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Prior problem behavior accounts for the racial gap in school suspensions

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ABSTRACT

Purpose: A large body of empirical research finds a significant racial gap in the use of exclusionary school discipline with black students punished at rates disproportionate to whites. Furthermore, no variable or set of variables have yet to account for this discrepancy, inviting speculation that this association is caused by racial bias or racial antipathy. We investigate this link and the possibility that differential behavior may play a role.
Methods: Using data from the Early Childhood Longitudinal Study, Kindergarten Class (ECLS-K), the largest sample of school-aged children in the United States, we first replicate the results of prior studies. We then estimate a second model controlling for prior problem behavior.
Results: Replicating prior studies, we first show a clear racial gap between black and white students in suspensions. However, in subsequent analyses the racial gap in suspensions was completely accounted for by a measure of the prior problem behavior of the student – a finding never before reported in the literature.
Conclusions: These findings highlight the importance of early problem behaviors and suggest that the use of suspensions by teachers and administrators may not have been as racially biased as some scholars have argued.

Introduction

For nearly four decades, research has shown a consistent racial disparity between black and white students in school discipline, including office referrals, corporal punishment, suspensions, and expulsions (Children's Defense Fund, 1975; Gregory, 1995; Rocque, 2010; Skiba, Michael, & Nardo, 2000; Skiba, Michael, Nardo, & Peterson, 2002; Wu, Pink, Crain, & Moles, 1982). In particular, many of these studies report that suspension rates for blacks are generally two to three times higher than that of their white peers (Costenbader & Markson, 1994; Gordon, Della Piana, & Keleher, 2000; Skiba et al., 2000). The racial gap in suspensions has been detected in virtually every published study, has been detected across and within school districts, and has been detected under varied methodologies and analytical strategies. The consistency of the racial gap in school disciplinary practices is unique in education research partly because it has been replicated so frequently.

Yet the consistency of the finding is only part of the empirical picture – the other part, perhaps even the most important part, is that no set of variables has yet to account for the racial disparity in school discipline. Despite controls for socioeconomic status, school or teacher-specific effects, differential behavior and a host of other potentially causal and confounding factors, the racial gap in school discipline has yet to be fully explained (Gregory, Skiba, & Noguera, 2010; Payne & Welch, 2010; Rocque, 2010).

The consistency of the racial gap in school disciplinary practices and the resiliency of the effect has generated widespread concern. Indeed, because exclusionary discipline has been repeatedly linked to race, scholars have theorized that the effect represents pervasive racial discrimination that brings harm to black students (Skiba et al., 2000; Welch & Payne, 2010). Some scholars have even advanced the idea that such disparities are evidence of a "school-to-prison pipeline" that targets disadvantaged, minority youth (Wald & Losen, 2003). Accordingly, these concerns are now echoed by the Department of Education and the Department of Justice that, based on this body of research, are actively investigating school districts for civil rights violations related to disproportionate disciplinary outcomes (Delisle, 2012; Holder & Duncan, 2011; Perez, 2010).

A close read of the available empirical literature suggests, however, that racial bias may not be the only factor associated with racial differences in school disciplinary rates. Recent studies, for example, reveal that black youth, in comparison with their white counterparts, are often less prepared for school entry (Magnuson & Waldfogel, 2005; Murnane et al., 2006; Sadowski, 2006), are disproportionately involved in delinquency and crime (Earls, 1994; Hawkins, Laub, & Lauritsen, 1998), and are more likely to behave in ways that interfere with classroom and school functioning (Beaver, Wright, & DeLisi, 2011). These studies, and others from various disciplines, suggest that the school disciplinary rates may also reflect the problematic behaviors of black youth – problem behaviors that are imported into schools and into classrooms. Even so, as critics point out, prior studies that include controls for student misbehavior have yet to account completely for the

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racial disparity in school disciplinary practices (Hinojosa, 2008; McCarthy & Hoge, 1987; Rocque, 2010).

The current paper revisits the linkages among student behavior, past and present, and later disciplinary differences based on race. We utilize a large, national dataset that allows us to control for time-stable individual differences in behaviors related to school discipline. The dataset contains multiple measures from teachers and parents and thus presents a unique opportunity to test the association between student misconduct and race-based disciplinary differences.

Existing evidence on racial disparities in school discipline

A large body of empirical work examines the predictive capacity of a range of variables on school disciplinary rates. In general, these studies have employed a variety of measures in an effort to understand and to account for the effects of race on school discipline. Since race is often significantly correlated with a range of variables, including socioeconomic status, family instability, and poverty status, scholars have paid particular attention to economic and social class factors that may predict differences in school disciplinary rates. Moreover, empirical attention has also been paid to how teachers and school administrators make decisions to use exclusionary discipline and how school district regulations, such as "zero-tolerance" policies, affect disciplinary decisions. We next turn to research that has examined these factors in relation to race differences in school disciplinary outcomes.

Socioeconomic status

Low socioeconomic status, whether measured at the individual or school-level, has been associated with an increased risk of school discipline (Christle, Nelson, & Jolivette, 2004; McCarthy & Hoge, 1987; Wu et al., 1982). In general, studies have used student eligibility for free or reduced-cost lunch as a measure of poverty, often finding that increased program enrollment corresponds with higher suspension rates (Raffaele Mendez, Knoff, & Ferron, 2002; Skiba et al., 2002). Additional measures have also incorporated the full-time employment status of the father and family intactness (McCarthy & Hoge, 1987; Wu et al., 1982). For example, students living in a two-parent household with greater access to home resources, such as a computer, books, or a room to themselves, have reduced odds of suspension compared to others (Hinojosa, 2008). Nonetheless, socioeconomic differences between individuals and between races have not explained the racial discipline gap.

In a recent study involving a nationally representative sample, Wallace, Goodkind, Wallace, and Bachman (2008) found that despite controlling for family structure, parental education, and urbanicity that black youths were still significantly more likely to be referred to the principal's office, were significantly more likely to be suspended, and were significantly more likely to be expelled compared to white youth. This pattern of findings holds across a broad array of studies and reveals that race frequently remains a significant predictor of school discipline regardless of socioeconomic status (Hinojosa, 2008; Raffaele Mendez et al., 2002; Skiba et al., 2002; Wu et al., 1982). More recently, however, Gregory, Cornell, and Fan (2011) found that while poverty is predictive of white suspension rates, poverty status was not a significant predictor of black suspension rates nor was it predictive of the black-white suspension gap.

In sum, the inability of socioeconomic variables to account for racial differences in school discipline has spurred researchers to examine how the context of the school may contribute to the racial discipline gap. Commonly, studies have investigated school, classroom, and teacher characteristics especially in those cases that are likely to involve minority students. This has raised the issue of whether racial bias plays a role in disciplinary decision-making both at the level of the referral and for the type of punishment administered. In addition, concerns exist as to whether racial disparities are exacerbated by the use of zero-tolerance disciplinary policies.

School context

The effect of individual teachers, school discipline policies, and even the demographic composition of the school present a set of overlapping concerns regarding racial bias in school discipline. How teachers, principals, and other school officials treat youth, the expectations they hold for youth behavior, and the possibility that officials hold biased views of black students have been extensively studied. For instance, using a sample of 1,125 students from six public schools, McCarthy and Hoge (1987) argued that because black students perform poorly academically and present unique behavioral problems for teachers and administrators that school officials are more apt to sanction them. This process results in a cycle of cumulative disadvantage where black youth are initially disciplined for their failure to conform to school standards which, in turn, produces an official disciplinary record that often leads to further sanctions. Although the authors note that, "most of the school officials [they] studied were black" it is suggested that a discriminatory set of "universalistic norms" may guide teacher perceptions of problem behavior in these circumstances regardless of race (pp. 1116-1117). Similarly, in a qualitative study of eleven black teachers, Moore (2002) argued that an establishment bias may designate female, light-skinned, socially mature children from stable, middle-class families as ideal students. However, immature, male, dark-skinned children from dysfunctional families and lower socioeconomic backgrounds were considered difficult students possibly warranting increased surveillance and control.

Townsend (2000) writes that cultural conflicts between students and teachers, even of the same race or ethnicity, can occur in schools serving impoverished, minority children. For example, the active learning style of lower-class black youth, featuring an unfamiliar vernacular and expressive, nonverbal communication style, may be misinterpreted as disobedience or as combative. As a result, teachers may use disciplinary sanctions that target black students in an effort to reassert control and order in the classroom. Along these lines, Skiba et al. (2000) studied a sample of 11,011 middle school students from a single, urban school district and found that white students were more likely to be referred to the office for objective misbehavior, such as smoking or using obscene language. However, black students were more often referred for less serious, subjective misbehavior, such as being disrespectful to a teacher or disrupting a classroom. Skiba and his colleagues concluded that disproportionate referrals at the classroom-level may indicate "systematic racial discrimination" (p. 16).

Studies at the level of the classroom provide some empirical evidence that teachers hold views of student abilities that sometimes correlate with race and ethnicity. In a meta-analysis of teacher expectations and behavior, Tenenbaum and Ruck (2007) reported that teachers held significantly lower academic expectations for black and Hispanic students and also used less positive speech with them compared to white students. Notably, teachers held the highest expectations for Asian students. Accordingly, in a survey of 5,305 ninth-grade students from 199 high schools, Gregory et al. (2011) found that schools with lower perceived support and academic expectations have higher suspension rates for both blacks and whites and, more importantly, have the largest racial gaps in suspension rates.

Higher black student enrollment has also been found to be significantly associated with overall higher suspension rates and with greater racial imbalances in the use of suspensions. Raffaele Mendez et al. (2002), for example, found that the percentage of black students in a school correlated positively with rates of suspensions in a single district sample of 142 elementary and secondary schools. However, among secondary schools, racial homogeneity also correlated negatively with suspensions. Similarly, Eitle and Eitle (2004) examined the influence of racial segregation across 40 school districts and found that more segregated districts – that is, more racially homogenous districts – had reduced black-white suspension gaps.

Welch and Payne (2010, 2012) assert that findings of disproportionate discipline rates in schools with higher black enrollment lends

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support to the racial threat hypothesis, wherein white teachers and school administrators respond to increasing proportions of minorities in schools with more frequent and more severe punishments. Their subsequent tests involving a sample of approximately 300 public schools revealed that those with a larger percentage of black students not only used more punitive disciplinary measures like detention and suspension, but also resorted to more extreme disciplinary practices, such as expulsion and involving the police. These schools were also more likely to use zero-tolerance policies and were less likely to use mild or restorative disciplinary practices even when controlling for socioeconomic conditions and levels of student delinquency in the school. Interestingly, racial threat appears most evident in schools with less crime and disorder. Further work by Payne and Welch (2010) using the same data found that schools implementing punitive disciplinary policies were also more likely to use other harsh sanctions which, they argue, may contribute to the "prisonization" of the school environment. Payne and Welch (2010) concluded that excessive punishment in schools with relatively higher black enrollment leads to the criminalization of black youth, to further academic disadvantage, and to the reinforcement of negative stereotypes of blacks in society.

Contrary evidence, however, was produced by Kinsler (2011) in an examination of approximately 500,000 students across 1,000 elementary, middle, and high schools in North Carolina. His analysis of student infractions and disciplinary outcomes found significant variation across schools. Kinsler (2011) also found that within schools, blacks and whites were treated similarly, leading him to conclude that the discipline gap may actually be a byproduct of differences in school discipline policies rather than racial bias.

Differential behavior

The contribution of individual misbehavior to disproportionate disciplinary rates has largely been overshadowed by hypotheses emphasizing cultural or racial bias (Gregory et al., 2010). In fact, Fenning and Rose (2007) state that "there is no current empirical evidence that factors internal to the student" can account for the overrepresentation of racial or ethnic minorities (p. 542). Indeed, numerous authors have made this point (McCarthy & Hoge, 1987; McFadden, Marsh, Price, & Hwang, 1992; Shaw & Braden, 1990; Wu et al., 1982), leading Skiba et al. (2002, p. 322) to argue that "investigations of behavior, race, and discipline have yet to provide evidence that African-American students misbehave at a significantly higher rate than other students." Years later, this conclusion was again echoed by Losen and Skiba (2010) who stated that "there is no evidence that racial disparities in school discipline can be explained through higher rates of disruption among African-American students" (p. 10).

This conclusion, however, may be premature if not entirely incorrect. We make two inter-related points: First, aggregate differences between black and white students are well documented across a variety of studies and a variety of outcomes. Beaver et al. (2011), for example, detailed the various differences in behaviors between black and white youth, including black over-involvement in crime and delinquency (see also, DeLisi & Regoli, 1999; Elliott, 1994), black over-involvement in the juvenile justice system (Earls, 1994; Hawkins et al., 1998), and black over-involvement in a range of social services and programs (Herrnstein & Murray, 1994; Wilson, 1987). Beaver et al. (2011) also noted that black youth are significantly more likely to enter school unprepared and are significantly more likely to have deficits in many social skills (in particular, deficits that parents are unable to correct) that may translate into behavioral problems to be managed by teachers and school officials (Brooks-Gunn & Markman, 2005; Murnane et al., 2006). Indeed, in their analysis of data from the Early Childhood Longitudinal Study-Kindergarten (ECLS-K), Beaver and colleagues found substantive differences between white and black youth in measures of social skills assessed at kindergarten and the first-grade.

Second, while a large swath of data exists revealing aggregate differences in behaviors between black and white youth (Paschall, Flewelling, & Ennett, 1998; Snyder & Sickmund, 1999) it remains unknown whether these differences account for racial disparities in school discipline. A recent study by Rocque (2010), however, is instructive. Analyzing elementary school office referrals, Rocque used teacher ratings of student antisocial behavior to examine differences for both referred and non-referred students. Although race remained a significant predictor of receiving a disciplinary referral, Rocque found that the odds of being referred dropped by 36% after controlling for problem behavior. As a result, Rocque concluded that much "previous work without measures of student behavior grossly overestimated the extent to which racial disparity in school discipline is based upon illegitimate factors" (pp. 572-573).

Rocque's (2010) conclusion draws attention to the issue of model specification and to the range of variance in prior measures of child misbehavior. Virtually all prior studies of the racial gap in school discipline have not included detailed measures of student misbehavior and those that have tend to rely on cross-sectional data or, at best, one year of behavioral data (Hinojosa, 2008; Payne & Welch, 2010; Skiba et al., 2002; Wu et al., 1982). For example, Hinojosa (2008) used a two-item measure of misbehavior that assessed only whether a student fought at school. In addition, Wu et al. (1982) constructed an eight-item index of self-reported antisocial attitudes as a proxy measure of problem behavior – assuming that students holding more antisocial attitudes would exhibit greater misbehavior. Even Rocque's (2010) study was limited to an eight-item scale of teacher-reported externalizing behavior in a single school year. The point is, few studies have included detailed assessments of student misbehavior and even fewer have assessed student misbehavior longitudinally. This last point is of serious consequence because few students experience exclusionary discipline on the first offense. Instead, it appears possible that suspensions and expulsions are driven, in part, by time-stable individual differences in problem behavior. This possibility has been echoed by others.

For example, Morrison, Anthony, Storino, and Dillon (2001) state that students may be suspended for attitudinal offenses, such as defiance, only if they first come to the attention of staff through aggressive acts, such as fighting. Thus, teachers and school officials increase their awareness of problem students over time, which may result in increased supervision, scrutiny, and referral for less serious behaviors (Skiba et al., 2000). In an exploratory study, Tobin, Sugai, and Colvin (1996) note that students referred or suspended in the sixth-grade were more likely to have continuing disciplinary problems. Although they suggest this could be a result of negative reinforcement (e.g., suspensions permit the student to escape the classroom), they also acknowledge the possibility of a yet to be identified factor such as a performance deficit in social problem-solving skills that may account for these behavioral issues.

Lastly, the intense focus on the discipline and behavior of blacks and whites has generally allowed findings for other racial and ethnic groups to go unexplained (Lynn, 2009). Although data clearly show blacks are disciplined at a significantly higher rate than whites, the same cannot always be said about Hispanics (Gordon et al., 2000). Gregory et al. (2010) remark that Hispanic-white differences remain inconclusive as studies have failed to uncover consistent significant disparities. For example, Eitle and Eitle (2004) conducted an analysis of the Hispanic-white suspension gap and found an overrepresentation ratio of only 1.16:1 (p. 283). Considering that their study takes place in Florida, a state with a large and increasing Hispanic population (and thus possibly presenting a mounting racial threat), it is especially notable.

In regard to Asian-white differences, limited sample sizes have often impaired detailed research (Gordon et al., 2000). However, a few studies have shown that Asians are significantly underrepresented in suspension rates (Costenbader & Markson, 1994) and less likely to receive disciplinary action than all other groups, including whites (Rocque & Paternoster, 2011; Wallace et al., 2008). Further exploration of such

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findings across racial and ethnic groups is strongly warranted. Should a significant disparity exist wherein whites are disciplined at significantly higher rates than Asians, it could call into question the validity of hypotheses based upon racial threat or bias.

Against this backdrop, we note that previous research has consistently failed to account for the racial discipline gap and that methodological limitations may have upwardly biased the association between race and disciplinary outcomes. The present study is designed to partially address these methodological shortcomings within the existing literature by examining the effects of socioeconomic status and school context while also estimating the influence of individual student misbehavior across several years and grade levels.

Methods

Sample

Data for the present study came from the Early Childhood Longitudinal Study, Kindergarten Class of 1998-1999 dataset (ECLS-K). The ECLS-K includes over 21,000 children and is the largest nationally representative sample of kindergartners, parents, teachers, and both public and private schools in the United States. The ECLS-K is sponsored by the U.S. Department of Education and the National Center for Education Statistics with the goal of providing reliable data that can help scholars investigate children's development and early experiences and additionally, how these early experiences impact later development and learning in school. The data provide detailed information about the subjects' cognitive, social, mental, and physical development, family factors, medical conditions and history, as well as information about their school and classroom environments, and home environments. Information was obtained from teacher and school administrator questionnaires, parent and child interviews, and observations from trained professionals in the schools.

The initial data were collected in the fall of 1998 when children first entered kindergarten. Data were also collected later in the spring of 1999, in the fall (1999), and in the spring (2000) of first-grade. Follow-up data were collected in the spring of third-grade (2002), spring of fifth-grade (2004), and the spring of eighth-grade (2007). We used outcome and control variables from the spring of the eighth-grade (2007) while the prior behavior measures came from the fall of kindergarten (1998), spring of first-grade (2000), and the spring of third-grade (2002).

Measures

Suspension

School suspension data were available only in the eighth-grade wave of the ECLS-K. Suspensions are used widely as an index of exclusionary discipline, are more frequent compared to expulsions, and have been subject to extensive analyses in other studies (Skiba et al., 2000; Wallace et al., 2008). We restrict our analyses of suspensions to children in public schools. Private schools, such as military academies and religious schools, may employ unique disciplinary policies that introduce an array of complexities. The school suspension measure was a simple parent-reported question asking whether or not the child had ever received an out-of-school suspension (0 = No, 1 = Yes). Parent reports provide a conservative estimate of whether a child had ever been suspended since some parents may not be aware of their child's suspension. Moreover, it is highly unusual for children in elementary grades to be suspended as this type of punishment is usually reserved for youth in at least middle school (Raffaele Mendez et al., 2002). Thus, the suspension measure likely captures disciplinary actions taken within close temporal proximity to the eighth-grade.

Problem behavior

To measure early and stable problem behavior, we employ Gresham and Elliott's (1990) widely used Social Skills Rating Scale (SSRS). The SSRS uses a Likert scale ranging from 1-4 (1 = Never exhibits this behavior; 4 = Very often/exhibits behavior most of the time). Parents and teachers provided a score for each item within each scale. The mean of these items was then used for the total score on each specific scale. Teacher reports of the SSRS were available from the kindergarten through the fifth-grade waves of data. The ECLS-K also employed a parent-reported SSRS, but only for the kindergarten and first-grade years. Therefore, we used teacher-reported measures of prior problem behavior. Teacher reports have proven to be highly efficient, valid, and reliable accounts of student behavior (Cairns & Cairns, 1994).

Our measure of teacher-reported prior problem behavior utilized data from kindergarten, first, and third-grades only and is the sum of the four SSRS scales: self-control, interpersonal skills, externalizing problem behaviors, and approaches to learning. These scales tap a wide range of behaviors such as controlling one's temper, responding appropriately to pressure from peers, expressing thoughts and feelings appropriately, attentiveness, impulsivity, unnecessary arguing, disturbing ongoing classroom activities, and fighting. While some of the items that compose the subscales of the SSRS are attitudinal, studies have shown that measuring traits and behaviors with attitudinal measures is appropriate (see Pratt & Cullen, 2000). The SSRS scales have been used in a number of prior studies examining self-control and analogous problem behaviors (Beaver & Wright, 2007; Lamont & Van Horn, 2013; Vaughn, DeLisi, Beaver, & Wright, 2009; Wright & Beaver, 2005).

We note that the SSRS was administered to different teachers during kindergarten, first, and third-grade. Moreover, the parent report of the child ever being suspended was assessed in the eighth-grade. Thus, our measure of prior problem behavior was taken at least five years prior to the parental measure of child suspension. Additionally, we averaged the teacher-reported SSRS scores across kindergarten through third-grade and found no difference in our analyses when using the averaged versus the additive measure of teacher-reported prior problem behavior.

Our measure of prior problem behavior was coded so that higher values indicate more problematic behavior. Unfortunately, the ECLS-K dataset does not make available the individual items of each scale. Therefore, reliability statistics could not be computed for the items within each scale. Validation studies of the SSRS have found the measure to be comprehensive, valid, and reliable (Demaray, Ruffalo, Carlson, & Busse, 1995; Lyon, Albertus, Birkinbine, & Naibi, 1996). The teacher-reported scales were correlated at a range of 0.47 to 0.56 over time.

Finally, we employed a maternal report of their child's delinquency and their child's grades in school in the eighth-grade. Three parent-reported delinquency items were available in the eighth-grade. Items asked parents if the child cheats, if the child steals, and if the child fights. We used these three items to create a measure of child delinquency where higher values indicate more delinquent behavior (alpha = 0.53). In order to tap the child's progress in school, a parent-reported measure of the child's grade in school was included and coded as 1 = Mostly A's, 2 = Mostly B's, 3 = Mostly C's, 4 = Mostly D's, and 5 = Mostly F's.

School-related measures

School-related variables included items measuring enrollment size, the percent of students on free or reduced lunches, the racial composition of the school, and parent's opinion of the school. Again, due to the possibility of different discipline policies in private schools, the inability to examine key aspects of the school (such as percent of students on free or reduced lunch), and other complexities, only public schools were included in the analyses. School enrollment was coded as 1 = 0-149 students, 2 = 150-299 students, 3 = 300-499 students, 4 = 500-749 students, and 5 = 750 or more students. Regarding free and reduced lunches, there were separate variables for the percent (0-100%) of

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students on free lunches and the percent of students on reduced lunches. We combined these two variables by adding the percentages together and dividing by two. This variable measures the percent of students in the school on free or reduced lunches. The racial composition of the school was a categorical variable for the percent of black students in the school. ECLS-K staff coded this variable as 1 = <1%, 2 = 1- < 5%, 3 = 5- < 10%, 4 = 10- < 25%, and 5 = 25% or more black students in the school. Finally, a four-item scale of the parent's opinion of the school was included. Responses were scored 1 to 5 where 1 = Strongly Agree and 5 = Strongly Disagree. The four items asked parents if they thought their child's school is good, emphasizes learning, has an alcohol or drug problem, and if the school has a problem with violence. The last two items were reverse coded so that higher scores indicated more problems with the school (alpha = 0.75).

Control variables

Several demographic variables were included in the analysis. Race of the child was obtained through parent reports. We restricted our sample to focus on the white-black racial contrast only (0 = White and 1 = Black). Race of the eighth-grade teacher was also included and dichotomously coded as 0 = White and 1 = Black. The child's gender was dichotomously coded as 0 = Female and 1 = Male. Another measure included in the analysis was whether or not the child was on an individualized education program (IEP). Socioeconomic status was included as a control variable and was measured by two items: parent education and poverty level. The parent's level of education was measured with a scale ranging from 1-9, where 1 = A doctoral or professional degree and 9 = Eighth-grade education or below. The child's household level of poverty was measured simply as 0 = At or above the poverty threshold and 1 = Below the poverty threshold.

Analytical strategy

Since our outcome variable is measured as a dichotomy, we use logistic regression to analyze the data. Moreover, given that the data were clustered at the classroom level, we utilized robust standard errors to adjust for the clustering of observations. We first estimate an equation that seeks to replicate findings from other studies on black-white suspension differences – namely that blacks are suspended significantly more frequently than are whites, and that no set of variables used in prior studies can account for the racial gap in suspensions. The second equation then introduces our measure of prior problem behavior. The addition of the measure tests whether early, consistent problem behavior can account for the racial gap in suspensions. Next, we introduce a multiplicative interaction term between prior problem behavior and the measure of parent-reported child delinquency which was reported on during the eighth-grade year. The interaction, created through mean centering, assesses whether continuity in problem behavior elevates the logged odds of being suspended independent of the main terms. Finally, we conduct a separate within-race analysis involving the interaction term using a similar methodology.

Results

Table 1 shows the descriptive statistics for the analytical sample. The sample is 85.5% white and 14.5% black. Slightly over half the sample is male and 9% of students were on an IEP. Economically, 16.4% of the sample fell below the Federal standards for poverty status. The average school in the sample had 22% of youth who received a free or reduced lunch. Lastly, we note that 31% of blacks and 11% of whites had reported an out-of-school suspension in the study.

We first calculated the bivariate odds ratio for black youth being suspended compared to white youth. The odds ratio of 3.78 (Z = 14.14) (results not presented in table) is consistent with odds differentials reported in other datasets by varied authors by indicating black youth experience higher odds of suspension relative to white youth (see Skiba et al., 2000). The difference is statistically significant ($p < .001$) and substantive.

Table 1
Descriptive Statistics

	Percentage	Mean	Std. Deviation
Race		.144	.351
White	85.5		
Black	14.5		
Gender		.507	.500
Male	50.7		
Female	49.3		
IEP		.090	.286
Yes	9.0		
No	91.0		
Poverty Threshold		.164	.370
At or Above	83.6		
Below	16.4		
Teacher Race		.077	.267
White	92.3		
Black	7.7		
School Grades		1.69	.796
Parent's Education		4.78	1.98
School Enrollment Size		3.80	1.18
Percent Free/Reduced Lunch		22.31	15.66
"Bad" School		1.77	.623
Percent Black Enrollment		2.83	1.24
Parent-Reported Delinquency		1.08	.220
Prior Problem Behavior		12.67	1.83

Table 2 presents the results of the multivariate logistic regression of suspensions on our control variables. To remind the reader, we control for variables prior research has identified as important predictors of being suspended, including sex, the percentage of black students in a school, and concurrent delinquent behavior. In Model 1, the inclusion of these covariates reduced the odds ratio associated with the racial gap by 50%. While the inclusion of these covariates reduced in magnitude the race differences in suspensions, they did not account for the racial disparity in school suspensions. The adjusted odds ratio of 1.89 was statistically significant ($p < .001$) and showed that, even with controls for misbehavior included, black youth were 89% more likely to be suspended compared to white youth.

Other variables were also predictive of suspension. Males were more likely to be suspended than were females (OR = 2.67), youth with lower grades were more likely to be suspended (OR = 1.69), youths who resided in schools their parents perceived as poorly functioning were more likely to be suspended (OR = 1.51), as were youth who had attended schools with a relatively higher percentage of blacks (OR = 1.22). Even so, the strongest predictor of being suspended was the parent report of delinquent behavior (OR = 6.83, Z = 8.65).

Model 2 in Table 2 contains the results of our logistic regression analyses that include the measure of teacher-reported prior problem behavior. We first note that the estimate of prior problem behavior was statistically significant (Z = 6.66, $p < .001$) with an odds ratio of 1.30. The inclusion of the measure of prior problem behavior, more importantly, completely accounted for the black-white differentials in suspensions, reducing the odds ratio for race to 1.20 (Z = .80). The magnitude of the effect of prior problem behavior, moreover, largely paralleled that associated with the measure of current delinquency (Z = 6.21).

Model 3 in Table 2 extends the analysis presented in Model 2 by including a centered, multiplicative interaction term. The term tests whether those youth who had high levels of problem behavior early in life and who also scored high on the measure of contemporaneous delinquency were significantly more likely to be suspended. The results of this analysis shows that not only were the main effects of prior problem behavior and current delinquency significant, so too was the interaction term. Students who scored high on the prior problem behavior measure *and* on the parent-reported delinquency measure were more

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Table 2
Logistic Regression of Suspensions on Independent Variables for White/Black Differences

	Model 1: Baseline			Model 2: Inclusion of Prior Problem Behavior (PPB)			Model 3: Interaction of Delinquency and PPB		
	N = 4,101			N = 2,737			N = 2,737		
	OR	Z	RSE	OR	Z	RSE	OR	Z	RSE
Race (0 = White, 1 = Black)	1.89	3.66	.331***	1.20	0.80	.285	1.18	0.73	.276
Gender (0 = Female, 1 = Male)	2.67	8.82	.298***	2.14	5.26	.309***	2.15	5.28	.312***
School Grades	1.69	8.21	.109***	1.50	4.63	.133***	1.48	4.52	.131***
IEP (0 = No, 1 = Yes)	1.04	0.32	.161	.895	-0.55	.181	.927	-0.38	.181
Parent's Education	1.06	1.78	.036	1.09	2.09	.046*	1.09	2.07	.046*
Poverty (0 = At or Above, 1 = Below)	1.03	0.19	.157	.854	-0.74	.180	.853	-0.76	.177
School Enrollment Size	1.05	0.87	.062	1.14	1.76	.088	1.13	1.69	.087
Percent Free/Reduced Lunch	1.00	1.34	.005	1.00	0.47	.006	1.00	0.40	.006
"Bad" School	1.51	4.85	.130***	1.65	4.81	.173***	1.64	4.79	.171***
Percent Black Enrollment	1.22	3.48	.070**	1.28	3.57	.091***	1.29	3.60	.092***
Teacher Race (0 = White, 1 = Black)	.964	-0.19	.187	.911	-0.32	.262	.902	-0.36	.258
Parent-Reported Delinquency	6.83	8.65	1.51***	7.08	6.21	2.23***	12.7	6.81	4.75***
Prior Problem Behavior	-	-	-	1.30	6.66	.052***	1.33	7.06	.053***
Interaction	-	-	-	-	-	-	1.40	2.51	.189*

*** p < 0.001.
** p < 0.01.
* p < 0.05.

likely to be suspended compared to students who scored relatively low on any one measure. These results provide further evidence that early misbehavior is tied to later misbehavior and, in turn, that misbehavior is tied to school suspensions.

We note that the inclusion of the interaction term was associated with a substantive increase in the odds ratio and standard error connected to the measure of parent reported delinquency. We checked the correlation matrix and variance inflation factors to verify that no problems with collinearity existed. No significant problems were detected and no variable in the full model had a VIF value that reached 2 (mean VIF = 1.34). Nonetheless, we note that the increase in the odds ratio associated with the measure of delinquency provides further evidence that student misbehavior is likely at the crux of suspension decisions.

Table 3 presents the results of our within-race analyses. Looking first at white students in Model 1, we find that being male, having poorer school grades, parental education, parental evaluation of the school, and the percent black enrollment in the school each significantly predicted being suspended. The largest effect, however, was still attributed to parent-reported delinquency and, to a slightly lesser extent, the measure of prior problem behavior.

Model 2 presents the results for black students. We first note that the sample size for black students dropped from N = 527 to N = 289. This reduction was associated with the inclusion of the measure of prior problem behavior. That said, being male and parental evaluation of the school were each predictive of suspensions for blacks. Again, however, the largest effect was generated by the delinquency measure while the measure of prior problem behavior retained statistical significance.

We also note that we attempted to include a multiplicative interaction term into the within race analyses. For whites and for blacks, the centered interaction term was significant, but the odds ratio and the standard error associated with the delinquency measure for blacks increased substantially. Collinearity analyses revealed substantive collinearity only within the black sub-sample. The delinquency measure includes items that could result in a suspension if the behavior occurred at school. If behavioral problems are more concentrated among black students, as the data so far suggest, then collinearity may be a byproduct. To test this we conducted a t-test on the parent-reported delinquency measure. The t-test revealed substantive and significant differences in the average levels of parent-reported delinquency with blacks scoring over a third of a standard deviation higher than whites (t = 7.21, p < .001, standardized mean difference = .36).

To further examine the association between continuity in prior problem behavior and suspensions, we standardized the measure of prior problem behavior and school suspensions and plotted the corresponding values by race. The results are shown in Fig. 1. The association between prior problem behavior, suspensions, and race is clear. Whites show the lowest levels of prior problem behavior (Z = -0.14) and suspensions (Z = -0.08), and blacks show the highest levels of prior problem behavior (Z = 0.44) and school suspensions (Z = 0.52). These estimates are unadjusted for other covariates.

Table 3
Logistic Regression of Suspensions on Independent Variables for Within Races

	Model 1: Within Whites			Model 2: Within Blacks		
	N = 2,448			N = 289		
	OR	Z	RSE	OR	Z	RSE
Gender (0 = Female, 1 = Male)	1.93	4.15	.306***	3.61	3.70	1.25***
School Grades	1.54	4.32	.155***	1.32	1.42	.263
IEP (0 = No, 1 = Yes)	.803	-0.93	.188	1.60	1.15	.659
Parent's Education	1.12	2.54	.053*	.882	-1.09	.101
Poverty (0 = At or Above, 1 = Below)	.788	-0.81	.231	1.25	0.65	.439
School Enrollment Size	1.11	1.24	.099	1.29	1.69	.199
Percent Free/Reduced Lunch	1.00	0.53	.007	1.00	0.11	.015
"Bad" School	1.65	4.30	.195***	1.81	2.68	.401**
Percent Black Enrollment	1.28	3.34	.095**	1.33	1.20	.326
Teacher Race (0 = White, 1 = Black)	1.47	1.07	.540	.641	-1.02	.279
Parent-Reported Delinquency	5.77	4.53	2.23***	14.5	4.62	8.38***
Prior Problem Behavior	1.32	6.19	.059***	1.27	2.46	.124*

*** p < 0.001.
** p < 0.01.
* p < 0.05.

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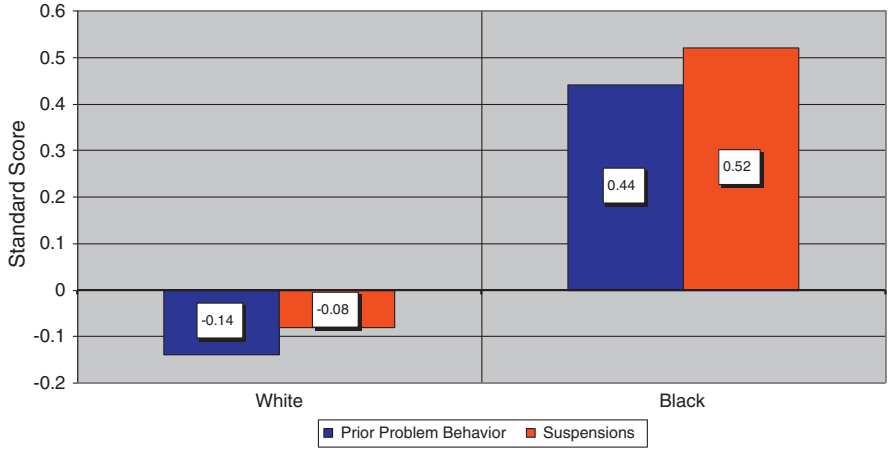

Fig. 1. Mean Comparison of Prior Problem Behavior and Suspensions by Race.

Discussion

Consistent with forty years of social science findings, data from the ECLS-K revealed that black youth are suspended at rates significantly higher than those of white youth. Moreover, the effect remained statistically significant even with contemporaneous measures of youthful misbehavior in the model along with controls for a host of other theoretically relevant factors such as individual-level socioeconomic status and school-level measures of school quality. This general pattern has been found in a variety of datasets covering various time periods and school districts. The consistency in findings showing black youth are suspended more often than white youth and that the relationship cannot be accounted for by differences in problem behavior between white and black children has invited several explanations. Chief amongst these explanations is that cultural bias harbored by teachers and school officials influences the subjective appraisals of the behavior of white and black students in a way that penalizes black youth (McCarthy & Hoge, 1987; Moore, 2002; Payne & Welch, 2010; Skiba et al., 2000; Townsend, 2000).

Capitalizing on the longitudinal nature of the ECLS-K, and drawing on a rich body of studies into the stability of early problem behavior, we examined whether measures of prior problem behavior could account for the differences in suspension between both whites and blacks. The results of these analyses were straightforward: The inclusion of a measure of prior problem behavior reduced to statistical insignificance the odds differentials in suspensions between black and white youth. Thus, our results indicate that odds differentials in suspensions are likely produced by pre-existing behavioral problems of youth that are imported into the classroom, that cause classroom disruptions, and that trigger disciplinary measures by teachers and school officials. Differences in rates of suspension between racial groups thus appear to be a function of differences in problem behaviors that emerge early in life, that remain relatively stable over time, and that materialize in the classroom (Broidy et al., 2003; Campbell, Shaw, & Gilliom, 2000; Kingston & Prior, 1995; Tremblay, Pihl, Vitaro, & Dobkin, 1994).

To further investigate the connection between continuity in problem behavior and later school suspensions, we introduced a multiplicative interaction term into our statistical model. The term also reached conventional levels of statistical significance, again providing evidence of a measurable and meaningful connection between early and later problem behavior and school suspensions: children with the highest levels of prior *and* current problem behavior had greater odds of suspension than other students in the sample.

We believe our results speak to the current debate about the influence of race on school suspensions. First, prior studies have not adequately measured or considered the influence of time-stable problem behaviors that are imported into classrooms by children. It is well documented, for example, that black youth are less academically prepared for school entrance and suffer from a greater range of social, emotional, and behavioral disadvantages than white or Asian youth (Beaver et al., 2011; Kao, 1995; Kao & Thompson, 2003; Magnuson & Waldfogel, 2005; Murnane et al., 2006; Sadowski, 2006; Schneider & Lee, 1990). More importantly, a large body of research also shows that early behavioral problems can remain remarkably stable over time, place, and situation (Beaver, Wright, DeLisi, & Vaughn, 2008; Caspi et al., 2003; Donker, Smeenk, van der Laan, & Verhulst, 2003; Haberstick, Schmitz, Young, & Hewitt, 2006). Continuity in problem behavior thus has the potential to account for a range of outcomes associated with misbehavior – outcomes such as school suspensions.

Additionally, our findings are supportive of a broader literature that has continued to examine and to account for racial disparities in other areas, including the criminal justice system (see DeLisi, 2011). For instance, recent research by Beaver et al. (2013) examined the extent to which the racial gap in criminal justice processing could be closed by two factors: IQ and self-reported violent behavior. Similar to prior studies, Beaver et al. (2013) found that black males were more likely to be arrested and incarcerated than white males. However, the racial gap in criminal justice processing was accounted for by self-reported lifetime violent behavior and IQ. Other studies, too, have shown that differential behavior often produces differential criminal justice outcomes. For example, it is now well known that black drivers are stopped more often than white drives. The phenomenon of "driving while black," was examined extensively by Tillyer and Engel (2012) who reported that black drivers not only speed more often than whites, but that they do so more severely which may help to partially explain disproportionate minority contact during traffic stops. Findings from additional studies have also revealed that minority race is an inconsistent factor in court processing, in juvenile justice processing outcomes, and in criminal sentencing (Caudill, Morris, El Sayed, Yun, & DeLisi, 2013; Guevara, Herz, & Spohn, 2008; Klein, Petersilia, & Turner, 1990; Leiber & Johnson, 2008).

Second, while our results await replication we believe it important to raise a disturbing possibility. As we pointed out in the introduction to this paper, numerous authors, interest groups, and government agencies including the Department of Justice, have used the racial differential in suspension rates as *prima facie* evidence of teacher or school district bias against black youth. Indeed, great liberties have been taken in linking racial differences in suspensions to the racial discrimination. Nowhere is this more evident than in the rhetoric surrounding the "school-to-prison pipeline" (American Civil Liberties Union, 2013; Children's Defense Fund, 2012; NAACP Legal Defense and Educational Fund, 2013; Wald & Losen, 2003). Yet it is entirely possible that the body of evidence and the conclusions drawn from the evidence on racial differences in school suspensions represents not the sum

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total of rigorous scientific analysis but the process of confirmation bias (Nickerson, 1998).

As Nickerson (1998) notes, confirmation bias occurs not only when scholars give too much weight to select findings but also when they provide too little by way of critical analyses. Our findings hint at this possibility, especially when juxtaposed against the clear motivations of some scholars and activists to frame race differences in school suspensions as only a matter of discrimination or cultural bias, and especially when framed as a civil rights issue with all the corresponding threats of litigation by the federal government. Under these circumstances, where careers are advanced, where reputations are earned, and where the "working ideology" of scholars is confirmed, the usual critical and cautionary sway of scholarly investigation, critique, and insight becomes marginalized or usurped.

Limitations

Our study, like others, faces a series of limitations. First, the vast majority of prior studies on school discipline have focused exclusively on black-white differences in the odds of being suspended. Other racial contrasts have not been examined, perhaps because such analyses require very large sample sizes or because scholars have simply only been interested in black-white differences. We attempted to use the ECLS-K to examine the Asian-white contrast in suspensions, however, even the ECLS-K has too few Asian students for analysis, especially too few who have been suspended from school.

Second, readers may question whether our measure of prior problem behavior, which was assessed through teacher reports, is endogenous with the outcome variable. From a labeling perspective, a theoretical possibility arises that teachers may label students as "problem children" in the early years and that the label may then "stick" to youth as they progress through elementary and middle-school grades. While we cannot rule out this possibility empirically – indeed after much careful thought, it was concluded that there is no obvious way to control for this possibility in a statistical model – we do not believe it is logically feasible. Our measures of early problem behavior, for example, were assessed by independent teachers from kindergarten through the third-grade. The suspension measure was assessed by parents, however, in the eighth-grade – a difference of five years. During those five years, students transferred from elementary to middle-school, and some may have moved from one elementary school to another, thus making it highly doubtful that the eighth-grade teachers or principals were even aware of a youth's kindergarten and primary grade teachers and, furthermore, those teachers' assessment of the child's behavior. Moreover, in many schools the decision to suspend a youth is made by an administrator or principal – and not necessarily a teacher. Nonetheless, future studies should better account for the possibility of labeling effects. One possibility would be to *only* assess students who change schools for reasons other than their behavior. If prior problem behavior – that would have occurred at a different school – continues to explain away the race gap in suspension, then the results and conclusions from the current study will be supported. Note that even this approach is imperfect given that disciplinary records may follow children from school-to-school.

Third, our measures of school suspensions and delinquency were relatively limited. It is indeed odd that a large educational dataset such as the ECLS-K would contain so few questions relevant to school conduct, problem behavior, and school discipline. Future studies should include more rigorous measures of these constructs.

Finally, sample attrition was substantial. We undertook numerous analyses to verify that attrition did not substantively influence the pattern of results we reported. Missing data analyses, including various imputation techniques, failed to alter the results. That said, our analyses did find that black youth who scored highest on early measures of problem behavior were significantly less likely to be retained in the sample over time. Non-random attrition correlated with problem behavior is common in longitudinal studies, especially in samples of urban minorities who tend to relocate frequently. Nonetheless, even when we controlled for missing data and when we employed imputation, the results did not change. Future studies, however, should carefully consider non-random sample attrition.

Conclusions

The focus on racial disproportionality in school discipline has drawn attention to factors within the control of school officials that could reduce, but not necessarily eliminate, suspension differentials. Even so, the focus on racial dissimilarity in school discipline may have also drawn attention away from youth who show early patterns of disruptive and unregulated behavior. These emerging behavioral patterns can become highly stable ways of interacting – ways of interacting that elevate the likelihood of school discipline, school failure, and dropping out of school later in life (French & Conrad, 2001; Hamre & Pianta, 2001; Loeber, 1982; Loeber & Dishion, 1983; Parker & Asher, 1987). These analyses show that early and prolonged problem behavior accounts for the racial gap in suspensions and thus should be used to take more seriously the presentation of problem behavior early in life and in the scholastic career.

Lastly, we remain agnostic on the appropriateness of suspending students from school as a means of discipline. The use of suspensions may, or may not, be an advisable, useful, and meaningful disciplinary mechanism. Indeed, other forms of discipline may be more effective in controlling the behavior of difficult children. The present study does not speak to these effects. However, research has indicated that students who are suspended at the secondary school level are over five times more likely to be charged with a violent crime as an adult (Katsiyannis, Thompson, Barrett, & Kingree, 2012). Ways to mitigate this outcome remain unclear because disciplinary and administrative policies are likely to vary from school to school (Kinsler, 2011). Despite this, we note in our analysis that schools rated as more troublesome by parents remain a significant predictor of suspensions for both races, as well as poor academic achievement for whites. As a result, schools utilizing proactive measures to identify and intervene early with at-risk youth, especially males, or those that attempt to foster positive community relations by involving parents, may show some success (Cornell, Gregory, & Fan, 2011; Ryan, Katsiyannis, Peterson, & Chmelar, 2007).

Nonetheless, we are wary of strongly advocating for large-scale social programs like Head Start that target disadvantaged youth. Although well-intended, these services have failed to significantly affect the long-term cognitive and behavioral outcomes of children during their transition from pre-school to elementary school and, in some cases, may have negatively affected them (Puma et al., 2012). Thus, further studies that examine the context of the school, the student body, and the community may help to shed light on whether the "school-to-prison pipeline" has a true disparate racial impact or whether the use of harsher discipline policies is merely a response to higher levels of delinquency and disorder. Our results suggest, however, that the association between school suspensions and blacks and whites reflects long-standing behavioral differences between youth and that, at least in the aggregate, the use of suspensions may not be as racially biased as many have argued.

References

American Civil Liberties Union (2013). School-to-prison pipeline. Retrieved from. http://www.aclu.org/racial-justice/school-prison-pipeline

Beaver, K. M., DeLisi, M., Wright, J. P., Boutwell, B. B., Barnes, J. C., & Vaughn, M. G. (2013). No evidence of racial discrimination in criminal justice processing: Results from the National Longitudinal Study of Adolescent Health. *Personality and Individual Differences*, *55*, 29–34.

Beaver, K. M., & Wright, J. P. (2007). The stability of low self-control from kindergarten through first grade. *Journal of Crime and Justice*, *30*, 63–86.

Beaver, K. M., Wright, J. P., & DeLisi, M. (2011). The racist teacher revisited: Race and social skills in a nationally representative sample of American children. In Frank Columbus (Ed.), *Classrooms: Management, effectiveness, and challenges*. New York, NY: Nova Science Publishers.

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Beaver, K. M., Wright, J. P., DeLisi, M., & Vaughn, M. G. (2008). Genetic influences on the stability of low self-control: Results from a longitudinal sample of twins. *Journal of Criminal Justice*, *36*, 478–485.

Broidy, L. M., Nagin, D. S., Tremblay, R. E., Bates, J. E., Brame, B., Dodge, K. A., et al. (2003). Developmental trajectories of childhood disruptive behaviors and adolescent delinquency: A six-site, cross-national study. *Developmental Psychology*, *39*(2), 222.

Brooks-Gunn, J., & Markman, L. (2005). The contribution of parenting to ethnic and racial gaps in school readiness. *The Future of Children*, *15*(1), 139–168.

Cairns, R. B., & Cairns, B.D. (1994). *Lifelines and risks: Pathways of youth in our time.* New York: Cambridge University Press.

Campbell, S. B., Shaw, D. S., & Gilliom, M. (2000). Early externalizing behavior problems: Toddlers and preschoolers at risk for later maladjustment. *Development and Psychopathology*, *12*(3), 467–488.

Caspi, A., Harrington, H., Milne, B., Amell, J. W., Theodore, R. F., & Moffitt, T. E. (2003). Children's behavioral styles at age 3 are linked to their adult personality traits at age 26. *Journal of Personality*, *71*(4), 495–513.

Caudill, J. W., Morris, R. G., El Sayed, S., Yun, M., & DeLisi, M. (2013). Pathways through the juvenile justice system: Predictors of formal disposition. *Youth Violence and Juvenile Justice*, *11*, 183–195.

Children's Defense Fund (1975). *School suspensions: Are they helping children?* Cambridge, MA: Washington Research Project.

Children's Defense Fund (2012). Cradle-to-prison pipeline campaign. Retrieved from. http://www.childrensdefense.org/programs-campaigns/cradle-to-prison-pipeline/

Christle, C., Nelson, C. M., & Jolivette, K. (2004). School characteristics related to the use of suspension. *Education and Treatment of Children*, *27*(4), 509–529.

Cornell, D.G., Gregory, A., & Fan, X. (2011). Reductions in long-term suspensions following adoption of the Virginia Student Threat Assessment Guidelines. *NASSP Bulletin*, *95*(3), 175–194.

Costenbader, V., & Markson, S. (1994). School suspension: A survey of current policies & practices. *NASSP Bulletin*, *78*, 103–107.

DeLisi, M. (2011). Where is the evidence for racial profiling? *Journal of Criminal Justice*, *39*(6), 461–462.

DeLisi, M., & Regoli, B. (1999). Race, conventional crime, and criminal justice: The declining significance of skin color. *Journal of Criminal Justice*, *27*, 549–558.

Delisle, D. (2012, December 12). *Testimony of Deborah Delisle, Assistant Secretary, Office of Elementary and Secondary Education, U.S. Department of Education.* Testimony before the Subcommittee on the Constitution, Civil Rights and Human Rights of the U.S. Senate Committee on the Judiciary (Retrieved from http://www.judiciary.senate.gov/pdf/12-12-12DelisleTestimony.pdf)

Demaray, M. K., Ruffalo, S. L., Carlson, J., & Busse, R. T. (1995). Social skills assessment: A comparative evaluation of six published rating scales. *School Psychology Review*, *24*(4), 648–671.

Donker, A. G., Smeenk, W. H., van der Laan, P. H., & Verhulst, F. C. (2003). Individual stability of antisocial behavior from childhood to adulthood: Testing the stability postulate of Moffitt's developmental theory. *Criminology*, *41*(3), 593–609.

Earls, F. J. (1994). Violence and today's youth. *The Future of Children*, 4–23.

Eitle, T. M., & Eitle, D. J. (2004). Inequality, segregation, and the overrepresentation of African Americans in school suspensions. *Sociological Perspectives*, *47*, 269–287.

Elliott, D. S. (1994). Serious violent offenders: Onset, developmental course, and termination. *Criminology*, *32*, 1–21.

Fenning, P., & Rose, J. (2007). Overrepresentation of African American students in exclusionary discipline: The role of school policy. *Urban Education*, *42*(6), 536–559.

French, D. C., & Conrad, J. (2001). School dropout as predicted by peer rejection and antisocial behavior. *Journal of Research on Adolescence*, *11*(3), 225–244.

Gordon, R., Della Piana, L., & Keleher, T. (2000). *Facing the consequences: An examination of racial discrimination in U.S. public schools.* Oakland, CA: Applied Research Center.

Gregory, J. F. (1995). The crime of punishment: Racial and gender disparities in the use of corporal punishment in U.S. public schools. *The Journal of Negro Education*, *64*(4), 454–462.

Gregory, A., Cornell, D., & Fan, X. (2011). The relationship of school structure and support to suspension rates for black and white high school students. *American Educational Research Journal*, 1–31.

Gregory, A., Skiba, R., & Noguera, P. (2010). The achievement gap and the discipline gap: Two sides of the same coin? *Educational Researcher*, *39*, 59–68.

Gresham, F. M., & Elliott, S. N. (1990). *Social skills rating system.* Minneapolis, MN: NCS Pearson.

Guevara, L., Herz, D., & Spohn, C. (2008). Race, gender, and legal counsel: Differential outcomes in two juvenile courts. *Youth Violence and Juvenile Justice*, *6*(1), 83–104.

Haberstick, B. C., Schmitz, S., Young, S. E., & Hewitt, J. K. (2006). Genes and developmental stability of aggressive behavior problems at home and school in a community sample of twins aged 7-12. *Behavioral Genetics*, *36*, 809–819.

Hamre, B. K., & Pianta, R. C. (2001). Early teacher–child relationships and the trajectory of children's school outcomes through eighth grade. *Child Development*, *72*(2), 625–638.

Hawkins, D. F., Laub, J. H., & Lauritsen, J. L. (1998). Race, ethnicity, and serious juvenile offending. In R. Loeber, & D. P. Farrington (Eds.), *Serious and violent juvenile offenders: Risk factors and successful interventions (pg* (pp. 30–46). Thousand Oaks, CA: Sage.

Herrnstein, R. J., & Murray, C. (1994). *The bell curve: Intelligence and class structure in American life.* New York: Free Press.

Hinojosa, M. S. (2008). Black-white differences in school suspension: Effect on student beliefs about teachers. *Sociological Spectrum*, *28*, 175–193.

Holder, E., & Duncan, A. (2011, July 21). Effort to respond to school-to-prison pipeline by supporting good discipline practices [Press release]. Retrieved from. http://www.justice.gov/opa/pr/2011/July/11-ag-951.html

Kao, G. (1995). Asian Americans as model minorities? A look at their academic performance. *American Journal of Education*, *103*(2), 121–159.

Kao, G., & Thompson, J. S. (2003). Racial and ethnic stratification in educational achievement and attainment. *Annual Review of Sociology*, *29*, 417–442.

Katsiyannis, A., Thompson, M. P., Barrett, D. E., & Kingree, J. B. (2012). School predictors of violent criminality in adulthood: Findings from a nationally representative longitudinal study. *Remedial and Special Education*, *34*(4), 205–214.

Kingston, L., & Prior, M. (1995). The development of patterns of stable, transient, and school-age onset aggressive behavior in young children. *Journal of the American Academy of Child & Adolescent Psychiatry*, *34*(3), 348–358.

Kinsler, J. (2011). Understanding the black-white school discipline gap. *Economics of Education Review*, *30*(6), 1370–1383.

Klein, S., Petersilia, J., & Turner, S. (1990). Race and imprisonment decisions in California. *Science*, *247*(4944), 812–816.

Lamont, A., & Van Horn, M. L. (2013). Heterogeneity in parent-reported social skill development in early elementary school children. *Social Development*, *22*(2), 384–405.

Leiber, M. J., & Johnson, J.D. (2008). Being young and black: What are their effects on Juvenile justice decision making? *Crime & Delinquency*, *54*(4), 560–581.

Loeber, R. (1982). The stability of antisocial and delinquent child behavior: A review. *Child Development*, 1431–1446.

Loeber, R., & Dishion, T. (1983). Early predictors of male delinquency: A review. *Psychological Bulletin*, *94*(1), 68.

Losen, D. J., & Skiba, R. J. (2010). *Suspended education: Urban middle schools in crisis.* Montgomery, AL: Southern Poverty Law Center (http://www.splcenter.org/get-informed/publications/suspended-education)

Lynn, R. (2009). Race differences in school exclusions and anti-social behavior. *Mankind Quarterly*, *L*(1&2), 95–105.

Lyon, M.A., Albertus, C., Birkinbine, J., & Naibi, J. (1996). A validity study of the social skills rating system-teacher version with disabled and nondisabled preschool children. *Perceptual and Motor Skills*, *83*, 307–316.

Magnuson, K. A., & Waldfogel, J. (2005). Early childhood care and education: Effects on ethnic and racial gaps in school readiness. *The Future of Children*, *15*(1), 169–196.

McCarthy, J.D., & Hoge, D. R. (1987). The social construction of school punishment: Racial disadvantage out of universalistic process. *Social Forces*, *65*, 1101–1120.

McFadden, A.C., Marsh, G. E., Price, B. J., & Hwang, Y. (1992). A study of race and gender bias in the punishment of handicapped school children. *Urban Review*, *24*, 239–251.

Moore, A. L. (2002). African-American early childhood teachers' decisions to refer African-American students. *International Journal of Qualitative Studies in Education*, *15*, 631–652.

Morrison, G. M., Anthony, S., Storino, M., & Dillon, C. (2001). An examination of the disciplinary histories and the individual and educational characteristics of students who participate in an in-school suspension program. *Education & Treatment of Children*, *24*(3), 276–293.

Murnane, R. J., Willett, J. B., Bub, K. L., McCartney, K., Hanushek, E., & Maynard, R. (2006). Understanding trends in the black-white achievement gaps during the first years of school [with comments]. *Brookings-Wharton Papers on Urban Affairs*, 97–135.

NAACP Legal Defense and Educational Fund (2013). School to prison pipeline. Retrieved from. http://www.naacpldf.org/case/school-prison-pipeline

Nickerson, R. S. (1998). Confirmation bias: A ubiquitous phenomenon in many guises. *Review of General Psychology*, *2*, 175–220.

Parker, J. G., & Asher, S. R. (1987). Peer relations and later personal adjustment: Are low-accepted children at risk? *Psychological Bulletin*, *102*(3), 357.

Paschall, M. J., Flewelling, R. L., & Ennett, S. T. (1998). Racial differences in violent behavior among young adults: Moderating and confounding effects. *Journal of Research in Crime and Delinquency*, *35*, 148–165.

Payne, A. A., & Welch, K. (2010). Modeling the effects of racial threat on punitive and restorative school discipline practices. *Criminology*, *48*, 1019–1062.

Perez, T. (2010, September 27). *Address at Civil Rights and School Discipline: Addressing Disparities to Ensure Equal Educational Opportunities Conference*. U.S. Departments of Justice & Education (Retrieved from http://www.justice.gov/crt/speeches/perez_eosconf_speech.php)

Pratt, T. C., & Cullen, F. T. (2000). The empirical status of Gottfredson and Hirschi's general theory of crime: A meta-analysis. *Criminology*, *38*(3), 931–964.

Puma, M., Bell, S., Cook, R., Heid, C., Broene, P., Jenkins, F., et al. (2012). Third grade follow-up to the Head Start Impact Study: Final report, executive summary. *OPRE Report 2012-45b.* Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

Raffaele Mendez, L. M., Knoff, H. M., & Ferron, J. M. (2002). School demographic variables and out-of-school suspension rates: A quantitative and qualitative analysis of a large, ethnically diverse school district. *Psychology in the Schools*, *39*(3), 259–277.

Rocque, M. (2010). Office discipline and student behaviors: Does race matter? *American Journal of Education*, *116*(4), 557–581.

Rocque, M., & Paternoster, R. (2011). Understanding the antecedents of the school-to-jail link: The relationship between race and school discipline. *Journal of Criminal Law & Criminology*, *101*(2), 633–665.

Ryan, J. B., Katsiyannis, A., Peterson, R., & Chmelar, R. (2007). IDEA 2004 and disciplining students with disabilities. *NASSP Bulletin*, *91*(2), 130–140.

Sadowski, M. (2006). The school readiness gap. *Harvard Education Letter*, *22*(4), 4–7.

Schneider, B., & Lee, Y. (1990). A model for academic success: The school and home environment of East Asian students. *Anthropology & Education Quarterly*, *21*(4), 358–377.

Shaw, S. R., & Braden, J. P. (1990). Race and gender bias in the administration of corporal punishment. *School Psychology Review*, *19*, 378–383.

Skiba, R. J., Michael, R. S., & Nardo, A.C. (2000). *The color of discipline: Sources of racial and gender disproportionality in school punishment (Policy research report No. SrS1).* Bloomington: Indiana Education Policy Center.

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Skiba, R. J., Michael, R. S., Nardo, A.C., & Peterson, R. L. (2002). The color of discipline: Sources of racial and gender disproportionality in school punishment. *Urban Review, 34*, 317–342.

Snyder, H. N., & Sickmund, M. (1999). *Juvenile Offenders and Victims: A National Report.* Washington, DC: US Department of Justice, Office of Juvenile Justice and Delinquency Prevention.

Tenenbaum, H. R., & Ruck, M.D. (2007). Are teachers' expectations different for racial minority than for European American students? A meta-analysis. *Journal of Educational Psychology, 99*(2), 253–273.

Tillyer, R., & Engel, R. S. (2012). Racial differences in speeding patterns: Exploring the differential offending hypothesis. *Journal of Criminal Justice, 40*(4), 285–295.

Tobin, T., Sugai, G., & Colvin, G. (1996). Patterns in middle school discipline records. *Journal of Emotional and Behavioral Disorders, 4*(2), 82–94.

Townsend, B.L. (2000). The disproportionate discipline of African American learners: Reducing school suspensions and expulsions. *Exceptional Children, 66*(3), 381–391.

Tremblay, R. E., Pihl, R. O., Vitaro, F., & Dobkin, P. L. (1994). Predicting early onset of male antisocial behavior from preschool behavior. *Archives of General Psychiatry, 51*(9), 732.

Vaughn, M. G., DeLisi, M., Beaver, K. M., & Wright, J. P. (2009). Identifying latent classes of behavioral risk based on early childhood manifestations of self-control. *Youth Violence and Juvenile Justice, 7*, 16–31.

Wald, J., & Losen, D. F. (2003). Defining and redirecting a school-to-prison pipeline. *New Directions for Youth Development*(99), 9–15.

Wallace, J. M., Jr., Goodkind, S. G., Wallace, C. M., & Bachman, J. (2008). Racial, ethnic and gender differences in school discipline among American high school students: 1991-2005. *Negro Educational Review, 59*, 47–62.

Welch, K., & Payne, A. A. (2010). Racial threat and punitive school discipline. *Social Problems, 57*, 25–48.

Welch, K., & Payne, A. A. (2012). Exclusionary school punishment: The effect of racial threat on expulsion and suspension. *Youth Violence and Juvenile Justice, 11*(2), 155–171.

Wilson, W. J. (1987). *The truly disadvantaged.* Chicago: University of Chicago Press.

Wright, J. P., & Beaver, K. M. (2005). Do parents matter in creating self-control in their children? A genetically informed test of Gottfredson and Hirschi's theory of low self-control. *Criminology, 43*, 1169–1202.

Wu, S.C., Pink, W. T., Crain, R. L., & Moles, O. (1982). Student suspension: A critical reappraisal. *The Urban Review, 14*, 245–303.

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