year 2009–2010.

Note: Expected percentages obtained from regression results presented in Table 3. Numbers in boldface type are significant coefficients between school percentage black and district disadvantage, indicating variation in the relationship between school racial composition and the dependent variable across different levels of district disadvantage. Asterisks indicate that the effect of a 1-SD difference in school percentage black on the dependent variable is statistically distinguishable from zero in low-, mean-, and high-disadvantage districts, respectively ($p < .05$). IDEA = Individuals with Disabilities Education Act; NCES = National Center for Education Statistics.

– 1} × 100) more suspensions or expulsions per 1,000 students. Finally, as Table 4 demonstrates, the association between school racial composition and referral or arrests rates was relatively consistent across varying levels of district disadvantage.

In general, patterns revealed in the analyses presented here suggest a complex relationship among race, economic disadvantage, and school discipline. Schools and districts with greater levels of blacks had lower rates of Section 504 and IDEA enrollment and higher rates of punishment and police referral or arrest. On the other hand, although schools and districts with greater levels of Hispanics had lower rates of Section 504 and IDEA enrollment, they also displayed lower rates of punishment and police referral or arrest. Schools and districts with higher levels of economic disadvantage displayed lower rates of Section 504 enrollment but yielded higher levels of IDEA enrollment and rates of punishment and police referral or arrest. Results from cross-level interaction models suggest that the association between racial composition and school discipline varies significantly across different levels of district disadvantage. The observed relationships between racial composition and rates of Section 504 were significantly more pronounced in more disadvantaged contexts than in less disadvantaged contexts. Conversely, the observed relationships between racial composition and rates of IDEA and suspension or expulsion were significantly

more pronounced in less disadvantaged contexts than more disadvantaged contexts.

DISCUSSION

Drawing on social reproduction arguments and research contrasting the attribution of misbehavior across different racial and ethnic groups, I examined the social structural forces behind disciplinary practices in U.S. public schools. Using a unique and large multilevel data set, I used linear regression models to test relationships between local racial/ethnic and socioeconomic composition and multiple types of criminalized and medicalized school discipline. The results indicate that use of criminalization and medicalization in schools mirrors racial and socioeconomic inequalities observed in the criminal justice and mental health systems.

Consistent with hypothesis 1, schools and districts with greater black populations had higher rates of criminalized school discipline and lower rates of medicalization. Schools with more black students relative to other schools in the district had higher rates of suspension or expulsion and police referral or arrest. Furthermore, after controlling for relevant school- and district-level factors, schools in districts with larger black populations had higher suspension and expulsion rates. Along with being more punitive, these schools had lower rates of IDEA and Section 504 than

other schools in the district. These findings suggest that schools and districts with relatively larger black and Hispanic populations organize their student disciplinary policies around the principles of the criminal justice system rather than the mental health system (Kupchik and Ward 2014; Simon 2007). Western (2006) and others (Ferguson 2001; Soung 2011) have suggested that the overrepresentation of minorities in the prison system and the perception of minority communities as high-crime areas lead to an assumption that minorities, even children, are more crime prone. As a result, schools and districts with relatively larger black and Hispanic populations are more likely to view student misbehavior as potential crimes for which perpetrators need to be punished and removed rather than reformed and rehabilitated.

The results only partially support hypothesis 2. Schools and districts with relatively larger Hispanic populations had lower rates of IDEA and Section 504 use than schools and districts with smaller Hispanic populations. Similarly, schools with more Hispanic students had significantly lower rates of suspension/expulsion relative to other schools in their districts and relative to districts with smaller Hispanic populations. These findings suggest that schools and districts with larger Hispanic populations are less likely to use disciplinary strategies modeled on social control institutions such as the criminal justice or mental health systems. Indeed, although the literature discussed earlier suggests that schools may criminalize Hispanic students in a manner similar to black students, research from criminology and elsewhere provides a guide to understand these contrary findings. For example, many of the historically racialized systems of social control, particularly slavery and Jim Crow, explicitly focused on the subjugation of U.S. blacks and were not experienced by Hispanics to the same degree (Alexander 2012). Additionally, research drawing from the “Hispanic (or immigrant) paradox” literature reveals that Hispanic adolescents have lower rates of misbehavior and school punishment, particularly in the first and second generations (Peguero and Shekarkhar 2011). But similar to black families, Hispanic families are less likely than white families to visit mental health professionals (Alegria et al. 2011).

Schools and districts with greater levels of economic disadvantage are more likely than others to implement formal disciplinary measures that require few local resources. In support of

hypothesis 3, I found a positive association between higher levels of school- and district-level economic disadvantage and higher rates of criminalized school discipline policies such as suspension or expulsion and police referral or arrest. This finding is consistent with prior research demonstrating significant relationships between disadvantage and punitive discipline at the school (Irwin et al. 2013; Kupchik and Ward 2014; Welch and Payne 2010, 2012) and district (Hirschfield 2010; Simon 2007) levels. Disadvantaged schools and districts are consistently more likely than less disadvantaged schools and districts to punish students, but findings from models of medicalized discipline are less consistent.

In line with hypothesis 4, schools and districts with greater levels of economic disadvantage had higher rates of IDEA enrollment but were less likely to provide Section 504 services. According to the social reproduction perspective adopted here, schools with greater levels of disadvantaged students adopt criminalized and medicalized social control for the same purposes: compliance and order (Kupchik and Monahan 2006). However, medicalized social control can be costly (Hibel et al. 2010; Hinshaw and Scheffler 2014). Because IDEA comes with some federal or state funding, schools and districts with greater levels of disadvantage are better able to provide behavioral services to children covered under IDEA (Gius 2007; Hinshaw and Scheffler 2014; Zirkel 2011). Conversely, because Section 504 relies completely on school- and district-level discretion and resources, schools and districts with greater levels of disadvantage often lack the social and economic resources needed to enroll students in Section 504 (Kim et al. 2010).

Finally, findings from cross-level interactions provide partial support for hypothesis 5. The relationship between greater proportions of black students at the school level and criminalized and medicalized school discipline varies significantly across different concentrations of district-level disadvantage. The positive relationship between school-level racial composition and suspension or expulsion was less pronounced in heavily disadvantaged districts than in districts with lower levels of disadvantage. However, contrary to expectations, the coefficients for cross-level interaction terms run in different directions for Section 504 and IDEA enrollment. In line with expectations, the negative relationship between school-level racial composition and IDEA enrollment was

less pronounced in more economically disadvantaged districts than in less disadvantaged districts. However, the negative relationship between racial composition and enrollment in Section 504 plans was actually more pronounced in more disadvantaged districts.

Disadvantaged school districts are more likely than affluent school districts to have centralized decision-making structures that offer very little authority to local principals and teachers: decisions regarding school funding from state and federal sources are made in a top-down manner that leaves little room for variation across public schools in the district (Hirschfield 2010). These different governance structures are made more apparent when considering the pressures presented by legislation like the No Child Left Behind Act and the Safe Schools Act (Figlio 2003, 2006; Hinshaw and Scheffler 2014; Hirschfield 2010; Simon 2007). Consequently, economically disadvantaged districts have more uniformity in the implementation of zero-tolerance policies and decisions regarding eligibility requirements for IDEA enrollment and less variation on the basis of school racial composition. Because Section 504 is an unfunded mandate, enrollment is highly dependent on local resources and parental decision making (Bussing et al. 2012; Gius 2007). Consequently, the inability of poor school districts to provide adequate resources necessary to cover children under Section 504, and disparities in the labeling of black children as needing help, overlap and contribute to lower enrollment in Section 504.

These findings provide evidence of a relationship between social structural factors and schools' use of discipline and medicalization, but there remain some unanswered questions. I examined overall rates of criminalized and medicalized discipline rather than the race of students being punished or medicalized in schools. The data include race-specific rates of discipline, but they are not appropriate for within-school analyses for several reasons. First, I wanted to avoid the risk of distorting the role of race or ethnicity in school discipline by inflating race-specific rates for schools with small black and Hispanic student bodies. Moreover, identification of individual students of color with behavior problems becomes easy in schools with high race-specific rates of discipline and small numbers of racial minorities. Nevertheless, the strategy of describing broad patterns of school discipline rather than focusing on specific racial differences allowed me to test for overall school

environment. Future research should seek to answer important questions surrounding racially patterned discipline use among different students in schools, but doing so will likely require data at the individual level, nested within different school contexts.

Additionally, the argument that use of IDEA, Section 504, and medicalized school discipline somehow insulates children from harsh discipline is not always accurate. For example, schools are allowed to suspend or arrest children enrolled in IDEA or Section 504 plans, provided they take behavior problems into account. Indeed, rates of suspension for children on IDEA plans are relatively high (Kim et al. 2010). However, at the very least, schools are required to consider the behavior problems that led to Section 504 or IDEA when making disciplinary decisions. Indeed, many courts have ruled in favor of families and children who believed that behavior problems were inadequately considered before schools made the decision to suspend or expel students (Hinshaw and Scheffler 2014; Kim et al. 2010). Furthermore, prior research suggests that school- and district-level racial and socioeconomic composition influences the likelihood of punishment or medicalization for all students, regardless of race or ethnicity (Hibel et al. 2010; Kupchik 2010). Examination of racial disparities in the punishment of children with disability labels is an important topic for future research, but it requires individual-level data, particularly from a nationally representative sample.

Finally, measures of behavior and crime are not available in the data. Consequently, I cannot test whether the relationships among race/ethnicity, disadvantage, and school discipline are indeed due to underlying differences in behavior. However, these concerns are dispelled somewhat by the divergent and expected patterns of social control. For example, if Black children displayed more frequent or severe behavior problems, schools with larger Black populations should have higher rates of criminalization and medicalization.

Criminalized and medicalized disciplinary policies represent updated approaches to the reproduction of racial and economic social structures in schools. Schools engage in both criminalization and medicalization during the school year, but the social factors behind the use of criminalized or medicalized school discipline remain somewhat unclear. In this article, I demonstrated the

relationship between school- and district-level racial and ethnic composition and economic disadvantage and several criminalized and medicalized disciplinary policies. Additionally, I provided evidence that school racial composition and school- and district-level economic disadvantage interact to create potentially hyperpunitive environments that, in the pursuit of safe school environments, may inadequately consider the mental health needs of minority students.

RESEARCH ETHICS

My research design was not reviewed by my institution's institutional review board because it does not constitute human subjects research. Data used in this study were collected by the U.S. Department of Education and the National Center for Education Statistics and are publicly available and contain no personal identifiers.

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NOTES

1. For children with multiple disorders, the "most disabling" condition, or the condition that best describes the child's impairment, is considered the primary disability and is the official impairment listed with the school (Holler and Zirkel 2008).
2. Throughout the article, all mentions of black populations refer to non-Hispanic blacks.
3. Authorized under the statutes and regulations implementing Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, and the Department of Education Organization Act (20 U.S.C. 3413).
4. American Community Survey data do not represent a single time point and are thus not representative for any given year. However, it is common practice to use the American Community Survey to represent a data point in census analyses, particularly to estimate noncensus years (Sharp and Iceland 2013). Finally, because of the centrality of district-level information to the research questions, I chose to rely on estimates using specific district boundaries, as opposed to city- or county-level boundaries.
5. I removed schools and districts from Native American reservations and Alaska and Hawai'i for several reasons. First, absent the geographic or historical connections to the racialized history of the

United States, black or Hispanic composition might not contribute to social construction in the same way as it does in the rest of the country. Second, these schools present unique racial and ethnic dimensions that are unrelated to the mechanisms discussed here. Results including these schools do not differ greatly from the present analysis and are available by request.

6. The Civil Rights Data Collection provides information on how many children experienced one suspension during the school year and how many experienced two or more suspensions during the school year. By adding these values together, my suspension measure is an indicator of the number of individuals receiving one or more suspensions during the school year. If a student is suspended and expelled during the school year, he or she can be included twice in the suspensions or expulsions measure. Similarly, a student can be suspended or expelled while being covered under Section 504 or IDEA and thus counted in multiple categories. Students cannot receive services under both IDEA and Section 504 (Holler and Zirkel 2008). Because of confidentiality concerns, I am unable to estimate how many students were included in more than one category. However, analysis of separate measures (e.g., in-school suspensions, out-of-school suspensions, and expulsions) all yield similar results and are available by request.
7. Although no direct test for variance inflation for multilevel models is used in the analysis, results of variance inflation factors on ordinary least squares regression with standard errors clustered at the district level reveal no variance inflation factors over 2.1. Furthermore, the coefficients for key independent variables did not change in direction or magnitude when running additional models without potentially problematic variables.
8. In supplementary models, I examined for nonlinearity in the relationships between school racial and ethnic composition and criminalization or medicalized school discipline using quadratic terms for both school- and district-level racial composition. In no model were school-level quadratic terms significant. At the district level, the coefficient for district percentage black squared was significant and negative. However, inclusion of the quadratic term does not significantly improve model fit, and only a small proportion of school districts fall beyond the point in the distribution at which the coefficient becomes negative. Therefore, although racial threat theory hypothesizes a curvilinear relationship between racial composition and punitive discipline (Welch and Payne 2010, 2012), I chose to exclude a quadratic term in this analysis to improve model parsimony and efficiency and focus instead on a broader range of explanations of race and social control (Irwin et al. 2013). Results for models including quadratic terms are available by request.

9. Additional models yield no significant coefficients for interactions between percentage Hispanic and district-level disadvantage. To save space, results of these models are not discussed but are presented in Appendix B (available online).

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Author Biography

David M. Ramey is an Assistant Professor of Sociology and Criminology at the Pennsylvania State University. His research and teaching interests include crime, deviance and social control; community organization; and mental health.