Mid-Western Educational Researcher

Volume 30 | Issue 3 Article 4

2018

Discipline with Emotion: Exploring the Influence of Teacher Tone on Elementary Students' Perceptions of and Responses to Teacher Authority

Sarah Cashdollar
University of Chicago

Follow this and additional works at: https://scholarworks.bgsu.edu/mwer

How does access to this work benefit you? Let us know!

Recommended Citation
Cashdollar, Sarah (2018) "Discipline with Emotion: Exploring the Influence of Teacher Tone on Elementary Students' Perceptions of and Responses to Teacher Authority," *Mid-Western Educational Researcher*: Vol. 30: Iss. 3, Article 4.
Available at: https://scholarworks.bgsu.edu/mwer/vol30/iss3/4

This MWERA Distinguished Paper is brought to you for free and open access by the Journals at ScholarWorks@BGSU. It has been accepted for inclusion in Mid-Western Educational Researcher by an authorized editor of ScholarWorks@BGSU.

Discipline with Emotion: Exploring the Influence of Teacher Tone on Elementary Students' Perceptions of and Responses to Teacher Authority

Sarah Cashdollar
University of Chicago

Popular preventative discipline programs often provide guidelines for ideal disciplinary interactions, emphasizing teachers' use of a neutral, soft, warm, and/or loving tone of voice during student discipline. Yet the scholarly literature has suggested that there are alternative pedagogical ways of using emotional expression, including tone, to enhance student learning. For example, a long line of scholarship on African American educators (Delpit, 1996; Foster, 1991, 1997; Gordson, 1998; Irvine & Fraser, 1998; Monroe & Obidah, 2004; Patterson, Mickelson, Hester, & Wyrick, 2011; Ware, 2006) has found that some African American teachers use a direct, assertive, and strict disciplinary tone in the context of trusting student-teacher relationships to communicate high expectations and concern. Through experiments, interviews, and observations, this current mixed methods study explored how elementary students perceived and responded to the strict tone aspect of a "tough love" discipline style. Based on the study's findings, I argue that teacher education programs that deem only one style of communication as acceptable during discipline may in fact be needlessly excluding diverse teaching styles and disregarding the cultural assets of the teachers who use them.

Introduction

For researchers interested in the role of the public education system in an ethnically and socioeconomically pluralistic society, one question continually recurs: Should the project of schooling be to assimilate children from minority groups into the dominant culture in order to increase their social mobility and access, or should it be to mirror and affirm children's diverse sociocultural backgrounds in order to value the experiences they bring to school and avoid unduly privileging those already in the majority group? In the context of this debate, the issue of student discipline is especially salient. A growing number of studies have found that current school discipline practices disproportionately exclude students from minority groups, especially students who are African American, from the learning environment through suspension, expulsion, and simple removal from class (Skiba, Arredondo, Gray, & Rausch, 2016). Part of this racial disparity in school discipline seems to arise from student-teacher racial mismatch. Students with a teacher of a different race have been found to receive 20% more suspensions (Holt & Gershenson, 2015), and because approximately 80% of teachers in the US are White (Goldring, Gray, & Bitterman, 2013), this disproportionately affects Black students and other students of color. When individual students have teachers of the same race, their rates of suspension decrease (Roch, Pitts, & Navarro, 2010) and overall rates of discipline in the school decline when the majority of the faculty are of the same race as their students (Blake et al., 2016).

The group of educational researchers seeking to address these discipline disparities can generally be divided into two camps. The first maintains that some ideal approaches for disciplining children exist, and that by adopting these universally effective approaches, schools can reduce exclusionary discipline and the racial disparities that accompany ineffective discipline practices. Not coincidentally, the discipline approaches touted as ideal resemble those high in sensitivity and low in control, which are most often practiced among White, middle class parents (Tamis-LeMonda, Briggs, McClowry, & Snow, 2008). For this reason, I consider this group's proposed solution to represent an *assimilationist* ideology toward schooling. The second group of researchers theorizes that students and teachers with similar social and cultural backgrounds may have a shared understanding of discipline and authority, while students and teachers with different social backgrounds will experience misunderstandings that will contribute to discipline disparities. Thus, I consider this group to represent an ideology toward schooling that prioritizes student-teacher cultural matching, theorized according to Irvine's (1990) *cultural synchronization* framework as one way to facilitate positive student-teacher interactions.

In the pages that follow, I explain how one primary difference between the assimilationist and culture matching approaches toward discipline lies in teachers' disciplinary tone. I ask, *How does teacher tone shape student perceptions of and responses to teacher authority, and do these perceptions vary depending on the student and teacher's racial correspondence?* I go on to detail the methods I developed in order to explore how students at an urban elementary charter school, with a predominantly African American student population, perceived and responded to variations in teacher tone. I then present and discuss findings showing that students responded less favorably to the highly sensitive tone associated with assimilationist approaches toward discipline and more favorably to the stricter tone often associated (though non-exclusively) with historically African American and Asian American disciplinary styles. Students of higher socioeconomic status were especially favorable towards Black over White teachers using a strict tone when rating trustworthy authority. I argue that, while these findings are not generalizable, they provide evidence that teacher education programs that deem just one style of communication during discipline as acceptable may in fact be needlessly excluding diverse teaching styles and disregarding the cultural assets of the teachers who use them.

Review of Literature

The "Tender Loving Care" Approach: A Modern Assimilationist Discipline Style

In response to the growing evidence regarding the negative consequences resulting from exclusionary discipline practices, a number of schools have adopted whole-school programs for student social and emotional learning, along with a focus on teacher empathy toward students, with the purpose of cultivating restorative, rather than punitive, behavioral correction. Frequently, such programs lay out specific ways teachers should communicate empathy to students, with an emphasis on teacher tone during disciplinary interactions. Central to the popular Love and Logic® classroom curriculum, for example, is the teacher's ability to avoid a negative emotional state. Based on the assertion that children respond to tone of voice as much as the words that are spoken, Love and Logic ® urges disciplinarians to "maintain a soft, empathetic tone of voice" (Love and Logic, n.d.). Responsive Classroom, another widely endorsed program, also emphasizes the primary role of teacher nonverbal communication during

discipline. The program states that it is essential to "use a neutral tone and neutral body language when giving a redirection" (Responsive Classroom, 2014). However, perhaps no whole-school program is as explicit about teacher tone as the Montessori program, a primarily early childhood and elementary school model that was one of the nation's first to integrate social emotional learning into its curriculum. Montessori teachers are expected to speak quietly to students with a tone that communicates love and acceptance at all times (Montessori Research and Development, 2013). According to the North American Montessori Center (NAMC) blog:

> Children are tender creatures… Students are much more likely to listen to a voice that sounds warm and encouraging than to one that sounds harsh and judgmental. A caring and inviting tone of voice communicates our desire to have an atmosphere of acceptance, love, and respect. (Irinyi, 2010)

A common thread running through these and many other teacher education programs is the premise that, alongside rejecting harshness in consequence (e.g., through suspension or expulsion), educators must reject harshness in communication, such as in tone. Through their prescription of *soft, warm, neutral,* and/or *loving* teacher tones during behavioral corrections, the disciplinary style these programs most strongly resemble is that used commonly by middle class White families. These tones tend to be higher in sensitivity and lower in control than those used by African American families, Asian American families, and low-income families from a variety of ethnic and racial backgrounds (Tamis-LeMonda, Briggs, McClowry, & Snow, 2008). Although the designers and implementers of this approach likely believe that this gentle discipline style is ideal for all children, the concordance between the discipline practices promoted by these programs and those of modern White, middle class families arguably reinforces the institutional hegemony of Whites' social and cultural practices in schools. By mirroring the dominant group culture in their discipline practices and policies, schools may acculturate minority group children into the interaction styles of the dominant group, and they may also privilege majority group children already familiar with these interactional styles by reproducing Whites' privileged social positions under the guise of meritocracy (Bourdieu, 1977). According to Ladson-Billings' (1994) work on culturally relevant teaching, the "tender loving care" disciplinary approach would represent an assimilationist ideology toward schooling in that it "operates without regard to the students' particular cultural characteristics. According to the assimilationist perspective, the teacher's role is to ensure that students fit into [dominant] society" (p. 22).

The "Tough Love" Approach: Traditions in African American Discipline Styles

In contrast to the standardization impulse that is inherent in the discipline practices theorized as ideal for all children, one premise behind culturally responsive classroom management is that effective discipline may require culturally appropriate forms of communication that vary depending on the student population (Ladson-Billings, 1994; Weinstein, Tomlinson-Clarke, & Curran, 2004). Ladson-Billings (1994) explains: "[t]he primary aim of culturally relevant teaching is to assist in the development of a 'relevant Black personality' that allows African American students to choose academic excellence yet still identify with African and African American culture" (p. 17-18). According to Delpit (1988), many African American children have shared historical and structural experiences that socialize them to accord to teachers' authority in

culturally particular ways:

> Many people of color expect authority to be earned by personal efforts and exhibited by personal characteristics. In other words, the authoritative person gets to be a teacher because she is authoritative. Some members of middle-class cultures, by contrast, expect one to achieve authority by the acquisition of an authoritative role. That is, the teacher is the authority because she is the teacher. (p. 289)

Through their shared experiences, including shared perceptions of authority and discipline, African American teachers may employ culturally consistent teaching styles that support African American student success (Foster, 1989; Griffin & Tackie, 2016; Hale, 1982; Irvine, 1989, 1990, 2002, 2003; Ladson-Billings, 1994). Irvine (1990) proposes that *cultural synchronization*, or shared cultural understanding, between students and teachers has a positive impact on student behavior, while lack of cultural synchronization can increase misunderstandings in the classroom context and contribute to discipline disparities.

Although more recent applications of the cultural synchronization framework focus primarily on teachers' culturally influenced perceptions of student behavior (Blake et al., 2016), student perceptions of and responses to teacher communication are also subject to cultural interpretation (Gay, 2000; Irvine, 1990). Thus, culturally synchronous discipline may include enactments of authority that resemble the relatively less sensitive, more controlling discipline styles that may be familiar to children in socioeconomically diverse African American and Asian American families (Tamis-LeMonda, Briggs, McClowry, & Snow, 2008). Although for some time these parenting styles were widely considered ineffective (Wentzel, 2002), a number of studies have found mixed evidence on their impact on African American and Asian American children, who have at times been found to show positive outcomes in response to strict and controlling discipline (Dornbusch, Ritter, Leiderman, Roberts, & Fraleigh, 1987; Mason, Cauce, Gonzales, & Hiraga, 1996; Tamis-LeMonda, Briggs, McClowry, & Snow, 2008). In one 2005 study by Brooks-Gunn and Markman, more upwardly mobile African American parents[1] were found to discipline in a style characterized by both negative, harsh control and warm, firm control. The researchers termed this stern yet affectionate style, *tough love* and observed that children whose parents used this discipline style had positive IQ and vocabulary outcomes. These findings suggest that the meaning of harsh or controlling discipline is culturally mediated (Deater-Deckard & Dodge, 1997) and can have positive effects when meted out purposefully in the context of tough love parenting.

A long line of scholarship on African American teacher pedagogy has found that many African American educators of African American students have traditionally used a discipline style similar to the tough love approach. This body of literature recognizes the effectiveness of direct, assertive, and strict discipline in the context of trusting and affectionate student-teacher relationships (Delpit, 1996; Foster, 1991, 1997; Gordson, 1998; Irvine & Fraser, 1998; Monroe & Obidah, 2004; Patterson, Mickelson, Hester, & Wyrick, 2011; Ware, 2006). Irvine and Fraser (1998) use the following teacher quotation to demonstrate the directness of this style: "That's

[1] In this study, this group of parents were those who had at least a high school education and who delayed childbearing beyond their teenage years.

enough of your nonsense, Darius. Your story does not make sense. I told you time and time again that you must stick to the theme I gave you. Now sit down" (p. 56). While they point out that this discipline may appear severe to the outside observer, scholars of African American teacher pedagogy insist that teachers employ this discourse style to communicate high expectations to students (Bondy, Ross, Gallingane, & Hambacher, 2007; Delpit, 1996; Ware, 2006). Further, based on students' positive behavioral responses to this discipline style, these scholars assume that students interpret African American teachers' strictness as a way to express concern for students' success (Carpenter Ford & Sassi, 2014; Foster, 1991; Ware 2006). As such, the tough love discipline style may be an important component of historical African American educational practices that emphasize high expectations and care (Walker, 2001). Indeed, the ability for students to interpret strictness as a form of care depends upon pre-established relationships of trust between the students and teacher, which stems from the family-like relationships that characterize culturally relevant teaching (Ladson-Billings, 1994). According to Foster (1991), students feel "proud of their teachers' meanness" (p. 56) and respond in ways that contribute to a harmonious classroom environment.

One primary difference between the assimilationist, tender loving care approach and the potentially culturally synchronous, tough love approach is the tone teachers use during discipline. If students interpret the stern tone of the tough love style as an indication of teachers' care and high expectations, perceptions which have been shown to improve student behavior (Gregory & Weinstein, 2008), then other whole-school behavioral intervention programs that prescribe a specific, often gentle, tone for interacting with students may actually hurt schools' efforts to communicate in culturally relevant ways. Despite the documented effectiveness of African American teachers who employ tough love, it remains unclear whether students behave cooperatively with these teachers in partial *response to*, rather than *in spite of*, their strict tone. It also remains unclear whether White or other non-African American teachers can employ this discourse style with the same effectiveness as teachers who share the cultural background and ethnic identity of their African American students (Carpenter Ford & Sassi, 2014). That is, no prior studies have examined student perceptions of and responses to teacher tone or how these perceptions vary by teacher race. This study attempts to help fill this gap through the design of experimental, interview, and observational methods to measure student perceptions of and responses to variation in teacher tone. Building upon Irvine's (1990) cultural synchronization framework, I ask the following research questions:

1. What is the role of teacher tone in shaping perceptions of and responses to teacher authority among a low- to middle-income elementary African American student population at an urban charter school?

2. Do urban elementary charter school students' perceptions of and responses to teacher tone vary depending on student-teacher racial match? If so, how?

Methods

Due to the novelty of the proposed research questions, a combination of experimental, interview, and observational methods were developed to explore student perceptions of tone and authority. First, an experimental task assessed student perceptions of teacher tone and teacher race in a

controlled setting in order to reduce the potential confounding effects of extraneous variables in the natural classroom context. As students completed the experimental tasks, they were asked interview questions that allowed them to expound upon their subjective interpretations of teacher race and tone and explain the reasoning behind their responses. Finally, classroom observations were conducted in order to shed light on how students interact with teacher tone in the context of the natural classroom environment and its myriad other factors that influence student behavior on a day-to-day basis. Case studies from these observations illustrated the need to holistically examine how various elements of teacher practice interact to produce student behavioral outcomes. The limitations of these methods, which were considerable, were expounded upon in the discussion. This study should be considered primarily a methodological exploration of how to assess student perceptions of teacher authority.

School Context

Located on the South Side of Chicago, "George Washington Prep" is a charter school that serves approximately 400 pre-K through fifth grade students. Its student population is 99% African American and approximately 70% free and reduced lunch. Suspensions and expulsions are virtually nonexistent at George Washington, and administrators rarely need to intervene to address student misbehavior. This school was selected because, unlike most urban school teachers for whom student behavior management is generally a leading source of stress and teacher burnout (Schwartz, Dinnen, Smith-Millman, Dixon, & Flaspohler, 2016), the teachers at George Washington affirm that student misbehavior is rare, mild, and for the most part, easily managed. Based on this discipline climate, George Washington Prep served as a case study for understanding student perceptions of teacher authority in an ideal school behavioral environment. Thus, findings can speak to factors that promote, rather than denigrate, productive student-teacher relationships. Access to George Washington Prep was approved by its principal as well as the district's research review board. Once the study commenced, individual students and teachers volunteered to participate. Only students whose parent or guardian provided written consent were allowed to participate in the study.

Experiment and Interviews: Student Responses to Teacher Tone and Race

Overview. An experimental task combined with interview questions assessed student perceptions of teacher tone and teacher race in a controlled environment. In a one-on-one setting, the researcher presented each student with a series of videos in which actresses portrayed teachers delivering disciplinary consequences. The teachers in the videos varied by race (Black or White) and by tone (neutral or strict), and students compared the teachers on qualities that education researchers have found to predict student compliance, including high expectations, care, and trustworthy authority (Gregory & Weinstein, 2008). The experimental nature of this task allowed for control of teacher experience, pedagogical effectiveness, relationships with students, and all other variables except teacher race and tone, while the inclusion of interview questions helped capture a rich qualitative picture of students' thoughts and perceptions behind their comparisons.

Participants. Forty-two students from the school, all of whom identified as African American according to school demographic information, participated in the experiment/interview portion

of the study (29 female, 13 male, 18 third grade, 7 fourth grade, and 17 fifth grade). A composite index of family socioeconomic status (SES), based on information provided by participants' parents, consisted of parent education level and parent occupation. Using these measures, each family was assigned an overall socioeconomic percentile rank using a 2000 and 2003 analysis of U.S. Census Bureau data (New York Times, 2005). Students below the median percentile ranking of the sample were categorized as low SES (n = 19), while students at or above the median were categorized as middle SES (n = 20). Qualitatively, a typical low SES participant lived with one parent who had a high school or associate's degree and worked in the service industry. A typical middle SES participant lived with two parents, one of whom had a bachelor's degree and worked as a health technician, the other of whom had a bachelor's degree and worked in education. Students were randomly assigned to Sample 1 (n = 21) or Sample 2 (n = 21).

Materials. Four female, mid-twenties actresses, two Black and two White, recorded videos in which they acted as teachers disciplining an off-camera student. All videos lasted approximately seven seconds and portrayed an actress facing slightly to the right of the camera, gazing down to about the height of a 4 ½-foot person, and delivering one of the disciplinary consequences described in Appendix A. Each actress created a video for each of the two disciplinary consequences in neutral tone and strict tone, resulting in four videos per actress and 16 videos in total. Actresses conveyed neutral tone through calm voice and minimal facial expression and conveyed strict tone through raised voice, brow furrowing, eye squinting, and emphasis on certain words (Ekman, 2006).

Procedure. Each student completed the experiment and interview questions in a one-on-one setting in a faculty room with the experimenter. With parents' informed consent, the entire session was audio-recorded and later transcribed. The experimenter first told the student, "I am going to describe some students who are not following directions and show you how their teachers respond. Then I am going to ask you some questions about the teachers." The experimenter read one of the scenarios of a misbehaving student described in Appendix A. The experimenter then showed the student a series of videos of teachers responding to the misbehaving student that alternated either in teacher race or teacher tone based on the sample to which the student was randomly assigned, as shown in Table 1. The experimenter asked the student to rate and compare the teachers. See Appendices B and C for detailed descriptions of the comparison sequences and the specific questions students were asked. All methodological procedures were approved by the author's university Institutional Review Board.

Table 1
Sequences of Video Comparisons for Sample 1 and Sample 2

Sequence	Sample 1: Race Effect $n = 21$	Sample 2: Tone Effect $n = 21$
Comparison 1:	A: Black, neutral vs. B: White, neutral	A: Black, neutral vs. C: Black, strict
Comparison 2:	C: Black, strict vs. D: White, strict	B: White, neutral vs. D: White, strict
	Both Samples 1 & 2: Race-Tone Interaction Effect $n = 42$	
Comparison 3:	A: Black, neutral vs. B: White, neutral vs. C: Black, strict vs. D: White, strict	

Controlling for confounders. To control for actress qualities not associated with race or tone, the experimenter randomly alternated which actresses portrayed each tone and race. To control for non-tone qualities, actresses portraying each tone alternated within each racial group. For example, one student may have seen White actress A portray the neutral tone teacher and White actress B portray the strict tone teacher, while another student saw White actress A portray the strict tone and White actress B portray neutral tone. Additionally, the use of two actresses of each race allowed for detection of actress-level confounders within each racial group. For example, significantly different student ratings of Black actress A compared to Black actress B would signal individual qualities confounding the racial-group comparisons. Finally, to control for differences in the disciplinary scenarios, in Sample 1 the scenario associated with each teacher tone randomly alternated, and in Sample 2 the scenario associated with each teacher race randomly alternated.

Classroom Observations: Student Responses to Teacher Tone in a Natural Context

Sample. Four third through fifth grade self-contained classrooms at George Washington Prep were observed (with any paraprofessionals excluded from the observation). Teacher race was not recorded in order to preserve anonymity. On average, the classes consisted of 27 students.

Establishing baseline classroom climate. The first week of observations involved establishing a baseline picture of each classroom's behavioral climate. The Classroom Climate Assessment Tool (C-CAT), designed and validated by Leff and colleagues (2011), used participatory action

research in third through fifth grade urban school classrooms to establish this baseline. For each of the four classes being observed in the school, the researcher sat as inconspicuously as possible in the back of the room and coded student and teacher behaviors according to four C-CAT domains: student noncompliance and disruptive behavior, teacher praise and reprimands, overall student interest and enthusiasm, and overall student level of focus and being on task. Observation intervals lasted 10 minutes each, and four intervals total were conducted per class. For each class, at least one observation interval took place in the morning, at least one interval took place in the afternoon, and at least one interval took place during independent reading.

Student responses to teacher tone. The second week of observations involved recording student responses to teacher tone during redirections. As with the observations of baseline classroom climate, observations of student responses to teacher authority consisted of timed intervals of researcher coding. Each interval lasted 10 minutes, during which time the researcher attended to teachers' redirections, tone during redirections, and student behavioral responses to the teacher's redirections. Redirections included any sort of verbal correction of student behavior, including reminders of the directions (e.g. "The directions were to put away your materials"), verbal reprimands (e.g. "Why are you swinging that ruler around?"), or verbal punishments (e.g. "Write your name on the board"). During each 10-minute period, the researcher recorded every instance of a redirection and coded the teacher's tone during the redirection on a scale from 1 (*most strict*) to 4 (*most positive*). The researcher also coded student behavioral responses to the teacher's redirections on a scale of 1 (*least compliant*) to 4 (*most compliant*). See Appendix D for a detailed description of the codes used. On average, each classroom was observed for 111 minutes, with a range from 77 minutes to 168 minutes. For each class, observations took place at varying times of day and in varying subjects.

Analytic Strategy

I began analyzing the experimental data by examining student comparisons of teacher race and teacher tone using logistic regression analysis. I continued by examining student preference for each teacher category (White neutral, White strict, Black neutral, Black strict) on a measure of trustworthy authority. Given the small sample sizes and the exploratory nature of the study, I used a relaxed standard of $p < .10$ to indicate suggestive evidence of statistical significance. To analyze data from classroom observations of student behavioral responses to teacher tone during redirections, I began by presenting between-teacher average levels of emotion during redirections and their students' corresponding average behavioral responses. I went on to examine the within-teacher relationship between teacher emotion and student behavioral response using ordered logistic regression analysis. For a detailed description of how data from the experiment and classroom observations was analyzed and modeled, see Appendix E.

Results

To answer the research questions of how teacher tone shapes student perceptions of and responses to teacher authority and whether student-teacher racial correspondence influences these perceptions and responses, I examined student comparisons of teacher videos on measures of expectations and care. As displayed in Table 2, there were few differences by teacher race or tone when students were explicitly asked to choose which teacher cared the most. When asked to

choose the teacher with the highest expectations, however, students were much more likely to choose the strict-tone teacher of both races. This pattern was significant for all actresses except for one of the White actresses, Actress D. However, Actress D's coefficient was similar in size and direction to those of the other actresses, suggesting that additional statistical power could reveal a significant difference for Actress D as well. Table 2 also shows that the group of students on average did not consider Black teachers to have higher expectations than White teachers ($p > .10$), but middle SES students found Black teachers to have significantly higher expectations than White teachers when teachers of both races used a strict tone ($p < .10$). There was no such difference by socioeconomic group when comparing teachers with neutral tone.

Table 2
Coefficients from Logistic Regression Analysis Estimating Log Odds of Selecting Each Teacher Race/Tone Category as Highest Expectations and Care

	Total	Low SES	High SES	Actress A (Black)	Actress B (Black)	Actress C (White)	Actress D (White)
High Expectations							
Neutral vs. strict (reference neutral), *n* = 20							
White	1.73***	1.95*	1.50*			1.40***	1.10
Black	1.73***	1.79*	1.61**	1.95*	1.61**		
White vs. Black (reference white), *n* = 17							
Neutral	0.12	0.29	0.51	0.29	0.00	0.29	0.00
Strict	0.12	-1.10	1.79*	0.00	0.29	0.00	0.29
Care							
Neutral vs. strict (reference neutral), *n* = 20							
White	-0.20	0.29	-0.34			-0.18	-0.22
Black	0.00	-0.29	0.00	-1.25	0.98		
White vs. Black (reference white), *n* = 18							
Neutral	-0.12	-0.51	-0.29	-1.61	0.55	-1.61	0.55
Strict	0.00	0.51	-0.51	-0.41	0.51	-0.41	0.51

**p* < .10; ***p* < .05; ****p* < .01

To address the second research question regarding if and how student perception of and responses to teacher tone vary depending on student-teacher racial match, we turned to the results from the final experimental task. Students were asked to compare all four teacher categories simultaneously (White neutral, White strict, Black neutral, Black strict) on a measure of trustworthy authority. Students were more likely to choose the Black strict-tone category on average (see Table 3 in Appendix F). Yet disaggregating results by socioeconomic group revealed that middle SES students were much more likely to choose the Black strict-tone teacher while low SES students did not seem to prefer any one teacher category over another, as shown in Figure 1 below. A logistic regression analysis examined the log odds of each teacher category being selected as highest in trustworthy authority relative to a reference group. Results showed that, among middle SES students, the Black strict category had a log odds relative to the reference group of 1.73 ($p < .05$). In other words, middle SES students were 5.7 times as likely to

choose the Black strict category than the White neutral category. Students from the low socioeconomic group, however, were significantly less likely than students from the high socioeconomic group to choose the Black strict category over all of the other categories ($p < .05$) (see Table 4, Appendix F). This confirms the observation that middle SES students alone were responsible for the observed preference for the Black, strict-tone category in determining trustworthy authority. The difference between the two Black actresses in log odds of their strict-tone video being selected as highest in trustworthy authority was nonsignificant for both the high and low socioeconomic groups, indicating that actress-level confounders are not responsible for the observed patterns (see Table 5, Appendix F).

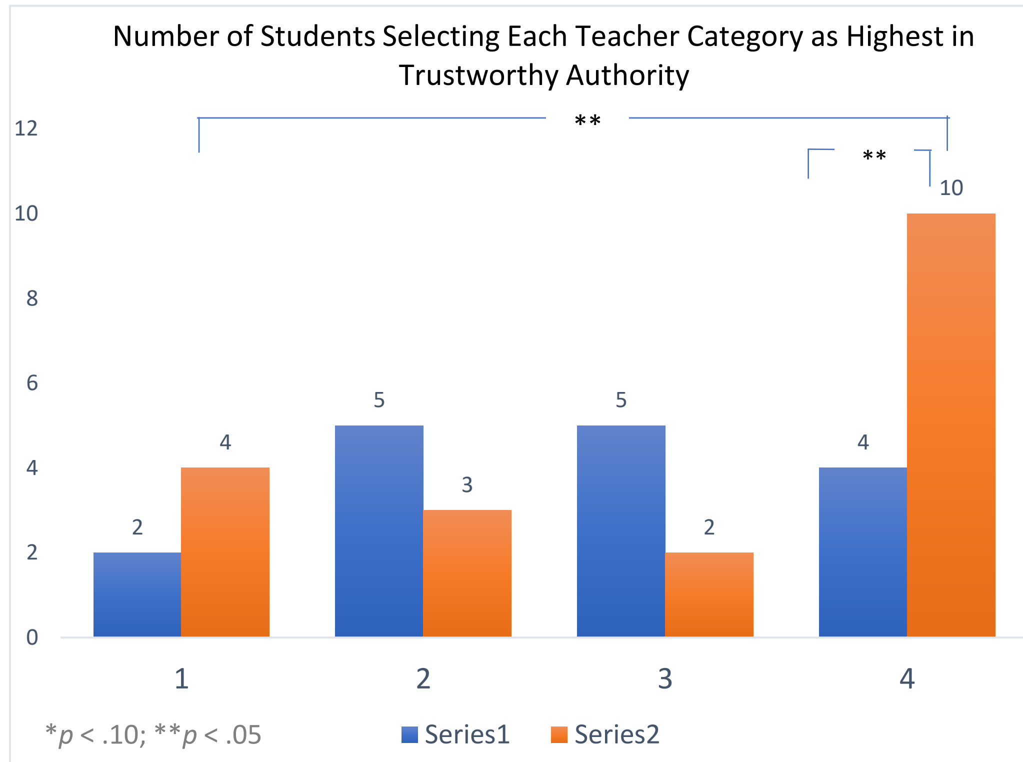

Figure 1. The number of students categorized as middle-socioeconomic status and low-socioeconomic status who chose each teacher category as highest in trustworthy authority.

Student Interview Responses

To qualitatively understand students' thought processes behind their experimental responses, I analyzed quotes from students' responses to interview questions asked throughout the study. In general, students held positive views of the strict-tone teachers, especially students categorized as middle SES. The following middle SES student responses to videos of the strict-tone teachers capture some of the positive inferences they made about these teachers:

> Because, because she seems like she's kind of strict and mean. And most strict and mean teachers would want, they want their students to like, be some, someone, someone, some, some*thing* [emphasis added] when they grow up. They

> don't want them to be somebody on the streets *asking* for money. She wants, they wa-, she probably wants the students to be *giving* money. *Jacob, 4th grader*
>
> Oh, she expect-, I gu-, I think it was her that expect more from Aaron because when she was yelling at him, it was like, she *wanted* to-, like she probably knows that he's prob-, like a good kid or some-, something and like, he should get the right education, so he, like, this is probably unexpected to her? I guess? So she would expect more from him. *Jade, 5th grader*

In contrast, a number of the students attributed negative qualities to videos of teachers delivering redirections in a calm and neutral tone. The following interview excerpts from middle SES students demonstrate this general pattern:

Interview with Isaiah, 3rd grader

Isaiah: I'm just confused because these two (*pointing to the strict-tone videos*) use like, actually sound like they're giving real discipline. These two (*pointing to the neutral-tone videos*) just sound like they're just tryna get done with it.

Interviewer: Ok.

Isaiah: And just messin around. So, I will pick, the, this one. (*pointing to the Black, strict-tone teacher video*)

Interviewer: Mhm. Ok.

Isaiah: Because she sounds like she's giving the most discipline.

Interviewer: Ok, cool. Why does she sound like that?

Isaiah: Because she, she, number one, she lets, she kno-, she tells the child that she is not playin. Number two, she's speaking loud enough so that you can hear her, and number three, she does not have a smirk on her face that lets the child know that they're playin.

Interview with Alexus, 5th grader

Interviewer: How do you think this teacher feels?

Alexus: This teacher feels that she doesn't really care abou-, about her because she's sayin it like in a s-, like in a calm voice, in a soft. She's not gettin mad, it's the other teacher.

Interviewer: Yeah. How much do you agree or disagree that Jaime deserved her punishment?

Alexus: Mmm. Disagree.

Interviewer: Ok. Why do you pick disagree?

Alexus: I disagree because, eh, that she gave multiple warnings and that she *still* said it in a calmly voice.

Classroom Observation Data

I coded for teacher tone during redirections, addressing both specific students and the class as a whole, and student behavioral responses to those redirections in natural classroom contexts in order to address the first research question, about the role of teacher tone in shaping student perceptions of and responses to teacher authority.

Teacher tone was measured on a 4-point ordinal scale from *strict and emotive/yelling* (1) to *positive* (4). Students' levels of behavioral compliance in response to each teacher was measured on a 4-point ordinal scale from *noncompliant and disruptive* (1) to *compliant* (4) for individual student responses to specific redirections, and from *mostly noncompliant* (1) to *all compliant* (4) for whole-class responses to universal redirections. Individual student responses and whole-class responses to redirections were combined to create the *average student behavioral response* variable. Given the small sample, the classroom observations cannot shed light on the second research question regarding the influence of student-teacher racial match on student responses to teacher tone.

Results displayed in Figure 2 show that, in general, as average teacher tone during redirections became stricter, students in that teacher's class responded with higher average levels of compliance. The standard deviation bars in Figure 2 also show that the two teachers with higher student compliance also used greater variation in their tone, indicating that they adjusted their tones depending on the situation. (See Table 6 in Appendix G for a numerical summary of this chart.)

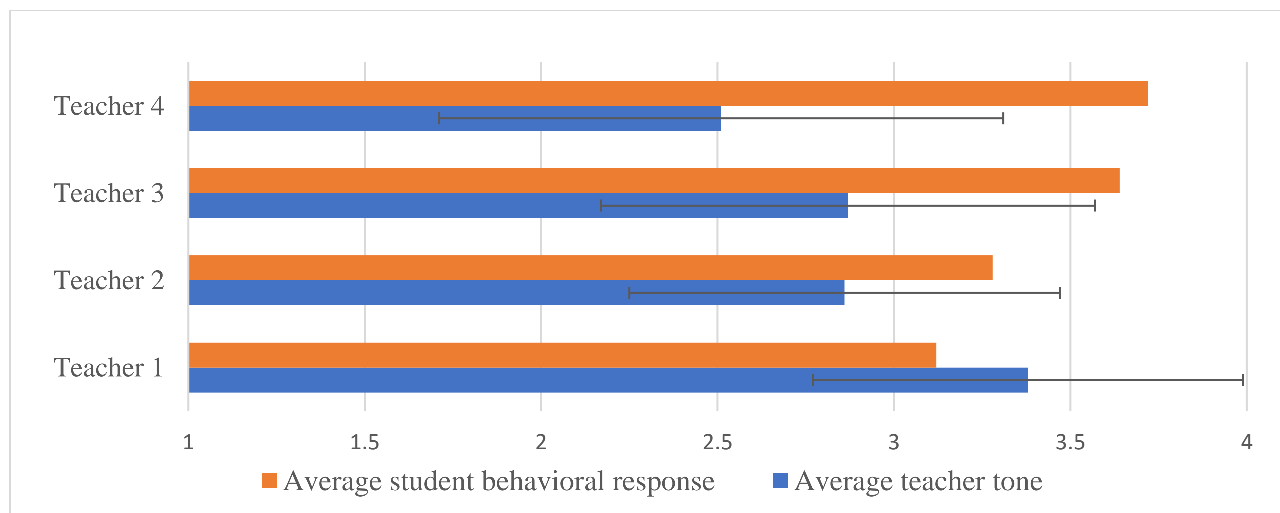

Figure 2. Average Teacher Tone and Student Behavioral Responses.

Table 7 shows results of an ordered logistic regression model estimating log odds of students in a class increasing behavioral compliance as their teacher's tone becomes stricter, controlling for teacher fixed effects. That is, Table 7 shows the *within-teacher* relationship between teacher tone and student compliance in contrast to the *between-teacher* findings shown in Figure 2.

Table 7
Coefficients from Ordered Logistic Regression Analysis Estimating Log Odds of Increased Student Compliance as Teacher Tone Becomes More Positive

Student Compliance	Log Odds	Odds/Odds Ratio
Teacher tone (reference strict and emotive)	0.00	1.00
Positive	-1.60	0.20
Neutral	-0.47	0.63
Strict	-0.16	0.85
Teacher fixed effects (reference Teacher 1)	0.00	1.00
Teacher 2	0.19	1.20
Teacher 3	1.40***	4.06***
Teacher 4	1.35***	3.86***

Observations $n = 220$; $*p < .10$; $**p < .05$; $*** p < .01$

By controlling for observable and unobservable attributes between teachers using fixed effects, the ordered logistic regression model shows no significant within-teacher relationship between teacher tone and her students' behavioral responses to her redirections. In other words, as any single teacher changed her tone from more positive to stricter, her students were not significantly more or less likely to comply. This finding stands in contrast to the results displayed in Figure 2, which show that teachers with stricter average tones tended to have more compliant students. Table 7 also demonstrates significant and large differences between teachers in how likely students were to comply with their redirections, controlling for tone. Teacher 4, for example, was almost four times as likely to have students comply or partially comply with her directions as was Teacher 1 when both teachers used the same tone.

Combining the between-teacher and within-teacher results from the classroom observations, we can conclude that teachers with stricter average tones during redirections tended to elicit higher levels of student compliance. Yet as any single teacher changed tone to become more positive or stricter, her students were not significantly more likely to comply with her redirections. To better understand these differences between teachers and the student responses to teachers within each class, we can turn to qualitative portraits of three of the observed classrooms.

Two Case Studies: Classroom Teacher Variations on Tone and Expectations

Ms. Williams: The Tough Love Approach

Teacher 4, 'Ms. Williams,' frequently expressed frustration while redirecting her third grade students, correcting their behavior with a stern tone as often as with a neutral or positive tone. Not only did Ms. Williams use the strictest average tone of all the teachers observed in the school, she also delivered the highest number of redirections per minute. Her eyes constantly

scanning the room, Ms. Williams's instruction was punctuated with stern reminders to individual students:

> "Jordan, I'm in guided reading so that means I'm not answering questions. You know how to problem solve."
>
> "You didn't follow directions. You're not prepared."
>
> "What are you supposed to be doing?"
>
> "Mariah, you can sit over there at that table. This is not going to work. Zyrah is doing her best to ignore you, and you keep distracting her. Go sit over there."
>
> "Go ask Marcus, he can tell you what to do."
>
> "Paris, that's not practicing self-control. At all."

Rather than pushing back against these unyielding reprimands, Ms. Williams's students calmly and agreeably corrected their behavior and rejoined their classmates, soon re-immersed in the task at hand without so much as a pout. In fact, Ms. Williams's class had the second-highest rate of student compliance with redirections of all the classes observed, and her students never seemed upset by her strict tone. Instead, they appeared to implicitly accept her authority, and for good reason. By following her strict routines and heeding her redirections, Ms. Williams's students earned a level of autonomy as third graders that had been unheard of in second grade. They spent most of their class time working with each other at various stations around the room, quietly reveling in their freedom. Sprawling their legs out on the carpet or leaning across workstation tables, they chattered softly but excitedly with their friends about the activity assigned. Yet as soon as a student diverged from the expected routine, perhaps by talking too loudly or failing to use materials appropriately, Ms. Williams swiftly and sternly reprimanded them, reminding them of her expectations for student independence and responsibility for their own actions: "*I set up systems for you to be successful*… The expectation is that you are prepared for class. That is your responsibility" [emphasis added]. Indeed, Ms. Williams made clear that her redirections were based on her desire for student success, and students showed through their compliance that they trusted her motives in holding them to such high behavioral standards. Students also knew Ms. Williams held high expectations for how they treated others and, consequently, for how others treated them. To support students in reaching these expectations, Ms. Williams explicitly taught the children how to show consideration for others' feelings. During one lesson, a student was fielding questions from her classmates following a presentation she made. When one of the boys pointed out that the student was only calling on girls, Ms. Williams responded:

> (*to the boy*): I'm going to bring that to her attention.
>
> (*to the presenter*): Megan, when you're up here make sure you're calling on boys as well as girls.

> (*to the class*): She probably didn't realize that, but try to call on not just the people you usually talk to but different people. Now she knows.

Ms. Williams's students knew they could count on her to be fair and consistent, and they rewarded this equity by according her their respect and compliance.

Ms. McAdams: The Warm yet Undemanding Approach

In contrast to Ms. Williams, Teacher 1, 'Ms. McAdams,' rarely redirected her fourth grade students' behavior, and when she did, she never used a strict tone. In fact, Ms. McAdams had the most positive average tone during redirections of all the teachers, frequently using a warm, upbeat, gentle tone to ask students to get back on task. Ms. McAdams also rarely communicated high expectations for students' academic work or classroom behavior. During one observation, after a lesson at the carpet, Ms. McAdams sent her students back to their seats without any direction for what to do. While about half the class decided to continue completing a worksheet provided earlier, the other half talked, played, teased, and laughed, completing no academic work. After about five minutes, Ms. McAdams asked students to finish their worksheets, but many of them continued talking and playing instead. Ms. McAdams then softly told students that if they did not do their work they would have their names written on the board, but she followed through with this consequence for only a small fraction of the off-task children. The playing continued. This type of warm but ineffective management coupled with low academic expectations typified Ms. McAdams' teaching style. Over the course of my observations, Ms. McAdams addressed less than half of off-task student behavior, which frequently occurred because students were given no academic tasks to complete. When she did address student misbehavior, she often delivered warnings without following through on delivering consequences. As a result, Ms. McAdams's class almost constantly bubbled with chatter and off-task behavior. Her students spoke of her affectionately, but often expressed frustration when their classmates' playing or teasing intruded on their ability to concentrate.

Discussion

The tender loving care approach to student discipline appeals to many educators who seek to reduce the harmful effects of overly punitive disciplinary consequences. Yet the premise that rejecting harsh disciplinary consequences requires rejecting any form of sternness in tone is unsupported, and it privileges communication styles most often observed among White, middle class authority figures (Tamis-LeMonda, Briggs, McClowry, & Snow, 2008). According to the literature on Black teacher pedagogy (Bondy, Ross, Gallingane, & Hambacher, 2007; Delpit, 1996; Foster, 1991; Foster, 1997; Ware, 2006), a direct, assertive, and strict discipline style may be more congruent, or culturally synchronous (Blake et al. 2016; Irvine, 1990) with the experiences of many children. Results from this study's experiment, interviews, and observations at a school with a majority African American student population confirm that some students respond more positively to stern tone during moments of discipline.

Strict Tone as a Proxy for Teachers' High Expectations and Concern

The most robust finding from the experimental portion of the study in which students rated videos of teachers of different races and tones on dimensions associated with effective classroom management, was that students were almost six times as likely to attribute high expectations to a strict-tone teacher as to a neutral-tone teacher, regardless of the teacher's race. Students were not more likely to rate strict-tone teachers as less caring than neutral-tone teachers, a finding that may come as a surprise given previously documented tradeoffs between student perceptions of teachers' expectations and teachers' care (Ferguson, Phillips, Rowley, & Friedlander, 2015). Yet the current study's finding is exactly what the literatures on African American teacher pedagogy would predict. That is, in the context of trusting student-teacher relationships, students may feel "proud of their teachers' meanness" (Foster, 1991, p. 56) because it indicates their teacher's level of investment and concern (Carpenter Ford & Sassi, 2014; Foster, 1991; Ware 2006) in a way that is culturally synchronous (Irvine, 1990) with enactments of authority commonly observed in African American families (Tamis-LeMonda, Briggs, McClowry, & Snow, 2008). Although the students in this study did not have trusting relationships with the actresses in the videos, they did seem to have a history of trusting relationships with teachers in general given the school's overall positive student behavioral profile. Quotations from the student interviews as they rated the videos of neutral-tone and strict-tone teachers suggest that some students actually interpreted the sternness in the videos as a demonstration of care.

Indeed, students projected all sorts of positive attributes onto the strict-tone teacher videos despite having no direct evidence that the fictional teachers held these qualities. In addition to believing the strict-tone teachers held high expectations, students described these teachers as wanting students to become someone "*giving* money" rather than "somebody on the streets *asking* for money," as protecting the reputations of students who do not know how to read, as instilling in students an ethic of respect for others, and as believing that students are "good kid[s]." Students often interpreted neutral tone during redirections, on the other hand, as indicative of a lack of investment in the students. As Alexus put it, a teacher who is "not getting' mad" when a student acts out "doesn't really care abou-, about her." Such a teacher, according to Isaiah, is "just tryna get done with" the discipline rather than taking the time to teach the student a lesson. These elaborate student conjectures suggest that what appear to be responses to teacher tone in the experimental setting are in fact responses to the whole package of positive teacher qualities they associate with use of a strict tone.

Based on documented findings that students in general are more likely to cooperate with teachers whom they perceive as more caring and holding high expectations (Carpenter Ford & Sassi, 2014), this finding suggests that the students observed in this study would be more compliant with teachers who used more strict tones during classroom redirections. Indeed, between-teacher results from the classroom observations demonstrate that, on average, students were more compliant the stricter their teacher's typical tone was during redirections. Yet the within-teacher results do not support the observed link between strict teacher tone and student compliance. When an individual teacher varied her tone it was associated with no significant change in student compliance. According to Shweder (1973), this type of across-unit versus within-unit discrepancy in results is not uncommon in comparative research and often indicates that a variable is valid and meaningful across groups but may simply be a background factor within

groups. In this study, strict tone serves as a meaningful predictor of compliance across classrooms because it may serve as a proxy for the type of teacher who practices a number of other behaviors that affect student compliance, including behaviors that communicate high expectations and care.

Indeed, although tone was the strongest predictor of students perceiving high expectations in the controlled experiment, in the natural classroom context, tone may be just one communication tool of teachers who convey high expectations and care to students in countless ways. Classroom routines and procedures, lesson structure, academic rigor, relationships with parents, rewards and punishments, and a host of other teacher processes and practices convey the forms of conduct that are acceptable in a particular classroom and the teacher's level of investment in students. During this study's classroom observations, teachers with generally more strict tones during redirections tended to communicate high expectations and care in many other ways as well. The cases of Ms. Williams and Ms. McAdams illustrate this relationship. Ms. Williams, a teacher whose tough love style was typical of other effective classroom managers in the school, generally used a strict tone during her frequent redirections. Yet she also set high expectations for student autonomy, responsibility, and respect for others. Indeed, she tolerated absolutely no deviations from these standards, though she did differentiate her tone depending on the situation to ensure she was appropriately responding to the particular circumstances and students involved in the misbehavior. Like the other strict-tone behavior managers in the school, Ms. Williams demonstrated care by continually reinforcing her commitment to students' independence, academic achievement, and personal wellbeing both verbally and nonverbally. She frequently reminded students why she held them to such high behavioral standards, ensuring they understood her reasoning for the consequences they received and how they could use their behavior to maintain autonomy and achieve academically. By taking time out of her lessons to address instances in which students felt disrespected by others, she demonstrated a commitment to making all students feel heard, safe, and included.

Ms. McAdams, on the other hand, with admirable attention to students' feelings, used an almost uniformly positive tone. Yet she struggled to communicate behavioral expectations and rarely held her students accountable to the expectations she did set. Her gentle tone indicated that she too likely felt concern for students, but her reluctance to hold them to high behavioral and academic standards and her failure to interfere when students were being teased, feeling annoyed, or unable to concentrate likely communicated to students a lack of personal investment in their success and wellbeing.

Based on these examples, it appears that strict tone during redirections indeed serves as a signal for the type of teacher who holds her students to high expectations in a number of ways and demonstrates personal, caring investment in students' outcomes. In other words, students may associate strict tone with the high expectations and care that has historically been characterized as a tough love pedagogical and parenting style (Tamis-LeMonda, Briggs, McClowry, & Snow, 2008; Walker, 2001), making this tone culturally synchronous with student expectations. Importantly, this means that in the natural classroom context, a change in tone apart from a change in all of the other indicators of high expectations and care likely will not have an impact on student conduct, which is exactly what the within-teacher classroom observations revealed. It also suggests that teachers, especially those with masterful understandings of student behavioral

dynamics, may be able to successfully communicate high behavioral expectations in culturally relevant ways and create a cooperative classroom environment without using strict tone. Indeed, the case of a fifth teacher, 'Ms. Davis,' illustrates this possibility.

Ms. Davis: The Need for a Holistic Picture of Classroom Instruction

Although she was originally one of the teachers observed in this study, Ms. Davis's observations were ultimately dropped from the results. The codes for tone used for the other teachers, which incorporated body language and speech content as well as vocal inflection to determine negativity versus positivity, ultimately could not capture the emotional content of Ms. Davis's communication. As a ten-year veteran teacher, Ms. Davis's facial expressions during redirections were almost uniformly stern and her no-nonsense corrections communicated firm expectations. Yet she used the same no-nonsense demeanor for encouraging and praising students. Her ability to communicate force and gravitas in both praise and discipline could not be captured by the unidimensional positive/strict tone scale, but it was certainly understood by the students in Ms. Davis's class. Indeed, Ms. Davis had one of the best-behaved classes in the school. Like the teachers who strictly reprimanded their students, Ms. Davis communicated high expectations and made sure her students held absolutely no doubts that she would hold them accountable for meeting her demands. She also demonstrated care for her students' outcomes in a number of ways. Through frequent praise, strong personal relationships, and encouragement for students even as she subjected them to what might otherwise be stressfully high expectations, Ms. Davis communicated a fierce commitment to her students' academic and personal success.

Her case illustrates the need for education researchers to conceptualize teacher practice holistically. Although the subject of the current study is teacher tone, Ms. Davis illustrates that the role of tone may vary depending on other teacher traits and practices. Indeed, according to Rowan, Correnti, and Miller (2002) and Hong and Hong (2009), any single element of classroom practice is unlikely to substantially influence a teacher's effectiveness. Instead, combinations of elements interact to produce environments optimal for student outcomes. Although tone by itself may not have a significant impact on student behavior, the observation that teachers' communication of high expectations and personal investment was most often combined with strict disciplinary tone suggests that tone may interact with and enhance these qualities. Yet in any classroom, understanding what makes a teacher effective requires attention to how various elements of instruction fit within a holistic portrait of each teacher's particular practice.

Socioeconomic Class Difference in Perceptions of Trustworthy Authority

An unexpected finding from the experimental portion of the study was the preference middle SES students had for Black, strict-tone teachers when determining trustworthy authority. While students categorized as low SES demonstrated no general preference for teacher race or tone in determining which teacher in the videos was highest in trustworthy authority, students categorized as middle SES were almost six times as likely to choose the Black, strict-tone teacher video as any other category, regardless of actress. Middle SES students also had more favorable perceptions than low SES students of strict-tone Black teachers' fairness, a quality that has been found to be significantly associated with trustworthy authority (Gregory & Weinstein, 2014). One way to interpret this difference in perceptions between low SES and middle SES

students may be through the literature on African American parenting styles, which finds differences in enactments of parental authority by socioeconomic status.

Given extensive documentation of the authoritarian parenting style, characterized by harsh, negative control among low-income families (as reviewed in 2008 by Tamis-LeMonda, Briggs, McClowry, & Snow), it might be expected that the strict discipline style delivered by the teachers in this study would be most culturally congruent with the experiences of low SES students. What, then, explains the perplexing finding that it was in fact the *middle SES* students who preferred the Black, strict-tone teachers? One of the few studies that has analyzed African American parenting styles among middle-income African American families may shed some light on this question. Brooks-Gunn and Markman (2005) found that the difference between low SES and more upwardly mobile African American families was not in their use of negative, harsh control, which was common among both groups of parents. Instead, the difference was that the higher SES group coupled their negative discipline with warm, firm control as well, delivering the tough love style of discipline that qualitatively differed from the purely authoritarian approach. For the middle SES students, more so than the low SES students in this study, their experience at home may have taught them that the use of a strict tone indicates strict yet invested and caring authority. By using negative discipline in a way that is purposeful, caretakers can communicate that the discipline is in the child's best interest. The low SES students, if accustomed to harsh tones without simultaneous warm and caring relationships, may evaluate the strict-tone teachers as no better or worse than any other teachers, which is indeed what the experiment found. Of course, without having included parents in this study, these explanations are simply post-hoc conjectures based on a small body of literature. Future research should further explore the prevalence of the tough love parenting style and whether it influences children's perceptions of teachers.

Perceptions of Black versus White Teachers Using Strict Tone

The notion that children are evaluating teachers based on their experiences with their parents may also explain why middle SES children preferred the Black strict over the White strict category during the experiment. Whether or not this preference has any impact on children's actual interactions with teachers in the classroom is unclear, since no significant number of White teachers were observed in this study. However, in addition to rating White teachers in the videos as lower in trustworthy authority, middle SES students considered White teachers to have significantly lower expectations than Black teachers when both used a strict tone. Based on these results, we might expect that students would evaluate White and Black teachers' use of tone differently in the classroom environment. Indeed, while African American teachers report that they often are perceived by students as surrogate parents or relatives (Ladson-Billings, 1994; Griffin & Tackie, 2016), Carpenter Ford & Sassi (2014) found that White teachers of African American students considered their own use of strict tone to be ineffective due to their race and inability to take on the role of surrogate parent. Additionally, given the historical power relations between racial groups in the United States, an African American student's experience of receiving strict discipline from a White authority figure may take on a different meaning than that received from an authority figure of the same race. Thus, facilitating positive student-teacher interactions using culturally synchronous practices (Irvine, 1990) may look different for teachers who do not share the race of their students. And while many African American teachers of

African American students feel that the ability to leverage students' views of them as familial facilitates relationship development and discipline enforcement, it is important to note that this strength can be a double-edged sword, leading African American teachers to feel stereotyped as primarily discipline enforcers (Hale, 1982). Griffin and Tackie (2016) found that African American teachers often reported being pigeonholed by their colleagues as school disciplinarians, curtailing their opportunities for other types of professional development and advancement opportunities. Future work may explore how White teachers can effectively implement culturally synchronous discipline and avoid passing this responsibility off to their African American colleagues.

Limitations

The population of students and teachers from which this study's sample was drawn was not typical of other high-performing urban schools. Additionally, only four teachers were included in the teacher observations, and all students and teachers in this study volunteered to participate. Given the selectness of this sample, this study's findings are not generalizable to other teachers, students, or contexts. Instead, this study aims to make sense of how students in one particular context perceive and interact with teachers in ways that contradict universalizing assumptions about ideal student-teacher communication. Unfortunately, features of the study's methods also limit the confidence we can place in its findings and conclusions about this particular sample.

No validation study was conducted to ensure the videos varied only in race and tone and that each actress's "neutral" and "strict" tones were comparable. Although the experimental design involved randomly alternating which actress performed which race and tone combination in order to reduce the influence of actress-level confounders, there may have been confounders shared by both actresses in any one alternation. For example, if both Black actresses were dressed more professionally than both White actresses, then what appears to have been student responses to teacher race could actually have been student responses to teacher clothing. Although as many steps as possible were taken to avoid this and any other potential confounders, the experimental portion of the study should be considered an exploratory basis for future research.

Limitations in the classroom observation methods also reduce confidence in the study's conclusions. Teacher tone during classroom observations was coded by just one researcher. While this lends consistency to the coded data, it also means that the codes were more vulnerable to subjective interpretation. The codes used to measure tone were also not valid for every teacher. Ms. Davis, whose tone did not vary with body language and speech content as the tone construct described, was ultimately dropped from the results at the expense of rich data from her unique and effective teaching style. This lack of validity calls into question the usefulness of the tone construct itself. Additionally, teachers' student-specific redirections and universal whole-class redirections were conflated into one measure, removing (for most teachers) the possibility of analyzing how teacher tone and student responses to teacher tone varied depending on whether the redirection was specific or universal. However, for the one teacher for whom data on student-specific versus universal redirections was recorded for the majority of redirections observed (66 of 72 redirections), the teacher used virtually the same tone, on average, for specific and universal redirections (recorded as 2.86 and 2.87, respectively), and students

responded with the same average level of compliance to the two types of redirections (recorded as 3.28 and 3.27, respectively). Data from this teacher suggests that both specific and universal redirections may be represented as one measure when examining the relationship between teacher tone and student level of compliance, but future studies would be needed to confirm whether this is indeed the case. Based on this flaw, the observational portion of this study should also be considered an exploratory basis for future research.

Conclusion

The current debate on exactly how student-teacher racial correspondence affects student outcomes, including disciplinary outcomes, is unlikely to be resolved any time soon. The leading theory for why African American students experience better academic and behavioral outcomes when they have same-race teachers posits that African American teachers have lower implicit racial bias, leading to higher expectations, and better relationships with students of color. While strong evidence suggests that implicit bias is a primary mechanism in racial discipline disparities (Blake et al., 2016), the role of student perceptions of their teachers in shaping their behavior (Gregory & Weinstein, 2008) suggests that lower teacher bias may not be the only way student-teacher racial match improves students' disciplinary outcomes. The version of authority some African American teachers enact may be more culturally synchronous (Blake et al. 2016; Irvine, 1990) with the experiences of their African American students than many White teachers' styles of authority (Delpit, 1988). Specifically, a subset of African American teachers have historically employed a tough love pedagogical style characterized by use of strict tone during student discipline to communicate high expectations and concern. Through its experimental, interview, and observational methods, this study examined a group of African American students' perceptions of and responses to this tone. It found that the students in general interpreted strictness as a sign of the teacher's high expectations, personal investment, and, for higher-SES students evaluating Black teachers, trustworthy authority. In this way, the students appeared to associate the tough love discipline with a teaching style in African American educational communities that historically has emphasized high expectations and care (Walker, 2001). To interpret the implications of this study for educators, it is important to situate its findings in the very unique context from which they are drawn.

Students at the charter school who comprised this study's sample have a history of strong relationships with their teachers. While the teachers in this school are described as using a strict tone, none of them were observed using a tone that was disrespectful, demeaning, or belittling in any way. As a result of their own classroom histories, students in this study likely interpreted the videos during the experiment and their teachers during classroom observations in the context of generally positive, trusting assumptions about teachers in general. Had this not been the case—for example, if the sample were drawn from a school in which a teacher's strict tone was frequently associated with harsh consequences or disrespectful attitudes towards students—the students may not have made the positive associations with strict tone that were observed. Given this unique school context, specific findings from the study about how students interpreted teacher tone cannot be generalized to other African American students, other low- or middle-income students, or any students outside of the sample, nor are they meant to be. Rather than making sweeping statements about the ideal tones teachers should use with specific populations of students, this study aims instead to demonstrate that, in a public education system that serves

students from a variety of cultural and socioeconomic backgrounds, there likely exists no single ideal way to talk to students. This finding runs contrary to the assumptions of business ventures that market school-wide programs that prescribe use of a gentle or neutral tone during discipline and prohibit any kind of harshness in communication.

By prescribing one specific tone for discipline—one which happens to typify White, middle class communication of authority (Brooks-Gunn & Markman, 2005; Tamis-LeMonda, Briggs, McClowry, & Snow, 2008)—schools may disregard these non-dominant yet culturally relevant teaching styles and an implicit preference for hegemonic communication styles that are not actually more effective. According to the literature on African American teacher pedagogy, sternness in tone is one aspect of a historically successful African American style of discipline (Delpit, 1996; Foster, 1991, 1997; Gordson, 1998; Irvine & Fraser, 1998; Monroe & Obidah, 2004; Patterson, Mickelson, Hester, & Wyrick, 2011; Ware, 2006), and yet African American teachers are often viewed as too harsh or strict by their White colleagues (Griffin & Tackie, 2016). Using Irvine's (1990) cultural synchronization framework, this study lends support for the idea that a number of communication styles may be effective in schools that serve culturally pluralistic student bodies. If schools fail to acknowledge this multiplicity of effective communication styles, they may also inadvertently fail to benefit from the value that non-dominant group teachers who share the cultural backgrounds of their students can bring to matters of discipline and authority in the classroom.

Author Notes

Sarah Cashdollar is a doctoral student in the Department of Comparative Human Development at the University of Chicago.

Correspondence regarding this article should be addressed to scashdollar@uchicago.edu.

References

Blake, J.J., Smith, D.M., Marchbanks, M. P., Seibert, A.L., Wood, S.M., & Kim, E.S. (2016). Does student teacher racial/ethnic match impact Black students' discipline risk? A test of the cultural synchrony hypothesis. In R. J. Skiba, K. Mediratta, & M. K. Rausch (Eds.), *Inequality in School Discipline: Research and Practice to Reduce Disparities*. New York: Palgrave/Macmillan.

Bondy, E., Ross, D. D., Gallingane, C., & Hambacher, E. (2007). Culturally responsive classroom management and more: Creating environments of success and resilience. *Urban Education*, *42*, 326–348.

Bourdieu, P. (1977). Cultural reproduction and social reproduction. In J. Karabel & A. H. Halsey (Eds.), *Power and Ideology in Education*. New York: Oxford University Press.

Bradshaw, C. P., Mitchell, M. M., O'Brennan, L. M., & Leaf, P. J. (2010). Multilevel exploration of factors contributing to the overrepresentation of Black students in office disciplinary referrals. *Journal of Educational Psychology, 102*(2), 508–520.

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

Carpenter Ford, A., & Sassi, K. (2014). Authority in cross-racial teaching and learning (re)considering the transferability of warm demander approaches. *Urban Education, 49*(1), 39-74.

Cornell, D. (2015). The authoritative school climate survey and school climate bullying survey: Research summary. Retrieved from http://curry.virginia.edu/uploads/resourceLibrary/Authoritative_School_Climate_Survey_Research_Summary_January_2016.pdf

Costenbader, V., & Markson, S. (1998). School suspension: A study with secondary school students. *Journal of School Psychology, 36,* 59−82.

Deater-Deckard, K., & Dodge, K. A. (1997). Externalizing behavior problems and discipline revisited: Nonlinear effects and variation by culture, context, and gender. *Psychological Inquiry, 8*(3), 161-175.

Dornbusch, S. M. Ritter, P. L., Leiderman, H., Roberts, D. F., & Fraleigh, M. J. (1987). The relation of parenting style to adolescent school performance. *Child Development, 58*(5), 1244-1257.

Delpit, L. D. (1988). The silenced dialogue: Power and pedagogy in educating other people's children. *Harvard Educational Review, 58*(3), 280-298.

Delpit. L. (1996). *Teaching other people's children.* New York: New Press.

Ekman, P. (2006). *Darwin and facial expression: A century of research in review.* Cambridge: Malor Books.

Ferguson, R. F., Phillips, S. F., Rowley, J. F. S., & Friedlander, J. W. (2015). The influence of teaching beyond standardized test scores: Engagement, mindsets, and agency. *The Achievement Gap Initiative at Harvard University.* Retrieved September 5, 2016, from http://www.agi.harvard.edu/projects/TeachingandAgency.pdf

Foster, M. (1989). It's cooking now: A performance analysis of the speech events of a Black teacher in an urban community college. *Language and Society, 18*(1), 1-29.

Foster, M. (1991). “Just got to find a way”: Case studies of the lives and practices of exemplary Black high school teachers. In M. Foster (Ed.). *Qualitative Investigations into Schools and Schooling* (pp. 273-309). New York: Aims.

Foster, M. (1997). *Black teachers on teaching.* New York: The New Press.

Gay, G. (2000). *Culturally responsive teaching: Theory research, and practice*. New York: Teachers College Press.

Goldring, R., Gray, L., & Bitterman, A. (2013). Characteristics of public and private elementary and secondary school teachers in the United States: Results from the 2011–12 Schools and Staffing Survey (NCES 2013-314). U.S. Department of Education. Washington, DC: National Center for Education Statistics. http://nces.ed.gov/pubsearch

Griffin, A., & Tackie, H. (2016). *Through our eyes: Perspectives and reflections from Black teachers*. Washington, DC: The Education Trust.

Gregory, A., & Weinstein, R. S. (2004). Connection and regulation at home and in school: Predicting growth in achievement for adolescents. *Journal of Adolescent Research, 19*, 405−427.

Gregory, A., & Weinstein, R.S. (2008). The discipline gap and African Americans: Defiance or cooperation in the high school classroom. *Journal of School Psychology, 46*(4), 455-475.

Holt, S. B., & Gershenson, S. (2015). The impact of teacher demographic representation on student attendance and suspensions. Discussion Paper No. 9554, *Institute for the Study of Labor* (IZA).

Ladson-Billings, G. (1994). *The dreamkeepers: Successful teachers of African American children*. San Francisco: Jossey-Bass Publishers.

Iriny, M. (2010). Montessori values explained: The importance of tone and voice level in the prepared environment. Retrieved January 23, 2017, from http://montessoritraining.blogspot.com/2010/02/importance-of-tone-and-voice-level-in.html

Irvine, J. J. (1989). Beyond role models: An examination of cultural influences on the pedagogical perspectives of Black teachers. *Peabody Journal of Education, 66*(4), 51-63.

Irvine, J. J. (1990). *Black students and school failure: Policies, practices, and prescriptions*. New York, NY: Greenwood.

Irvine, J. J. (2002). *In search of wholeness: African American teachers and their culturally specific classroom practices.* New York, NY: Palgrave.

Irvine, J. J. (2003). *Educating teachers for diversity: Seeing with a cultural eye*. New York: Teacher's College.

Irvine, J. J., & Armento, B. J. (2001). Culturally responsive teaching: Lesson planning for elementary and middle grades. New York, NY: McGraw-Hill.

Irvine, J. J., & Fraser, J. W. (1998). Warm demanders. *Education Week, 17*(35), 56.

Leff, S. S., Thomas, D. E., Shapiro, E. D., Paskewich, B., Wilson, K., Necowitz-Hoffman, B., & Jawad, A. (2011). Developing and validating a new classroom climate observation assessment tool. *Journal of School Violence, 10*(2), 165-184.

Love and Logic. (n.d.). Tips for parents. Retrieved January 23, 2017, from https://www.loveandlogic.com/articles-advice/quick-parenting-tips

Mason, C. A., Cauce, A. M., Gonzales, N., & Hiraga, Y. (1996). Neither too sweet nor too sour: Problem peers, maternal control, and problem behavior in African American adolescents. *Child Development, 67*(5), 2115-2130.

Montessori Research and Development. (2013). *Language Arts Manual Vol. I: Early Childhood.* Retrieved from https://www.montessorird.com/sites/default/files/samples/mp.la1_sp.pdf

Nosek, B. A., Banaji, M. R., & Greenwald, A. G. (2002). Harvesting implicit group attitudes and beliefs from a demonstration website. *Group Dynamics, 6*(1), 101-115.

New York Times. (2005). How class works. *Class Matters: A Special Section.* Retrieved from http://www.nytimes.com/packages/html/national/20050515_CLASS_GRAPHIC/index_04.html

Responsive Classroom. (2014). Reinforcing, reminding, and redirecting. Retrieved January 23, 2017, from https://www.responsiveclassroom.org/reinforcing-reminding-and-redirecting/

Roch, C.H., Pitts, D.W., & Navarro, I. (2010). Ethnicity, student discipline, and representation in public schools. *Administration & Society, 42*(1), 38-65.

Rowan, B., Correnti, R., & Miller, R. J. (2002). What large-scale, survey research tells us about teacher effects on student achievement: Insights from the *Prospects* study of elementary schools. *Teachers College Record, 104*(8), 1525-1567.

Schwartz, T., Dinnen, H., Smith-Millman, M. K., Dixon, M., & Flaspohler, P. D. (2016). The Urban Teaching Cohort: Preservice training to support mental health in urban schools. *Advances in School Mental Health Promotion, 10*(1), 26-48.

Skiba, R. J., Arrendondo, M.I., Gray, C., & Rausch, M. K. (2016). What do we know about discipline disparities? New and emerging research. In R. J. Skiba, K. Mediratta, & M. K. Rausch (Eds.), *Inequality in School Discipline: Research and Practice to Reduce Disparities*. New York: Palgrave/Macmillan.

Shweder, R. A. (1973). The between and within of cross-cultural research. *Ethos, 1*(4), 531-545.

Tamis-LeMonda, C. S., Briggs, R. D., McClowry, S. G., & Snow, D. L. (2008). Challenges to the study of African American parenting: Conceptualization, sampling, research approaches, measurement, and design. *Parenting: Science and Practice, 8*(4), 319-358.

Walker, V. S. (2001). African American teaching in the South: 1940-1960. *American Educational Research Journal, 38*(4), 751-799.

Ware, F. (2006). Warm demander pedagogy: Culturally responsive teaching that supports a culture of achievement for African American Students. *Urban Education, 41*(4), 427-456.

Weinstein, C., Tomlinson-Clarke, S., & Curran, M. (2004). Toward a conception of culturally responsive classroom management. *Journal of Teacher Education, 55*(1), 25-38.

Wentzel, K. R. (2002). Are effective teachers like good parents? Teaching styles and student adjustment in early adolescence. *Child Development, 73,* 287−301.

Appendix A

Disciplinary Scenarios and Consequences

	Version A	Version B
Scenario (*read to student*)	Students in Jaime's class are taking turns presenting stories they wrote to the class. As one student is reading his story aloud, Jaime starts talking to a classmate instead of listening. The teacher reminds Jaime to listen, but a minute later, Jaime starts talking again.	Aaron/Erin's teacher has just announced it is time for independent reading. She reminds the class that this means they should be reading without talking or communicating with others. Aaron/Erin starts whispering to a classmate, trying to get the classmate's attention. The teacher reminds Aaron/Erin to read, but Aaron/Erin keeps whispering.
Consequence (*delivered by actress in video*)	"Jaime, right now you are to be listening to the speaker. You've continued to talk and disrespect her instead, so you will be giving up part of your free time."	"Aaron, you know the directions are to read silently. You chose to talk, so you will be spending part of your lunch reading with me."

Appendix B

Comparison Sequences

Sample 1: Race Comparisons

Comparison 1: After reading one of the scenarios, the experimenter stated: “Here are two ways teachers could respond to (Jaime/Aaron).” The experimenter then played videos portraying a Black and a White teacher using the same tone (both neutral or both strict) delivering a consequence to an imagined off-camera student. The order in which the Black and White teachers were presented and the tone they used alternated randomly, but the consequence was the same. After each video, the experimenter asked students how they thought the teacher in the video felt, then asked students to rate the teacher on fairness using a question adapted from Cornell’s (2015) Authoritative School Climate Survey: 2016 Elementary Version. The experimenter also asked students to rate the teacher on ability to make students follow directions using a question adapted from Gregory and Weinstein’s (2008) survey on teacher authority. Ratings were made with a 4-point Likert scale, which took the form of a chart with 4 colorful circles labeled *Strongly Disagree* in dark red, *Disagree* in red, *Agree* in light green, and *Strongly Agree* in dark green. Students either verbally stated their rating or pointed to it on the chart, in which case the experimenter verbally confirmed their choice. Along with each rating, students were asked to explain their thinking. After viewing and rating both videos, the experimenter asked students to choose which teacher had the greatest ability to make students follow directions using a question adapted from Gregory and Weinstein’s 2008 survey. The experimenter also asked which teacher had highest expectations and which teacher cared the most about her students using questions adapted from Cornell’s (2015) Authoritative School Climate Survey: 2016 Elementary Version. Students were asked to explain their thinking for each choice.

Comparison 2: Students were read the other disciplinary scenario and told, “Here are two ways teachers could respond to (Jaime/Aaron).” The students were then shown videos portraying a different Black and a White teacher using whichever tone was not used in the first comparison. Students were presented with the same rating tasks following each video as in Comparison 1, and presented with the same comparison tasks following both videos as Comparison 1.

Comparison 3: Students were then re-shown each of the four videos presented to them in Comparisons 1 and 2 (Black strict, White strict, Black neutral, White neutral) and asked the following question, adapted from Gregory and Weinstein’s (2008) survey: “Of all the teachers, who do you trust the most in terms of the way she uses her power and authority?” Students selected their choice and explained why.

Sample 2: Tone Comparisons

Comparisons 1 & 2: For this sample, Comparisons 1 and 2 were exactly the same as those presented in Sample 1, except each comparison involved videos portraying teachers of the same race using different tones (as opposed to different races using the same tone). Like with Sample 1, the order in which the Black and White teachers were presented and the tone they used alternated randomly, and students were asked the same questions in the same order as with Sample 1.

Comparison 3: Comparison 3 was exactly the same as in Sample 1.

Appendix C

Teaching Rating and Comparison Questions

Initial Questions (asked after each video)	
Question	Probe
1. How do you think this teacher feels? Tell me with your words.	• Why does she feel that way? • Do you think she should feel that way?
For the next questions, I want you to show me whether you agree or disagree by pointing on this scale. If you point here, where it says strongly agree, it means you agree a lot. If you point here, where it says agree, it means you mostly agree. If you point here, where it says disagree, it means you mostly disagree. And if you point here, where it says strongly disagree, it means you really don't agree at all. Remember, there are no right or wrong answers.	
2. (*Student name*) deserved this punishment.	• Why do you (*insert response – agree, disagree, etc.)*?
3. Students should follow this teacher's directions even if it goes against what they want to do.	• Why do you (*insert response – agree, disagree, etc.)*? • (*if appropriate*) What should students do instead?
4. You feel similar to this teacher.	• Why do you (*insert response – agree, disagree, etc.)*?

Comparison 1 & 2 Questions (asked after participants watch involved in Comparison 1 and Comparison 2)	
Question	Probe
For the following questions, I will ask you to respond by pointing to images of the teachers you saw. It may be hard to choose, but please do your best. There are no right or wrong answers.	
1. Point to the teacher you think cares the most about her students. Or are they both the same?	• Why did you choose this teacher? • (If student is not able to pick) Why do you think all the teachers are about the same?
2. Point to the teacher who expects the most from her students. Or are they both the same?	• Why did you choose this teacher? • (If student is not able to pick) Why do you think all the teachers are about the same?
3. Point to the teacher who most wants all her students to do well. Or are they both the same?	• Why did you choose this teacher? • (If student is not able to pick) Why do you think all the teachers are about the same?
4. Point to the teacher you would trust the most to make sure everyone follows directions. Or are they both the same?	• Why did you choose this teacher? • (If student is not able to pick) Why do you think all the teachers are about the same?

Summary Question (asked following Comparison 3, after all videos have been watched)	
Question	Probe
For the following question, I will ask you to respond by pointing to images of the teachers you saw. It may be hard to choose, but please do your best. There are no right or wrong answers.	
1. Of all the teachers, who do you trust the most in terms of the way she uses her power and authority?	• Why did you choose this teacher? • (If student is not able to pick) Why do you think all the teachers are about the same?

Appendix D

Coding Teacher Tone During Redirections and Student Responses

Teacher Emotion	4 – Positive (smiles, jokes, uses a soft tone, or verbally communicates care, e.g. "I know you can do this.") 3 – Neutral (calm tone, neither positive nor negative) 2 – Strict and calm/firm (teacher facial expressions, tone, or verbal statements communicate anger, frustration, sarcasm, or other negative emotions in a calm and measured way) 1 – Strict and emotive/yelling (teacher facial expressions, tone, or verbal statements communicate anger, frustration, sarcasm, or other negative emotions in an emotional way through raising voice)
Individual Student Behavioral Response	4 – Compliant (follows directions exactly) 3 – Partially compliant (follows part of directions) 2 – Noncompliant (does not follow directions at all) 1 – Noncompliant and disruptive (does not follow directions and defies other rules for behavior as well, such as through yelling or leaving the classroom)
Class Behavioral Response	4 – All compliant (90% or more of the class follows redirections exactly) 3 – Mostly compliant (75-90% of class follows redirections) 2 – Majority compliant (50-75% of the class follows redirections) 1 – Mostly noncompliant (less than 50% of the class follows redirections; some students may defy other rules for behavior as well, such as through playing or conducting other off-task behavior)

Appendix E

Analytic Strategy

Experimental Data

I began analyses of the experimental data by examining average student ratings of each teacher category (White neutral, White strict, Black neutral, Black strict), using hypothesis testing to determine whether students rated each category equally in terms of fairness and ability to elicit student compliance. Using t-tests, I compared teacher categories as rated by the group of students as a whole (n = 42), as well as by students grouped by socioeconomic status in order to determine the influence of this student-level factor on ratings. I also compared ratings of each actress within each teacher category in order to detect the presence of confounds related to non-controlled characteristics of each actress.

I continued analyses by examining student comparisons of teacher race and teacher tone. Each student received just one of the two comparison conditions: race controlling for tone or tone controlling for race. Students in Condition A were asked to compare teachers of different races when they used the same tone, while Students in Condition B were asked to compare teachers of the same race using different tones. Thus, the sample size for these teacher comparisons is half the sample size of the individual teacher ratings. Employing logistic regression analysis, I determined the log odds of students selecting one teacher group over another on measures of teacher care, high expectations, and ability to control the classroom.

$$Ln\left(\frac{\Pr(Y=1|X)}{\Pr(Y=0|X)}\right) = \beta_0 + \boldsymbol{\beta}'\mathbf{X_j} + r_j \qquad r_j \sim N(0, \tau) \qquad (1)$$

Equation 1 contains a reference group β_0, a vector for teacher category change in log odds β', a vector for teacher category predictor variables X_j (either race or tone), and residuals, r_j. This analysis tells whether, for example, when presented with same-race teachers using different tones, students were significantly more likely, less likely, or equally likely to choose a strict-tone over a neutral-tone teacher as more caring, fairer, or more able to control the classroom. Similarly, it tells whether students presented with same-tone teachers of different races were equally likely to choose a Black teacher as a White teacher as more caring, fairer, or more able to control the classroom. I again examined student responses by socioeconomic status and actress within each teacher category to detect the influence of socioeconomic differences and actress confounds on ratings. However, these student- and actress-level variables are not included in the model due to over-specification issues with such a small sample. Instead, differences for each student- and actress-level factors are determined by running the model for these groups separately.

Finally, I examined student responses when asked to compare all four teacher categories (White neutral, White strict, Black neutral, Black strict) simultaneously. I presented descriptive summaries of student responses, then use logistic regression analysis to determine the significance of patterns observed. All students received this condition (n = 42), allowing for inclusion of interaction terms between student socioeconomic status and teacher category for

consideration of differences by student socioeconomic groups. The following model is implemented for this logistic regression analysis:

$$Ln(\frac{\Pr(Y=1|X)}{\Pr(Y=0|X)}) = \beta_0 + \boldsymbol{\beta}'\mathbf{X_j} + \mathbf{S'}\,\mathbf{X_j} + \boldsymbol{\beta}'\,\mathbf{X_j}{*}\,\mathbf{S_j} + r_j \qquad r_j \sim N(0, \tau) \tag{2}$$

Equation 2 measures the log odds $Ln(\frac{\Pr(Y=1|X)}{\Pr(Y=0|X)})$ of students selecting a teacher category as their preference in response to a comparison question. It contains a reference group β_0, a vector for teacher category change in log odds β', a vector for teacher category predictor variables X_j (either race or tone), a vector for student-level covariates S', a vector for student-level covariate interactions with teacher category predictor variables S_j, and residuals, r_j. The vector for teacher category predictor variable X_j includes all four categories of teachers, such that this specification provides the log odds of students selecting one of the four teacher categories as a preference when asked to select the teacher highest in trustworthy authority and when asked to select the teacher with whom the student would most likely comply.

Classroom Observation Data

To analyze data from classroom observations of student behavioral responses to teacher tone during redirections of either specific students or the class as a whole, I began by presenting between-teacher average levels of emotion during redirections and their students' corresponding average behavioral responses (where teacher emotion is coded on a 4-point ordinal scale from *strict and emotive/yelling* at 1 to *positive* at 4, where individual student responses to teacher redirections addressed specifically to them are coded on a 4-point ordinal scale from *noncompliant and disruptive* at 1 to *compliant* at 4, and where class responses to redirections addressed toward the class as a whole are coded on a 4-point ordinal scale from *mostly noncompliant* at 1 to *all compliant* at 4). I go on to examine the within-teacher relationship between teacher emotion and student behavioral response using ordered logistic regression analysis. With Equation 3, I determine the odds of students becoming more or less compliant as teacher emotion changes, controlling for variation between teachers:

$$Ln(\frac{\Pr(Y\leq c)}{1-\Pr(Y\leq c)}) = \gamma_c + \boldsymbol{\beta}'\mathbf{X_j} \tag{3}$$

In this equation, where c reflects categories of the student behavioral outcome and γ_c reflects threshold parameters, the vector of explanatory variables x includes teacher level of emotion as well as teacher fixed effects. In this way, the model controls for teacher confounds and provides an estimate of the relationship between teacher level of emotion and student behavior on average.

Appendix F

Experimental Results

Table 3

Number of Students Selecting Each Teacher Category as Highest in Trustworthy Authority

	White	Black	Total
Neutral	6	8	14
Strict	9	15	24
Total	15	23	38

Table 4

Coefficients from Logistic Regression Analysis Estimating Log Odds of Selecting Each Teacher Race/Tone Category as Highest in "Trustworthy Authority"

	Log Odds	Odds/Odds Ratio
Middle SES student		
Teacher race/tone (reference White neutral)		1.00
White strict	-0.75	0.47
Black neutral	-0.34	0.71
Black strict	1.73**	5.67
Low SES student difference from middle SES		
White neutral	-0.63	0.53
White strict	1.24	3.46
Black neutral	0.84	2.31
Black strict	-1.54**	0.21

Observations $n = 39$; *$p < .10$; **$p < .05$; ***$p < .01$

Table 5

Coefficients from Logistic Regression Model Estimating Log Odds of Selecting Black Actress "A" vs. Black Actress "B" as Highest in "Trustworthy Authority"

	Log Odds	Odds Ratio
High SES students		
Actress A (reference "B")	-0.55	0.58
Low SES difference from high SES student		
Actress A (reference "B")	-1.16	0.31

*$p < .10$; **$p < .05$; ***$p < .01$

Appendix G

Observation Results

Table 6
Average Tone, Number of Redirections, and Average Student Behavioral Response for Each Teacher

Teacher	Average teacher tone (*SD*)	Average student behavioral response
Teacher 1	3.38 (0.60)	3.12
Teacher 2	2.86 (0.61)	3.28
Teacher 3	2.87 (0.70)	3.64
Teacher 4	2.51 (0.80)	3.72