

The Relative Contribution of Subjective Office Referrals to Racial Disproportionality in School Discipline

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To improve our understanding of where to target interventions, the study examined the extent to which school discipline disproportionality between African American and White students was attributable to racial disparities in teachers' discretionary versus nondiscretionary decisions. The sample consisted of office discipline referral (ODR) records for 1,154,686 students enrolled in 1,824 U.S. schools. Analyses compared the relative contributions of disproportionality in ODRs for subjectively and objectively defined behaviors to overall disproportionality, controlling for relevant school characteristics. Results showed that disproportionality in subjective ODRs explained the vast majority of variance in total disproportionality. These findings suggest that providing educators with strategies to neutralize the effects of implicit bias, which is known to influence discretionary decisions and interpretations of ambiguous behaviors, may be a promising avenue for achieving equity in school discipline.

Keywords: equity, school discipline, disproportionality, implicit bias

In the United States, racial and ethnic minority students, particularly African Americans, are sent to the office, suspended, and expelled at disproportionately high rates compared to their White counterparts (Losen, Hodson, Keith, Morrison, & Belway, 2015; Raffaele Mendez & Knoff, 2003; Skiba et al., 2011). Further, converging evidence shows these disparities cannot be explained by different rates of problem behavior of minority compared to White students

(Bradshaw, Mitchell, O'Brennan, & Leaf, 2010; Losen & Skiba, 2010; Skiba et al., 2011; Skiba, Michael, Nardo, & Peterson, 2002).

Disproportionate exclusionary discipline is particularly problematic because of exclusionary discipline's contribution to negative student outcomes (American Academy of Pediatrics Council on School Health, 2013). Skiba and Sprague (2008) described exclusionary discipline practices as "a devil's bargain" (p. 39) in which teachers' efforts to improve student behavior and the classroom environment ultimately produces the opposite result. Students who experience higher rates of exclusionary discipline are often *more likely* to continue to receive future discipline, drop out of school, and enter the juvenile justice system than students who experience lower rates of exclusionary discipline (Ekstrom, Goertz, Pollack, & Rock, 1986; Nicholson-Crotty, Birchmeier, & Valentine, 2009; Tobin, Sugai, & Colvin, 1996). Further, schools with high rates of suspension have lower academic quality, poorer school climate, and receive lower ratings on school governance than schools with low rates of suspension (American Psychological Association, 2006).

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Indeed, the use of suspension has been shown to actually increase the rate of future suspensions in school settings (Atkins et al., 2002).

Exclusionary discipline practices are generally more costly, and less effective, than alternative forms of discipline (American Academy of Pediatrics Council on School Health, 2013). School-wide positive behavioral interventions and supports (SWPBIS), for example, has been shown to reduce overall rates of office discipline referrals (ODRs), suspensions, and expulsions, as well as significantly decrease the racial discipline gap (Vincent, Swain-Bradway, Tobin, & May, 2011). It has not, however, been sufficient to eliminate disproportionality entirely (Vincent et al., 2011; Vincent & Tobin, 2011).

Disproportionality Is Multifaceted

Morrison and Skiba (2001) proposed that disproportionality is not simply the result of intentional discrimination. Instead, disproportionality more likely occurs from complex interactions between features of a student's environment, including (a) the specificity of type of infraction (i.e., subjectively defined vs. objectively defined behavior), (b) student characteristics (e.g., race, ethnicity, disability status), and (c) environmental characteristics (e.g., school climate, classroom structure; Skiba et al., 2014). Okonofua, Walton, and Eberhardt (2016) similarly suggested that disproportionality is not attributable to either students or teachers but results from a transactional process between them. Stereotypes bias teachers' perceptions about which students represent the most significant threat to their desire to be respected, leading to disproportionate discipline. Students, in turn, sense that the discipline disparities are unjust and have their own concerns about stereotypes impeding their educational goals, which causes them to be less willing to engage with school or comply with behavioral expectations, thus reinforcing teachers' concerns and increasing disproportionality.

Recently, we (McIntosh, Girvan, Horner, Smolkowski, & Sugai, 2014) proposed a multifaceted intervention approach to improving student outcomes. It recognizes that distinct strategies are needed for different elements of the problem. First, to reduce the racial achievement gap, we recommended use of effective aca-

demical instruction practices (Chaparro, Nese, & McIntosh, 2015; Hattie, 2009). Second, to reduce overall levels of exclusionary discipline, we advocated building a foundation of prevention within the school setting by implementing SWPBIS, a framework that can be adapted to the needs of students and families (Bradshaw, Mitchell, & Leaf, 2010). Third, to reduce disproportionality, we proposed (a) using disaggregated student discipline data to identify particular settings or practices that are primary drivers for disproportionality, (b) providing school personnel with strategies to neutralize the influence of implicit bias in these situations (Smolkowski, Girvan, McIntosh, Nese, & Horner, 2016), and (c) developing policies to promote accountability for disciplinary equity (Green et al., 2015).

Intervening in all of these areas at once may overwhelm school personnel and lead to inadequate implementation and subsequent abandonment of initiatives (Nese et al., 2016). Understanding the problem as a complex system, however, allows teams to design interventions that specifically target variables that are the most significant causes of the problem. These approaches are likely to be more effective not only because they address keystone variables but also because of their efficiency (Okonofua, Paunesku, & Walton, 2016; Vincent, English, Girvan, Sprague, & McCabe, in press). We thus proposed the vulnerable decision points (VDP) model (McIntosh, Girvan, Horner, & Smolkowski, 2014) to help educational systems prioritize the most important areas to target to enhance equity.

Identifying the Most Vulnerable Decision Points

The VDP model incorporates the insights of dual-process models in social psychology, such as aversive racism (Pearson, Dovidio, & Gaertner, 2009) and the MODE model (Fazio & Olson, 2014). Such models describe discriminatory behavior as a function of the interaction between features of situations and two distinct psychological processes: explicit and implicit bias. Explicit bias includes consciously held attitudes and beliefs about members of social groups, including prejudice and overt racism (Pearson et al., 2009). Implicit bias describes the subtle, automatic operation of stereotypic associations that people frequently have, even

though they do not necessarily endorse them (Devine, 1989; Greenwald & Banaji, 1995; Pearson et al., 2009). Given that most people tend to value equality (i.e., not be explicitly biased) but nevertheless harbor implicit biases, dual-process models predict that discriminatory behavior is most likely to occur when people lack the motivation or ability to make careful decisions (Fazio & Olson, 2014) or are faced with ambiguous situations or discretionary judgments (Pearson et al., 2009), all of which make it difficult to put values into practice.

The VDP model predicts that a substantial component of disproportionality is due to the influence of implicit bias in particular VDPs, such as when teachers are tired, hungry, or frustrated and are faced with the need to make a quick judgment call as to how best to respond to an unexpected student behavior. The model also predicts that disproportionality is less likely to result from explicit biases, and thus it should be rare that teachers make conscious decisions to send African American children who were not behaving inappropriately to the office or a failure to discipline White children who clearly are. In the model, the question is not whether explicit and implicit bias contribute to disproportionality but rather the extent to which one is stronger, as interventions to address one type of bias have been shown to be ineffective in addressing the other (Lai, Hoffman, Nosek, & Greenwald, 2013).

Initial descriptive evidence is consistent with several of the VDP model's predictions about the conditions under which disproportionate discipline tends to occur (Smolkowski et al., 2016). More broadly, the results of multiple studies (see Table 1) suggest that disproportionality is related to situations in which teachers have to make decisions about the appropriate use of discipline for subjectively defined behaviors (Smolkowski et al., 2016). Evidence that disproportionality is related to subjective decisions does not, however, quantify the relative magnitude or extent of that relationship—necessary information for understanding how to prioritize targets for interventions.

Purpose of the Study

Following the predictions of the VDPs model and to identify how critical subjective decisions may be as a target for intervention, the goal of this study was to examine the relative contribution of racial disparities in discipline decisions regarding

subjectively versus objectively defined behaviors to overall rates of disproportionality. Specifically, based on the VDP model, we predicted that substantially more variation in disproportionality is attributable to racial disparities in referrals for subjectively defined behaviors, that is, those for which teachers must exercise discretion, compared to those for objectively defined behaviors, that is, those for which they do not.

Method

Participants and Settings

The sample included classroom ODR in the 2011–2012 academic year in schools that were using the School-Wide Information System (SWIS; May et al., 2013), a web-based application for tracking and analyzing ODRs. Following federal recommendations for reliability and stability when calculating risk ratios (Bollmer, Bethel, Munk, & Bitterman, 2014), we excluded schools that did not have at least 10 African American students and 10 White students enrolled. School demographics are provided in Table 2. For the present analysis, we narrowed our focus to ODRs for African American or White students only, the most common comparison (Skiba et al., 2011).

Measures

Office discipline referrals (ODRs). ODRs are standardized forms used to document incidents of problem behavior (Sugai, Sprague, Horner, & Walker, 2000). School personnel issue ODRs to students for a defined set of behavior violations. When operationally defined (as is required for the use of SWIS), ODRs are reliable and valid indicators of problem behavior (Irvin, Tobin, Sprague, Sugai, & Vincent, 2004; McIntosh, Campbell, Carter, & Zumbo, 2009).

Subjectivity and objectivity of ODRs. An expert panel, composed of four researchers in school discipline and equity, rated the specific SWIS behavior definitions used for ODRs as reflecting a subjectively defined judgment by the teacher (e.g., defiance), objectively defined judgment by the teacher (e.g., truancy), or unclear (e.g., dress code violation; Greflund, McIntosh, Mercer, & May, 2014). We refer to the former two of these categories as “subjective ODRs” and “objective ODRs,” respectively. The

Table 1
Evidence for Implicit Bias as the Primary Driver of Disproportionality in School Settings

Study	Sample	Key findings
Skiba, Michael, Nardo, and Peterson (2002)	Academic year: 1994–1995	48% of African American students and 21% of White students referred for discipline (student-level risk ratio = 2.3)
	<i>N</i> = 11,001 students	66% of referrals for discipline were of African American students (who made up 56% of student population) compared to 33% of referrals of White students (42% of population; incident-level risk ratio = 1.5)
	19 middle schools from one large city	Minor/subjective discipline violations positively related to referrals of African American students; serious/objective discipline violations positively related to referrals of White students
Skiba et al. (2011)	Academic year: 2005–2006	37% of African American students and 21% of White students referred for discipline (student-level risk ratio = 1.8)
	<i>N</i> = 120,148 students 364 elementary and middle schools	43% of referrals for discipline were of African American students (who made up 26% of student population) compared to 34% of referrals of White students (46% of population; incident-level risk ratio = 2.2) Odds ratios of referrals for African American compared to White students were higher for disruption and noncompliance than for violations categorized as minor, moderate, or major violations and use/possession
Fabelo et al. (2011)	Academic year: 2000–2009	92.4% of disciplinary actions were discretionary code of conduct violations
	<i>N</i> = 928,940 students	75% of African American students and 47% of White students experienced discipline (student-level risk ratio = 1.6)
	3,896 middle and high schools in Texas	26% of African American students and 10% of White students experienced out-of-school suspension for first violation (student-level risk ratio = 2.6) Controlling for other factors, African American students were 31% more likely to experience discretionary discipline violation than White students but 23% less likely to experience mandatory discipline. (African American/White risk ratio of discretionary versus mandatory discipline actions = 1.18)
Burke and Nishioka (2014)	Academic year: 2011–2012	15% of African American students and 5% of White students experienced exclusionary discipline (student-level risk ratio = 3.1)
	<i>N</i> = 143,176 students 215 elementary, middle, and high schools in Oregon	The African American/White risk ratio for experiencing exclusionary discipline was higher than average for insubordination/disruption (risk ratio = 3.3) and physical and verbal aggression (risk ratio = 4.0)

median number of subjective, objective, and total classroom ODRs for African American and White students in each type of school are provided in Table 3.

School-level variables. School characteristics included enrollment, the proportion of students receiving free and reduced-price lunch, and the proportion of African American and White

Table 2
Demographic Characteristics of Schools in Sample

Variable	Elementary	Middle	High
<i>N</i>	1,206	427	191
States	42	35	27
Students	605,897	317,625	231,164
Classroom ODRs	302,797	370,217	199,629
Median school characteristics			
Enrollment	478	720	1,159
African American	69 (15%)	76 (11%)	140 (13%)
White	227.5 (52%)	386 (58%)	598 (58%)
Free and reduced lunch	57%	50%	46%
Classroom ODRs	153	557	694
Subjective	99 (66%)	368 (70%)	363 (57%)
Objective	9 (7%)	43 (8%)	68 (10%)

Note. ODR = office discipline referral.

students. These data were collected from the National Center for Educational Statistics and were used as covariates to control for their influence on disproportionality (Skiba et al., 2002).

Disproportionality. The most common measure of racial disproportionality is the student-level risk ratio (student-level RR; Boneshefski & Runge, 2014). It defines disproportionality for each school *Sch* as the relative risk of African American students compared to a reference group, here White students, experiencing ODRs (Boneshefski & Runge, 2014).

$SL\ RR_{Sch}$

$$= \frac{\left(\frac{\# \text{ African American Students with any ODRs}_{Sch}}{\text{Total \# of African American Students}_{Sch}} \right)}{\left(\frac{\# \text{ White Students with any ODRs}_{Sch}}{\text{Total \# of White Students}_{Sch}} \right)}$$

For example, a school in which 10% of White students and 20% of African American students had been sent to the office at least once in an academic year would have a student-level RR of 2. It does not differentiate between students who have experienced one ODR and those who have had many and is therefore insensitive to disproportionality attributable to a small number of particular students and the total absolute number of ODRs. Thus, it is an indication of the comparative breadth of impact of disproportionate discipline on students within a racial group.

To help ensure that the results of our analysis are robust to particular method and measure (Skiba et al., 2002), we also computed the in-

cident-level risk ratio (incident-level RR). It defines disproportionality for each school as the relative risk of an ODR being issued to an African American compared to a member of a reference group, here White students.

$$IL\ RR_{Sch} = \frac{\left(\frac{\# \text{ of ODRs of African American Students}_{Sch}}{\text{Total \# of African American Students}_{Sch}} \right)}{\left(\frac{\# \text{ of ODRs of White Students}_{Sch}}{\text{Total \# of White Students}_{Sch}} \right)}$$

Unlike the student-level RR, this measure captures information about all of the school's ODRs, even if they involve repeated ODRs for the same student. Thus, it is sensitive to and can be thought of a measure of disparities in the relative amount of time, energy, and other resources teachers and administrators devote to discipline of students from different racial and ethnic groups.

For both student-level RR and incident-level RR, values of 1 indicate no disproportionality. Numbers greater than 1 reflect the magnitude of disproportionality against African American students (e.g., a student-level RR of 2 means that African American students have 2 times the risk of an ODR as White students) and those less than 1 reflect the magnitude of disproportionality against White students (e.g., a student-level RR of .5 means that White students have 2 times the risk of an ODR as African American students). Median student-level RR and incident-

Table 3
 School-Level Median Number and Risk of Classroom Referrals (ODRs) for African American and White Elementary, Middle, and High School Students

Statistic	Students with ODRs by race						ODR incidents by student race					
	Elementary		Middle		High		Elementary		Middle		High	
	African American	White	African American	White	African American	White	African American	White	African American	White	African American	White
Subjective ODRs median (risk)	11 (.16)	15 (.08)	26 (.34)	50 (.15)	36 (.27)	55 (.12)	24.5 (.34)	30 (.16)	83 (1.00)	130 (.38)	86 (.62)	95 (.23)
Objective ODRs median (risk)	2 (.03)	3 (.01)	6 (.08)	13 (.04)	10 (.07)	18 (.04)	2 (.03)	3 (.02)	8 (.10)	16 (.05)	12 (.09)	20 (.04)
Total ODRs median (risk)	15 (.21)	23 (.11)	34 (.44)	74 (.21)	48 (.40)	94 (.20)	39 (.52)	51 (.25)	117 (1.52)	200 (.57)	169 (1.28)	220 (.46)
Total ODR median risk ratio	1.97		2.05		1.96		2.20		2.63		2.48	

Note. School-level median number and risk of classroom ODRs for African American and White elementary, middle, and high school students.

level RR in classroom ODRs for the schools in the sample are shown in Table 3.

Analytic Plan

For the student-level (SL) and incident-level (IL) criteria, we computed risk ratios of disproportionality separately for subjective ODRs and objective ODRs. As an example, the SL-subjective RR and SL-objective RR for each school were calculated as follows:

SL – Subjective RR_{Sch}

$$= \frac{\left(\frac{\# \text{ African American Students with ODRs for Subj. Behaviors}_{Sch}}{\text{Total \# of African American Students}_{Sch}} \right)}{\left(\frac{\# \text{ White Students with ODRs for Subj. Behaviors}_{Sch}}{\text{Total \# of White Students}_{Sch}} \right)}$$

SL – Objective RR_{Sch}

$$= \frac{\left(\frac{\# \text{ African American Students with ODRs for Obj. Behaviors}_{Sch}}{\text{Total \# of African American Students}_{Sch}} \right)}{\left(\frac{\# \text{ White Students with ODRs for Obj. Behaviors}_{Sch}}{\text{Total \# of White Students}_{Sch}} \right)}$$

The IL-subjective RR and IL-objective RR for each school were similarly calculated as the relative risk of subjective or objective ODRs, respectively, being issued to an African American compared to a White student.

To assess differences in the contribution of subjective and objective ODRs to overall disproportionality, we used three estimates of the absolute and relative proportion of variation in disproportionality explained by such disparities: R^2 , change in R^2 , and η_p^2 . R^2 is the proportion of variation in the criterion (e.g., student-level RR) attributable to variation in the predicted values of it (i.e., \hat{Y}) derived from the variables in the model (Kutner, Nachtsheim, Neter, & Li, 2005; Lewis-Beck & Skalaban, 1990). In the case of nested models, R^2 can also be the additional variation in the criterion that is accounted for by the variables in the full model compared to that accounted for by those in the reduced model (Anderson-Sprecher, 1994). We refer to the incremental increase in R^2 from adding a predictor to the model as the “change in R^2 ,” associated with that predictor. Finally, like change in R^2 , η_p^2 indicates variation accounted for by one

Table 4
Student-Level Disproportionality Analysis

Variable	AA/W disproportionality					
	Elementary schools				Middle schools	
	M1 _{Subj.}	M1 _{Obj.}	M2	M3	M1 _{Subj.}	M1 _{Obj.}
Intercept	.67*** [.56, .77]	1.62*** [1.48, 1.75]	.47*** [.37, .57]	.52* [.03, 1.02]	.26*** [.18, .34]	1.62*** [1.49, 1.77]
Subj.	.65*** [.61, .68]		.58*** [.55, .61]	.59*** [.56, .63]	.80*** [.77, .83]	
Obj.		.24*** [.21, .27]	.12*** [.10, .14]	.12*** [.10, .14]		.21*** [.17, .24]
% Subj.				.07 [-.47, .62]		
% Obj.				.00 [-.69, .69]		
% FRL				-.28† [-.60, .04]		
% AA				.24 [-.18, .67]		
% W				-.03 [-.38, .31]		
Model <i>F</i>	<i>F</i> (1, 1,610)	<i>F</i> (1, 753)	<i>F</i> (2, 740)	<i>F</i> (7, 713)	<i>F</i> (1, 365)	<i>F</i> (1, 365)
	741***	160.1***	1,051***	286.4***	2,786***	134***
Model <i>R</i> ²	.68	.24	.74	.74	.88	.27

Note. AA = African American; W = White; Subj. = subjective; Obj. = objective; FRL = percent of students receiving free and/or reduced price lunches. Cells contain regression coefficients over their 95% confidence interval.

† *p* < .10. * *p* < .05. *** *p* < .001.

predictor in a multivariate model. Unlike *R*², however, it is not the proportion of the total variance but the proportion of otherwise unexplained variance which is explained by that specific predictor (Cohen, 1973; Levine & Hullett, 2002).

A potential confound for our analysis is that a higher proportion of ODRs are written for subjectively defined than objectively defined behaviors (see Tables 2 and 3). As such, we would expect that predictors based upon subjective ODRs will explain more of the variance in

total ODRs than those based on objective ODRs. To control for the effects associate with the relative proportion of referrals, for each school we computed the percentage of students with subjective and objective ODRs, respectively, for use as covariates.

Results

We fit a series of four models, separately for student-level and incident-level disproportionality, in the samples of elementary, middle, and

Table 5
Incident-Level Disproportionality Analysis

Variable	AA/W disproportionality					
	Middle schools				Middle schools	
	M1 _{Subj.}	M1 _{Obj.}	M2	M3	M1 _{Subj.}	M1 _{Obj.}
Intercept	1.02*** [.91, 1.13]	2.06*** [1.83, 2.28]	.60*** [.47, .72]	.35 [-.25, .96]	.33*** [.23, .42]	2.00*** [1.78, 2.23]
Subj.	.59*** [.57, .61]		.58*** [.56, .61]	.68*** [.66, .71]	.85*** [.82, .87]	
Obj.		.28*** [.24, .32]	.14*** [.12, .17]	.11*** [.10, .13]		.33*** [.28, .38]
% Subj.				.23 [-.45, .90]		
% Obj.				-.40 [-1.26, .45]		
% FRL				.28 [-.67, .12]		
% AA				-.04 [-.57, .49]		
% W				.17 [-.25, .60]		
Model <i>F</i>	<i>F</i> (1, 1,130)	<i>F</i> (1, 753)	<i>F</i> (2, 740)	<i>F</i> (7, 713)	<i>F</i> (1, 421)	<i>F</i> (1, 365)
	2,725***	160.1***	1,500***	645.5***	4,266***	158.2***
Model <i>R</i> ²	.71	.17	.80	.86	.91	.30

Note. AA = African American; W = White; Subj. = subjective; Obj. = objective; FRL = percent of students receiving free and/or reduced price lunches. Cells contain regression coefficients over their 95% confidence interval.

† *p* < .10. ** *p* < .01. *** *p* < .001.

AA/W disproportionality					
Middle schools		High schools			
M2	M3	M1 _{Subj.}	M1 _{Obj.}	M2	M3
.23*** [.15, .31]	-.13 [-.45, .17]	.67*** [.52, .82]	1.03*** [.80, 1.26]	.51*** [.37, .65]	-.02 [-.52, .48]
.76*** [.73, .79]	.77*** [.74, .81]	.56*** [.52, .61]		.46*** [.41, .51]	.48*** [.43, .52]
.04*** [.03, .06]	.04*** [.02, .05]		.50*** [.42, .58]	.18*** [.13, .24]	.15*** [.10, .20]
	.69*** [.37, 1.01]				1.20*** [.80, 1.60]
	.05 [-.42, .52]				-.16 [-.91, .58]
	-.13 [-.33, .06]				-.05 [-.51, .42]
	.10 [-.15, .35]				-.18 [-.61, .26]
	-.11 [-.30, .08]				.07 [-.36, .50]
<i>F</i> (2, 364)	<i>F</i> (7, 340)	<i>F</i> (1, 158)	<i>F</i> (1, 158)	<i>F</i> (2, 157)	<i>F</i> (7, 144)
1,532***	446***	638.4***	166.3***	423.8***	147.6***
.89	.90	.80	.51	.84	.87

high schools. For coefficients and model statistics at the student level and incident levels, respectively, see Tables 4 and 5. Because the results were substantially similar, we focus our description and discussion of the analysis on student-level disproportionality. For the first two models, M1_{Subj} and M1_{Obj}, we regressed the student-level RR on only the SL-subjective RR or SL-objective RR. Tables 4, 5, and 6 provide *R*² estimates for each predictor. To assess the unique variance attributable to these predictors compared to one

another, we next regressed the student-level RR on the SL-subjective RR and SL-objective RR. M2 on Table 6 provides the change in *R*² and η_p^2 for this model in each type of school. Finally, to determine the extent to which variance explained by alternative predictors and control variables attenuated those relationships, we regressed the student-level RR on the SL-subjective RR, SL-objective RR, percent of the ODRs in a school that were for subjectively defined and objectively defined behaviors, percent of students who qualified

AA/W disproportionality					
Middle schools		High schools			
M2	M3	M1 _{Subj.}	M1 _{Obj.}	M2	M3
.18*** [.09, .27]	.39 [†] [-.02, .79]	.42*** [.17, .67]	1.44*** [1.07, 1.82]	.46*** [.26, .66]	-.07 [-.86, .71]
.82*** [.80, .85]	.82*** [.79, .85]	.76*** [.70, .81]		.57*** [.52, .62]	.58*** [.53, .63]
.08*** [.06, .09]	.07*** [.05, .09]		.61*** [.49, .72]	.21*** [.14, .28]	.19*** [.12, .26]
	-.04 [-.48, .40]				.96** [.33, 1.58]
	-.77* [-1.39, -.14]				-.55 [-1.72, .62]
	-.30* [-.56, -.03]				-.14 [-.88, .59]
	.17 [-.17, .51]				.06 [-.62, .75]
	.07 [-.19, .33]				.34 [-.34, 1.02]
<i>F</i> (2, 364)	<i>F</i> (7, 340)	<i>F</i> (1, 182)	<i>F</i> (1, 160)	<i>F</i> (2, 157)	<i>F</i> (7, 144)
2,657***	742.2***	700.1***	109.1***	511.4***	147.2***
.94	.94	.79	.40	.87	.87

Table 6
Variance in Overall Disproportionality Attributable to Office Discipline Referrals for Subjectively and Objectively Defined Behaviors

Statistic	Elementary		Middle		High	
	Subjective	Objective	Subjective	Objective	Subjective	Objective
Student level						
R^2	(M1) .68	(M1) .24	(M1) .88	(M1) .27	(M1) .80	(M1) .51
ΔR^2	(M2) .49	(M2) .05	(M2) .63	(M2) .01	(M2) .33	(M2) .04
	(M3) .46	(M3) .05	(M3) .61	(M3) .01	(M3) .34	(M3) .03
η_p^2	(M2) .66	(M2) .17	(M2) .85	(M2) .08	(M2) .68	(M2) .21
	(M3) .64	(M3) .15	(M3) .86	(M3) .06	(M3) .73	(M3) .18
Incident level						
R^2	(M1) .71	(M1) .17	(M1) .91	(M1) .30	(M1) .79	(M1) .40
ΔR^2	(M2) .62	(M2) .04	(M2) .63	(M2) .01	(M2) .43	(M2) .03
	(M3) .66	(M3) .03	(M3) .59	(M3) .01	(M3) .42	(M3) .01
η_p^2	(M2) .76	(M2) .18	(M2) .91	(M2) .16	(M2) .76	(M2) .19
	(M3) .83	(M3) .16	(M3) .91	(M3) .15	(M3) .77	(M3) .17

for free and reduced lunch, and percent of students who were African American and White. Model 3 in Table 8 provides the change in R^2 and η_p^2 for this model in each type of school.

The six scatterplots in Figure 1 depict the bivariate relations between racial disparities in subjective and objective ODRs (x -axis) and overall student-level disproportionality (y -axis) in elementary, middle, and high schools. As indications of effect size, the horizontal line with an intercept of 1.0 on each plot indicates schools with no disproportionality. Points within the dashed lines at $y = .80$ and 1.25 indicate schools that do not exceed the four-fifths ratio suggested as an indication of significant disproportionality (Smolkowski et al., 2016). Finally, those between the solid lines at $y = .5$ and 2 are schools in which White and African American students are less than 2 times the risk of an ODR as students from the other racial group.

Discussion

The purpose of this study was to examine the extent to which school discipline disproportionality is attributable to racial disparities in subjective ODRs compared to objective ODRs to identify a primary target for intervention. The results were highly consistent: as predicted by the VDP model, substantially more of the variance in student-level disproportionality is attributable to racial disparities in subjective ODRs

than to racial disparities in objective ODRs. On their own, subjective ODRs explained approximately 1.5 (high school) to 3 (middle school) times as much variance in disproportionality as objective ODRs. The difference in explanatory power was particularly pronounced for unique contributions to overall disproportionality. Change in R^2 from the addition of subjective ODRs was over 9 (elementary), 60 (middle), and 10 (high) times the size of the equivalent change in R^2 for the addition of objective ODRs. Similarly, comparison of the η_p^2 for subjective and objective ODRs shows that relative proportion of unexplained variance attributable to subjective ODRs is far more robust to the inclusion of the other predictors in the model than is the case for objective ODRs.

As with prior descriptive work, these results are consistent with the conclusion that subtler, implicit biases that affect teacher's discretionary decision-making, not racial differences in student behaviors or explicit biases, are likely one of the largest contributors to disproportionality. Operating akin to within-subjects variables, the subjective ODR and objective ODR predictors capture decisions and behaviors of the exact same teachers and students interacting in the same classrooms, effectively controlling for stable tendencies across these individuals and domains. However, they differ systematically from each other in the extent to which teachers must exercise discretion when identifying and responding to perceived behavioral violations. Thus, although correlational, the most direct inference from the substantial differ-

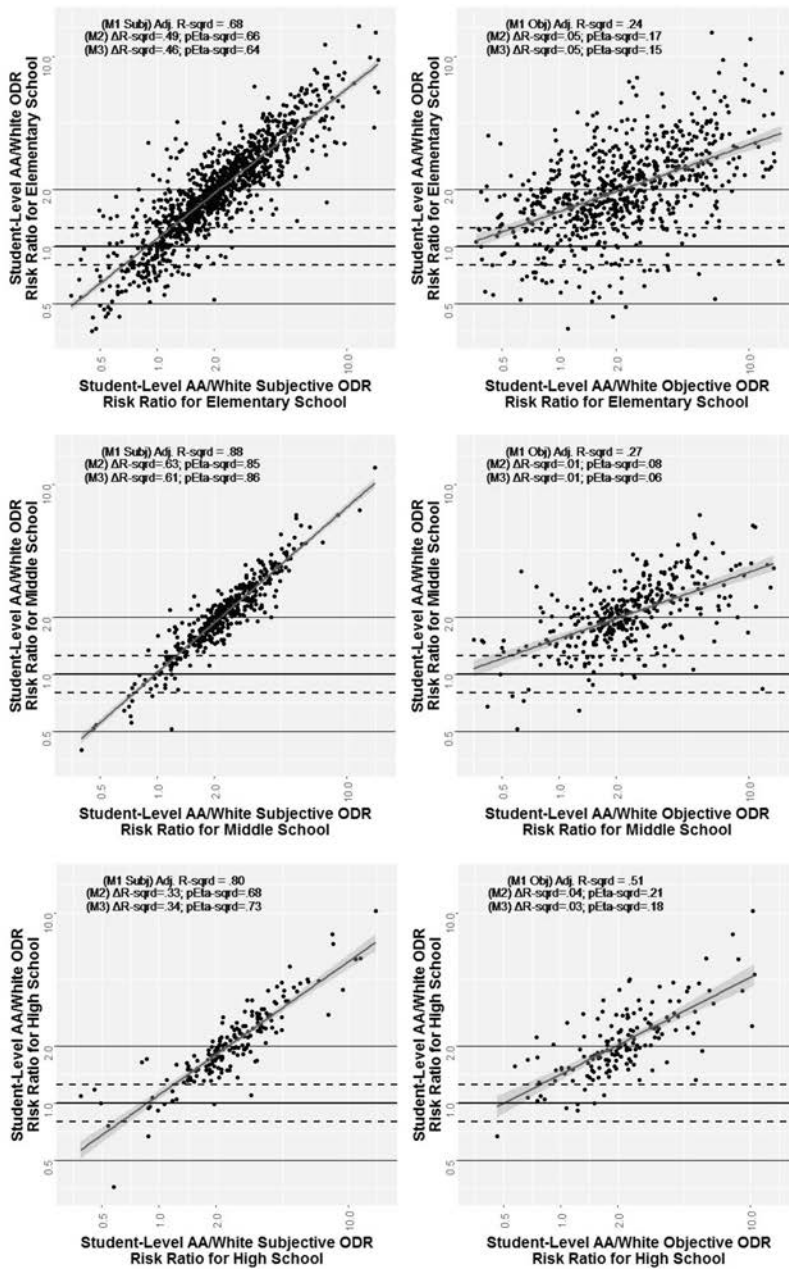


Figure 1. Associations between disproportionality in subjectively and objectively defined behaviors and total student-level racial disproportionality. See the online article for the color version of this figure.

ences seen in the explanatory value of subjective versus objective ODRs is that disproportionality is attributable, in some way, to biases in how teachers perceive, interpret, and make decisions about

student behaviors that are not clearly and objectively defined (e.g., defiance, disrespect, disruption) as opposed to more objectively defined behaviors (e.g., fighting, skipping class). Notably,

these results were observed even when controlling for school-level variables that have been shown to be related to disproportionality, such as the percent of non-White students and students who qualify for free and reduced lunch in the school.

In addition, the relative increase in variance explained by objective ODRs between middle and high school is consistent with the model proposed by Okonofua et al. (2016). Under that model, students who are subject to bias in discretionary discipline, particularly in middle schools where identity formation can become particularly pronounced, may tend, over time, to disengage with school, potentially leading to increasing violations of expectations for objectively defined behaviors (e.g., truancy) in high school. Although we did not have the longitudinal data to test this hypothesis directly, that theoretical process could produce the pattern of findings here.

Limitations and Future Research

This study is subject to many of the same limitations of other analyses of extant data. Because of the scale of the sample, it was not possible to verify the incidents that were analyzed through direct observation or interviews. As a result, there was no way to capture interactions that did not result in an ODR. In addition, the decision to issue ODRs is also subject to individual teacher tolerances for behavior. Importantly, although the study used definitions of subjective and objective ODRs from an expert panel, there were no direct measures of teachers' explicit or implicit bias and thus the results are merely consistent with, and do not provide direct evidence of, the operation of the particular social psychological processes associated with these two types of bias. Future research, most likely involving a smaller sample of schools, is needed to corroborate these findings with classroom observations and direct measurement of individual teachers' biases. Finally, this study examined only disproportionality in discipline between African American and White students. Although this type of disproportionality is most pronounced in the United States, future research should examine patterns of disproportionality for other racial and ethnic groups.

Implications for Practice

Comprehensive theoretical models of the factors associated with disproportionality are indispensable for advancing our understanding of this

serious problem and for directing intervention efforts. By highlighting its complexity and equifinality, however, they can be interpreted as requiring multifaceted interventions, which, in practice, tend to overwhelm available resources and be counterproductive. To the extent that the models provide a guide for identifying specific, malleable intervention targets that are most critical for a district or school, however, they can make intervention manageable by focusing efforts on the most productive avenues to enhancing equity. Consistent with this approach, prior research results, and the VDP model, the results here provide evidence that interventions to help teachers to identify and neutralize implicit and other subtle biases that impact discretionary decisions likely have the potential to reduce overall disproportionality. This may be particularly true in elementary and middle schools, where approximately half or more of the unique variation in disproportionality appears to be attributable to subjective ODRs.

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