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Racial Mismatch and School Type: Teacher Satisfaction and Retention in Charter and Traditional Public Schools

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Abstract

Studies of teacher satisfaction suggest that satisfaction is related to both the racial composition and the organizational structure of the schools in which teachers work. In this article, the authors draw from theories of race and organizations to examine simultaneously the effects of school type (traditional public vs. charter) and racial mismatch on teacher satisfaction and subsequent turnover. In doing so, they examine the organizational differences between traditional public and charter schools that contribute to systematic differences in satisfaction and turnover across these school types. Using 1999-2000 Schools and Staffing Survey data, the authors find that charter school teachers are more satisfied than are public school teachers because of greater autonomy. Charter school teachers, however, are more likely to leave teaching than are traditional teachers. The authors also show that teaching in racially mismatched schools results in lower levels of satisfaction for white teachers and that being in a charter school reduces this negative effect.

Keywords

charter schools, teachers, race, job satisfaction, job turnover

In an increasingly diverse country and service-oriented economy, workers more frequently interact with a diverse clientele. Trends toward increased diversity are paradoxically met with increased resegregation within social institutions (Brown et al. 2003; Maume and Sebastian 2007). This is especially true in our public schools. Schools in the United States are experiencing a dramatic transformation of student racial/ethnic composition, with 10 states already reporting that a majority of students are nonwhite and demographic data suggesting that school enrollment nationwide will soon reflect this trend (Orfield and Lee 2007). Yet schools have also grown increasingly segregated by race and ethnicity since the 1980s, as changing demographics, laws, and policies have taken hold (Orfield and Eaton 1996; Orfield and Lee 2007). In spite of efforts to recruit and train teachers who reflect the racial/ethnic diversity of their students, the profession remains dominated by whites, even in

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schools with large populations of minority youth (Frankenberg 2006). Thus, some jobs and occupations, such as teaching, increase the likelihood of having cross-race interactions, which may influence worker satisfaction and subsequently attrition (Maume and Sebastian 2007; Mueller et al. 1999).

Dissatisfaction and job turnover among teachers are particularly significant because these factors affect not only individual teachers' careers but also the broader school community. As organizations, schools are particularly reliant on a positive sense of community among families, teachers, and students for successful functioning (Coleman and Hoffer 1987; Durkheim [1925] 1961; Lortie 1975; Waller 1937). Teacher dissatisfaction and turnover can undermine this cohesion and diminish the share of teachers who have extensive experience and relevant qualifications. Thus, both dissatisfaction and turnover are associated with more negative student outcomes, including lower test scores and attendance rates as well as increased disciplinary problems (Hanushek, Kain, and Rivkin 2004; Louis, Marks, and Kruse 1996; Ostroff 1992). Further, schools with high proportions of black and Latino students experience particularly high rates of teacher dissatisfaction and turnover that can exacerbate preexisting problems with student achievement and discipline (Frankenberg 2006), but the mechanisms behind this association have not been examined. Therefore, in this article, we examine the broad question of how schools and race affect teacher satisfaction and turnover.

In response to the problem of dissatisfaction and teacher turnover, charter schools are *marketed* to prospective teachers as satisfying and autonomous work environments where teachers can enjoy greater autonomy than in regular public schools. In fact, there is evidence that formal organizational practices, such as the school structure and level of teacher autonomy, influence both teacher satisfaction with their jobs and turnover rates (Ingersoll 2001; Lee, Dedrick, and Smith 1991). In particular, greater teacher autonomy over the social dimensions of teaching, such as discipline (rather than over instructional or academic issues), is associated with lower teacher turnover (Ingersoll 2003). Therefore, if charter schools really provide teachers with more autonomy than is found in traditional public schools, they may be more satisfying work environments in which teachers are more likely to stay. Nevertheless, no prior research has directly examined whether the organizational characteristics of charter schools are associated with greater satisfaction and lower teacher turnover than are those found in traditional public schools.

In addition to school type, informal features of the organizational setting, including the racial/ethnic composition of students relative to a teacher's own race, are also related to how satisfied teachers are with their jobs (Mueller et al. 1999). White teachers who experience *racial mismatch* (in which the majority of the schools' students are of a different race or ethnicity) are especially dissatisfied with their jobs, net of controls for teacher, student, and school characteristics (Mueller et al. 1999). Moreover, the effects of racial mismatch and organizational structure may not work independently of each other. It is likely that school type (because of differing organizational structure) moderates the effect of racial mismatch on satisfaction. Existing studies have not examined this potential moderating effect of formal organizational types. In fact, only a handful of studies have examined both formal and informal organizational practices, such as school structure *and* school racial composition, to consider their joint effects on teachers' satisfaction with their jobs and their retention rates. Our research thus builds on Ingersoll's (2003) findings of the importance of the social dimensions of teaching to explicate the relationship between racial mismatch and teacher satisfaction and turnover.

In this article, we seek to answer the following research questions: First, how do racial mismatches (when a teacher's race does not match the majority race of students in the school) affect job satisfaction and turnover? Subsequently, how does school type moderate the effect of racial mismatch on job satisfaction and turnover? Finally, why does school type affect these relationships between racial mismatch and satisfaction and turnover? Addressing these research questions will identify the roles of race and organization in teacher satisfaction and turnover.

Understanding the mechanisms that increase teacher satisfaction and retention is important for the study of workers in general. By studying teachers, race, and school structure, we can help integrate the insights of research on race and organizations. While theories of race and ethnicity have often overlooked the organizational context in which cross-race interaction occurs, organizational theories have often been color-blind. By simultaneously examining student-teacher racial mismatch and school type, we can link the two sets of theories and show that organizational and racial

dynamics are in fact interdependent. By examining the effects of school type on satisfaction, we learn the ways in which schools can modify their existing systems to encourage greater satisfaction among teachers and possibly reduce turnover.

BACKGROUND

Two Studies of Teacher Satisfaction

Studies suggest that teacher satisfaction is related to both the racial composition and the organizational structure of schools. No study, however, has examined these two determinants simultaneously. Mueller et al. (1999) found that the racial composition of groups has an effect on teacher satisfaction. They examined how the student-teacher and teacher-teacher racial mismatch affected teachers' satisfaction and commitment to teaching. Their work was innovative in considering the effects of clients (students) on workers' (teachers') attitudes and drew on social psychological literatures. White (but not black) teachers who teach in schools where the majority of students match their race are more satisfied with their work than those who are "mismatched." As the authors note, however, they can only examine the effects of race, schools, and teacher satisfaction in one type of organization—a loosely coupled bureaucratically run school. This may be problematic if school type moderates the effects of teacher-student racial matching.

An earlier study by Lee et al. (1991) examined how the social organization of schools influences teacher satisfaction. Their work found that Catholic school teachers were more satisfied than were public school teachers. However, once Lee et al. controlled for formal aspects of the school social organization, such as the level of teacher autonomy, the differences between sectors disappeared. Teachers working in organizational structures that allow them more autonomy are more likely to be satisfied with their jobs. Although Lee et al.'s work considers student quality along with organizational structure, it does not examine the racial composition of a school—something that Mueller et al.'s (1999) later work showed to affect teacher satisfaction.

Motivated by Mueller et al.'s (1999) work on racial mismatch and teacher satisfaction and Lee et al.'s (1991) work on school organization and teacher satisfaction, we examine how the effects of racial mismatch may vary between schools with different school types. Using insights from both lines of work, we simultaneously consider organizational type and race to better understand teacher satisfaction. In addition, we take both the above studies one step further by explicitly examining how satisfaction, racial mismatch, and school type affect teacher turnover. Before we discuss our theoretical framework and hypotheses, we outline the current state of affairs in terms of racial mismatch in schools.

Racial Mismatch Today

It is important to discuss the processes through which teachers (particularly white teachers) end up teaching in schools with students of a different race than their own, resulting in the type of racial mismatch we analyze. More than 80 percent of teachers in the United States are white, while less than 60 percent of students in U.S. schools are white (Frankenberg 2006; Orfield and Lee 2007). Further, schools are growing increasingly segregated by race and ethnicity even as student bodies are growing more diverse (Orfield and Lee 2007). In spite of a slight growth in the numbers of nonwhite teachers in recent decades, the majority of teachers are white in all schools except those with 90 to 100 percent black and/or Latino students (Frankenberg 2006). Thus, by virtue of sheer demographics, white teachers are likely to teach students who are of a different race or ethnicity than their own. In some cases, white teachers have remained in the same schools over time, and the student demographics in their schools have changed from predominantly white to predominantly nonwhite, even in suburban areas (Frey 2001). In other instances, new teachers begin their careers or veteran teachers opt to take jobs in schools with a majority of students who are nonwhite, in either case because of a personal commitment to working with a diverse student body or because these are the only jobs available in proximity.

The theories of organizational demography and racial prejudice that we draw from predict that racial mismatch leads to lower satisfaction and higher turnover (especially for white teachers) regardless of how teachers come to teach in racially mismatched schools. However, we explore the possibility that different pathways into mismatched schools may alter the effects of mismatch, such that teachers who experience demographic shifts

may be more negatively affected by mismatch than are teachers who select schools with large minority populations.

THEORY

Organizational Demography

A vast literature in economics and sociology examines factors associated with individuals' job satisfaction. Key among these explanations is the argument that organizational demography influences worker satisfaction because of group threat, contact, and racial prejudice. As such, workers who are employed in heterogeneous settings with respect to race, gender, age, and other demographic characteristics are less socially integrated and more dissatisfied, unattached, and likely to experience job turnover than those in more homogenous workplaces (O'Reilly, Caldwell, and Barnett 1989; Tsui, Egan, and O'Reilly 1992; Wharton, Rotolo, and Bird 2000). In particular, members of majority groups experience more negative outcomes from heterogeneity than do minority group members (Maume and Sebastian 2007). This is consistent with Blalock's (1967) conceptualization of group threat, which suggests that conflict and competition abound in heterogeneous settings because members of the dominant group feel threatened by large numbers of societal (but not organizational) minorities. Because the internal workings of the classroom are central to teachers' work lives (Lortie 1975), the racial composition of their classrooms is perhaps more relevant to teachers' work experiences than is the race of their coworkers (see also Mueller et al. 1999), which we term teacher-student *racial mismatch*. While our use of this theory may not flow directly from Blalock's conceptualization of group threat, since teachers as a group have much greater social power than do students as a group, we believe it is relevant for two important reasons. First, teachers are generally outnumbered by their students, making the concept of group threat relevant. Second, there is evidence that white teachers in predominantly minority schools tend to rely on race-based stereotypes and diffuse status characteristics that characterize minority students (especially black and Latino males) as "criminal" and otherwise threatening, which may structure student-teacher interactions in these settings (Berger et al. 1977; Devine 1996; Ferguson 2000; Fischer et al. 1996; Lopez 2002).

Further, contact theory suggests that the social conditions surrounding interracial interactions can influence whether the outcomes of such interactions are positive or negative (Allport 1954). Allport argues that most interracial contact results in negative outcomes, yet positive outcomes are possible. We draw from Allport's theory because it highlights the importance of the social context in which interracial interactions take place for producing positive or negative outcomes. Our study examines different forms of school *organizational* structures as key social contexts for interracial interactions. We consider which school types might lead to arrangements that help promote more positive interracial interactions that lead to higher teacher satisfaction and lower turnover. Organizational structures may condition a variety of interracial interactions, yet this association is likely especially important for worker-client relations. In these cases, the organizational context directly structures interactions more than it does in less formal interracial relations, such as between neighbors or strangers on the street.

Expectations for satisfaction and turnover. Studies have found that there is increased satisfaction and decreased turnover within homogeneous groups (Jackson 1991; O'Reilly et al. 1989; Tsui et al. 1992). With respect to the school setting in particular, there is evidence that teachers evaluate student behavior of racial groups different from their own more negatively than they do the behavior of students of their same race (Downey and Pribesh 2004). This suggests that teacher-student racial mismatches are characterized by heightened conflict. Thus, teachers who teach in schools with students of a different race than their own would likely have lower job satisfaction and may be more likely to leave than those teachers who teach in schools with students of their same race.

Racial prejudice theories and status characteristics theory can also shed light on how teacher satisfaction is affected by racial mismatch (e.g. Berger et al. 1977; Blalock 1967; Quillian 1995). Group threat theory suggests that the dominant group (i.e. whites) perceive a growing threat and thus develop greater feelings of prejudice as the minority group increases in size. Unlike minority group members, who may develop strategies to cope with being different from others, whites are more accustomed to being the dominant group and might be especially dissatisfied in situations where they are not in the majority (Hoffman 1985; Maume

and Sebastian 2007; Tsui et al. 1992). Studies that examine schools with high minority concentrations and low proportions of minority teachers likewise highlight the contentious nature of teacher-student interactions in these settings (Devine 1996; Lopez 2002). Moreover, Mueller et al. (1999) uses status characteristics theory to argue that teachers use the diffuse characteristic of race to form expectations about students and thus about their jobs overall (Berger et al. 1977). These expectations lead teachers to have lower job satisfaction. Thus, we expect that white teachers (but not minority teachers) teaching in racially mismatched schools will have lower job satisfaction than white teachers in racially matched schools.

The organizational demography perspective highlights prejudice as the mechanism through which racial heterogeneity influences worker attitudes, operating either through a distrust of those who are different or a preference for those who are similar, or some of both. With respect to the effects of teacher-student racial mismatch on teacher satisfaction, we expect that racialized teacher perceptions of their students will drive the results. Prior work has shown that white teachers rate black students lower than they rate white students with respect to work habits, effort, maturity, attendance, and behavior (K. Alexander, Entwisle, and Thompson 1987; Downey and Pribesh 2004; Farkas et al. 1990). If teacher-student racial mismatch results in systematically more negative perceptions of students, this is likely to lower teacher satisfaction with their jobs (Liu and Meyer 2005). We predict that teachers are less satisfied teaching students of different races from their own because they perceive them as being less able students (whether or not this perception is accurate); thus, the effects of racial mismatch on satisfaction will disappear once teacher perceptions of student quality are controlled.

In addition, racial mismatch may affect turnover among teachers. While organizational structures are likely to influence turnover via job satisfaction (Lincoln and Kalleberg 1985; Pfeffer 1983; Price and Mueller 1981), characteristics such as racial composition of the workplace may also affect turnover directly (Scafidi, Sjoquist, and Stinebrickner 2007). In fact, organizational demographers have demonstrated that heterogeneity of coworker characteristics is associated with higher worker turnover (J. Alexander et al. 1993). Examining teacher turnover specifically, Ingersoll (2001) demonstrates that the organizational characteristics of schools are important determinants of turnover, net of individual-level factors. Teachers who teach in schools with students of a different race than their own are more likely to leave their jobs than teachers in schools with students of their same race, net of satisfaction.

Though teacher-student racial matching in schools is likely to have an effect on teachers' likelihood of job turnover, school structure is also likely to play a role in this relationship. In fact, because a school's racial composition and structure are *both* likely to influence teacher satisfaction and turnover, examining these factors simultaneously is important for gaining a more complete picture of what schools can do to retain teachers. In the next sections, we turn to school structure to explain satisfaction and turnover.

School Type: Charter Schools and Organizational Structure

Charter schools, first established as a school form in 1992, are an attempt to reestablish autonomy and accountability in the classroom, school, and district. In response to the elaborate division of labor and rationalized school procedures found in traditional schools, charter schools have created a new legal structure that is presumably less bureaucratic and provides more autonomy than traditional schools. The rhetoric of charter schools involves a commitment to giving teachers freedom to try innovative techniques, which should foster their classroom autonomy (Malloy and Wohlstetter 2003; Nathan 1996; Wohlstetter, Wenning, and Briggs 1995). Ingersoll (1996) demonstrated that increased teacher autonomy is associated with lowered levels of conflict between teachers, students, and principals in a school, which could be one mechanism through which autonomy affects satisfaction. Decentralizing and debureaucratizing schools may increase teacher autonomy in the classroom, leading to greater satisfaction (Lee et al. 1991). Thus, the charter school form may achieve greater teacher job satisfaction and retention if in practice the schools achieve the goal of greater autonomy.

Because charter schools attract teachers with the lure (whether actual or not) of more autonomy, they have been shown to have more satisfied teachers than traditional public schools do (Bomotti, Ginsberg, and Cobb 1999; Gawlik 2007, 2008; Koppich, Holmes, and Plecki 1998; Malloy and

Wohlstetter 2003). However, prior findings on charter school teachers' autonomy are mixed. It is certainly a goal of the movement to provide teachers with more autonomy in both pedagogy and organization, but not all schools seem to reach this goal. Charter schools do not seem to provide teachers with budget autonomy (RPP International 2000; Wells 1998), and though some schools do give teachers autonomy, it is a dynamic process decreasing with time (Gawlik 2007). Further, charter school autonomy varies by the authorizing agency (SRI International 2000).

The literature about charter school teacher characteristics and autonomy may be limited, however, because it has largely relied on case studies of limited scope or concentrated in one state at a time (Bomotti et al. 1999; Crawford 2001; Ferraiolo et al. 2004; Finnigan 2007; Gawlik 2007; Hess et al. 2002; Hoxby 2002; Malloy and Wohlstetter 2003; Miron and Applegate 2007). Because charter schools emerged so recently and data on them have not been available, no prior research examines a representative sample of charter school teachers. Nevertheless, it is important to remember that not all charter schools are the same. In fact, there is evidence that the variation among charter schools is rather high with respect to autonomy and innovation (Finnigan 2007; Miron 2008). Rather than simply assuming that all charter schools inherently lead to teacher satisfaction, we empirically examine the claims that charter schools on the whole provide more autonomy to teachers, which raises their job satisfaction, then we consider if such satisfaction lowers attrition.

Charter schools: expectations for satisfaction and turnover. Researchers have long been interested in schools as workplaces and their effects on teachers and production (see Bidwell [2001] for a review). Nevertheless, the landscape of schools has changed a great deal since many of the studies Bidwell cites in his review. With charter schools growing in number (in 2007 near 4,000 schools educating about 1.6 million students), researchers are called to compare the organizational structures in traditional public schools to those of charter schools to consider the effect of these structures on faculty. If charter schools do allow teachers more autonomy, then working in a charter school may increase job satisfaction. We empirically test this assumption by examining the difference between charter schools and traditional schools along a variety of organizational dimensions, particularly levels of autonomy.

Following the above logic, it is also likely that teachers working in schools in which faculty members are cooperative, but at the same time have autonomy, would be less likely to leave teaching or their schools. However, the structural mechanisms that increase satisfaction may not be the same mechanisms that increase retention. There is a growing body of literature that shows that charter school teachers, despite higher levels of satisfaction, leave their jobs and the occupation more often than do traditional public school teachers (Johnson and Landman 2000; Miron and Applegate 2007). While charter schools may increase satisfaction through increased autonomy, they nevertheless suffer from a liability of newness (Stinchcombe 1965), are less likely to have unionized teachers (Malloy and Wohlstetter 2003), have a lower pay scale (Harris 2006), and may attract less committed teachers overall as these teachers are usually younger and not certified as compared with traditional teachers (Miron and Applegate 2007). The high turnover rates additionally have been attributed to charter school teachers' heavy workloads and long hours (Johnson and Landman 2000; Miron and Applegate 2007). We therefore have a competing expectation that teachers in charter schools will be more likely than traditional public school teachers to leave their schools or the occupation because the organizational setting is not as conducive to long-term careers.

Considering organizational demography and school type simultaneously. As we have stated, it is important to consider racial composition and organizational dimensions of school type together. We have predicted that racial mismatch and school type may have independent effects on teacher satisfaction, but there is reason to believe that they interact. We expect that charter schools will moderate the relationship between racial composition and satisfaction.

Satisfaction may be affected by racial composition due to decreased status. That is, there might be something inherent to charter school status that decreases the negative relationship between racial mismatch and satisfaction. Maume and Sebastian (2007) found that white workers were not less satisfied working with black workers because the workers were black per se but rather because black workers reduced the status of the job. Similarly, white teachers may be less satisfied teaching black students when those schools are given less respect and attention and ultimately less status than other schools.[1] Charter schools, however, may be

buffered from any diminished status that comes from teaching in schools with high minority populations if in fact there is a higher status within the teaching occupation for charter school teachers. Thus, racial mismatch may be less dissatisfying in charter schools. Though we suggest that teachers who teach in schools with students of a different race than their own will have less job satisfaction than those teachers who teach in schools with students of the same race, we expect that the negative relationship will be moderated by school type. Charter school teachers' satisfaction will be less affected by racial mismatch than traditional public school teachers' satisfaction.

Charter schools may affect the relationship between racial mismatch and satisfaction because of something specific about charter school structure. As we argue above, Allport's (1954) identification of the social conditions associated with positive or negative outcomes from interracial interactions suggests that variation in social contexts, such as the organizational structures of schools, might also relate to differences in the effects of such interactions. If charter school teachers have the professional autonomy to make changes in their classrooms and in the school as a whole, the structure of the school may lead to more positive effects of working with students of a different race. If, for example, white teachers are unhappy teaching minority students because they perceive little latitude to implement innovative teaching to effect change due to the rigid school structure and curriculum, working in a school that provides greater autonomy may reduce the negative effect of racial mismatch.

DATA AND METHOD

We use the 1999–2000 Schools and Staffing Survey (SASS) and the Teacher Follow-up Survey (TFS). Both are restricted-use representative data sets that contain data from charter schools and public schools. The survey provides not only information from teachers about their working conditions but also school-level data provided by administrators with more accurate information. The TFS is designed to allow for longitudinal analysis of teachers even after they leave their schools or occupation. The data for this analysis come from the teacher surveys of public and charter schools. The weighted response rates for public school teachers and charter school teachers were 83.1 percent and 78.6 percent respectively (for more information, see http://nces.ed.gov/surveys/sass/). The richness of this survey and its inclusion of information on teachers' working conditions at the school level and work histories longitudinally make this data set uniquely designed for analysis of job satisfaction and retention over different school types.

We use theoretical and methodological criteria for the data we include in the analysis. First, we eliminated teachers who were not full-time or standard teachers (e.g., student teachers and teacher's aides). The analysis is further limited to white, black, and Hispanic teachers due to the relatively small number of Asian and Native American teachers in the sample. We kept the Asian and Native American *students* in the data because our focus is on the racial mismatch teachers can have in their schools. Though we cannot assess the effect of racial mismatch for Asian and Native American teachers, we can assess the effect of being white, black, or Hispanic and teaching in a school with a majority Asian or Native American student body. Finally, because we use hierarchical linear modeling (HLM) in the SASS analysis, we eliminated schools with only 1 teacher sampled. After eliminating these cases, our final SASS sample includes approximately 32,930 teachers in 7,190 schools (31,170 traditional public school teachers in 6,740 traditional public schools, and 1,760 charter school teachers in 450 charter schools).[2]

The TFS is a subsample of the teachers who completed the SASS in 1999–2000. The TFS has two components: current teachers and an oversample of teachers who left teaching in 2000. We are examining voluntary turnover and thus eliminated teachers who said that being laid off or involuntarily transferring schools was important to their decision to leave teaching.[3] The Center for Education Reform has collected data on all closed charter schools. We were able to locate about 40 charter schools that closed between 1999 and 2000. We supplied the names of the closed charter schools to National Center for Education Statistics and the center gave us the identification numbers of teachers who were in those charter schools at that time. Three charter schools in our sample had closed, and thus, five teachers were eliminated from the TFS sample to ensure that we are modeling *voluntary* turnover. Finally, our analysis is restricted to teachers who remained in the labor force. Most of the teachers who left the labor force did so for family care work or retirement. Modeling family-level decisions or retirement is beyond the

scope of this analysis, and thus eliminating those teachers made for a more theoretically parsimonious analysis. Our final sample (rounded per NCES data restrictions) in the TFS includes 2,770 teachers (2,210 in public schools and 560 in charter schools).

Variables

Dependent variables. In the analyses of teacher satisfaction we created a scale of satisfaction for the dependent variable (Cronbach's alpha = .64) using four questions in the SASS data. The questions include ratings of satisfaction with being a teacher at the current school, whether the teacher feels as though it is a waste of time to try his or her best, whether he or she would become a teacher again, and how long the teacher plans to remain in teaching. The variables are coded so that higher numbers denote more satisfaction; the scale is similar to that of Lee et al. (1991) because we include measures of both efficacy and satisfaction. As Lee et al. describe, efficacy (e.g., It is waste of time to do my job) and satisfaction (how satisfied a teacher is) are distinct measures, but they are highly correlated and reflect a similar concept within teaching. We employ this same measure as an independent variable in the analysis to predict turnover at time two. The raw variable ranges from 1 to 4.5, but we standardized the scale.[4]

In the analyses of turnover, we used a three-category dependent variable created from the TFS. In doing so, we are able to capture two types of worker attrition—leaving the job and leaving the occupation. By modeling these types of attrition as two distinct options for teachers, we are able to examine the predictors that lead to leaving one's school and leaving the occupation altogether (Guarino, Santibafiez, and Daley 2006; Ingersoll 2001). Teachers who remained teaching at the same school were coded as 1 and used as the reference category.

Independent variables. The racial mismatch variables are our primary independent variables of interest at level one (the individual teacher level). While much of the organizational demography literature focuses on the heterogeneity and homogeneity of work groups, we use a more nuanced measure to capture the effects of racial mismatch. These race variables have two components: the race of the teacher and the majority racial composition of the student body (see Table 1). If at least 60 percent of the student body is a particular race, we consider that race to be in the majority. In their study, Mueller et al. (1999) examined whether dominant student racial composition is the same as or different from that of the teacher. However, because we wish to isolate how the effects of racial mismatch on teacher satisfaction and turnover operate across racial/ethnic groups and different school organizational structures, our measure provides more detail than Mueller et al.'s study. We include six categories for student racial composition—white majority, black majority, Hispanic majority, Asian/Pacific Islander majority, Native American/Alaskan majority, and no majority.[5] Then we combine it with information about the teacher's race to make a measure of racial mismatch. The first set of letters in the variable name represents the race of the teacher, while the second set of letters stands for the student racial composition. For example, WT_WS indicates a white teacher teaching in a school with a majority of white students.[6]

We also include a series of independent variables at the individual teacher level. We categorized the teacher variables into three groups. First, teacher characteristics include information about the teacher such as income, gender, degree, overall teaching experience, years at current school, grade level, hours worked, and union membership. Second, we include measures of teachers' perceptions of their schools. As Lortie (1975) discusses, perceptions of the school and teaching may increase teacher satisfaction. These variables include perception of student attendance, quality, behavior, and overall expectations for the school.

Finally, we include a set of variables that will help us assess the structure of charter schools and traditional schools. Teacher's work environment is the organizational structure we are measuring. It is a teacher's reported level of coworker support, job security, and tracking in the school. We also measure teacher-perceived student quality, school expectations, and coworker support as scales (see Table 2 for details).

One of our most important measures of school organization is autonomy (Gawlik 2007, 2008). Wohlstetter and her colleagues define autonomy as "independence and self-determination of a community in its external and internal relations" (Wohlstetter et al. 1995: 338). An autonomous teacher is able to make decisions in his or her classroom regarding curriculum and instructional issues, how students will learn, and how teachers will teach. Thus, we use a scale of various levels of decision making to measure classroom autonomy (see Table 2).

Table 1. Descriptive Statistics (means) of Racial Mismatch Variables in Schools and Staffing Survey (SASS) and Teacher Follow-up Survey (TFS) Analyses by School Type

		SASS analyses		TFS analyses	
Variable	Variable description	Traditional	Charter	Traditional	Charter
WT_WS	Dummy variable = 1 if a white teacher teaching ≥60% white students	0.69 (0.46)	0.49* (0.50)	0.63 (0.48)	0.49* (0.50)
WT_BS	Dummy variable = 1 if a white teacher teaching ≥60% black students	0.03 (0.18)	0.10* (0.30)	0.04 (0.19)	0.09* (0.29)
WT_HS	Dummy variable = 1 if a white teacher teaching ≥60% Hispanic students	0.02 (0.15)	0.04* (0.20)	0.03 (0.17)	0.06* (0.24)
WT_AS	Dummy variable = 1 if a white teacher teaching ≥60% Asian/ Pacific Islander students	0.00 (0.04)	0.00 (0.06)	–	–
WT_NS	Dummy variable = 1 if a white teacher teaching ≥60% Native American or Alaskan students	0.02 (0.12)	0.01 (0.10)	–	–
WT_other	Dummy variable = 1 if a white teacher teaching ≥60% Asian, Native American, or Alaskan students	–	–	0.02 (0.14)	0.02 (0.13)
WT_no majority	Dummy variable = 1 if a white teacher not teaching >60% of any group	0.13 (0.33)	0.17* (0.38)	0.15 (0.36)	0.18 (0.39)
BT_WS	Dummy variable = 1 if a black teacher teaching ≥60% white students	0.01 (0.11)	0.01 (0.09)	0.01 (0.12)	0.01 (0.09)
BT_BS	Dummy variable = 1 if a black teacher teaching ≥60% black students	0.03 (0.18)	0.08* (0.27)	0.03 (0.16)	0.06* (0.24)
BT_HS	Dummy variable = 1 if a black teacher teaching ≥60% Hispanic students	0.00 (0.05)	0.00 (0.04)	0.00 (0.06)	0.00 (0.04)
BT_AS	Dummy variable = 1 if a black teacher teaching ≥60% Asian/ Pacific Islander students	0.00 (0.01)	0.00 (0.02)	–	–
BT_NS	Dummy variable = 1 if a black teacher teaching ≥60% Native American or Alaskan students	0.00 (0.01)	0.00 (0.00)	–	–
BT_no majority	Dummy variable = 1 if a black teacher not teaching >60% of any group	0.02 (0.01)	0.02 (0.15)	0.02 (0.15)	0.02 (0.15)
HT_WS	Dummy variable = 1 if a Hispanic teacher teaching ≥60% white students	0.01 (0.11)	0.02* (0.14)	0.02 (0.13)	0.01 (0.09)
HT_BS	Dummy variable = 1 if a Hispanic teacher teaching ≥60% black students	0.00 (0.04)	0.01* (0.09)	0.00 (0.06)	0.01 (0.07)

(continued)

Table 1. (continued)

Variable	Variable description	SASS analyses		TFS analyses	
		Traditional	Charter	Traditional	Charter
HT_HS	Dummy variable = 1 if a Hispanic teacher teaching ≥60% Hispanic students	0.02 (0.13)	0.02 (0.16)	0.02 (0.16)	0.03 (0.16)
HT_AS	Dummy variable = 1 if a Hispanic teacher teaching ≥60% Asian/ Pacific Islander students	0.00 (0.01)	0.00 (0.02)	–	–
HT_NS	Dummy variable = 1 if a Hispanic teacher teaching ≥60% Native American or Alaskan students	0.00 (0.02)	0.00 (0.02)	–	–
HT_no majority	Dummy variable = 1 if a Hispanic teacher not teaching >60% of any group	0.01 (0.11)	0.02* (0.15)	0.02 (0.13)	0.03 (0.16)

Note: An asterisk indicates a significant difference in means between traditional public and charter schools.

Autonomy may occur at the school level as well. Teachers are autonomous at the school level when they have input over personnel (such as teacher hiring and compensation), school mission, professional development, fiscal policies (allocation, how to raise more money), and which student bodies to serve. It is possible that teachers have classroom but not school-level autonomy, and thus, it is important to measure these separately as part of the organizational structure of schools. We measure school autonomy as a scale that combines teacher responses to the questions about their influence in school-level decisions (see Table 2).

We conceptualize classroom and school autonomy as the amount of autonomy a teacher *perceives* she or he has, and thus, we are looking at individual-level autonomy. This could be problematic if there is more individual variance within a school than between schools. We decomposed the variance in classroom and school autonomy and found that the variation within schools is substantially less (16 and 19 percent, respectively) than between schools (84 and 81 percent, respectively). Thus, teachers in the same school provide consistent reports of the level of autonomy, while those in different schools do not. We are confident that we are measuring a school organizational characteristic that is shared by most of the teachers in a given school.

School-level variables. Charter school is the key school level variable in the analysis that indicates the school type. We are examining if school type matters and why, so it is important to include a school type variable as well as organizational structure variables (as described above). Other school-level variables include location in an urban, rural, or suburban setting; school resources (materials needed for teaching); student-teacher ratio; and school size.[7] We also include a measure of proportion of students receiving free or reduced-price lunch to control for social class of the student body. Though theoretically we are interested in the effects of racial mismatch rather than class mismatch, we control for school class to properly specify our models and to ensure that we are not tapping into a "class not race" effect, which is found in other education studies (Rumberger 1983). We include the entire set of individual- and school-level independent variables in both the satisfaction and turnover analyses, except the measure of satisfaction, which is included as an independent variable in models predicting teacher turnover.

Analytic Strategy

Satisfaction. In these analyses, we examine how teacher-student racial matching influences teacher satisfaction differently depending on school structure and then consider the process through which these factors influence turnover. We use the variables measured in the SASS data 1999–2000 wave. Since our hypotheses predict that both teacher-level and school-level factors influence satisfaction, we have chosen to use multilevel modeling with a continuous dependent variable in our satisfaction analyses. An analysis of variance shows that significant between-school differences exist in teacher

Table 2. Description Statistics (Means) of Variables in Schools and Staffing Survey (SASS) and Teacher Follow-up Survey (TFS) Analyses by School Type

		SASS analysis		TFS analyses	
Variables	Variable description	Traditional	Charter	Traditional	Charter
Dependent variables					
Satisfaction	Scale: standardized alpha = .636	0.00	0.09*	0.01	0.13*
	Combination of four questions: whether teacher is (1) satisfied teaching at current school, (2) feels that teaching is not a waste of time, (3) would become a teacher again, and (4) plans to remain in teaching	(0.69)	(0.70)	(0.73)	(0.65)
	unstandardized scale range 1–4, 4 = *most satisfied*				
Turnover	Multinomial; one year after the initial interview, teachers have either continued teaching in the same school, switched schools, or left teaching all together.	–	–	0.70	0.49*
				(0.79)	(0.69)
Level 1 variables					
Teacher characteristics					
Income	Teacher pay in thousands of dollars	36.95	32.30*	34.64	33.06*
		(11.54)	(8.44)	(10.89)	(8.66)
Female	Dummy variable = 1 if female	0.66	0.73*	0.68	0.70
		(0.47)	(0.44)	(0.47)	(0.46)
Advanced degree	Dummy variable = 1 if teacher has an advanced degree	0.44	0.28*	0.38	0.29*
		(0.50)	(0.45)	(0.48)	(0.46)
Years teaching 1–4 years	Dummy variable = 1 if teacher has been teaching for under 5 years	0.20	0.56*	0.65	0.84*
		(0.40)	(0.50)	(0.48)	(0.37)
Years teaching 5–10 years	Dummy variable = 1 if teacher has been teaching for 5 to 10 years	0.17	0.17	0.16	0.18
		(0.38)	(0.38)	(0.37)	(0.38)
Years Teaching 11+ years	Dummy variable = 1 if teacher has been teaching for over 10 years	0.59	0.20*	0.38	0.20*
		(0.49)	(0.40)	(0.49)	(0.40)
Years at current school	Number of years at current school	8.78	2.40*	5.49	2.73*
		(8.77)	(4.41)	(7.37)	(4.72)
Elementary school teacher	Dummy variable = 1 if teacher teaches grades pre–K to 8	0.44	0.68*	0.60	0.68
		(0.50)	(0.47)	(0.49)	(0.47)
High school teacher	Dummy variable = 1 if teacher teaches grades 9–12	0.55	0.31*	0.39	0.31*
		(0.50)	(0.46)	(0.49)	(0.46)
Hours worked	Number of hours worked in prior week	38.36	39.58*	38.22	39.63*
		(3.63)	(3.70)	(3.81)	(3.73)
Union	Dummy variable = 1 if teacher is in a union	0.74	0.25*	0.74	0.30*
		(0.44)	(0.43)	(0.44)	(0.46)
Teacher perception of school					
Attendance	Teacher's perception of student attendance, on scale of 1–4	2.39	2.55*	2.45	2.49
		(0.89)	(0.95)	(0.89)	(0.93)
Student quality	Scale: standardized alpha = .79	−0.05	0.30*	−0.06	0.16*
	Combination of four questions: level of problems with (1) students cutting class, (2) student disrespect for teachers, (3) student apathy, and (4) students coming unprepared	(0.77)	(0.81)	(0.77)	(0.76)
	Unstandardized scale range 1–4; 4 = *best quality/fewest problems*				

(continued)

Table 2. (continued)

Variables	Variable description	SASS analysis		TFS analyses	
		Traditional	Charter	Traditional	Charter
School expectations	Scale: standardized alpha = .80 Combination of two questions: teacher's perception of whether (1) principal lets staff know what is expected and (2) principal knows what kind of school he/she wants and communicates it to staff Unstandardized scale range 1–4; 4 = *clear expectations*	0.01 (0.92)	−0.06* (0.92)	0.02 (0.91)	−0.07 (0.89)
Disruptions of teaching	Number of teacher-reported class disruptions due to disciplinary problems within the past week	1.54 (14.85)	12.84* (15.81)	12.74 (15.88)	13.76 (16.92)
Student misbehavior	Dummy variable = 1 if teacher agreed that student misbehavior interferes with teaching	0.41 (0.49)	0.45* (0.50)	0.43 (0.50)	0.44 (0.50)
Teacher job characteristics					
Classroom autonomy	Scale: standardized alpha = .78 Combination of six questions: Teacher has control over (1) selecting textbooks and other instructional materials, (2) teaching techniques, (3) discipline, (4) amount of homework, (5) evaluation procedures, and (6) content, topics and skills to be taught Unstandardized scale range 1–4; 4 = *most autonomy*	−0.01 (0.68)	0.00 (0.77)	−0.03 (0.67)	0.03 (0.75)
School autonomy	Scale: standardized alpha = .80 Combination of seven questions: Teacher has influence over setting (1) performance standards, (2) curriculum, (3) content of in-service professional development, (4) evaluating teachers, (5) hiring new teachers, (6) discipline policy, and (7) school budget Unstandardized scale range 1–4; 4 = *most autonomy*	−0.04 (0.66)	0.29* (0.82)	−0.08 (0.65)	0.26* (0.80)
Coworker support	Scale: standardized alpha = .73 Combination of three questions: teacher's perception of whether (1) rules for student behavior are consistently enforced, (2) colleagues share beliefs and values about schools central mission, and (3) great deal of cooperative effort among staff Unstandardized scale range 1–4; 4 = *most support*	−0.04 (0.80)	0.23 (0.81)	−0.07 (0.81)	0.16* (0.78)
Students are tracked	Dummy variable = 1 if students are assigned to teachers' classes on the basis of achievement or ability level	0.33 (0.47)	0.25* (0.43)	0.32 (0.47)	0.26* (0.44)

(continued)

Table 2. (continued)

Variables	Variable description	SASS analysis		TFS analyses	
		Traditional	Charter	Traditional	Charter
Job security	Dummy variable = 1 if teacher worries about job security because of student performance on state or local tests	0.57 (0.49)	0.58 (0.49)	0.61 (0.49)	0.58 (0.49)
Level 2 variables					
Suburban	Dummy variable = 1 if school is in a suburban area	0.40 (0.49)	0.43* (0.50)	0.45 (0.50)	0.46 (0.50)
Urban	Dummy variable = 1 if school is in an urban area	0.22 (0.42)	0.47* (0.50)	0.23 (0.42)	0.44* (0.50)
Rural	Dummy variable = 1 if school is in a rural area	0.38 (0.49)	0.10* (0.30)	0.32 (0.47)	0.10* (0.30)
Resources	School average of teacher's perception of availability of needed classroom materials	3.07 (0.54)	3.06 (0.61)	3.03 (0.84)	3.05 (0.74)
Student-teacher ratio	Ratio of students to teachers	0.08 (0.04)	0.08* (0.07)	0.07 (0.04)	0.08* (0.08)
% free/reduced-price lunch	Percent of students on free or reduced lunch	0.36 (0.27)	0.40* (0.32)	0.38 (0.28)	0.42* (0.33)
School size	Number of students in school/100	8.20 (6.45)	4.18* (3.65)	7.65 (6.00)	4.61* (4.30)
N		31,170	1,760	2,210	560

Note: An asterisk indicates a significant difference in means between traditional public and charter schools. *n*s are rounded to nearest tenth per National Center for Education Statistics restricted data use agreement. Standard Deviation in parentheses.

satisfaction. The intraclass correlation is .13, which means that 13 percent of the variance in satisfaction is due to differences between schools.

In Table 3, we present two models to examine the effects of race on satisfaction. We use dummy variables as described above for racial mismatch. The models in Table 3 include the racial mismatch variables only at Level 1; thus, we are looking at how the race of the teacher and corresponding racial composition of the student body affect teacher satisfaction, without controlling for other individual-level and school-level variables.[8] In Table 3, Model 2, we use a summary measure of racial mismatch to test our hypothesis that racial mismatch between teachers and students will have a significantly more negative effect on white teachers' satisfaction than it will on teachers of other racial/ethnic origins, an important theoretical question we posed earlier. Table 4 examines the cross-level effects of charter school on racial mismatch, which tests to see if charter schools reduce the effect of racial mismatch on teacher satisfaction.

Table 5 examines the mediating effects of autonomy on teacher satisfaction. In this table, we have several coefficients in which we modeled a significant random component, meaning that the effect of that independent variable is not uniform across schools. These coefficients are marked in bold. Table 5, Model 1 allows us to examine possible mediators of the effect of racial mismatch on satisfaction. In Table 5, Model 2 isolates the effects of school-level variables on teacher satisfaction, while Model 2a includes school-level variables and teacher autonomy to show the mediators of the effect of charter school on satisfaction. Model 3 in Table 5 presents an analysis of all individual-level and school-level variables. All variables have been grand-mean centered.

Turnover. The turnover analyses use a dependent variable from the TFS, but all the independent variables are measured using the SASS 1999–2000 data. Though we still have hypotheses that include both teacher-level and school-level variables, we cannot use HLM for the turnover analysis. More than 56% of schools in the data sampled only 1 teacher (of the 2,770 teachers in the follow-up sample, 1,980 were the only teachers sampled from their schools), making HLM an inefficient and inappropriate analytic tool. We used multinomial regression analyses instead to model our three-category

Table 3. Hierarchical Linear Modeling Analysis of Teacher Satisfaction on Racial Mismatch

	Beta	*SE*
Model 1: Racial mismatch		
Average intercept	0.04**	0.01
Racial mismatch (reference category: WT_WS)		
WT_BS	−0.27**	0.03
WT_HS	−0.07†	0.04
WT_AS	−0.08	0.13
WT_NS	−0.22**	0.04
WT_no majority	−0.09**	0.02
BT_WS	−0.03	0.04
BT_BS	−0.13**	0.04
BT_HS	−0.02	0.13
BT_AS	−1.10*	0.53
BT_NS	−0.49*	0.22
BT_no majority	−0.03	0.05
HT_WS	0.00	0.04
HT_BS	−0.33*	0.14
HT_HS	−0.01	0.04
HT_AS	−0.72**	0.14
HT_NS	0.01	0.21
HT_no majority	0.06	0.05
Deviance	63,788.02	
Number of parameters	2	
Reliability of intercept	0.34	
Model 2: Individual-level interaction model		
Intercept	0.08**	0.01
White teacher	0.06*	0.03
Teach in school with student of a different race	0.04	0.04
White Teacher × Teach Different Race	−0.16**	0.04
Deviance	63,739.45	
Parameters	2	
Reliability of intercept	0.34	

Note: *N* = 32,930 teachers in 7,190 schools (31,170 traditional public school teachers in 6,738 traditional public schools, and 1,760 charter school teachers in 450 charter schools). *ns* are rounded to nearest tenth per National Center for Education Statistics restricted data use agreement. All variables are grand-mean centered. †$p < .10$. *$p < .05$. **$p < .01$.

dependent variable (reference category is "remained in teaching at the same school").[9] We corrected for nonindependence in our models by using the Huber-White correction for standard errors.

Table 6 shows four models to examine teacher turnover. Model 1 examines how the race of the teacher, corresponding student racial composition,

Table 4. Hierarchical Linear Models of Teacher Satisfaction on Charter School and Racial Mismatch Cross-level Effects

	Beta	*SE*
Level 1		
Average Intercept	0.05**	0.01
Racial mismatch (reference category: WT_WS)		
On WT_BS slope coefficient		
Intercept (WT_BS)	−0.26**	0.03
Charter	0.17*	0.07
WT_HS	−0.07†	0.04
WT_AS	−0.08	0.13
WT_NA	−0.22**	0.04
WT_no majority	−0.09**	0.02
BT_WS	−0.03	0.04
BT_BS	−0.13**	0.04
BT_HS	−0.02	0.13
BT_AS	−1.10*	0.53
BT_NA	−0.49*	0.22
BT_no majority	−0.03	0.05
HT_WS	0.00	0.04
HT_BS	−0.33*	0.14
HT_HS	−0.01	0.04
HT_AS	−0.72**	0.14
HT_NS	0.01	0.21
HT_no majority	0.06	0.05
Level 2		
Charter	0.06**	0.02
Deviance	63,683.80	
Number of parameters	2.00	
Intercept reliability	0.340	

Note: *N* = 32,930 teachers in 7,190 schools (31,170 traditional public school teachers in 6,740 traditional public schools, and 1,760 charter school teachers in 450 charter schools). *ns* are rounded to nearest tenth per National Center for Education Statistics restricted data use agreement. All variables are grand-mean centered. †$p < .10$. *$p < .05$. **$p < .01$.

and previous level of satisfaction affect teacher turnover. Models 2 and 3 of Table 6 allow us to examine possible mediators of the effect of racial mismatch on turnover. Finally in Table 6, Model 4, we present an analysis of all individual-level and school-level variables.

ANALYSIS

Racial Mismatch and Satisfaction

Analysis in Table 3 Model 1 supports that racial mismatch is negatively associated with satisfaction

Table 5. Hierarchical Linear Models of Teacher Satisfaction on Racial Mismatch and Organizational Structure

	Model 1		Model 2		Model 2a		Model 3	
	Beta	*SE*	Beta	*SE*	Beta	*SE*	Beta	*SE*
Average intercept	0.00	0.00	0.04**	0.01	0.04**	0.01	0.00	0.00
Level 1								
Racial mismatch (reference category: WT_WS)								
WT_BS	0.01	0.02	−0.19**	0.04	−0.11**	0.03	−0.01	0.03
WT_HS	0.01	0.02	−0.02	0.04	0.00	0.04	−0.04	0.04
WT_AS	−0.19**	0.07	0.01	0.11	−0.13	0.11	−0.17**	0.03
WT_NS	0.06	0.05	−0.18**	0.04	−0.10*	0.04	0.03	0.04
WT_no majority	0.01	0.01	−0.04†	0.02	−0.01	0.02	−0.01	0.02
BT_WS	−0.08**	0.03	−0.03	0.05	−0.04	0.05	−0.09*	0.04
BT_BS	0.02	0.02	−0.04	0.04	0.01	0.04	−0.01	0.03
BT_HS	0.02	0.06	0.06	0.13	0.10	0.12	−0.04	0.10
BT_AS	−0.58*	0.28	−0.98*	0.49	−0.81†	0.45	−0.63**	0.20
BT_NS	0.10	0.56	−0.45*	0.22	−0.35†	0.19	0.07	0.15
BT_no majority	−0.03	0.02	0.01	0.05	−0.01	0.04	−0.06	0.04
HT_WS	−0.03	0.03	0.00	0.04	−0.01	0.04	−0.04	0.03
HT_BS	−0.16†	0.08	−0.24†	0.14	−0.24†	0.12	−0.19	0.12
HT_HS	0.01	0.02	0.05	0.04	0.03	0.04	−0.04	0.04
HT_AS	−0.60**	0.19	−0.62**	0.16	−0.72**	0.16	−0.58**	0.18
HT_NS	0.37	0.26	0.04	0.19	0.02	0.24	0.34	0.27
HT_no majority	0.07**	0.03	0.11*	0.05	0.10†	0.06	0.04	0.05
Teacher characteristics								
Income	0.00**	0.00					0.00**	0.00
Female	0.05**	0.01					0.05**	0.01
Advanced degree	−0.02*	0.01					−0.02†	0.01
Years teaching 5–10 years	−0.06**	0.01					−0.06**	0.02
Years teaching 11 years+	−0.09**	0.01					−0.09**	0.02
Years at current school	0.00*	0.00					0.00	0.00
High school teacher	−0.01	0.01					−0.01	0.01
Hours worked	**0.00****	**0.00**					**0.00****	**0.00**
Union	0.05**	0.01					0.05**	0.01
Teacher perception of school								
Attendance	**−0.01****	0.01					**−0.01**	**0.01**
Student quality	**0.16****	0.01					**0.16****	**0.01**
School expectations	**−0.10****	0.00					**−0.09****	**0.01**
Disruptions of teaching	**0.00****	0.00					**0.00****	**0.00**
Student misbehavior	**−0.13****	0.01					**−0.13****	**0.01**
Teacher's job characteristics (organizational structure)								
Classroom autonomy	**0.11****	0.01			**0.16****	0.01	**0.11****	**0.01**
School autonomy	**0.12****	0.01			**0.23****	0.01	**0.12****	**0.01**
Coworker support	**0.11****	0.01					**0.11****	**0.01**
Students are tracked	**0.01**	0.01					**0.00**	**0.01**
Job security	**0.04****	0.00					**0.04****	**0.01**
Level 2								
Charter			0.04*	0.02	−0.06**	0.02	−0.02	0.02
Urban			−0.03†	0.02	−0.04*	0.02	−0.01	0.02

(continued)

Table 5. (continued)

	Model 1		Model 2		Model 2a		Model 3	
	Beta	*SE*	Beta	*SE*	Beta	*SE*	Beta	*SE*
Rural			−0.07**	0.01	−0.09**	0.01	0.00	0.01
Resources			0.18**	0.01	0.11**	0.01	0.03**	0.01
Student-teacher ratio			−0.80**	0.20	−0.80**	0.17	−0.28†	0.16
% free/reduced-price lunch			−0.01	0.03	0.03	0.03	0.11**	0.03
School size			−0.01**	0.00	0.00**	0.00	0.00**	0.00
Model fit statistics								
Deviance	52,655.69		63,120.56		58,865.97		53,624.67	
Number of parameters	79		2		7		79	
Reliability of intercept	0.09		0.29		0.17		0.09	

Note: N = 32,930 teachers in 7,190 schools (31,170 traditional public school teachers in 6,740 traditional public schools, and 1,760 charter school teachers in 450 charter schools). *n*s are rounded to nearest tenth per National Center for Education Statistics restricted data use agreement. All variables are grand-mean centered. Results in bold indicate coefficients in which is modeled a significant random component, meaning that the effect of that independent variable is not uniform across schools.
†$p < .10$. *$p < .05$. **$p < .01$.

to some extent when controls are not included in the model. We see that, on average, white teachers who teach in a school with a majority of black students (WT_BS), in a school with a majority Hispanic students (WT_HS), or in a school where no one race makes up the majority are less satisfied than white teachers who teach a majority of white students (WT_WS reference category). Hispanic teachers are less satisfied than white teachers who teach in white schools only when they teach in schools with a majority of black students (HT_BS). Nevertheless, black teachers seem to show a contradiction to this hypothesis. Black teachers are *less* satisfied than white teachers teaching in white schools when they teach in a majority black school (BT_BS).

Further supplemental analyses examined the effect of teachers' race and school composition by changing the reference category. In analyses not shown, we find that Hispanic teachers teaching in schools with a majority of black students are less satisfied compared to Hispanic teachers teaching in a school with a majority of Hispanic students. Hispanic teachers teaching in a school with white students are not significantly more or less satisfied than Hispanic teachers teaching Hispanic students. Black teachers teaching in schools with students of other races are no more or less satisfied than black teachers teaching in schools with black students. These findings suggest that rather than lowering worker satisfaction because of group differences, as organizational demographers suggest, teacher-student racial mismatch may be associated with lower teacher satisfaction due to status composition factors such as school quality, which we explore in subsequent models. We suspect that these findings are driven by the overall quality of a school in which a student population is majority black. The results in Table 5 speak to this possibility and examine the reduced effect of racial mismatch once teacher perceptions of student quality are controlled.

Before we return to a discussion of the mediating effects of student quality on satisfaction, we consider the expectation that white teachers who teach in schools with minority students may be more dissatisfied than minority teachers who teach in racially mismatched schools. The analyses in Table 3, Model 1, cannot explore this interaction effect explicitly. We test this hypothesis by running an interaction between two dummy variables and show the results in Table 3, Model 2. The two sets of analysis complement one another and help reveal how racial mismatch matters for each group (Model 1) and subsequently whether one group (white teachers) are *more* dissatisfied than other groups (Model 2). In Model 2, we include a dummy variable indicating whether a teacher is white, as well as a dummy variable identifying teachers who teach in schools with a majority of students who are a different race. The interaction between these variables reveals three important findings.

Table 6. Multinomial Regression of Turnover on Racial Mismatch and Organizational Structure

	Model 1		Model 2		Model 3		Model 4	
	Different school	Not teaching	Different school	Not teaching	Different school	Not teaching	Different school	Not teaching
Level 1								
Satisfaction	0.57**	0.53**	0.65**	0.38**	0.57**	0.52**	0.63**	0.38**
Race Mismatch (reference category: WT_WS)								
WT_BS	1.39	2.67	1.09	3.87†	0.89	4.28†	0.79	5.14*
WT_HS	1.57	1.13	1.24	0.90	1.02	1.37	0.88	1.08
WT_Other	0.42	1.50	0.27†	1.80	0.28	1.79	0.18*	1.80
WT_no majority	1.07	1.86	0.90	1.49	0.88	2.20*	0.77	1.76
BT_WS	0.64	2.96	0.52	2.83	0.58	3.12	0.50	2.96
BT_BS	1.85†	1.71	1.45	1.76	1.10	2.57	0.97	1.97
BT_HS	0.00**	0.36	0.00**	0.99	0.00**	0.79	0.00**	2.10
BT_no majority	0.71	2.41	0.55	1.79	0.56	2.62	0.45	2.19
HT_WS	2.51*	1.45	2.07†	1.22	2.65*	1.29	2.32*	1.34
HT_BS	0.04**	0.00**	0.02**	0.00**	0.02**	0.00**	0.01**	0.00**
HT_HS	0.77	1.08	0.52	0.67	0.48	1.52	0.35†	0.93
HT_no majority	1.54	1.01	1.01	0.60	1.18	1.27	0.75	0.91
Teacher characteristics (organizational structure)								
Income			0.99	1.01			1.00	1.01
Female			1.08	0.78			1.05	0.74
Advanced degree			1.26	1.95†			1.27	2.03*
Years teaching 5–10 years			0.58*	0.85			0.59*	0.80
Years teaching 11 years+			0.46**	0.52			0.46**	0.51
Years at current school			0.95*	0.97			0.95*	0.97
High school teacher			0.73	1.41			0.89	1.60
Hours worked			1.06*	1.07†			1.06**	1.07†
Union			0.58**	0.58			0.58**	0.57
Teacher perception of school								
Attendance			0.91	0.63†			0.91	0.62*
Student quality			1.02	1.27			1.04	1.26
School expectations			1.08	0.75†			1.08	0.77†
Disruptions of teaching			1.00	1.01			1.00	1.01
Student misbehavior			1.01	0.69			0.97	0.63
Teacher's job characteristics								
Classroom autonomy			1.01	0.90			1.01	0.95
School autonomy			0.81	1.58†			0.79†	1.68*
Coworker support			0.89	0.91			0.88	0.94
Students are tracked			0.97	1.42			0.98	1.43
Job security			0.95	0.68			0.92	0.71
Level 2								
Charter					2.47**	2.70**	1.19	1.10
Urban					0.83	0.43**	0.88	0.39**
Rural					0.83	0.73	0.79	0.60†
Resources					0.93	1.03	1.04	0.89
Student-teacher ratio					1.14	2.73	4.36	0.88
% free/reduced-price lunch					2.85**	0.88	2.68**	1.07
School size					0.98	1.02	0.98	0.98
−2 log likelihood	−1,056.24		−976.90		−1,043.22		−966.23	
N	2,770		2,770		2,770		2,770	

Note: All coefficients are presented in odds ratios. *ns* are rounded to nearest tenth per National Center for Education Statistics restricted data use agreement.

†$p < .10$. *$p < .05$. **$p < .01$.

First, white teachers are slightly more satisfied than minority teachers (as seen in the positive coefficient for white teachers). This makes sense theoretically—the broader work literature has shown that whites are generally more satisfied with their work than are minorities (Clay-Warner, Reynolds, and Roman 2005; Tuch and Martin 1991). Second, we see that the direct effect of teaching in a racially matched school is not significant. Given the interaction term, this means that racial mismatch does not have an effect for nonwhite teachers. The effect of racial mismatch for white teachers, however, is negative (the sum of the interaction coefficient and the mismatch coefficient). To interpret the magnitude of this effect, we rely upon the unstandardized scale for satisfaction.[10] For white teachers, a racial mismatch is associated with a decrease of 0.10 on the satisfaction scale. Given that the unstandardized scale has a limited range from 1 to 4.5, this is an important decrease in satisfaction. Therefore, our argument is supported—the effect of teacher-student racial mismatch on satisfaction is more negative for white teachers than it is for nonwhite teachers. Like Mueller et al. (1999), our data support a racial nonsymmetry hypothesis. Minority teachers are not as negatively affected by being in mismatched contexts as are white teachers (Dworkin 1987; Hoffman 1985).

Racial Mismatch, Satisfaction, and the Effect of Charter Schools

We also hypothesized that charter schools may lessen the negative effect of teaching in racially mismatched schools. We use cross-level interactions to examine this possibility and discover only one significant interaction, as presented in Table 4. White charter school teachers teaching in majority black schools are more satisfied than white traditional public school teachers when they teach in a majority black schools. In fact, the effect of WT_BS and charter schools is significant, meaning that there is a direct effect of charter schools on the satisfaction of this group. However, the interaction is also significant, implying that the gap in satisfaction between white teachers teaching in schools with a majority of black students and white teachers teaching in schools with majority white students is significantly larger than zero. That gap is smaller in charter schools than it is in public schools.

Why Charter Schools Matter: Mediating Effects of Organizational Structure

Returning to the question of why blacks teaching in schools with a majority of black students are less satisfied than whites are teaching in white schools, we turn to Table 5, Model 1. The results here show that after adding other independent variables that capture teacher characteristics, teachers' perceptions of their schools, and autonomy, there is no longer a significant negative effect for black teachers who teach in a school where the majority of students are black. In analyses not shown, we added each teacher characteristic and teacher perception variable individually to the model to see which variable mediated the relationship between racial mismatch and satisfaction. It was indeed teacher perception of student quality that removed the negative effect of BT_BS on satisfaction.

Additionally, the relationship between white teachers who teach in majority black schools and satisfaction also disappears when we add student quality into the equation. Interestingly, higher minority concentrations in a school may increase the likelihood of having poor school quality indicators (as perceived by the teacher) and thus lower satisfaction. Therefore, the effects of racial mismatch on satisfaction are mediated by teacher perceptions of student quality. Compared to white teachers in a majority white school, white and Hispanic teachers whose students are majority black are less satisfied with their jobs because they *perceive* their students to be of lower quality.

Furthermore, examining the bold coefficients in Table 5, the significant random effect for student quality indicates that the effect of teachers' perceptions of student quality is not uniform across all schools. The gap in satisfaction by perceived student quality varies significantly across schools. This random effect also exists for teacher perceptions and teacher characteristics. Classroom and school autonomy as well as coworker support and school expectations, attendance, student quality, disruption, tracking, and job security, and hours worked all had significant random components. Substantively, this could mean that teacher perceptions and characteristics are picking up objective differences between schools or that teachers in the same school are more likely to agree in their perceptions than are teachers in different schools.

In either case, the effect of these perceptions varies from school to school.

Model 2 in Table 5 addresses our hypotheses relating to organizational structure and includes measures at the school level in addition to the racial mismatch variables. We expect that teachers who teach in charter schools will be more satisfied than teachers who teach in traditional public schools. In fact, charter school teachers are significantly more satisfied than are traditional public school teachers. Using the unstandardized dependent variable to gauge the magnitude of this effect, we found that being a teacher in a charter school increases satisfaction by 0.04, close to a 10th of a point on the limited range. We also note that the variable capturing white teachers who teach in a school with majority black students is significant in this model because school quality is not yet included.[11]

We hypothesized that differences in satisfaction between charter and traditional public schools may be due to differences in autonomy. The *t*-tests shown in Table 2 demonstrated significant differences in both school and classroom autonomy between charter and traditional public schools, supporting the view that charter schools give teachers more autonomy on average. We added school and classroom autonomy to Model 2a to see whether autonomy in fact mediates the relationship between charter school and satisfaction. We show in Model 2a in Table 5 that it was indeed teacher perception of both classroom and school autonomy that reduced the effect of charter on satisfaction. In fact, not only does autonomy reduce the effect, but it also reverses the effect. Thus, once we control for autonomy, charter schools are no longer associated with increased satisfaction but, rather, with *decreased* satisfaction, net of other variables.

Model 3 in Table 5 examines the combined effect of individual- and school-level variables. Indeed, higher levels of teacher-reported autonomy are associated with greater levels of satisfaction. Again, we ran this model using the unstandardized satisfaction scale, rather than the standardized scale, as the dependent variable in order to more easily interpret the magnitude of this effect. We discovered that a 1-point increase in classroom autonomy is associated with a 0.15-point increase in satisfaction and a 1-point increase in school autonomy is associated with a 0.18-point increase in satisfaction on a 1- to 4.5-point scale.[12] Thus, once we account for individual-level variance in teachers' perceptions of their work environments, charter schools are no longer the ideal haven for increasing teacher satisfaction but do not negatively affect satisfaction.

Turnover

The models in Table 6 examine teacher turnover. We first find that satisfaction at time one decreases teacher turnover at time two. Based on the turnover research in the work literature (Cohen 2006; Curry et al. 1986; Lambert, Hogan, and Barton 2001; Senter and Martin 2007), this finding is not unexpected. This result holds in the most and the least restrictive models. Greater reported satisfaction is associated with a decreased likelihood that teachers will both leave their schools for another teaching job and leave the teaching occupation altogether. The more interesting story is about racial mismatch and school structure on turnover.

We had stated that teachers who teach in racially mismatched schools would be more likely to leave their jobs. In actuality, we find that black teachers in schools with a majority of black students are more likely than white teachers in white schools to be in a different school one year later than to be working in the same school. The pattern of significant results in Model 1 of Table 6 do not suggest that racial mismatch increases the likelihood of a teacher leaving his or her school or teaching overall, and this is particularly true for white teachers, who are equally satisfied teaching both white and minority students. Once we control for either teacher characteristics in Model 2 or school-level variables in Models 3 and 4, however, we see an interesting racial mismatch finding. White teachers teaching in a majority black school are more likely to leave the teaching occupation than are white teachers teaching in a school of majority white students. In the full model (Model 4), white teachers teaching in majority black schools are more than five times more likely to leave teaching than are white teachers teaching in majority white schools. In analyses not shown, we entered the teacher and school variables one at a time to reveal which variables suppressed the relationship between WT_BS and leaving teaching. We found that teaching in a high school, working more hours, and having an advanced degree independently increase the likelihood that WT_BS will leave the teaching occupation. Teachers who teach in high school and those who have advanced degrees may have

greater opportunities for promotion elsewhere. Previous occupational literature has generally shown that stunted opportunities for advancement and promotion are linked to higher turnover (see Lease 1998). Some teachers, particularly those with advanced degrees, may become dissatisfied with the short career ladders present in secondary education and seek other employment opportunities. In addition, Model 3 revealed a suppressor effect for WT_BS. We see in supplemental analysis that socioeconomic status, as measured by school lunch eligibility, and urban schools independently suppressed the effect of WT_BS. Thus, after controlling for either individual characteristics or school structure, white teachers teaching in schools with black students are less likely to be retained in the occupation.

In Model 3 of Table 6, we also examine the relationship between satisfaction, racial mismatch, school-level variables, and turnover to explicitly test the competing hypotheses about the effect of charter schools. We find support for the negative effect of charter schools on turnover even after controlling for satisfaction. According to our results, charter school teachers are 2.47 times *more* likely to leave their schools and 2.70 times *more* likely to leave teaching altogether than to stay at their same schools by Time 2. Whereas the work literature would suggest that satisfaction should decrease attrition, our work contributes to a body of literature that has found that both charter and private school teachers, though satisfied with their jobs, have a lower retention rate than do traditional public school teachers (Ingersoll 2001; Johnson and Landman 2000).

We wanted to understand, however, what it is about charter schools that leads to lower retention rates. First, we expected that charter schools' greater autonomy would moderate the effects of racial mismatch on both teacher satisfaction and turnover. Therefore, we examined an interaction between charter school and white teachers teaching in majority black schools to see if the greater autonomy that charter school teachers have on average would reduce the race effect and thus buffer them from high levels of turnover (analysis not shown).[13] This interaction did not significantly predict turnover. It seems that factors that are important for creating satisfaction and reducing the racial mismatch effects (such as autonomy) are not the same for turnover.

Second, we modeled different characteristics of the charter schools to examine their effects on turnover. Model 4 of Table 6 includes information about the teacher, school, and job as reported by the teacher. We find that when we control for unionization, the relationship between charter schools and going to a different school becomes nonsignificant. Although charter schools may increase teacher satisfaction through their ability to give teachers classroom autonomy, charter schools may suffer from higher turnover because of decreased levels of unionization and the stability unions can bring to the occupation. In fact, we see in a cross-tabulation and in our satisfaction results that charter school teachers are less likely to be unionized than are traditional school teachers as is found in prior research as well (Malloy and Wohlstetter 2003).[14]

Before we conclude, it is important to note that teachers are not randomly assigned to schools. We know that they possess knowledge about their potential places of employment when they apply and are hired for jobs. Teachers who seek out charter schools may be particularly unique in that they are likely to be younger and uncertified (or at least have used nontraditional routes of certification) and may have never taught before. In addition, they may be seeking out these schools because of a personal commitment to reducing inequality and being part of something innovative. Thus, it is possible that the effects we found in this analysis are driven not by the causal mechanism found in charter schools but rather by the selection of teachers into the charter schools themselves. Controlling for teacher characteristics in HLM or in multinomial regression does not adequately deal with selection (Morgan 2001; Morgan and Harding 2006; Rosenbaum and Rubin 1983). Thus, in order to be confident with our analysis, it is important to address issues of selection. We have done so by using propensity score matching and found similar substantive and statistical affects (description of our robustness checks and tables are available from the first author).

DISCUSSION AND CONCLUSION

Although racial and organizational determinants of teacher satisfaction have been studied separately, few if any studies have examined the two simultaneously. This work has filled that gap by examining how racial mismatch between teachers and students influences satisfaction and how that relationship is altered by school type. In

particular, we examined how the relationship between racial mismatch and teacher satisfaction differs between charter schools and traditional public schools. We found some expected and some surprising results.

First, our findings show that there is an association between worker and client racial mismatch and satisfaction. The research on satisfaction and race has typically examined coworker relationships. Our work, like that of Mueller et al. (1999), however, shows that the racial composition of clients (i.e., students) matters for workers (i.e., teachers). White teachers in particular are more satisfied teaching in schools where the majority of students are white.

Second, our work implies that, all else equal, an organizational model that promotes autonomy may be associated with high levels of worker satisfaction. We found that teachers in charter schools were more satisfied than teachers in traditional public schools and that this difference emerged because charter school teachers tend to have more autonomy than traditional public school teachers. This suggests that if traditional schools could provide teachers with more autonomy, this may lead to increased teacher satisfaction. If No Child Left Behind has affected charter schools in the same way it has affected traditional schools (i.e., by narrowing the curriculum and lowering autonomy), the differences we see between traditional public schools and charter schools may in fact decline over time. However, if charter schools have maintained high levels of classroom autonomy, we should expect the differences in satisfaction to increase as autonomy in traditional public schools decreases.

Third, the results presented here show that autonomy has the potential to ameliorate the negative impact of racial mismatch on work attitudes. Our multilevel analysis shows that for white teachers the negative effect of teaching in predominantly black schools is decreased when they teach in charter schools. Although we attempted to account for the issue of selection in the supplemental propensity score matching analyses (not shown here), we still cannot completely rule out the possibility that this is a selection effect. Charter school teachers may join charter schools only when they know the demographics of the school ahead of time. However, we think most teachers know the composition of schools they are entering when they accept a job and thus argue that selection, though possible, probably does not account for all the effect. On the contrary, we believe that the structure of charter schools increases teacher satisfaction because it gives them the resources, autonomy, and latitude to make real educational improvements.

Finally, the results of this study point to two possible mechanisms through which racial mismatch might affect teacher satisfaction. First, it is possible that white racism (highlighted by organizational demography theory) is driving the observed relationships. Racial mismatch is associated with lower satisfaction for white teachers if any nonwhite racial group predominates in their schools. Among other racial/ethnic groups, in contrast, the negative feelings associated with student race seem to be directed primarily at black students. Dissatisfaction among teachers teaching in a majority black school, however, is explained by teacher perceptions of student quality, indicating that teachers in schools with high proportions of minority (and particularly black) students are dissatisfied with their jobs because they perceive the students to be of lower quality. Thus, it could be that teachers (especially white teachers) are basing perceptions of black student quality on racial stereotypes rather than on objective assessments of student quality, a phenomenon that has been widely documented in previous research (K. Alexander et al. 1987; Downey and Pribesh 2004; Farkas et al. 1990). However, we are hesitant to embrace this explanation given that our data do not include objective measures of student quality beyond what teachers report to tease out such an effect.

A second possible explanation for the diminished effect of racial mismatch upon inclusion of teacher perceptions is that prejudice is actually *not* at play, since the effect of racial mismatch appears to be driven by student quality. It could be that teacher perceptions represent objective (as opposed to racially tinged) teacher evaluations of student quality and thus illustrate that the effects of racial mismatch on teacher satisfaction are indeed a result of (actual) differences in student quality. This story would be consistent with Ogbu's (Fordham and Ogbu 1986; Ogbu 2004) arguments about an oppositional culture, which suggests that black students purposefully misbehave in school and downplay their academic abilities in order to avoid being seen as "acting white" through being academically successful. Support for Ogbu's theory has been limited to a few single-site case studies, however, and research using nationally representative data or multiple sites has not found support for the thesis (Ainsworth-Darnell and Downey

1998; Fordham and Ogbu 1986). Nonetheless, it is not merely teachers' perceptions that black students do have lower academic achievement and greater misbehavior than white students; it may also be true (Farkas 2004; Farkas et al. 1990). Thus, even absent any racial prejudice among white teachers and oppositional culture among black youth, lower achievement could still exacerbate the tensions that already exist when teachers and students are of a different race, leading to lower satisfaction. Teachers of a different background than their students are less likely to understand student behaviors (K. Alexander et al. 1987) and communicate with students less effectively because of a lack of shared cultural styles (Pigott and Cowen 2000).

To better isolate whether racial prejudice, oppositional culture, or some other factor is driving the results, we would need to include more objective measures of student achievement and behavior that are not available in our data (such as test scores and school-level measures of student misbehavior and discipline). More research about the mechanisms through which racial mismatch affects teacher attitudes toward their work is clearly warranted, as this study only hints at these issues. Nonetheless, we feel that our results offer important insights whether or not teacher perceptions are accurate, since there is evidence that teacher perceptions influence the quality and quantity of their interactions with students (Good and Brophy 1972).

As for turnover, we have shown that satisfaction reduces worker turnover at the job and occupation level. We also show that despite its importance, satisfaction is not a sufficient precondition for the retention of workers. Although charter school teachers are more satisfied than traditional public school teachers, they still have higher levels of turnover at both the occupation and job levels. Our results indicate that the difference can be traced, in part, to lower levels of teacher unionization in charter schools. Ultimately, this higher turnover rate may mean not only that charter schools are less stable than traditional schools as organizations (Ewing Marion Kauffman Foundation 2005) but that they may also be less likely to accumulate experienced teachers. Charter schools may be a satisfying place for teachers to work (at least in the short run), but their high rates of turnover are likely to present challenges for students and school communities.

In both satisfaction and turnover analyses, we would also have liked to examine classroom-level racial context, but data limitations precluded such an analysis. It is possible (and even likely) that teachers are segregated within their schools through tracking (Hallinan 1994; Oakes 1985) and other means. Though we controlled for tracking in our analysis, it is not an adequate measure of classroom-level racial context. Even so, we feel confident that our racial mismatch results would be as robust at the classroom level as they are at the school level. Nevertheless, more research on racial mismatch in the classroom should be examined.

Though we control for grade level of the teacher, an analysis of elementary school teachers and high school teachers separately may be interesting. Organizational structure varies across school level, and thus, results may show more nuances than the current analyses. We explored this question in models not shown and found that there was a positive interaction between charter school and high school grade level, indicating that being a charter school teacher increased the positive effects of teaching high school on satisfaction. We did not find the interaction to be significant for turnover, however. Thus, given the findings from this work and our supplemental analysis, we encourage researchers to examine more fully the effect of grade level on these outcomes across school type. Related to this point, research that examines organizational structure from a more objective standpoint than teacher perceptions would be useful to tease out the effects of teacher perceptions relative to objective bureaucratic measures.

Ultimately, our research speaks to two bodies of work: racial composition and school organizational literatures. We have expanded upon both sets of theories by showing that the organizational contexts in which cross-race interactions are taking place moderate the relationship between race and satisfaction. We simultaneously examine racial composition and organizational structure, illustrating that theories of race that are devoid of organizational context are not enough to explain teacher satisfaction. Our work broadens the scope of race and bureaucratic theories of schools while at the same time elucidating the process through which teachers find satisfaction in their work and are retained in their jobs and in the occupation.

NOTES

1. Maume and Sebastian (2007) measure status by pay. With teachers this is not an accurate measure of status, and thus we do not directly assess status. Nevertheless, we suggest that schools have more or

less status based on their student racial composition. Other research has also shown a correlation between the number of minority workers in a particular job and the status or pay of that job (Tomaskovic-Devey 1993), further justifying the use of racial composition as a proxy for status.

2. All sample sizes (*n*s) are rounded to the nearest tenth per the National Center for Education Statistics restricted data use agreement.
3. This question asked former teachers to rate how important being "laid off or involuntarily transferred" was in their decision to leave the teaching profession. Importance was ranked on a five-point scale—from *not important at all* to *extremely important*. We used a conservative estimate of involuntary turnover, eliminating all former teachers who responded that this factor was even *slightly important* in their decision to leave the profession.
4. We ran the analyses with two other constructions of the dependent variable. First, we used only one-item questions, "How satisfied are you being a teacher at this school?" This construction of satisfaction yielded similar results to the more inclusive scale we use in the article. Second, we used a construction that eliminated the item "would become a teacher again" to ensure that this item did not change the nature of the satisfaction concept. The scale had a Cronbach's alpha of only .52. Nevertheless, the results remained consistent with the analyses shown here. We settled on using the full satisfaction scale because it was consistent with the literature in the area (Lee et al. 1991).
5. Mueller et al. (1999) also examined the racial mismatch of teachers to their colleagues. We also looked at variables that included teacher-to-teacher mismatch but did not find significant results and thus for parsimony in the analysis did not include those variables.
6. This set of variables is equivalent to running interactions of teachers' race with students' race but is more advantageous given our theoretical concerns. By using this strategy rather than showing direct and moderating effects of teacher race and student composition, readers can more easily identify the substantive and significant results by each interaction. The equation is identical to a traditional interaction model but statistical tests are easier and more straightforward in this strategy.
7. We used size as a continuous variable, which assumes linearity. There is a great deal of work suggesting that the effects of size may not be linear; therefore, we tested a series of dummy variables as well. Substantively, we found similar results, and for parsimony, given that size is not a key theoretical measure in our analysis, we have kept in the simpler continuous variable.
8. All dummy variables for teacher's race and school race have been entered into the model with WT_WS as the reference category. There were small *n*s in four of the categories (BT_AS, BT_NS, HT_AS, HT_NS), however. For consistency across teachers' race, we have kept those categories in the analysis, but any interpretation of the coefficients and significance must be made with caution. We ran analysis dropping those dummy variables and the 30 cases that correspond to ensure that our results were not biased by the noise these small cell sizes could have caused. The story both in magnitude and significance of the variables remained the same as the results we present.
9. All the models shown indicate odds ratios rather than the coefficient for each of interpretation. An exponentiated coefficient of 1.06 indicates that a unit change in an independent variable will increase or decrease the likelihood of the changing schools by 6 percent as compared to staying in the same school. An exponentiated coefficient of less than 1 indicates a negative relationship between the dependent and independent variable.
10. We ran all of the Schools and Staffing Survey data analyses using both standardized and unstandardized scales for satisfaction, the dependent variable. The coefficients in the models are nearly identical. Using standardized scales is still most appropriate in order to account for unequal weighting of individual items within the scales; however, unstandardized scales are easier to interpret and thus are used in several places to describe the magnitude of the effect of certain independent variables on teacher satisfaction.
11. This effect may be driven by the newness of charter schools. We were not able to test this "newness" hypothesis directly but did include a measure of how many years a teacher worked at their current schools. We hoped this would capture an effect of a new school for charter school teachers. The results were not significant in any model. Clearly, more research over time may see a declining effect of charter schools on satisfaction.
12. In this analysis, not shown, all of the scales were unstandardized.
13. We tested other forms of this interaction—autonomy × charter school and teaching a different race × autonomy—but these were also not significant.
14. Charter schools have lower unionization rates in part due to state legislation making unionization voluntary, difficult, and unnecessary. It is beyond the scope of this article to examine *why* charter school teachers are less likely to be unionized. Rather, our results show that lower rates of unionization and turnover are correlated.

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