Contradiction in Culture: Cultural Capital or Oppositional Culture?

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ABSTRACT

KAREN PHELAN KOZLOWSKI: Contradiction in Culture: Cultural Capital or
Oppositional Culture?
(Under the direction of Dr. Karolyn D. Tyson)

This study offers a new angle on the study of minority education by examining how

student-teacher perceptions of student effort are patterned by race. Educational achievement

is unquestionably patterned by race such that aside from Asian students, students of color get

lower grades and test scores than white students. Many researchers who study the cultural

component of this problem do so under one of two theoretical frameworks: oppositional peer

culture or cultural capital mismatch. However, most studies that look at cultural explanations

for outcomes focus on student values of education, regardless of the fact that these theories

are rooted in understanding and interpreting behavior. Using Swidler's "toolkit" framework

for understanding culture, this study looks at how student-teacher dis/agreement about

student work effort reflects either oppositional peer culture frameworks or cultural capital

mismatch. I use cross sectional ELS survey data of 15,325 high school sophomores and their

teachers to examine two categories of student-teacher dis/agreement: 1) student and teacher

agree student is not working hard (oppositional culture) and 2) student thinks s/he is working

hard but teacher disagrees (cultural capital mismatch). Using logistic regression, I examine

demographic and school context predictors of being in these respective categories, as well as

interactions between race/ethnicity and track placement. Results offer partial support for

both oppositional culture and cultural capital mismatch. Oppositional behavior is found

among black students in college prep math programs only and cultural capital mismatch is

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found for black, Hispanic, and American Indian/multiracial students.

This thesis is dedicated to my grandfather, Maurice "Bob" Jones (1929-2011), lifelong

teacher and superintendent.

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I. **INTRODUCTION**

Despite 50 years' worth of court-mandated equal education for all, there are still considerable disparities in education outcomes among students of color and students of different socioeconomic status (Jencks and Phillips, 1998; Condron, 2009). Scholars have suggested that the persistence of these gaps may be due to one or several of many different structural factors, including differential family background, access to resources that promote learning, and treatment of students within schools (Condron, 2009; Ferguson 2000). In addition to to these structural explanations for educational inequality, cultural explanations for student achievement have also gained popularity and research attention over the last several decades (Ogbu, 1991; Ainsworth-Darnell and Downey, 1998; Farkas, Lleras, and Maczuga, 2002; Mickelson, 1990). Many of these studies have attempted to locate cultural orientations in students through a variety of mechanisms (values, attitudes, beliefs, museum trips, etc.). However, few studies attempt to characterize students' cultural orientations against the cultural orientation of the education institution itself--particularly in terms of behavioral dimensions of culture. Teachers differentially reward students who exhibit the attitudes and behaviors they expect in the classroom, and some studies have suggested that if students all exhibited the skills and behaviors teachers expect, racial disparities in achievement would be drastically reduced or even diminished (Farkas, Grobe, Sheeham, and Shuan, 1990). However, behaviors and norms students exhibit in schools sometimes vary by class and by race/ethnicity (Lareau, 2003; Patillo-McCoy, 1999; Tyler, et. al., 2008), and these differences may reflect a cultural orientation toward school that is not rewarded by the gatekeepers to students' success--teachers. By juxtaposing students' perceptions of their work

effort with teachers' perceptions of students' work effort, this study adds to existing research the extent to which minority students exhibit opposition toward school or cultural "toolkit" mismatch with the educational institution.

Oppositional culture and cultural capital mismatch are two of the dominant cultural theories that address minority educational underachievement. The cultural capital perspective suggests that disadvantaged minority students do not have access to the kinds of cultural resources, ideas, norms, and beliefs that are required for educational success. Alternatively, the oppositional culture framework suggests that minority students, having been disillusioned by experiences of discrimination and/or perceptions of a job ceiling, will intentionally resist the structures of the dominant mainstream, thereby perpetuating the behaviors that cause underachievement. To put it in a cultural "toolkit" framework (Swidler, 1986), the cultural capital perspective suggests that students whose culture does not match the normative culture of the institution will not have the tools they need to succeed in that environment. The oppositional culture perspective suggests that students are familiar with the standards, do have the tools, but refuse to use them.

The American success narrative claims that gains will come from hard work, and the same is true for education -- if you work hard enough, anyone can get an A. However, a taken-for-granted assumption of this claim is that everyone knows what this hard work entails. If cultural capital mismatch is a result of the structural inequality minorities experience, then students might not have access to the cultural codes that tell them what the standard for hard work is. In this case we would expect to find disagreement between minority students' self-reported effort (high) and teachers' assessment of their effort (low).

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Alternatively, if it is true that everyone knows what the standard is for hard work but minority students do not believe their efforts in school will pay off, then they may be consciously choosing not to work hard. In this case we would expect to find agreement between minority students' self-reported effort (low) and teachers' assessment of their effort (low). And we would expect these outcomes to be significantly different from whites'.

Because of this apparent contradiction, the following research question guided this study: *Is the work effort minority students exert a consequence of cultural capital differences or oppositional culture*? Using cross-sectional data from the Educational Longitudinal Study (base year 2002), I analyzed patterns of student-teacher dis/agreement about whether or not the student is working hard. Logistic regression results indicate partial support for cultural capital mismatch between black, Hispanic, and American Indian/multiracial students and their teachers and support for oppositional culture among some black students.

II. BACKGROUND AND SIGNIFICANCE

Cultural Capital Perspective

The concept of cultural capital originates from the writings of Pierre Bourdieu, who developed his ideas with respect to French society. Bourdieu suggests that society is a combination of coexisting fields (for example, the field of gender, the field of politics, the field of academia, and so forth), and that each field operates according to (often unspoken) rules of practice. Knowledge of how to operate within a particular field is referred to as capital (Bourdieu, 1980). Scholars of education have become particularly interested in the notion of cultural capital, which is purported to be an essential ingredient to academic success. That is, cultural capital reflects skills and abilities that are necessary for success in

the field of education. However, what "cultural capital" actually is remains somewhat elusive. Broadly, cultural capital has come to be known as a knowledge of dominant cultural attitudes, preferences, and behaviors defined according to the standards of the upper and middles classes. For empirical purposes though, researchers have conceptualized cultural capital as an understanding and appreciation for "high brow culture," particularly art, museums, music, and so forth (Lareau and Weininger, 2003). Scholars operating under this idea of cultural capital have measured how individuals' consumption of high brow culture-- that is, theatre and lecture attendance, museum trips, amount of time reading, number of books in the household, etc.--affects educational attainment. Bourdieu argues that affinity for high brow culture is inherited from past generations of elite, which accumulates for the present generation a cultural "wealth" that reproduces cultural and social structure--a structure in which those with the most access to these cultural markers are also the most highly educated (Bourdieu 1973). However, findings are mixed regarding the effect of this kind of cultural capital on educational attainment (DiMaggio, 1982; De Graaf, 1986; Katsillis & Rubinson, 1990).

That findings are mixed may reflect a misinterpretation of Bourdieu's concept. Though Bourdieu admits that affinity for high brow culture is a consequence of social reproduction of the elite, according to Michel Lamont and Annette Lareau (1988), Bourdieu provides little evidence that cultural *capital* should be interpreted as high brow culture. Upon a careful analysis of Bourdieu's cultural capital texts, Lamont and Lareau (1988) found cultural capital to be defined more as knowledge of standards related to academics specifically, rather than knowledge of high culture in general. For example, Lamont and

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Lareau (1988:155) found that in Bourdieu and Passeron's book *Inheritors,* cultural capital "consists of informal academic standards" which also happen to be an "attribute of the dominant class." These standards/class attributes include "informal knowledge about the school, traditional humanist culture, linguistic competence and specific attitudes, or personal style" (Lamont and Lareau 1988: 155).

American culture is dominated by a "middle class hegemony" (Farkas, et. al., 1990). That is, middle class gatekeepers define normative standards for a field, and one's ability to be successful within that field's culture is determined by how well he or she exhibits those normative standards. Therefore, cultural capital within the field of education ought to reflect one's familiarity with the informal academic standards defined by the attributes of the dominant class, in which teachers are the gatekeepers to students' success. Because classrooms are structured and conducted according to this "middle class hegemony," teachers differentially reward students who embrace general skills, habits, and styles that reflect this structure (Farkas, et. al, 1990). Exhibiting these middle class standards is so important that nearly all grade differentials between race and socioeconomic groups are explained when students successfully exhibit the habits, skills, and styles informally defined as appropriate school behavior (Farkas, et. al., 1990).

Oppositional Culture Framework

The second paradigm under which scholars have studied variability in educational achievement inequality, particularly the black-white achievement gap, is the oppositional culture framework. This framework was popularized by the highly contested work of Signithia Fordham and John Obgu (1986). These authors suggest that black students resist

schooling because of historically poor relations between blacks and whites in America, personal/family experiences with discrimination, and because they perceive few real opportunities for their futures. Scholars have interpreted this hypothesis to assume that "involuntary minority" students resist schooling because they value school less than their white counterparts[1]. However, black students actually seem to value education more than white students, despite having lower levels of attainment (Ainsworth-Darnell and Downey, 1998; Harris, 2006). For many researchers, the credibility of oppositional culture's explanatory power has been lost due to this paradoxical relationship between values and attainment (Mickelson, 1990; Ainsworth-Darnell and Downey, 1998).

If oppositional culture has been officially debunked by these rigorous tests of student values, then why does oppositional culture still find some supporters among researchers? First, it has been well-documented that values do not reliably predict outcomes[2]. Second, and more importantly, people might find some intuitive sense in oppositional culture theory precisely because "oppositional-looking behavior," such as being disruptive, not doing homework, and getting in trouble, does occur in classrooms, particularly among black students, in greater frequencies than white students. For example, despite the fact that Ainsworth-Darnell and Downey (1998) found no support for anti-school attitudes or social sanctions for being a good student in the black population they studied, a frequently missed result from their study is that black students did exhibit significantly more oppositional *behavior* in classrooms than did their white peers. Specifically, black students' teachers

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[1] Involuntary minorities, according to Fordham and Ogbu, are those minorities who did not immigrate out of free will to their host country, whereas voluntary minorities are those who choose to immigrate to their host country.

[2] See Swidler (1986) and Vaisey (2009) for a review.

reported that they exerted less effort in class and were more disruptive than their white peers. The black students themselves reported a greater propensity for being in trouble and doing less homework than what their white and Asian peers reported (Ainsworth-Darnell and Downey, 1998).[3] This result is important because there appears to be a more direct connection between the behavioral dimension of an oppositional peer culture and achievement. Because teachers reward students who exhibit the skills, styles, and habits of the middle class (Farkas, et. al., 1990), those who are more likely to exhibit these "oppositional" behaviors are probably more likely to underachieve.

The Cultural Toolkit Meets Cultural Capital and Oppositional Culture

Previous researchers have missed testing key elements of each of these theories. Cultural capital researchers tend to measure "high brow" proxies of culture rather than students' knowledge of and ability to enact general classroom standards set by teachers (Lamont and Lareau, 1988). Oppositional culture researchers tend to focus on student attitudes rather than students' disinclination toward enacting these same behavioral standards. There are clear similarities in that both theories are missing an analysis of students' perception and enactment of hegemonic middle class behavioral standards in the classroom.

The reason researchers may not have considered this angle to these two theoretical approaches may be due to an inconsistent definition of culture. Common to both of these theories is a use of culture to explain an outcome. However, previous studies reveal that they do not share a common framework for understanding culture. I propose viewing the culture

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[3] Many of these outcomes may also be attributable to teachers' socialization of black youths as troublemakers and "little criminals." Ann Ferguson's (2000) book offers analysis of teachers' negative presumptions about black youths' outcomes, as well as interactions between teachers and black youth, particularly black male youth, that reflect discriminatory standards for and practice against black youth.

in both of these theories through the framework of the cultural "toolkit" (Swidler, 1986). According to this model, culture ought to be seen as a "'toolkit' of symbols, stories, rituals, and world-views" that people use to "construct strategies of action" (Swidler, 1986: 273). Through this process of selecting resources for action--whether people select them by habit, tradition, or by creative innovation--one's cultural toolkit becomes reified as legitimate, important, and sensible in particular contexts. It is because of this meaning-making process that cultural resources of the toolkit lead to group-specific strategies of action, or behavioral response.

Swidler's framework for understanding culture is a useful approach for understanding both cultural capital and oppositional culture because it suggests that the behavior one exhibits is a result of culturally-defined options for strategic action. These options for strategic action are determined and given meaning by the environment, social forces, structural resources, and institutions of a particular group of people. Because not all groups are equally valued or legitimized, some groups' options for strategic action are more likely to be seen as acceptable in certain contexts. This can lead to hegemonic norms defined by dominant groups to the extent that strategies the dominant group enact become "standard" options for action. In America, this dominant group is the white middle class.

The cultural capital perspective would suggest that those who are never socialized into middle class life would probably not have the cultural tools to be successful in a middle class cultural context. Alternatively, it may be possible that those not socialized into middle class life will still be familiar with the dominant cultural tools because they are more visible. The oppositional culture perspective would suggest that those who exhibit resistance against

the dominant class would be rejecting the cultural tools of the middle class. Now the contradiction between these two theories becomes apparent: either students do not have the tools they need to be successful in school because of a cultural mismatch, or students do have the tools they need, but refuse to use them in opposition toward the educational establishment.

Teacher Bias in the Cultural Establishment

Both the cultural capital and oppositional culture perspectives suggest clear reasons why students may not meet expectations of the educational institution, but an implicit assumption of both of these perspectives is that agents of the educational institution provide fair and objective assessments of students. We know, however, that teachers can be biased in their treatment and assessment of students based on students' race and class. Even at the elementary and middle school levels, whether because of "inappropriate" dress, language (i.e. non-standard black English), or class disruption (typical particularly of most boys that age), teachers perceive young black males to be criminals in training (Ferguson, 2000). Ferguson argues that not only do these perceptions lead teachers to disproportionately punish black male students, but they also lead black male students to internalize the role and expectations of little criminals.

Some may assume that white teachers may be the primary culprits of this negative association and categorization of black students; however, the black-students-as-trouble-makers perception is not one that is just exhibited by white teachers. In fact, Tyson (2003) found that black teachers are just as likely as white teachers to negatively categorize the behavior of black students. Teacher perceptions of students, their behavior, and their ability

are not only determined by race, but by class as well. "Good" students are often represented by middle class students (real or imagined), whereas "bad" students are often thought to come from lower class backgrounds (Morris, 2005). This reflects the middle class hegemony structure that Farkas, et. al. (1990) suggest to be characteristic of the educational system. Yet, as Morris(2005) shows us, class and race intersect in ways that over- or under-value race or class separately; for example, black teachers in the school Morris studied viewed white students as "middle class," whereas white teachers tended to view white students as "trailer trash." This finding indicates that white race privilege may trump class status, a sentiment supported by studies of frustrated adult middle class blacks who often feel that no matter how much they have achieved, they will always carry the negative stigma of being black (Cose, 1993).

"Hard Work": What Is It? Who Defines It? And What Affects It?

Assessing whether a student has the necessary tools to succeed or whether they refuse to use standard tools for success requires looking at one of the most common expectations of the classroom: "hard work." Working hard, so the saying goes, leads to success, and teachers expect that students will work hard in their classes. People often assume that everyone knows exactly what it means to work hard, but it is possible that "working hard" may mean very different things for different groups of people as a result of access to different cultural tools and resources. Nevertheless, "working hard" is a standard expectation that, like the rest of classroom norms and structures, is defined by agents of a hegemonic white middle class.

Researchers have paid surprisingly little attention to the notion of "hard work" I suspect because as Shrouse, Schneider, and Plank 1992 put it, "One can reasonably assume

that increased student effort will lead to greater student achievement" (pg 267). When making such a "reasonable" assumption, it almost seems silly to test the extent to which effort does, in fact, affect student achievement. The few that have explored this relationship have shown the following: being "hardworking," in addition to other noncognitive classroom behaviors, accounts for approximately 20 percent of students' achievement scores as measured by standardized tests[4] (Lleras, 2008). Exploratory analysis from this study reveal that there is a very weak positive correlation between student reported work effort and test scores (.069), but a stronger correlation similar to the finding of Lleras (2008) between teacher reported effort and test scores (.26). Most telling, though, is that student work habits have a strong correlation with the grades they earn in their classes (.77, according to Farkas et. al., 1990). The work of these scholars confirms that achievement, at least in terms of student grades, is substantially contingent upon the behaviors students exhibit in the classroom. That is, if one works hard, it seems more likely that he or she will get an A. However, this relationship is not as strong for performance on standardized tests, which suggests that hard work is neither a necessary nor a sufficient condition for "objective" academic achievement[5].

Previous research does indicate that "hard work" reflects other classroom expectations. For example, Ferguson (2000) suggests that control of students' bodies is a primary concern of teachers, and that one way in which teachers exert their control is by

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[4] Compare Models 2 and 4 of Table 3 (OLS regression on educational attainment). The 10th grade test composite coefficient is reduced from 9.108 to 7.039 when she controls for noncognitive behaviors, including being "hardworking."

[5] Christopher Jencks (1998) suggests that standardized tests are not necessarily bias-free; however some biases are more troublesome than others. I have no reason to suspect that the questions on the standardized test that researchers employed for data collection are biased, but I cannot say unequivocally that they are not.

legitimizing some forms of dress over others. Research on work effort suggests that

students' hard work is indeed positively correlated with appearance and dress (Farkas, et. al.,

1990), though it is unclear how the scale for appearance and dress is measured. In addition

to dressing presentably, teachers expect that students are prepared for class. One of the ways

in which students are to show preparation is by working on and completing homework.

According to Natriello and McDill (1986), student effort is positively correlated with the

amount of time they spend on homework. And finally, teachers expect students to be able to

arrive on time and control themselves while in class (Ferguson, 2000). Prior research on

work effort suggests that hard work negatively correlates with both being tardy and being

disruptive in class (Lleras 2008).

There are several factors which might affect how hard students work (as perceived by

teachers and as perceived by the students themselves). The first of these factors is race. As

already discussed, a significant amount of literature points to the fact that teachers

differentially perceive black students to be acting inappropriately, which we can assume will

have a significantly negative impact on their grades and overall achievement. This is not

limited to just black students. Alejandro Portes and Min Zhou (1993) suggest that some

Hispanic students may be at risk of developing an oppositional stance toward education if

they are surrounded by other minorities who habitually blame an unjust system for their

inability to climb the mobility ladder. It is possible that if Hispanic students start to identify

themselves as victims of an unjust system, they might also adopt work habits that reflect this

oppositional stance. Prior research has also suggested that teachers do not perceive Native

American students to have enough motivation to work hard, which teachers attribute to the

fact that many students wish not to leave the reservation upon graduation (Deyhle, 2005).

Finally, just as race may affect the ways in which teachers and/or students perceive themselves not to work hard, race can also have the opposite effect. Stacey Lee (2009) describes how in a school with a diverse Asian and Asian American population, teachers tend to favor and differentially reward Asian students who exhibit behaviors stereotypical of the "model minority."

The second factor which may affect the extent to which students work hard is class. Annette Lareau has done extensive research on the ways in which class affects the way students and parents interact with social institutions such as education. She argues that schools are structured by expectations of the middle class, and that current trends normalize extensive parent involvement and intervention in school work and relationships (Lareau, 1987). Parents are expected to help with homework, facilitate learning outside of the classroom, and engage in regular conversations with the teacher about the progress of the student (Lareau, 1987; Lareau, 2002; Lareau, 2003). However, due to inflexible work schedules, lack of resources, transportation barriers, and distrust of teachers, many low-income parents cannot deliver the same kind of parental support to their children's education as middle class parents can (Hardaway and McLoyd, 2009).

A third factor that could affect differences in hard work is gender. From an early age, young girls are socialized to be much more obedient and docile than are boys. Boys, in contrast, are expected to be louder and more disruptive than are girls. Myra Sadker (1995) reports that from an early age, boys are called on more in class and are allowed to interrupt their female peers when they are talking. These practices essentially teacher young girls to

be silent and passive while boys are taught, as Ferguson (2000) puts it, that they are "naughty by nature." In fact, according to one of Ferguson's teacher informants, an "ideal" boy in her class is "not really Goody Two-shoes, you know. He's not quiet and perfect. He'll take risks. He'll say the wrong answer. He'll fool around and have to be reprimanded in class. There's a nice balance to him" (pg 91). I expect that though the standard for hard work is the same for everyone, different understandings of what constitutes "natural" behavior by gender may have effects on the extent to which students and teachers think they are "working hard."

It is important to note that gender norms are not necessarily the same by race. Black female students are often considered to exhibit behaviors, such as being loud or disruptive, that are not consistent with *white* notions of femaleness (Fordham, 1993). And as has been noted from Ferguson's (2000) work, the same risky behaviors and disruptions that are deemed to be "natural" of white boys tend to be "criminal" of black boys. To the extent that these behaviors are correlated with "hard work," I therefore expect that race could interact with gender in ways that could affect how both students and teachers categorize student work effort.

In additional to demographic factors that could affect how hard students work, there are several school factors that might affect student work effort. Though Coleman in 1966 found that there are virtually no differences between schools with different levels of resources, other studies have contested the notion that schools make no difference on student outcomes (Blau, 2003). One of the ways that schools do appear to affect student outcomes is through track placement. Some studies suggest that students who are in college preparatory programs tend to learn more and are more challenged (MacLeod, 2009; LaPrade, 2011). Not

surprisingly, studies have also found that students in the college prep program are more likely to be well-behaved and more likely to work hard than students in other tracks (Carbonaro, 2005). However, track placement is also highly correlated with SES and race/ethnicity such that lower SES, black, and Hispanic students make up the lower rungs of track placement (Mickelson, 2001; Lucas and Berends, 2007). Therefore track placement could have particularly salient implications for how students of different racial and ethnic groups work.

Hypotheses For Study

This study assumes that "good" work effort is a standard cultural expectation of classrooms and that students in general will likely claim to exhibit "good" work effort.[6] With these assumptions in mind, I examine the degree to which students and teachers similarly or dissimilarly rate student work effort, and how those similarities and differences are patterned by race and ethnicity as a function of cultural capital mismatch or oppositional culture[7]. Based on prior research regarding work effort and the factors that may affect it, the following hypotheses guide this study:

H1 (Oppositional Culture): Students exhibiting oppositional behavior should admit that they are not working hard. Because black and Hispanic students have been reported to exhibit oppositional culture in previous studies (Ogbu, 1991; Fordham and Ogbu, 1986; Portes and Zhou, 1993), and because white and Asian students tend to benefit from normative and "model minority" privilege (Lee, 2009), respectively,

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[6] Positivity bias may be of some concern here, but I cannot control for this phenomenon in this study's analyses. Conservative interpretation of results may offset the effect of some positivity bias.

[7] To be clear, I do not assume that teachers are unbiased. Teachers, as agents of the white middle class (regardless of teacher race, as supported by Tyson, 2003), are just as likely to be biased in this study as they are in others; however, this study attempts to understand the extent to which minority students define themselves according to the standards of teachers (i.e. the white middle class). There is inherent bias in the standards, but the fact that they are biased does not change the fact that they are still the dominant standards.

I expect that black and Hispanic students, along with their teachers, will be more likely than white and Asian students to exhibit oppositional behavior by agreeing with their teachers that they are not working hard.

H2 (Cultural Capital Mismatch): Students who are culturally mismatched with school expectations of work effort should think they are working hard but have teachers who disagree. Students raised in lower socioeconomic classes are more likely to exhibit cultural capital mismatch with schools and teachers (Lareau, 2003), and black and Hispanic students are disproportionately represented in the lowest socioeconomic strata. Therefore,

I expect that black and Hispanic students will be more likely than white and Asian students to exhibit cultural capital mismatch by rating their work effort highly when their teachers rate it poorly.

III. **METHODOLOGY**

Data

The data I use for this study are from The Educational Longitudinal Study of 2002 (ELS:2002). ELS:2002 is a nationally representative longitudinal survey study of 15,362 students from 752 schools and is designed to help researchers and policy informers better understand issues such as home life, particular course-taking paths, and school variation in the academic success of youth (U.S. Department of Education, National Center for Education Statistics). The first wave of the study examined a cohort of tenth grade high school students.

ELS:2002 was sampled in two stages--first by school and then by individual students. In the first stage, 752 public and private schools were randomly selected to participate in the

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study, though non-public Catholic and private schools were sampled at a higher rate. In the

second stage, 17,591 tenth grade students were selected to take the surveys. Of those

selected, 15,362 completed the base year questionnaire. Among the students sampled, Asians

and Hispanics are overrepresented, but black and white students are not. Students, as well as

their parents (13,488), English and math teachers (7,135), principals (743), and head

librarians or media center directors (718) were surveyed. This study uses information from

the student and teacher surveys only.

Table 1. Descriptive Statistics

Variable	Obs	Valid Obs.	Mean	Std. Dev.	Min	Max
Race/Ethnicity						
White	15325	15325	0.568	0.231	0	1
Black	15325	15325	0.132	0.339	0	1
Hispanic	15325	15325	0.145	0.352	0	1
Asian	15325	15325	0.096	0.294	0	1
AIAN/Multiracial	15325	15325	0.057	0.231	0	1
Math Test Scores	15325	15325	50.727	9.982	19.380	86.680
Demographic and School Controls						
Female	15,325	15325	0.502	0.500	1	2
SES	15,325	15325	0.043	0.743	-2.110	1.820
Public	15,325	15325	0.784	0.411	0	1
Catholic	15,325	15325	0.125	0.331	0	1
Other Private	15,325	15325	0.090	0.286	0	1
Urban	15,325	15325	0.333	0.471	0	1
Suburban	15,325	15325	0.482	0.500	0	1
Rural	15,325	15325	0.185	0.388	0	1
Northeast	15,325	15325	0.180	0.384	0	1
Midwest	15,325	15325	0.253	0.435	0	1
South	15,325	15325	0.366	0.482	0	1
West	15,325	15325	0.201	0.400	0	1
0-5% School Poverty	15,325	14073	0.315	0.465	0	1
6-10% School Poverty	15,325	14073	0.094	0.292	0	1
11-20% School Poverty	15,325	14073	0.171	0.376	0	1
21-30% School Poverty	15,325	14073	0.128	0.334	0	1
31-50% School Poverty	15,325	14073	0.149	0.356	0	1
51-75% School Poverty	15,325	14073	0.089	0.282	0	1
76-100% School Poverty	15,325	14073	0.055	0.228	0	1
General Track	15,325	15325	0.352	0.478	0	1
College Prep Track	15,325	15325	0.550	0.498	0	1
Vocational Track	15,325	15325	0.098	0.297	0	1
Discrimination Controls						
Math Teacher Race						
White	15325	15325	0.723	0.447	0	1
Black	15325	15325	0.043	0.203	0	1
Hispanic	15325	15325	0.032	0.177	0	1
Asian	15325	15325	0.025	0.155	0	1
AIAN/Multiracial	15325	15325	0.177	0.381	0	1
Perceived Discrimination	15,325	14556	0.132	0.339	0	1
Reported Work Effort						
Student Reported Effort	15,325	11162	0.573	0.494	0	1
Math Teacher Reported Effort	15,325	12478	0.669	0.471	0	1

Measures: Independent Variables

Student Race/Ethnicity: Students classified themselves according to one of the following seven racial or ethnic categories: non-Hispanic white, non-Hispanic black, Hispanic (two groups: race and non-race specified), American Indians/Alaskan natives, Asian/Pacific Islanders, and non-Hispanic multiracial. This study focuses on differences between white, black, Hispanic, and Asian students, so to simplify, I condensed race and non-race specified Hispanics into one category[8]. I also condensed American Indians/Alaskan natives and multiracial students into one "others" category because American Indians/ Alaskan natives make up less than one percent of the sample size. No students are missing race/ethnic information[9].

Socioeconomic status is a continuous, composite variable created by ELS researchers. The variable is based on five equally weighted, standardized components: father's/guardian's education, mother's/guardian's education, family income, father's/ guardian's occupation, and mother's/guardian's occupation[10]. No students are missing SES information.[11]

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[8] The codebook did not specify which race with which the race-specified Hispanics identified. Because there was a large (n=1,229) number of race-specified Hispanics, I opted to condense them into the non-race-specified Hispanics into one category rather than eliminate them from analysis.

[9] ELS researchers imputed any missing information.

[10] Parental education is reported as one of 8 ordered categories: (1) did not finish high school (2) graduated high school or GED (3) attended 2-year school, no degree (4) graduated from 2-year school (5) attended college, no degree (6) graduated college (7) completed Master's or equivalent (8) completed PhD or equivalent. Family income is reported from the parent questionnaire, which asks "Which category does your total family income from all sources in 2001 fall into?." Responses are $5000 increments from $1,000 or less to $25,000; $25,001-$35,000; $35,001-$50,000; $50,001-$75,000; $75,001-$100,000; $100,001-$200,000; and $200,001+. Parental occupation score is calculated according to the 1961 Duncan index.

[11] All of the SES component variables were imputed by ELS researchers if information was missing.

Student sex: Students were categorized as male or female. No information is missing on student sex.

Achievement: The American success narrative assumes that "hard work" will predict achievement. If this is the case, the achievement measure will provide a "check" on the extent to which teachers and students are accurately assessing student work effort. I used the students' standardized math test scores (standardized T scores) to measure educational achievement. The standardized T score provides an estimate of student achievement relative to the population of spring 2002 tenth grade students. No information is missing for student achievement.

Track placement: Students in advanced curriculum tracks perform higher than students in regular or general curriculum tracks (Gamoran, 1992). However, the causal relationship between tracking and performance is unclear. Since schools tend to track racial minorities and lower SES students disproportionately into general and vocational tracks (Oakes, 1985) it is necessary to control for any race effect that tracking may have. Students were classified as being in either the general track, the college prep track, or the vocational track, and no information is missing on track placement.

School demographics: I also included several school demographic variables in the model as well. Demographic variables include a school control (Catholic, public, or other private), urbanicity (urban, suburban, or rural), region (northeast, south, west, midwest), and school poverty (seven category variable of a percent range of students on free or reduced school lunch).

Teacher race: Teacher race, in past research, has been a standard measure used to predict race-based teacher bias (Ferguson, 1998), though I expect that if teachers are truly agents of the middle class that teacher race will not prove to be significant. Nevertheless, I included this variable as a standard predictor of teacher bias. Like student race, teachers classified themselves according to one of the following seven racial or ethnic categories: non-Hispanic white, non-Hispanic black, Hispanic (two groups: race and non-race specified), American Indians/Alaskan natives, Asian/Pacific Islanders, and non-Hispanic multiracial. I condensed these seven categories into five for this analysis: non-Hispanic white, non-Hispanic black, Hispanic, Asian/Pacific Islanders, American Indian/Alaskan native/ multiracial.

Perceived insult: Because I expected that teacher race may not provide a clear indication of teacher bias, I also included a measure of "perceived insult." To the extent that this perceived insult is patterned by race, this measure attempts to capture race-based teacher bias. I created this variable from the following Likert-scale question from the student survey: "How much do you agree or disagree...[that] In class I often feel 'put down' by my teachers." Responses ranges include strongly disagree, disagree, agree, and strongly agree. I dichotomized responses into "no" or "yes."

Measures: Dependent Variable

Student-Teacher Agreement: To assess the extent to which teachers and students differ in their perceptions of student effort, I crossed one student question from the ELS survey with one teacher question about the quality of the student's work effort. The ELS survey asks the student the extent to which he or she agrees with the following statement:

"when studying, I try to work as hard as possible." Responses were measured using a four-point Likert scale: *4 = almost always, 3 = often, 2 = sometimes, 1 = almost never*. I condensed these four responses into a binary category (1 and 2 = "no", 3 and 4 = "yes") to make a direct comparison to the teacher question, which asks the extent to which the teacher agrees with the following: "does this student usually work hard for good grades in your class?" This response was measured as *yes* or *no*. Math and English teachers' responses were both available for each student; however, I use responses from the students' math teachers only to compare to student responses.[12]

The dependent variable is a four-category cross-tabulation of the student and teacher responses. The categories resulting from the cross-tabulation include the following: "student yes, teacher yes," "student no, teacher no," "student no, teacher yes," and "student yes, teacher no." This measure provides a direct comparison between how well the students think they are working and how well the teachers perceive the students' classroom effort.

Figure 1: Constructed Dependent Variable Outcomes

Student Yes, Teacher Yes	Student Yes, Teacher No
Student No, Teacher Yes	Student No, Teacher No

Unfortunately, a limitation of the data set is that approximately 40 percent of students were missing on either their own assessment of their work effort or their teacher's assessment

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[12] I chose to use math teachers only for several reasons. First, to attenuate some of the data's missingness, I chose the group of teachers with the most responses. Specifically, 12,547, or 77.2 percent of math teachers responded to the survey question, whereas 11,927, or 73.4 percent of English teachers responded to the question. After running comparative analyses between English and math teachers, I found that both teachers' assessments of a particular student overlapped by 76 percent. Racial differences between students' four-category outcome placement were slightly affected by a math-English teacher difference. Specifically, while I found support for oppositional culture among black college prep students in the math teacher analysis, I did not find similar support for oppositional culture in the English teacher analysis. I did, however, find support for cultural capital mismatch in the English teacher-student analysis. See Appendix A for further discussion.

of their work effort[13]. Through preliminary analysis, I found that the data were not missing

completely at random; there were significant differences as to whether a student or teacher

answered the question of interest by student race/ethnic group.

Table 2. Frequency of Effort Missingness By Student Race/Ethnicity

	Works as Hard As Possible When Studies			
	No	Yes	Missing	Total
White	2,956 33.8%	3,820 43.7%	1,959 22.4%	8,735 100%
Black	475 23.4%	721 35.6%	831 41.0%	2,027 100%
Hispanic	596 36.8%	871 39.1%	760 34.1%	2,227 100%
Asian	394 26.9%	689 47.0%	382 26.1%	1,465 100%
American Indian/ Multiracial	300 34.4%	340 39.0%	231 27.6%	871 100%
Total	4,721 30.8%	6,441 42.0%	4,163 27.2%	15,325 100%

To restore data for the full student sample, I used ICE multiple imputation in STATA

to impute for missing values on all dependent and independent variables. All analyses

therefore present estimates for five imputed data sets, each with a sample size of 15,325

students. Though imputed values are not ideal data, simulation research shows that estimates

for imputed data often closely resemble estimates for complete data sets (Allison, 2002).

Analytic Strategy

The first part of this study explores patterns of student-teacher dis/agreement about

student work effort using descriptive cross tabulations. I present general descriptive cross

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[13] Not including missingness on other demographic characteristics, 27.2 percent of the sample was missing on student assessment of work effort, 18.6 percent was missing on math teacher effort assessment. However, overlap of missingness on both variables reduces the sample to approximately 60 percent, and casewise deletion of all cases missing on any variable reduces the sample size to 46 percent of the original set.

tabulations of all four dependent variable outcomes as well as the frequency of each categorical outcome by race/ethnicity. I present all cross tabulations with Pearson's chi-square to establish the extent to which racial/ethnic frequency in student-teacher dis/agreement category placement is significantly different from zero. Though I present racial/ethnic frequency for all four student-teacher dis/agreement categories, I focus further analysis on two categories of interest: "student no, teacher no," and "student yes, teacher no." These categories of interest directly represent oppositional culture and cultural capital mismatch, respectively.

To understand the conditions under which oppositional culture and cultural capital mismatch are present among minority students, the second part of the analysis explores predictors of racial and ethnic differences within the two categories of interest. I use logistic regression to model "student no, teacher no" and "student yes, teacher no" each as separate binaries where 1 is placement in the particular category of interest and 0 is placement in any of the other three outcome categories.

Using logistic regression, I test how well theoretically related variables predict over- or underrepresentation in both the "student no, teacher no" and "student yes, teacher no" categories. I first test race and ethnicity variables only to assess the significance of the over- or underrepresentation. I then test race/ethnicity and students' standardized test scores. Because test scores are theoretically supposed to reflect, in part, the fruits of one's work effort, test scores are an indication of whether or not students are placed in the correct category. That is, if under- or overrepresented students in the "student no, teacher no" category are no longer significantly under- or overrepresented once test scores are held

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constant, then we can assume that the students in this category are low achievers, which often results from low levels of work effort. Likewise, if teachers are correct in their assessments of students' effort, test scores will be negatively associated with the likelihood of being in the "student yes, teacher no" category. If this negative relationship attenuates significant under- or overrepresentation of students in this category, then we can assume that the students in the "student yes, teacher no" category are also low achievers--but unlike those in the "no, no" category, this group is not sure about what hard work means.

Since test scores are meant to provide a "check" on correct categorization of students' work effort, I remove test scores from the rest of the statistical models, which predict student and environmental characteristics in the likelihood of over- or underrepresentation in "student no, teacher no" and "student yes, teacher no" categories.[14] Specifically, models include demographic and structural predictors to assess the extent to which racial/ethnic patterns of student-teacher dis/agreement may be a cultural response to structural variables. To this model I also add teacher race and perceived teacher insult as a check on whether students' over or underrepresentation in each category of interest is determined by teacher discrimination. The following equation represents the analytical model for race/ethnicity and general predictors:

$$\log\left(\frac{p_i}{1-p_i}\right) = \beta_0 + \beta_1 Race_i + \beta_2 X_i + \beta_3 Y_i + \beta_4 Z_i$$

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[14] Additionally, though student test scores and SES are only correlated at .42, they are collinear. Analyses not presented here reveal that including test scores in the full model for both the "no, no" category and the "student year, teacher no" category completely eliminates the statistically significant effect of SES. See Appendix A for a visual comparison between race, track placement, test scores, and SES.

where X is a vector of all demographic predictors, Y is a vector of school characteristic and control variables, and Z is a vector of discrimination predictors.

Because track placement is likely a significant predictor for both outcomes of interest, I test an interaction between race/ethnicity and track placement to see if similar patterns exist here. Also, gender is expressed differently among racial and ethnic groups, such that the passivity and obedience teachers may deem to be characteristic of "hard work" varies by race (Fordham, 1993). To account for this, I also test the interaction between race and gender. The following equation describes the predictors plus interactions model:

$$\log\left(\frac{p_i}{1-p_i}\right) = \beta_0 + \beta_1 Race_i + \beta_2 X_i + \beta_3 Y_i + \beta_4 Z_i + \beta_5 RaceXtrack_i + \beta_6 RaceXgender_i$$

Because it is likely that any effect seen in the regression models could be due to sampling design rather than an overall population characteristic, all logistic regression analyses adjust for individual student and school weights.[15]

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[15] Data within ELS consists of calculated weights for each individual, as well as each school in the study. I used the mi survey-set command in STATA 11, primary sampling unit "student weight", strata "strata id."

IV. RESULTS

Degree of General Student-Teacher Agreement and Student-Teacher Agreement by Race

Table 3. General Frequency Distribution of Student-Teacher Work Effort

Student Assessment

		Yes	No	Total
	Yes	36,454 42.5%	21,036 24.5%	57,490 67%
Math Teacher Assessment	No	12,939 15.1%	15,415 18.0%	28,354 33%
	Total	49,393 57.5%	36,451 42.5%	85,844 100%

Generally across the sample, teachers and students agree about the amount of effort students are putting forth about 60.5 percent of the time. More often than not, when teachers and students do agree, they agree that the student is working hard (42.5 percent of time). However, 18.0 percent of the time students and teachers recognize that the student is not working hard. This leaves approximately 39.5 percent of students who disagree overall with their teacher's assessment of their performance[16]. Disagreement is not unidirectional, however; 15.1 percent of students overrate their performance and 24.5 percent of students actually underrate their performance.

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[16] One percent of teachers claimed that they "didn't know" whether or not the student was working hard. For students in this category, students' assessments of their work were evenly split; half suggested that they were working hard and half suggested they were not. Descriptive statistics showed that .1 percent of black students said they were working hard when their teacher did not know. All other racial groups represented between .4 and .5 percent of their respective populations. About .2 percent of black students and .3 percent of Hispanic students said they were not working hard when their teachers claimed that they did not know. All other racial groups represented approximately .48-.57 of their respective populations in this category. Because so few students fell into this "didn't know" situation, I imputed the teacher information to provide a complete sample rather than excluding these students from analysis.

Table 4. Frequency Distribution of Student-Teacher Effort Assessment, By Race/Ethnicity

	Student No, Teacher No	Student No, Teacher Yes	Student Yes, Teacher No	Student Yes, Teacher Yes	Total
White	8,554 17.3%	13,219 26.7%	6,187 12.5%	21,571 43.6%	49,531 57.7%
Black	2,246 20.3%	2,085 18.9%	2,566 23.2%	4,155 37.6%	11,052 12.9%
Hispanic	2,604 21.3%	2,407 19.7%	2,460 20.1%	4,781 39.0%	12,525 14.3%
Asian	961 11.8%	2,407 25.0%	966 11.9%	4,170 51.3%	8,131 9.5%
American Indian/ Multiracial	1,050 21.5%	1,291 26.5%	760 15.6%	1,777 36.4%	4,878 5.7%
Total	15,415 18.0%	21,036 24.5%	12,939 15.1%	36,454 42.5%	85,844 100%

Note: All frequencies calculated using complete set of imputed data.

Though all students, regardless of race/ethnicity, are most likely to agree that they are working hard versus any of the other categories, descriptive results do show racial/ethnic variation in all four categories of student-teacher work effort assessment. A cross-tabulation of the four-category outcome by racial and ethnic groups shows that of those in the "student yes, teacher yes" category, Asian students are the most likely to say they are working hard when their teacher agrees (51.3 percent of the Asian sample), followed by white students at 43.6 percent. Black, Hispanic, and American Indian/multiracial students all hover between 36.4 and 39.0 percent in the "yes, yes" category.

Descriptive results also show that of all racial and ethnic groups, American Indian/ multiracials and Hispanics (21.5 and 21.3 percent, respectively) are most likely to admit they are not working hard when the teacher agrees. Black students are not far behind at 20.3

percent. The descriptive table shows that Asian students are the least likely to agree that they are not working hard, at 11.8 percent, and 17.3 percent of white students agree with their teachers that they are not working hard.

For the 40.4 percent of students who disagree with their teachers' assessment of work effort, there are considerable differences by racial and ethnic groups. Though generally only 15.1 percent of students reported better work effort than what their teacher reported, black and Hispanic students are disproportionately represented in this category. Approximately 23.2 percent of black students and 20.1 percent of Hispanic students overrate their study effort. Conversely, the descriptive table shows that only 12.5 percent of white students and 11.9 percent of Asian students, and 15.6 percent of American Indian/multiracial students comprise the "student yes, teacher no" category.

Among the 23.8 percent of students who disagree that they are working hard, all minorities are slightly underrepresented. Black students are least likely to underrate their effort relative to their teachers at about 18.9 percent. Hispanics follow at 19.7 percent. Approximately 25 percent of Asian students underrate their work effort, and approximately the same percentage of white and American Indian/multiracial students do not think they work hard when their teachers think they do (26.7 and 26.5 percents, respectively).

Predictors of Racial Differences in Student-Teacher Dis/Agreement

Generally, at least one racial and/or ethnic minority group is disproportionately over- or underrepresented at a significant level in all four outcome categories. The next part of this analysis examines predictors that explain racial differences in this study's two categories of interest: "student no, teacher no" and "student yes, teacher no."

"Student No, Teacher No": Hypothesis 1 predicted that black and Hispanic students would be more likely than white and Asian students to agree with their teachers that they were not working hard. I did find partial support for this hypothesis, as black, but not Hispanic students, are significantly over-represented in the "student no, teacher no" category. The race-only, no controls model reveals that black students on average are about 22 percent more likely than white students to agree with their teacher that they are not working hard. Descriptive percentages, as well as the coefficient for Hispanic students in the race-only model suggests that Hispanic students would be more likely than white students to be in the "student no, teacher no" category; however, this result is just shy of significance at p=.093. Asian students, however, are on average significantly less likely (approximately 34 percent less likely) than white students to agree with their teacher that they are not working hard.

Table 5. Predictors of "Student No, Teacher No" Category Likelihood

	[1]		[2]		[3]		[4]		[5]	
	B	OR	B	OR	B	OR	B	OR	B	OR
Race (ref White)										
Black	0.200*	1.221	-0.210*	0.811	0.104	1.110	0.0140	1.014	-0.041	0.960
Hispanic	0.187†	1.206	-0.188	0.829	-0.058	0.944	-0.0270	0.973	-0.188	0.829
Asian	-0.418**	0.658	-0.401**	0.670	-0.477***	0.621	-0.514*	0.598	-0.620**	0.538
AIAN/Multiracial	0.250†	1.284	-0.049	0.952	0.1430	1.154	0.0240	1.024	-0.069	0.933
Test Scores			-0.048***	0.953						
SES					-0.286***	0.751			-0.282***	0.754
Gender (Ref Male)					-0.708***	0.493			-0.708***	0.493
Track placement (Reference General)										
College prep					-0.757***	0.469	-0.984***	0.374	-0.880***	0.415
Vocation					-0.132	0.876	-0.0950	0.909	-0.243*	0.784
School control (Reference Public)										
Catholic					0.004	1.004			0.011	1.011
Other Private					-0.067	0.935			-0.059	0.943
Urbanicity (Reference Urban)										
Suburban					0.032	1.033			0.036	1.037
Rural					-0.023	0.977			-0.020	0.980
Region (Reference Northeast)										
Midwest					-0.110	0.896			-0.115	0.891
South					-0.137	0.872			-0.142†	0.868
West					-0.053	0.948			-0.062	0.940
School Poverty (Reference 0-5%)										
6-10%					-0.054	0.947			-0.053	0.948
11-20%					0.054	1.055			0.052	1.053
21-30%					0.047	1.048			0.047	1.048
31-50%					0.057	1.059			0.058	1.060
51-75%					-0.045	0.956			-0.037	0.964
76-100%					-0.099	0.906			-0.093	0.911
Teacher race (reference white)										
Black					0.047	1.048			0.048	1.049
Hispanic					-0.187	0.829			-0.181	0.834
Asian					-0.076	0.927			-0.080	0.923
AIAN/Multiracial					0.086	1.09			0.090	1.094
Perceived Insult					0.532***	1.702			0.529***	1.697
BlackXcollege							0.364*	1.439	0.2720	1.313
BlackXvocational							0.159	1.172	0.2450	1.278
HispanicXcollege							0.354†	1.425	0.2870	1.332
HispanicXvocational							0.127	1.135	0.2170	1.242
AsianXcollege							0.226	1.254	0.2340	1.264
AsianXvocational							0.294	1.342	0.2990	1.349

AI/MXcollege						0.457†	1.579	0.447†	1.611
AI/MXvocational						0.267	1.306	0.3120	1.366
Constant	-1.497***		0.983***		-0.821***		-1.044***		-0.760***
Observations	15,325		15,325		15,325		15,325		15,325

Notes: Each model runs regressions on 5 sets of imputed data, each with 15,325 observations. Standard errors are in parentheses.
***p<.001; **p<.01; *p<.05; †p<.10

What accounts for these race/ethnicity patterns? The first significant predictor is test scores. When I controlled for achievement, I found that the black students who previously were significantly *more* likely to agree they were not working hard were actually significantly *less* likely than white students to be in the "student no, teacher no" category. This means that the black students who are more likely than white students to agree with their teachers that they are not working hard are low-performing students as measured by standardized tests. I expected some of the negative Asian coefficient to be absorbed by the effect of test scores because on average, Asian students do perform at slightly higher levels than white students on standardized math tests (National Center for Education Statistics). I expected that if Asian and white students' test scores were held to a constant level, Asian students' significant underrepresentation in the "student no, teacher no" category would disappear. However, even after controlling for test scores, Asian students are still 33 percent less likely (p<.01) than white students to be in the "student no, teacher no" category. This result may reflect a latent cultural norm that discourages Asian students from not working hard and/or a positive teacher bias for Asian students, drawing from the stereotype of the "model minority" (Lee, 2009).

Test scores provide a somewhat objective "check" on the accuracy of the *teacher* assessments of hard work, but other predictors, particularly SES, gender, and track placement, do a much better job of explaining why *students* may or may not be in the

"student no, teacher no" category. Model 3 in Table 5 shows that as SES increases, students are less likely to be in the "no, no" category. Female and college prep students are also less likely than are males and general track students to agree that they are not working hard. These three factors account for all of the racial and ethnic variation in the "no, no" category except for Asian students, which still show a significantly decreased log odds of being in the "no, no" category.

It is important to note that if students perceive insult by their teachers, that their likelihood of agreeing that they do not work hard increases by 70 percent. Though this relationship appears to in part explain racial and ethnic variation in the "no, no" category, it actually explains little, if any, racial or ethnic variation. As Table 6 below shows, perceived insult is not clearly patterned by race; the percentage of minority students who perceive insult is nearly the same as the percentage of white students. Though Pearson's chi square suggests that the slight differences between groups are significant, the magnitude of the effect is quite small and not enough to explain racial/ethnic patterns of student-teacher dis/agreement.

Table 6. Racial/Ethnic Distribution of Perception of Teacher Insult

	Strongly Agree	Agree	Disagree	Strongly Disagree	Total
White	1,207 2.3%	5,150 9.9%	30,773 59.2%	14,854 28.6%	51,993 100%
Black	356 3.0%	1,256 10.4	6,400 53.2%	4,026 33.4%	12,038 100%
Hispanic	510 3.9%	1,640 12.4%	7,4100 56.0%	3,677 27.8%	13,237 100%
Asian	236 2.7%	924 10.6%	5,275 60.5%	2,279 26.2%	8,714 100%
American Indian/ Multiracial	165 3.2%	675 13.0%	3,025 58.2%	1,334 25.7%	5,199 100%
Total	2,474 2.7%	9,654 10.6%	52,883 58.0%	26,170 28.7%	91,181 100%

Note: All frequencies calculated using complete set of imputed data.

Additional analyses reveal an interesting relationship between school track placement and the likelihood of being in the "student no, teacher no" category for black and Hispanic students. As model 4 in Table 5 shows, generally, college preparatory track placement reduces the likelihood of students agreeing with their teacher that they do not work hard. However, the interaction between student's race/ethnicity and track placement shows a significant positive coefficient for black students. This positive coefficient indicates that the racial difference between blacks and whites in the likelihood of being in the "no, no" category is especially strong for those in the college prep track. A similarly positive relationship exists for Hispanic students, though it is just shy of significance at p=.059.

Predicted probabilities calculated from this interaction reveal that black college prep students are significantly more likely than white college prep students to agree they are not working hard, but black general track students are no more likely than white general track

students to agree they are not working hard. Specifically, black college prep students are about 16 percent likely to agree that they are not working hard, versus an approximately 11.6 percent probability for white college prep students. However, in the general track, black and white students are both about 26 percent likely to agree with their teachers that they are not working hard. This interaction effect accounts for all of the significance of the black coefficient, suggesting that black students' overrepresentation in the "no, no" category is mostly driven by the black students in the college prep program.

Once SES, gender, and other controls are considered in the model, the significant interaction of college prep track placement and race is rendered insignificant for black students. Within gender groups, predicted probabilities suggest that black students in the college prep program show a higher likelihood than their white counterparts of being in the "no, no" category, but these differences are not significant.[17] Results of this final Model 5 suggest that black college prep students' overrepresentation in the "no, no" category is driven mostly by males of relatively low socioeconomic status.

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[17] Specifically, black females are 10 percent likely to agree they are not working hard, whereas white females are 8 percent likely to agree they are not working hard. Black male students are most likely to agree they are not working hard with a predicted probability of 18.2 percent, and white male students are not far behind at 15 percent.

Table 7. Predictors of "Student Yes, Teacher No" Category Likelihood

	[1]		[2]		[3]		[4]		[5]	
	B	OR	B	OR	B	OR	B	OR	B	OR
Race (Reference White)										
Black	0.744***	2.104	0.434***	1.543	0.609***	1.839	0.380*	1.462	0.280	1.323
Hispanic	0.530***	1.699	0.246**	1.279	0.293**	1.340	0.399*	1.490	0.194	1.214
Asian	-0.048	0.953	-0.023	0.977	-0.157	0.855	-0.028	0.972	-0.156	0.856
AIAN/Multiracial	0.362**	1.436	0.207	1.230	0.267*	1.306	0.693**	2.000	0.619**	1.857
Test scores			-0.037***	0.964						
SES					-0.221***	0.802			-0.212***	1.236
Gender (ref male)					-0.392***	0.676	-0.499***	0.607	-0.504***	0.604
Track placement (Reference General)										
College prep					-0.128*	0.880	-.226**	0.798	-0.166	0.847
Vocation					0.035	1.036	0.178	1.195	0.144	1.155
School control (Reference Public)										
Catholic					-0.115	0.891			-0.109	0.897
Other Private					-0.189	0.828			-0.173	0.841
Urbanicity (Reference Urban)										
Suburban					0.049	1.050			0.043	1.044
Rural					-0.072	0.931			-0.079	0.924
Region (Reference Northeast)										
Midwest					-0.041	0.960			-0.046	0.955
South					0.054	1.055			0.051	1.052
West					0.073	1.076			0.066	1.068
School Poverty (Reference 0-5%)										
6-10%					-0.183	0.833			-0.179	0.836
11-20%					-0.210†	0.811			-0.212†	0.809
21-30%					-0.166	0.847			-0.166	0.847
31-50%					-0.167	0.846			-0.162	0.850
41-75%					-0.127	0.881			-0.129	0.879
76-100%					-0.041	0.960			-0.033	0.968
Teacher race (Reference White)										
Black					0.061	1.063			0.054	1.055
Hispanic					0.099	1.104			0.098	1.103
Asian					0.188	1.207			0.200	1.221
AIAN/Multiracial					0.136	1.146			0.137	1.147
Perceived Insult					0.379**	1.461			0.379**	1.461
BlackXfemale							0.323*	1.381	0.316*	1.372
HispanicXfemale							0.316†	1.372	0.308†	1.361
AsianXfemale							-0.101	0.904	-0.077	0.926
AIXfemale							-0.138	0.871	-0.156	0.856
BlackXcollege							.379*	1.461	0.336†	1.399
BlackXvocational							0.116	1.123	0.115	1.122
HispanicXcollege							0.051	1.052	0.012	1.012

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HispanicXvocational					-0.375	0.687	-0.349	0.705
AsianXcollege					0.052	1.053	0.063	1.065
AsianXvocational					-0.101	0.904	-0.090	0.914
AI/MXcollege					-0.440	0.644	-0.443	0.642
AI/MXvocational					-1.030*	0.357	-1.046*	0.351
Constant	-1.900***	-0.015	-1.590**	-1.582***	-1.541***			
Observations	15,325	15,325	15,325	15,325	15,325			

Notes: Each model runs regressions on 5 sets of imputed data, each with 15,325 observations. Standard errors are in parentheses.
***p<.001; **p<.01; *p<.05; †p<.10

"Student Yes, Teacher No:" Hypothesis 2 predicted that Black and Hispanic students would be more likely than white and Asian students to rate their work effort highly when their teachers rate it poorly. I did find support for this hypothesis. In the race-only model of Table 7, we see that black students are more than twice as likely as white students to overrate their work effort relative to their teachers, whereas Hispanic students are about 70 percent more likely to overrate their work effort. American Indian/multiracial students are approximately 44 percent more likely than whites to overrate their work effort, and Asian students are no more likely than white students to overrate their work effort.

Controlling for test scores does account for a large amount of the variance between racial and ethnic groups in the "student yes, teacher no" category, but not all. For black and American Indian/multiracial students, test scores account for about half of the students' overrating. For Hispanics, test scores account for slightly more than half of the variance. In other words, roughly half of black, Hispanic, and American Indian/multiracial students who are in the "student yes, teacher no" category are low test scorers, which therefore explains half, but only half, of low teacher ratings of effort. The remaining half of students of color who say they are working hard when their teacher says they are not is not clearly justifiable on the part of the teacher. Either the remaining students in this category are moderate to

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highly performing test takers but still do not exhibit the soft skills teachers expect of "hard workers," or the teachers of these remaining students are colored by some racially-based bias.

Like in the "no, no" category, significant predictors of these racial and ethnic patterns in the "student yes, teacher no" category include class, gender, and track placement. Model 3 in Table 7 shows that together, SES, track placement, and gender account for some of the variation in the "student yes, teacher no" category. For black students the odds are reduced from 2.1 times as likely to 84 percent more likely. For Hispanic students the odds drop from 70 to 34 percent more likely, and for American Indian/multiracial students the odds drop from 44 to 31 percent more likely than white students to overrate work effort. Though track placement and gender are significant factors in the model, most of the effect is driven by SES, which is consistent with a class-based cultural capital argument. However, in the basic predictors model, much significant variation is still unexplained.

Like the "no, no" category, the "student yes, teacher no" category also shows some interesting interactions between race/ethnicity, track placement, and gender. In line with the pattern indicated by the college prep track coefficient, white students show an increased trajectory of overrating as tracks move from college prep to vocational, which makes sense if one assumes that the "best" students are the college prep students and the "poorest" students are in vocational tracks. For black students, however, being in the college prep track versus the general track produces a significantly greater likelihood of being in the "student yes, teacher no" category. There is also a significant track placement interaction for those of American Indian/multiracial ethnicity. American Indian/multiracial students are more likely

to be in the "student yes, teacher no" category if they are in the vocational track than if they are in the general track.

In terms of gender, generally, being female is negatively associated with an increased likelihood of overrating student effort, but an interaction between race/ethnicity and gender shows the opposite for blacks and Hispanics (though the relationship for Hispanics is just shy of significance at p=.074). In other words, whereas in the "no, no" category, males were still overall more likely to agree they were not working hard versus females regardless of race, in the "student yes, teacher no" category, black students are more likely to overrate their effort than are white students regardless of gender. For example, in the college prep track, the probability that a black female is overrating her work effort is about 22.7 percent. Compare this probability to the 9 percent probability that a white female or the 14 percent probability that a white male is overrating his work effort. In the general track, a black female is 20 percent likely to be overrating her effort, whereas a white female is 11 percent likely, and a white male is 17 percent likely to overrate work effort. In the vocational track, a black female is 25 percent likely to overrate her work effort, whereas a white female in the same track is 13 percent, and a white male is 19.7 percent likely to overrate. Finally, in all tracks black males are more likely to overrate their efforts than are black females, but the difference in percentage points is slight: a 3.2 point difference in the college prep track and a 3 point difference in the general and vocational tracks.

Generally, higher SES backgrounds significantly decrease the likelihood that a student would be in the "student yes, teacher no" category. SES and other controls do account for the significant overrepresentation of black college prep students in the "student

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yes, teacher no" category, but they do not account for significant overrepresentation of black girls in the "student yes, teacher no" category or significant overrepresentation of American Indian/multiracial vocational track students in the "student yes, teacher no" category.

V. **DISCUSSION**

In this study, I attempted to find support for either cultural capital mismatch or oppositional culture among minority students by comparing student perceptions of their effort with their teachers' perceptions of their effort. If students thought they were working hard, but their teachers disagreed, cultural capital mismatch could explain the difference of opinion. If students and teachers both agreed the student was not working hard, then evidence might point toward the existence of oppositional culture.

Evidence Supporting Oppositional Culture

Hypothesis 1 predicted that black and Hispanic students would be more likely than white and Asian students to agree with their teachers that they were not working hard. I found no support for hypothesis 1 among Hispanics and conditional support for hypothesis 1 for blacks in their math classes only. (See Appendix A for supplemental analyses of English teacher-student assessments of work effort.) This result therefore offers at best, partial support for oppositional culture among minority students. Some researchers have suggested that second and third generation Hispanic youth, particularly Mexican-Americans who identify as "Chicanos" and "Cholos" adopt an oppositional culture to protect their self worth against a system of white mainstream discrimination (Portes and Zhou, 1993). According to Portes and Zhou (1993), these "Chicano" and "Cholo" youth are different from newly arrived Mexican students who, not having been socialized into the discriminatory American mobility

structure, still reflect a cultural reverence and commitment to education. The results from this study are not consistent with the theory that Hispanic students exhibit oppositional culture; however, Portes' and Zhou's work suggests that oppositional culture among Hispanic students is conditional upon environmental factors such as proximity to a recently arriving in-group immigrant community, proximity to a white upwardly mobile community, and generational status. Additionally, it is unclear as to whether the oppositional culture Portes and Zhou describe is specific to Mexican-Americans or Hispanics in general. These are all variables that cannot be ascertained from this data set and therefore cannot be explored here. However, future empirical research should assess the extent to which oppositional culture, however conditional, may be exhibited among Hispanic youths in a local or national context.

Though I found no support for oppositional culture among the general population of Hispanic students, I did find conditional support for oppositional culture among black math students, and that condition is track placement. Despite theoretical predictions, black math students in the college prep track are more likely than white students to agree with their teachers that they are not working hard. But there are two other conditions to this phenomenon as well--being male and coming from a low socioeconomic status. In other words, if SES were equal for all black and white students in the college prep track, black males would be most likely to display oppositional culture, and white males would be next. Black college prep females would be third, white females would be least likely to exhibit oppositional culture.

Students in college preparatory programs are supposed to be the cream of the academic crop--those who are committed to their school work and who show the most

potential for success. So why then, would black students in the college prep math program

be the *only* significant group of black students to exhibit oppositional culture, when

theoretical wisdom would predict oppositional culture in the lowest track? One argument

may come from the impact of structural inequality, reflecting an intersection of oppositional

culture with cultural capital mismatch. Because black students in the college prep math

program tend to be disadvantaged relative to their white peers in terms of SES, black students

may not have the resources or skills they need to effectively compete with their white

classmates. Annette Lareau (2003) argues in *Unequal Childhoods* that students raised in

lower class households are often less adept at interacting with their schools, teachers, and

other institutions compared to middle class children, who are at home taught the type of

communication and critical thinking skills that schools and teachers have come to expect.

This would explain why *teachers* might rate black students in the college prep program lower

than white students who are better able to perform according to the standards of the "middle

class hegemony" (Farkas, et. al. 1990).

      If this oppositional culture-cultural capital intersection were operating this way, it is

still unclear from these data how structural inequality would get translated into *students'*

choice to not work hard. Lareau's argument assumes that lower SES students will choose to

work hard to the best of their ability but will be unaware of their lack of institutionally-

compatible skills. Results from this study, however, show that for some reason lower SES

students are not defaulting to hard work and instead choosing the opposite. Bourdieu would

suggest that this might occur because students who "lack" cultural capital of the middle class

start to internalize and then enact a "negative predisposition" toward a school that they know

to "sanction...[members of] classes or sections of a class deprived of cultural capital" (Bourdieu, 1977, p. 495). By internalizing this negative predisposition, students begin to exhibit "self-depreciation, devaluation of the school and its sanctions or a resigned attitude to failure and exclusion" (Bourdieu, 1977, p. 495). This resigned attitude to failure and exclusion may result from the relationship between achievement and work effort. My analyses assume work effort precedes achievement; that is, a student develops an orientation toward work, and test scores directly reflect that orientation. However, as Bourdieu suggests, low SES black students in the college prep program may see low test scores as a type of "sanction" to which they develop a resignation toward failure. Research shows that black students begin their schooling with high expectations for themselves (MacLeod, 2009; Tyson, 2002); over time, however, as scores do not match expectations, black students may begin to expect that they are poor students. Though I cannot extrapolate beyond the relationship between oppositional behavior and test scores from evidence in this study, evidence from other studies suggests that teacher "sanctions" may not only come in the form of negative achievement scores, but also in the form of punishment or reprimand for not conforming to mainstream cultural norms (Clark, 1983; Ferguson, 2000). Socioeconomic status and nonwhite cultural norms could be affecting black college prep math students in complex ways, but future research is needed to see how these factors work together to result in "oppositional" work effort.

Evidence Supporting Cultural Capital Mismatch

Hypothesis 2 predicted that black and Hispanic students would be more likely than white and Asian students to rate their work effort highly when their teachers rated it poorly.

If we only define cultural capital mismatch as a teacher-student mismatched understanding of the nature of work effort, I found clear support for cultural capital mismatch for both black and Hispanic students, as well as for American Indian/multiracial students. Specifically, black students are more than twice as likely, Hispanic students are 70 percent more likely, and American Indian/multiracial students are approximately 44 percent more likely to rate their work effort highly when their teachers rate it low. However, the "clarity" of support for cultural capital mismatch becomes a bit more muddied once I consider how predictors account for the racial and ethnic variation in this category.

Unlike in the "student no, teacher no" category, test scores do not account for the full racial/ethnic effect of black, Hispanic, and American Indian/multiracial students' overrepresentation in the "student yes, teacher no" category. Though clearly increased test scores do significantly reduce the likelihood of being in this category, test scores only account for roughly half of minority student overrepresentation. This suggests that roughly half of the black, Hispanic, and American Indian/multiracial students in the "student yes, teacher no" category are low achievers. If teachers assume that hard work leads to high achievement and that poor work leads to low achievement, then by virtue of test scores alone teachers may rightly assume that half of the overrepresented minority students in this category are not working hard.

Disparities in schooling, and by extension, effort, might be attributed to a mismatch between class culture at home and the middle class culture of school. Middle class children who are raised by "concerted cultivation" are taught skills like self expression and critical thinking early, as opposed to working class and poor children raised by "natural growth,"

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who are not encouraged to develop to the same extent command over their opinions and language (Lareau, 2003). Despite these differences, however, teachers in a hegemonic middle class institution would tend to expect of all students the level of engagement, questioning, and higher-level thinking typical of concertedly cultivated students. Middle class children, having the same cultural toolbox as the teachers, would understand these expectations. However, working class and poor children, having dissimilar cultural toolboxes, might find that the hard work they think they are exhibiting is not similarly rewarded by teachers.

Because of these clear class disparities, and because minorities are often disproportionately of lower class status than white students, Lareau and others' work would suggest that the cultural capital mismatch from this study should come primarily from class differences between low SES minority students and middle class teachers (Lareau, 2003; Bourdieu, 1977). However, results from this study indicate that SES, along with other structural controls, accounts for, at best, 24 percent of the racial difference.[18] This means that most of the student-teacher disagreement over work effort comes from other factors, particularly, 1) non-class-based racial and ethnic cultural orientations toward school work that differ from institutional standards and/or 2) race-based teacher bias.

Cultural Mismatch. The educational institution is organized according to a white middle class hegemony, and students who differentiate from the standards imposed by the agents of the institution are not likely to reap the rewards of success within it (Farkas et. al., 1990). That the institution of education is specifically organized by a *white* middle class

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[18] Note, however, that the class measure for this study does not include wealth, which researchers argue is an important aspect of class that account for more racial and ethnic differences than income and parental occupation alone (Conley, 1997; Oliver and Shapiro; 1995).

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hegemony is reflected in the fact that in none of the models presented for either the "no, no" category or the "student yes, teacher no" category, was teacher race a significant variable. Black, Hispanic, and Asian teachers are no more likely than white teachers to differentially rate minority students' work effort. Other research has confirmed these patterns. For example, as black teachers become more middle class, they are more likely to adopt the mobility perspective that is consistent with an individualistic, competitive, white middle class ideology (Ferguson, 2000; Tyson 2003).

Because in the educational institution white is normalized, any culture that is not compatible with white culture is deemed deviant and inappropriate. For example, research has shown that black students are more communally-, movement-, and verve-oriented than schools, which value individualism, quiet obedience, and competition (Tyler, et. al., 2008; Clark, 1983). It seems likely, then, that individualist teachers' expectations of work effort could clash with work effort that derives from communal, movement-, and verve-oriented culture. For example, black students who are more communally-oriented are probably more likely to miss school or forego homework to take care of family, actions which teachers might assume to reflect low levels of work effort. High levels of communalism may also reflect high levels of ethnic solidarity, which for students is often represented by use of black English or styles of dress that are not typical of or valued by the white mainstream (Pattilo-McCoy, 1999). Black students may not think their ethnic signaling affects their perceived level of work effort, but teachers may translate use of black English or styles of dress as evidence that they are not working hard. Correlations between work habits and style/dress suggest that this might be the case (Farkas, et. al, 1990). Some studies also find that black

students also tend to be more successful in environments that employ movement and verve, or the "propensity for high levels of physical or sensate stimulation" (Tyler, et. al., 2008, pg 285). Teachers that expect quiet, passive obedience would probably not find value in students who needed to be moving or needed constantly changing, intense stimuli. Several teachers from Ferguson's (2000) study on black "delinquent" boys expressed that some of the black students were hard to handle, suggesting that they were not as likely to submit to the structure of the teacher's classroom.

There is also a gendered aspect to black American culture that could affect the way teachers perceive work effort. Results from this study show that along with black males, black females are more likely than both white females and white males to be in the "student yes, teacher no" category. Perhaps this reflects a mismatch of gender norm expectations between teachers and black females. Though teachers expect a certain level of disobedience from boys (i.e. "boys will be boys"), teachers expect female students to be paragons of passive femininity. Some black females, however, display "masculine" characteristics such as self-reliance and assertiveness, characteristics which have developed, some argue, as a result of a socioeconomic structure that has placed more familial and financial responsibility on black women than black men (Hill, 2001; Darity and Meyers, 1998). This aspect of black culture, which is normalized to the student, might somehow translate negatively to teachers as being disruptive and aggressive, which could account for a teacher's negative assessment of a black female student's self-perceived hard work.

Like black American culture, many American Indian cultures value communalism Cultural clashes between American Indian students and white teachers over the goals of

education may also explain some of the overrepresentation in the "student yes, teacher no" category. Teachers report feeling frustrated that American Indian students will never leave the reservation or work toward ambitious mainstream goals, whereas American Indian students report that their tribal values and lifestyles are not compatible with the lifestyle that the teachers promote (Deyhle, 2005). This cultural misunderstanding of the purpose of education between teacher and student may also translate to a cultural misunderstanding of "hard work" in school as well.

Culture may also explain why Asian students are not any more significantly likely to be in this category than white students and significantly less likely to be in the "student no, teacher no" category.[19] Many Asian cultures are deferential to family desires, and one desire Asian cultures often share is family honor and recognition through academic achievement (Tyler et. al., 2008). Studiousness in Asian cultures shares, and perhaps even exceeds, many of the elements of white American culture in terms of desired work effort. Perhaps because Asian students tend to on average display the norms, habits, and skills that are compatible with the standards teachers have for "hard working" students, Asian students are more likely to share a cultural toolbox with white students than are other racial and ethnic minorities. In fact, the cultural toolkit of many Asian groups may be so similar to (or perhaps even more demanding than) the toolkit that teachers expect of good students that sometimes teachers inflate the efforts of Asian students. Stacey Lee (2009) describes a scene in her book *Unraveling the Myth of the Model Minority* in which a teacher admits to having graded an Asian student well on an assignment even though the student did not execute it to the extent

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[19] Additionally, race-only logistic regression results on the "student yes, teacher yes" category indicate that Asian students are 28 percent more likely than white students to agree with their teacher that they are working hard. Once controls are included in the model, the Asian coefficient actually increases.

that the grade would suggest. But it was hard, the teacher admitted, for her not to reward the consistent compliance and attendance this student displayed.

One problem with relegating the racial difference to "culture" is that it ignores the heterogeneity of different racial/ethnic group members' experiences (O'Connor, Lewis, and Mueller, 2007). There is not one "black," "American Indian," "Asian," or "Hispanic" culture. This is particularly true for Hispanic students in my study because of several reasons: first, there are many different Hispanic or Latino countries of origin, all of which are culturally not the same (this also applies to Asian countries); second, there is a considerable difference between Hispanic students who have recently immigrated to America and those who are second and third generation Americans (Portes and Zhou, 1993), and third, a significant limitation of analysis for Hispanic students in this study is the fact that there could be major cultural differences between race-specified and non-race specified Hispanics. Because of these factors, it is difficult to establish a cultural mismatch connection to Hispanic students' overrepresentation in the "student yes, teacher no" category.

Despite the heterogeneity of all racial and ethnic groups, there may still be some common elements of race or ethnic cultural mismatch that may be operating to produce significant likelihoods of minority students claiming they work hard when their teachers claim otherwise. Though some possible explanations have been offered here, definitive cultural inferences are beyond the scope of this study, and future research will need to further examine this relationship.

Race-Based Teacher Bias. Since the odds of being in the student yes, teacher no category reduce as test scores get higher, there is a considerable association between test

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scores and effort. Half of minority variance in the "student yes, teacher no" category is explained by test scores alone, suggesting that half the students in the "student yes, teacher no" category are high achievers. If we assume that achievement is the result of hard work effort, it would follow that approximately half of the the students presumed to be "overrating" their work effort are in fact working hard. This means that the teachers who underrated minorities' work effort may be basing their assessments on some race-based bias.

The analyses attempted to control for race-based teacher bias; however, I found no relationship between traditional (teacher race) and new (feeling "put down" by teachers) predictors of this bias. Further, I found that there was little proportional difference between race groups and the degree of perceiving insult by teachers. These measures attempted to assess the extent to which teachers may be discriminating against students, and results suggest three possible conclusions about it. First, it is possible that teachers do not have an overt racial bias but rather, that something else is accounting for overrepresentation of blacks, Hispanics, and American Indian/multiracials in the "student yes, teacher no" category. Second, it is possible that students do not perceive teacher insult as race-based discrimination, and third, it is possible that these measures are not valid measures of racial discrimination. I cannot assess the likelihood of each of these arguments from the results in this study, but such a large unexplained effect of student's race in the "student yes, teacher

no" disagreement category leaves me convinced that that latent unmeasurable discrimination is operating in the classroom.[20]

Even if teachers are not overtly biasing their assessments of work effort against minority students, racial privilege and bias still play a major role in the results of this study. Because the educational system is organized according to a middle class *white* hegemony, the educational standards teachers expect are inherently rooted in white culture. Whiteness is implicated in the definition of "well-matched" cultural capital, and any capital that is mismatched with the culture teachers expect is automatically mismatched with whiteness. Therefore, even if overt discrimination were absent from this story and cultural capital mismatch fully explained all racial and ethnic variation in student-teacher dis/agreement about work effort, systemic discrimination against non-white modes of conduct still remains an ingrained aspect of teacher assessment and consequent judgment of students.

Limitations

There are several limitations to my study, the first of which is the level of missing data. Though about 73 percent of students provided an answer about the extent to which they were working hard, and though about 81 percent of math teachers also provided their assessment of the students' work effort, about 60 percent of students and teachers together answered the work effort questions. This is unquestionably not an ideal percentage of the

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[20] There is no shortage of literature suggesting that teachers discriminate against minority students. Ferguson's (2000) ethnographic work clearly depicts teachers not only providing preferential treatment to white students who exhibit the same behavior for which black students are punished, but also failing to recognize that their actions and perceptions are racist. Empirical studies find that students--black students in particular--perceive this discrimination (Fisher et, al, 2000), and when they do, they are more likely to have conduct problems, depressive symptoms, and low achievement in school (Brody et. al, 2006; Cooper et al, 2008; Sellers, et. al, 2006).

sample to have left, but worse, this means that 40 percent of the sample might be missing on an important characteristic that could bias the analysis.

Another limitation of the study is the student measure of hard work. The survey question asks the student to what extent he or she agrees that he or she "works as hard as possible when studying." Studying here is not well defined.[21] Does it mean studying during school, at home, both? And what exactly do they mean by studying? Ideally, the student question would exactly match the teacher question so that I could be confident that I was making an apples to apples comparison of work effort, but I cannot determine to what extent the unclear definition of "studying," and where the studying happens, biases my analyses. However, it seems reasonable to conclude that if a student perceives him or herself to work hard when studying, however defined, it is probably likely that the student also perceives him or herself to be working hard in school in general.

Like all studies that use survey results, another limitation of the study is possible positivity bias. Given that people tend to want to present a positive image of themselves on surveys, it is possible that students who really did not think they were working hard did not want to admit it on a survey. Therefore, it is possible that more students should have been in the "no, no" or "student no, teacher yes" categories than what is reported. This would be particularly problematic if the positivity bias were somehow patterned by race.[22] I have no way of assessing the extent to which this might have occurred or not.

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[21] Fryer and Torelli (2010) also found student assessments of work effort from the ADD Health data set to be problematic such that blacks reported more work effort than whites and cheerleaders reported more work effort than did science and match club students. Though I did not test the extent to which work effort made sense for students in particular clubs and extra curricular activities, I did find that before imputation, reports of effort seem to fit theoretical expectations predicted by cultural capital mismatch and oppositional culture.

[22] Some studies report that black students are especially likely to report what they think to be "correct" answers on surveys rather than answers that reflect what they do (Downey, Ainsworth, and Qian, 2009).

VI. **CONCLUSION**

By framing culture as a toolbox of students' understanding of norms, behaviors, and skills to employ in the classroom, I saw a contradiction in two popular explanations for students' cultural behavior. According to the cultural capital mismatch theory, minority students without an understanding of the white middle class norms and standards of education do not have the tools they need to be academically successful. According to the oppositional culture theory, minority students have the tools they need to succeed, but, seeing no clear benefit to academic attainment, refuse to use them. Given the theoretical contradiction between the two theories, I expected to find clear support for *either* cultural capital mismatch *or* for oppositional culture among minority students. For Hispanics and American Indian/multiracials, I did find support for cultural capital over oppositional culture. Results for black students' student-teacher assessments of work effort, however, do not reflect an "either-or" scenario of culture, but rather, one that reflects "a little bit of both." In other words, because culture is complex, racial and ethnic groups do not universally have, not have, use, or not use classroom-compatible tools; rather, under certain structural conditions, some members of racial and ethnic groups differentially have, do not have, use, or do not use classroom-compatible tools. Support for one cultural explanation does not have to infer a lack of support for another.

The results suggest that black students heterogeneously have and use cultural tools, but just because I did not find similar heterogeneity among segments of the Hispanic, Asian, and American Indian/multiracial population does not mean that these groups are also not culturally heterogeneous. Rather, the use of a large nationally representative sample dilutes

and masks this in-group racial and ethnic heterogeneity. For example, though I found no support that Hispanics on average are more oppositional than white students, there is strong ethnographic evidence to support the fact that some segments of the Hispanic population may be at risk of developing an oppositional culture (Portes and Zhou, 1993). How culture operates for some members of a racial or ethnic group may not be the same for all members of the group, and though interactions in statistical analyses attempt to account for this heterogeneity, analyses of nationally representative racial and ethic data dilutes the diverse aspects of and responses to cultural influence.

Overall, I found conditional support for the existence of oppositional culture and partial support for the existence of cultural capital mismatch, but I also found evidence that students' classroom tools are not the only reason why students and teachers may disagree about work effort. Teachers on average do seem to discriminate against a small percentage of their minority students, as evidenced by unjustified moderate to high test scores of half the minority students supposedly "overrating" their work effort. Further, though, as agents of the white middle class, teachers who abide blindly by the standards of the educational system are also implicated in a system of white privilege that devalues racial and ethnic minorities of different cultures.

Like most studies, there are more questions raised by these results than are answers. What, specifically, do teachers and students agree or disagree upon when they assess hard work effort? How might student-teacher assessments of effort differ for elementary or middle school-aged students? How do student-teacher assessments of work effort change over time? Do differences in assessment of work effort explain grade differentials? Answers

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to these and other questions can and should be explained in further research to understand more about how students' classroom toolboxes are shaped by and interact with those of the education system's institutional gatekeepers.

APPENDIX A: METHODOLOGICAL CONSIDERATIONS AND ALTERNATIVE

MODEL OUTCOMES

For this study, I made several methodological choices that may need further

justifcation. The first of these choices is the use of standardized test scores as a "check" on

the extent to which teachers accurately perceive students to be working hard. We know

behavior is much more highly correlated with grades than it is with test scores (Farkas, et. al.,

1990), so how could test scores possibly be considered a check on accurate teacher

assessment? This bias of teachers inflating or deflating work effort assessment is precisely

what I try to capture with the "objective" measure of achievement. If we assume that work

effort leads to achievement, we should find that student work effort leads to an objective

level of achievement and that achievement should account for all variation in student-teacher

effort dis/agreement. Since in the "student yes, teacher no" disagreement category I find that

objective achievement does not account for all the variation, this suggests that teachers are in

fact measuring students' work effort by some other measure, which I argue to be rooted in a

race-based, and to a lesser extent, a class-based, cultural capital mismatch.

Still, why not "control" for learned intelligence in the categories' models? Some

might argue that this is an important student characteristic that merits controlling throughout

analysis of other predictors. What I found, though, is that SES and test scores were collinear.

When I "controlled" for learned intelligence, I found that SES no longer had an effect on

whether students were in the "no, no" or "student yes, teacher no" categories. I therefore

opted to drop the test score "control" for the model in order to capture the direct effect of

SES. See box plots below for a visual representation of how SES and test scores are each

separately but similarly related to students' track placement, by race/ethnicity.

Figure A1. Standardized Test Scores, by Race/Ethnicity and Track Placement
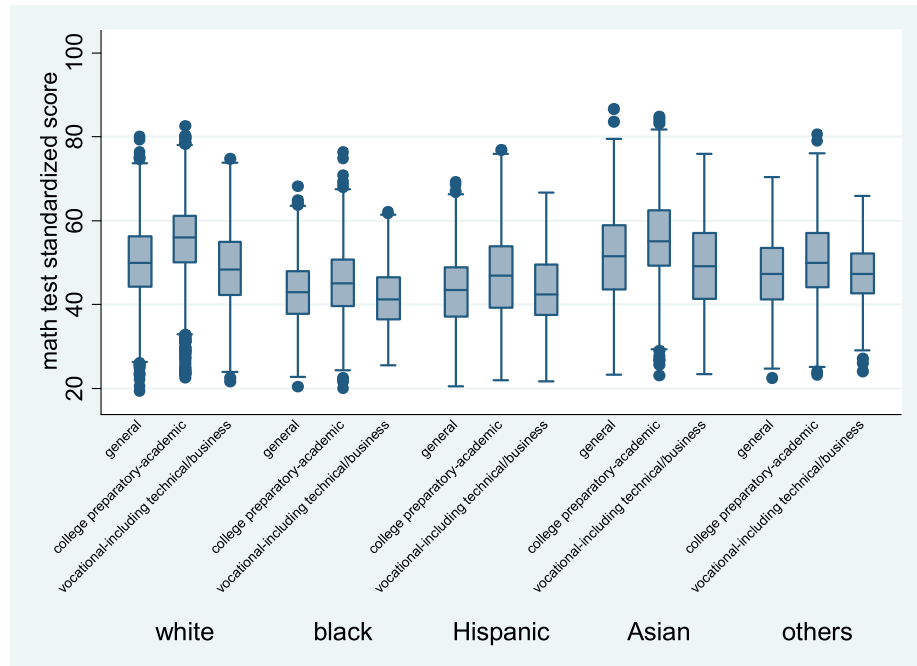
Figure A2. Socioeconomic Status, by Race/Ethnicity and Track Placement
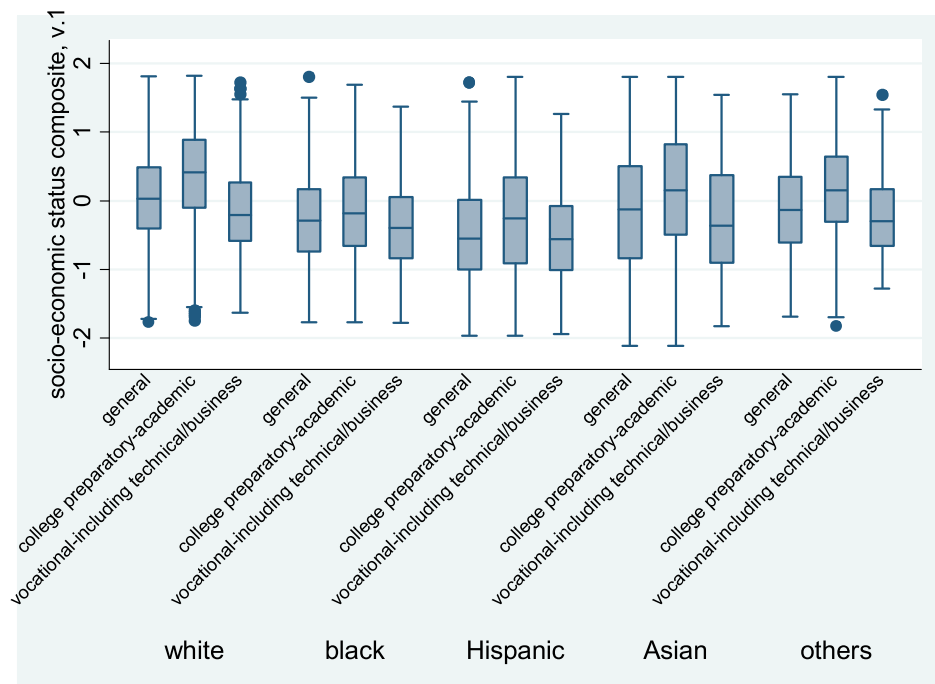
Second, I chose to use math teacher-student assesssments of effort only, primarily because more math than English teaches responded to the survey questions, which ultimately allowed more original data preservation. Though there is considerable overlap in math and English teachers' assesments of the same student's work effort, there was enough difference to warrant separate exploration of English teacher-student assessments of effort. For the "student no, teacher no" category that uses math teacher assessments of effort, I found some support for oppositional behavior among black students in the college prep track only. However, as Table A1 shows, this result is only limited to black *math* students in the college prep track. I found no support for oppositional behavior among black students in English classes. I did, however, find support for oppositional behavior among American Indian and multiracial students, and interestingly, I found support for this oppositional behavior among students in the college prep track, though this relationship is only significant at $p<.10$. Similarly to the "student no, math teacher no" category, Asian students are underrepresented in "student no, English teacher no" category, and none of the model's predictors completely account for this significant underrepresentation.

Results from the "student yes, English teacher no" model are much more consistent with the results from the "student yes, math teacher no" model. Like the math teacher model, Black, Hispanic, and American Indian/multiracial students are all significantly overrepresented in the Student Yes teacher no category, with coefficients very similar to those represented by the models using math teachers' assessments. Test scores account for much of the racial/ethnic variance, but less so in the English teacher model than in the math teacher models. SES and other controls accounted for very little of the effect of being in the "student

yes, teacher no" category to the degree that even with interaction effects and other controls, much of the original race/ethnicity effect remains significant for all three groups (though Hispanics are only significant at p<.10). Some variables were significant in the English model of "student yes, teacher no" that were not significant in the math model, including being in a 76-100% poverty school (a surprising significantly negative effect) and having an Asian teacher (significantly positive effect). Many of the track interactions were similar to those in the math models, but were only significant at p<.10. There were no significant gender interactions, for the "student yes, English teacher no" category.

Overall, results from the English teacher models offer mixed support for the math teacher models. Results from the "student yes, English teacher no" category confirm many of the patterns of student-teacher dis/agreement likelihood, suggesting that regardless of subject, cultural capital mismatch and/or race-based teacher bias is operating for black, Hispanic, and American Indian/multiracial students. Results from the "student no, English teacher no" model do not support the oppositional behavior I found among black students in the "student no, math teacher no" model; however, the English model does suggest similar patterns, particularly related to oppositional behavior among college prep track placement, among American Indian and multiracial students. The results of both math and English models therefore merit further exploration of possible oppositional behavior among minority students in college prep programs and the conditions under which this oppositional behavior may be likely to occur.

Table A1. Predictors of "Student No, Teacher No" Category Likelihood For English Teachers

	[1]		[2]		[3]		[4]		[5]	
	B	OR	B	OR	B	OR	B	OR	B	OR
Race (Ref White)										
Black	0.138	1.148	-0.193*	0.824	0.010	1.010	0.0360	1.037	0.049	1.050
Hispanic	0.176	1.192	-0.158	0.854	0.029	1.029	-0.0090	0.991	-0.068	0.934
Asian	-0.556***	0.573	-0.669***	0.512	-0.568***	0.567	-0.511*	0.600	-0.560*	0.571
AIAN/multiracial	0.324**	1.383	0.169	1.184	0.277*	1.319	0.0350	1.036	0.008	1.008
Test Scores			-0.045***	0.956						
SES					-0.288***	0.750			-0.287***	0.751
Gender (Ref Male)					-0.802***	0.448			-0.803***	0.448
Track placement (Ref General)										
College prep					-0.742***	0.476	-0.936***	0.392	-0.825***	0.438
Vocation					-0.101	0.904	-0.0310	0.969	-0.1790	0.836
School control (Ref Public)										
Catholic					-0.206†	0.814			-0.204†	0.815
Other Private					-0.097	0.908			-0.094	0.910
Urbanicity (Reference Urban)										
Suburban					-0.029	0.971			-0.027	0.973
Rural					-0.037	0.964			-0.035	0.966
Region (Ref Northeast)										
Midwest					0.036	1.037			0.032	1.033
South					-0.060	0.942			-0.065	0.937
West					-0.116	0.890			-0.120	0.887
School Poverty (Ref 0-5%)										
6-10%					0.156	1.169			0.156	1.169
11-20%					0.077	1.080			0.077	1.080
21-30%					0.020	1.020			0.020	1.020
31-50%					-0.018	0.982			-0.019	0.981
51-75%					-0.112	0.894			-0.106	0.899
76-100%					-0.451*	0.637			-0.448*	0.639
Teacher race (Ref White)										
Black					-0.035	0.966			-0.044	0.957
Hispanic					-0.059	0.943			-0.060	0.942
Asian					0.169	1.184			0.169	1.184
AIAN/multiracial					0.043	1.04			0.046	1.047
Perceived Insult					0.550***	1.733			0.548***	1.730
BlackXcollege							0.216	1.241	0.1070	1.113
BlackXvocational							0.000	1.000	0.0890	1.093
HispanicXcollege							0.298	1.347	0.2170	1.242
HispanicXvocational							0.065	1.067	0.1560	1.169
AsianXcollege							0.060	1.062	0.0570	1.059
AsianXvocational							-0.175	0.839	-0.1760	0.839
AI/MXcollege							0.488†	1.629	0.464†	1.590
AI/MXvocational							0.561	1.752	0.6580	1.931
Constant	-1.514***		0.774***		-0.834***		-1.088***		-0.792***	
Observations	15,325		15,325		15,325		15,325		15,325	

Notes: Each model runs regressions on 5 sets of imputed data, each with 15,325 observations. Standard errors are in parentheses.

Table A2. Predictors of "Student Yes, Teacher No" Category Likelihood for English Teachers

	[1]		[2]		[3]		[4]		[5]	
	B	OR	B	OR	B	OR	B	OR	B	OR
Race (Ref white)										
Black	0.748***	2.113	0.504***	1.655	0.730***	2.075	0.540*	1.716	0.559*	1.749
Hispanic	0.522***	1.685	0.273**	1.314	0.404**	1.498	0.401*	1.493	0.326†	1.385
Asian	-0.148	0.862	-0.224	0.799	-0.212	0.809	-0.121	0.886	-0.182	0.834
AIAN/Multiracial	0.366*	1.442	0.246	1.279	0.316†	1.372	0.678**	1.970	0.638*	1.893
Test scores			-0.034***	0.967						
SES					-0.193*	0.824			-0.184*	0.832
Gender (ref male)					-0.470***	0.625	-0.514***	0.598	-0.520***	0.595
Track placement (Ref General)										
College prep					-0.161*	0.851	-.282**	0.754	-0.203†	0.816
Vocation					0.003	1.003	0.189	1.208	0.181	1.198
School control (Ref Public)										
Catholic					-0.170	0.844			-0.162	0.850
Other Private					-0.129	0.879			-0.106	0.899
Urbanicity (Ref Urban)										
Suburban					-0.074	0.929			-0.082	0.921
Rural					0.056	1.058			0.048	1.049
Region (Ref Northeast)										
Midwest					0.113	1.120			0.108	1.114
South					0.128	1.137			0.124	1.132
West					0.184	1.202			0.176	1.192
School Poverty (Ref 0-5%)										
6-10%					0.000	1.000			0.005	1.005
11-20%					-0.010	0.990			-0.011	0.989
21-30%					-0.127	0.881			-0.125	0.882
31-50%					-0.136	0.873			-0.132	0.876
41-75%					0.029	1.029			0.030	1.030
76-100%					-0.324*	0.723			-0.317*	0.728
Teacher race (Ref White)										
Black					-0.143	0.867			0.141	1.151
Hispanic					-0.136	0.873			-0.150	0.861
Asian					0.401*	1.493			-0.406*	0.666
AIAN/Multiracial					-0.007	0.993			-0.005	0.995
Perceived Insult					0.355***	1.426			0.354***	1.425
BlackXfemale							0.067	1.069	0.068	1.070
HispanicXfemale							0.267	1.306	0.268	1.307
AsianXfemale							-0.323	0.724	-0.332	0.717
AIXfemale							-0.083	0.920	-0.075	0.928
BlackXcollege							0.373	1.452	0.303	1.354
BlackXvocational							-0.075	0.928	-0.083	0.920
HispanicXcollege							0.120	1.127	0.057	1.059
HispanicXvocational							-0.515†	0.598	-0.511†	0.600
AsianXcollege							0.196	1.217	0.185	1.203
AsianXvocational							-0.239	0.787	-0.217	0.805
AI/MXcollege							-0.506†	0.603	-0.525†	0.592

AI/MXvocational				-0.815* 0.443	-0.747† 0.474
Constant	-2.000***	-0.262	-1.748***	-1.641***	-1.721***
Observations	15,325	15,325	15,325	15,325	15,325

Notes: Each model runs regressions on 5 sets of imputed data, each with 15,325 observations. Standard errors are in parentheses.
***p<.001; **p<.01; *p<.05; †p<.10

Finally, because I had four discrete category outcomes, these analyses could have been executed using a multinomial rather than a binary logistic approach. The following set of supplemental analyses consists of results from a multinomial model of math teacher information that uses the "student yes, teacher yes" category as the reference group. The "student yes, teacher yes" category not only is the category in which most students are placed (lending itself to be a natural reference), but it is also the "ideal" student-teacher relationship to work effort proscribed by the American success narrative of hard work. Results from the math multinomial model are consistent with the results of the math logit model, but the effects are slightly exaggerated by the fact that black, Hispanic, and American Indian/multiracial students are both underrepresented in the "student yes, teacher yes" reference category and overrepresented in two categories of interest. I chose to present the more conservative findings of the binary logits so if they are at all biased, they are biased toward an understatement of the effect.

What is uniquely interesting about the multinomial model, though, is that we can see that relative to all other minorities, white students appear to be overrepresented in the "student no, teacher yes" category, a category not of explicit interest as it does not coincide with either the oppositional culture or cultural capital mismatch model. However, we see from this result that white students, even if they admit to not working hard, are still somehow able to appear to teachers that they are. Significant white overrepresentation in this category versus the "yes, yes" category, particularly compared to black and Hispanic students, remains even after controling for all model predictors. This result clearly illustrates hegemonic white privilege in schools and also further suggests that race and ethnicity are implicated in effort-

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related cultural capital differences between teachers and minority students in the "student

yes, teacher no" category.

Table A3. Math Multinomial Race Only Results

	"Student No, Teacher No" vs. "Student Yes, Teacher Yes"		"Student No, Teacher Yes" vs. "Student Yes, Teacher Yes"		"Student Yes, Teacher No" vs. "Student Yes, Teacher Yes"	
	B	OR	B	OR	B	OR
Race (ref White)						
Black	0.292**	1.339	-0.276**	0.759	0.742***	2.100
	(+0.086)		(+0.089)		(+0.085)	
Hispanic	0.247*	1.280	-0.171*	0.843	0.541***	1.718
	(+0.103)		(+0.108)		(+0.090)	
Asian	-0.487**	0.614	-0.138	0.871	-0.1760	0.839
	(+0.138)		(+0.123)		(+0.176)	
American Indian/ multiracial	0.440**	1.553	0.247†	1.280	0.547**	1.728
	(+0.152)		(+0.133)		(+0.153)	
Constant	0.830**		-0.450***		-1.171***	
	(+0.054)		(+0.037)		(+0.054)	
Observations	15,325		15,325		15,325	

Notes: Each model runs regressions on 5 sets of imputed data, each with 15,325 observations. Standard errors are in parer
***p<.001; **p<.01; *p<.05; †p<.10

Table A4. Math Multinomial Race and Test Scores Results

	"Student No, Teacher No" vs. "Student Yes, Teacher Yes"		"Student No, Teacher Yes" vs. "Student Yes, Teacher Yes"		"Student Yes, Teacher No" vs. "Student Yes, Teacher Yes"	
	B	OR	B	OR	B	OR
Race (ref White)						
Black	-0.261**	0.770	-0.423***	0.655	0.244**	1.276
	(+0.093)		(+0.095)		(+0.090)	
Hispanic	-0.251*	0.778	-0.297**	0.743	0.096	1.101
	(+0.108)		(+0.086)		(+0.094)	
Asian	-0.463**	0.629	-0.122	0.885	-0.150	0.861
	(+0.145)		(+0.105)		(+0.183)	
American Indian/ multiracial	0.181	1.198	0.182	1.200	0.317*	1.373
	(+0.159)		(+0.140)		(+0.158)	
Test scores	-0.067***	0.935	-0.017***	0.983	-0.059***	0.943
	(+0.003)		(+0.003)		(+0.004)	
Constant	2.642***		-0.466**		-1.942***	
	(+0.174)		(+0.175)		(+0.193)	
Observations	15,325		15,325		15,325	

Notes: Each model runs regressions on 5 sets of imputed data, each with 15,325 observations. Standard errors are in parer
***p<.001; **p<.01; *p<.05; †p<.10

Table A5. Math Multinomial Predictor Results

	"Student No, Teacher No" vs. "Student Yes, Teacher Yes"		"Student No, Teacher Yes" vs. "Student Yes, Teacher Yes"		"Student Yes, Teacher No" vs. "Student Yes, Teacher Yes"	
	B	OR	B	OR	B	OR
Race (Ref White)						
Black	-0.062	0.940	-0.326*	0.722	0.306	1.358
Hispanic	-0.230	0.795	-0.304*	0.738	0.183	1.201
Asian	-0.715**	0.489	-0.041	0.670	-0.3820	0.682
AIAN/Multiracial	0.141	1.151	0.084	1.088	0.636**	1.889
Test Scores						
SES	-0.393***	0.675	-0.103*	0.902	-0.342***	0.710
Gender (Ref Male)	-0.960***	0.383	-0.295***	0.745	-0.715***	0.489
Track placement (Ref General)						
College prep	-1.144***	0.319	-0.480	0.619	-0.582***	0.559
Vocation	-0.184	0.832	-0.068	0.934	-0.133	0.875
School control (Ref Public)						
Catholic	-0.042	0.959	-0.089	0.915	-0.135	0.874
Other Private	-0.091	0.913	0.004	1.004	-0.182	0.834
Urbanicity (Ref Urban)						
Suburban	0.071	1.074	0.055	1.057	0.075	1.078
Rural	-0.075	0.928	-0.083	0.920	-0.124	0.883
Region (Ref Northeast)						
Midwest	-0.111	0.895	0.058	1.060	-0.061	0.941
South	-0.116	0.890	0.061	1.063	-0.036	0.965
West	-0.024	0.976	0.067	1.069	0.072	1.075
School Poverty (Ref 0-5%)						
6-10%	-0.047	0.954	0.123	1.131	-0.159	0.853
11-20%	0.015	1.015	0.030	1.030	-0.203	0.816
21-30%	0.007	1.007	0.003	1.003	-0.171	0.843
31-50%	0.015	1.015	-0.017	0.983	-0.165	0.848
51-75%	-0.129	0.879	-0.154	0.857	-0.207	0.813
76-100%	-0.148	0.862	-0.138	0.871	-0.111	0.895
Teacher race (Ref White)						
Black	0.089	1.093	0.073	1.076	0.090	1.094
Hispanic	-0.259	0.772	-0.242	0.785	-0.031	0.969
Asian	-0.090	0.914	-0.169	0.845	0.135	1.145
American Indian/multiracial	0.136	1.146	0.009	1.009	0.177	1.194
Perceived Insult	0.816	2.261	0.291**	1.338	0.719***	2.052
BlackXcollege	0.390*	1.477	0.058	1.060	0.436*	1.547
BlackXvocational	0.268	1.307	-0.170	0.844	0.141	1.151
HispanicXcollege	0.333	1.395	0.145	1.156	0.122	1.130
HispanicXvocational	0.115	1.122	-0.013	0.987	-0.347	0.707
AsianXcollege	0.237	1.267	-0.102	0.903	0.140	1.150
AsianXvocational	0.135	1.145	-0.338	0.713	-0.166	0.847
AI/MXcollege	0.357	1.429	0.174	1.190	-0.360	0.698
AI/MXvocational	0.283	1.327	0.400	1.492	-0.779	0.459
Constant	0.817***		-0.086		-0.446***	
Observations	15,325		15,325		15,325	

Notes: Each model runs regressions on 5 sets of imputed data, each with 15,325 observations. Standard errors are in parentheses.
***p<.001; **p<.01; *p<.05; †p<.10

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