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EXAMINATION OF THE ROLE OF DEHUMANIZATION AS A POTENTIAL MECHANISM

UNDERLYING THE RACIAL DISPARITIES IN SCHOOL DISCIPLINARY MEASURES

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science at
Virginia Commonwealth University

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B.A., College of William & Mary, May 2016

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Abstract

EXAMINATION OF THE ROLE OF DEHUMANIZATION AS A POTENTIAL MECHANISM
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Schools should be safe and supportive spaces for all students, yet Black students tend to face

biased treatment in the education system, which often results in harsh disciplinary measures.

This research examined the role of animalistic dehumanization (i.e., perceiving others as animal-

like and uncultured and denying uniquely human characteristics), in predicting choice of harsher

disciplinary measures for Black students as opposed to White students. It was hypothesized that

individuals who dehumanize Black students to a greater degree would be more likely to believe

that Black students need to be disciplined through harsher measures. Additionally, it was

hypothesized that the link between dehumanization and choice of disciplinary measure would be

mediated by empathy, attribution of mind, and/or perceived threat. Both Study 1 (in which

dehumanization was assessed) and 2 (in which dehumanization was experimentally manipulated)

failed to provide evidence supporting the role of dehumanization in differential choices of school

disciplinary measures for Black vs. White students. However, both studies provided evidence

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suggesting that dehumanization of and negative attitudes toward Black Americans are still prevalent and related in American society, and that animal learning perceptions and paradigms influence participant perceptions of threat from students and disciplinary decisions. These findings indicate a need for continued investigation of racial stereotypes about students when assessing racial disparities in school discipline.

Examination of the Role of Dehumanization as a Potential Mechanism Underlying the Racial Disparities in School Disciplinary Measures.

"*As the one institution charged with providing access to all children regardless of their backgrounds, education will play an important role in shaping patterns of mobility in the years ahead. Education can either serve as the ultimate guardian and guarantor of the American Dream, or as the means through which existing inequities are reproduced over time*" (Noguera, Pierce, & Ahram, 2014, p. 3).

Schools should be safe and supportive spaces for all students, yet students from marginalized social backgrounds, including Black students, tend to face biased treatment in the education system, which often results in harsh disciplinary measures (Henderson & Long, 1973; Zucker & Prieto, 1977). This poses serious public health concerns, as harsh disciplinary measures through zero tolerance policies can not only adversely impact students' academic performance but also put students at higher risks of entering the criminal justice system (Mallet, 2016). Thus, it is essential to understand why Black students face harsher disciplinary measures.

The association between educators' negative attitudes (i.e., prejudice) toward Black Americans at the implicit level and their disciplinary measures against Black students has been documented previously. However, research has shown that there is another important form of negative intergroup attitudes that are uniquely different from prejudice—dehumanization of Black Americans (Goff, Jackson, Di Leone, Culotta, & DiTomasso, 2014). Though recent research has found that dehumanization contributes to harsher sanctioning of Black Americans within the criminal justice system, no research to date has examined dehumanization in the context of academic disciplinary measures. The overarching goal of the current research study is to investigate the role of dehumanization in school disciplinary measures.

Prevalence of Racial Disparities in School Disciplinary Measures

        Schools should be safe and supportive spaces for all students. However, the education system has been transformed recently into something that more closely resembles to the criminal justice system, which treats students harshly for their misconduct (Mallet, 2016). This transformation represents what many scholars call the "school-to-prison pipeline," or the national trend of pushing students out of the education system and into the juvenile and criminal justice systems (ACLU, 2017). Students with disabilities and students from low socioeconomic backgrounds are disproportionately funneled out of public schools in this system, but the pipeline is marked primarily by a long and troubling history of racial disparities in school discipline that specifically target Black and Latinx students (Addington, 2014; McNulty-Eitle & Eitle, 2006).

        The historical record of racial disparities in school discipline has been traced back to changes in school models of discipline that arose in response to issues with school shootings, such as the 1999 Columbine High School shooting and youth violence (Kayama, Haight, Gibson, & Wilson, 2015; Nolan, 2015). In response to growing public fears about youth gun violence, many school districts across the nation developed more punitive discipline policies and practices to address student misbehavior, particularly after the Clinton administration's 1994 Gun Free Schools Act. This act mandated that school administrators implement "zero-tolerance" stances on guns, drugs, and other paraphernalia in schools, and encouraged the immediate suspension, expulsion, and referral of students for such disciplinary issues. Schools also became more prison-like settings through the proliferation of government funding to support in-school police officers and security guards, metal detectors, and security cameras (Addington, 2009; Raymond, 2010).

While the criminalization of the American school system occurred largely in response to youth gun violence and school shootings that were typically committed by White students, research since the 90s has shown that Black students have disproportionately borne the brunt of reactionary and punitive zero-tolerance school disciplinary measures (Kaufman et al., 2000; McFadden et al., 1992; Triplett, Allen, & Lewis, 2014, Welch & Payne, 2010). For example, it has been documented that Black students are three times more likely than their White peers to be suspended nationally, and make up about 33% of students involved in school arrests (United States Department of Education Equality Office, 2014), even though they only make up about 15.5% of the enrolled K-12 population in the United States (U.S. Department of Education Office of Civil Rights, 2012). Black students are also more likely to be disciplined for subjective or discretionary misbehaviors, such as defiance or expression of disrespect, than their White peers, who are more likely to be disciplined for objective misbehaviors, such as destruction of property or smoking (Goyer et al., 2016; Klinger, 2006; Skiba et al., 2002). Furthermore, disparities in teacher referrals for students have been found, such that Black students are more likely to be referred to school counselors and administrators for disruptive behavior (Bryan, Day-Vines, Griffin, & Moore-Thomes, 2012; Gregory & Weinstein, 2008; Rausch & Skiba, 2004).

Recent analysis of interviews with 78 educators (i.e., general and special education teachers, as well as school administrators), students, and caregivers about the out-of-school suspensions of Black students provides evidence supporting educators' differential perceptions of Black vs. White students (Kamaya, Haight, Gibson, & Wilson, 2015). More specifically, the study has documented the use of 51 criminal justice terms [e.g., offense/offender, crime(s)/criminal, and infraction] 474 times by 76% (59) of participants. Furthermore, educators used criminal justice words more frequently than the suspended students or their caregivers, and

used the terms most when referring to the discipline of the students themselves or the students'

misbehaviors. Recent research has also revealed that educators were more likely to: (1) be

troubled by a second incidence of student misbehavior; (2) favor more sever discipline; (3)

characterize a student as a troublemaker; (4) believe an individual misbehavior was indicative of

a pattern of misbehavior; and (5) foresee suspension of a student in the future if the student was

Black, as opposed to White (Okonofua & Eberhardt, 2015).

Racial disparities in school discipline have also been documented at the preschool and

elementary levels (Skiba, Horner, Cheung, Rausch, May, & Tobin, 2011). For example, recent

research has found that Black preschoolers are 3.6 times as likely to be suspended as White

preschoolers (U.S. Department of Education Office of Civil Rights, 2016). Likewise, analysis of

701 preschool classrooms across 13 states found that White teachers are more likely to escalate

their responses to problem behavior in Black children, specifically Black boys, than Black

teachers were, even though there were no differences in problem behavior ratings for Black

children in comparison to White children regardless of the race of their teacher at the beginning

of the school year (Downer, Goble, Myers, & Pianta, 2016; Okonofua & Eberhardt, 2015).

Consequences of Racial Disparities in School Disciplinary Measures

Racial disparities in school discipline can adversely impact students' educational

outcomes (Gregory, Skiba, & Noguera, 2010; Morris & Perry, 2016; Okonofua, Walton, &

Eberhardt, 2016). These disparities also pose serious public health concerns, as harsh

disciplinary measures can also put students at higher risks of entering the criminal justice system

or community supervision (Mallet, 2016), which has been subsequently associated with poorer

overall health, greater psychological distress, and reduced risk perception (Vaugn, DeLisi,

Beaver, Perron, & Abdon, 2012). Additionally, interviews conducted with 28 students with

recent out-of-school suspensions, 25 educators, and 16 caregivers highlighted the adverse impact of such exclusionary discipline on student school performance and peer relationships, as well as family-school relationships (Haight, Gibson, Kamaya, Marshall, & Wilson, 2014).

A growing body of literature has also begun to address the negative impact of racial disparities in school discipline on teacher-student relationships and student sense of school belonging (Bottiani, Bradshaw, & Mendelson, 2016; Haight et al., 2014; Okonofua et al., 2016). For example, an analysis of self-report data from 29,148 high school students found that Black students report feeling significantly less connected to their educators. Additionally, racial disproportionalities in discipline were found to be significantly negatively correlated with all students reports of connectedness to their educators, even after controlling for covariates such as student gender, grade level, and the racial composition of the school (Anyon, Zhang, & Hazel, 2016). Likewise, recent research has found that school-level discipline gaps impact student perceptions of school equity as well as their sense of belonging in school, such that Black students scored lower on measures of perceptions of school equity and school belonging than White students (Bottiani, Bradshaw, & Mendelson, 2016).These findings stood even after controlling for student- and school-level factors (e.g., grade level, gender, school racial composition, socioeconomic status, and overall school suspension rates). Taken together, prior research provides strong evidence that the consequences of harsh school disciplinary measures are rather negative for students; this is particularly true for Black students, as they are considerably more susceptible to such negative consequences than other racial/ethnic students. Thus, it is essential to understand the underlying causes of these racial disparities in order to improve Black students' school experiences.

Evidence of Racial Bias as One Psychological Mechanism Underlying the Racial Disparities in School Disciplinary Measures

There is strong evidence supporting that stereotyping, prejudice, and discrimination are brought into classrooms across America (Henderson & Long, 1973; Zucker & Prieto, 1977). Particularly relevant to the present study are findings that educators' negative attitudes towards Black Americans adversely affect their treatment, perceptions, and expectations of Black students, which ultimately lead to poorer school achievement outcomes for Black students (London et al., 2014; Neal, McCray, Webb-Johnson, and Bridgest, 2003; Townsend, 2000). For instance, teachers' negative attitudes towards students from underrepresented backgrounds have been found to interfere with their impartiality and perceptions of student ability (London et al., 2014). Neal, McCray, Webb-Johnson, and Bridgest (2003) found that educators' perceptions of students' potential for achievement, levels of aggression and need for special education services was impacted by the degree to which the students displayed African-American culture-related movement styles (e.g., walking). In this study, 136 middle school teachers watched a video of one of four Black or White eighth grade students of similar height and weight walking. Students were depicted as either walking in a standard fashion or in a stroll, which has historically been associated with African-American movement. After the videos, participants completed a questionnaire consisting of items about participant demographics and perceptions of student aggression, achievement, and need for special education services. Results indicated that students who exhibited movement associated with African-American culture, whether Black or White, were perceived as having lower achievement potential, more aggressive, and more in need of special education services.

In another example, Oates (2009) explored five potential explanations for the Black-White performance gap (i.e., academic engagement, cultural capital, social capital, school quality and biased treatment) using data from 8,047 Black and White tenth and twelfth graders in the National Educational Longitudinal Study (NELS) of 1988. School quality and biased treatment based on teachers' racial attitudes emerged as the primary explanations for performance differences, with biased treatment of Black students explaining 20% of Black-White differences on test performance. Research has also found that teachers tend to hold higher expectations for White students, whereas they are more likely to suggest special education classes or discipline for Black students (Tenenbaum & Ruck, 2007).

Additionally, results from a study that employed an eye-tracker found that early education teachers tend to monitor Black children more closely in video scenarios where misbehavior was expected, suggesting that those teachers are more likely to expect problematic behavior from Black students (Gilliam et al., 2016). Specifically, 132 current and student teachers in early childhood and preschool classrooms, viewed twelve 30-second video clips of four preschoolers engaging in a variety of activities. Participants were told the study was evaluating how teachers detect problematic behavior in classrooms and were instructed to press the "Enter" key every time they saw a potentially challenging behavior, though none of the videos actually included instances of challenging behavior. After viewing the clip, participants were shown pictures of all four of the children they had seen in the video (a Black boy, Black girl, White boy, and White girl) and were asked to indicate which child had required the most of their attention during the video clips. Additionally, dwell time, or the amount of time participants spent gazing at any one child of a specific sex and race, was assessed using an eye-tracking device. Results showed that participants spent significantly more time gazing at boys and at

Black children, particularly Black boys, than girls and White children. Furthermore, 42% of participants indicated that the Black boy required most of their attention during the videos.

Data from the Early Childhood Longitudinal Study-Kindergarten cohort and the National Education Longitudinal Study also provide evidence suggesting that Black teachers may hold Black students in higher regard and have higher expectations for Black students, as Black teachers tend to rate Black students as less disruptive compared to teachers of other races (Dee, 2005; Downey & Pribesh, 2004; Wright, 2015). These results also found that Black students are much less likely to be suspended when they are in classrooms with Black teachers. Taken together, these findings provide evidence that both teacher race and student race significantly influence the teacher-student relationships and teachers' behavioral expectations of students.

Most relevant to the current research are findings from a recent study that suggest educators' negative attitudes toward and perceptions of Black Americans, particularly at the implicit level, are associated with their choice of disciplinary measures against Black students. Specifically, the data indicated that teachers expect and notice problematic behaviors more in Black students than in White students, and that Black students receive harsher disciplinary measures than White students for the same or similar misbehaviors (Gilliam, Maupin, Reyes, Accavitti, Shic, 2016). Taken together, the recent literature provides strong evidence suggesting that educators' racial attitudes toward and perceptions of Black students may play an essential role in shaping the pervasive racial disparities in school disciplinary measures.

Differences in teacher expectations of students based on student race are troubling because they may result in self-fulfilling prophecy (Brophy & Good, 1980; Jussim, Eccles, & Madon, 1996; Steele, 1997). Specifically, teachers' negative expectations for Black students would likely induce negative teacher behaviors toward Black students, such as showing negative

affect through non-verbal communication and allowing Black students to socially and academically disengage in classroom settings (Babad, Bernieri, & Rosenthal, 1989; Khalifa, 2011). These negative behaviors, in turn, can induce negative reactions from Black students, confirming the original negative expectations teachers had for Black students. Self-fulfilling prophecy is particularly important to consider given that Black students and students from other marginalized groups (e.g., Latinx and low-income students) have been found to be more susceptible to negative expectancy effects from educators (McKown & Weinstein, 2002). Differential teacher expectations based on student race are also concerning, as students may internalize them and begin acting in such a way that aligns with those perceived expectations, even if they are negative (Jussim, Eccles, & Madon, 1996; Rist, 2000).

Different Forms of Racial Bias: The Importance of Dehumanization Process in the Racial Disparities in School Disciplinary Measures

Previous social psychology research provides some evidence that dehumanization is a separate psychological construct from negative racial attitudes (Opotow, 1990; Powell, 2012; Staub, 1989). Dehumanization is a social-cognitive process involved in interpersonal and intergroup contact that is characterized by "denial of full humanness" to others (Goff et al., 2014; Haslam, 2006). It typically consists of exclusion from moral considerations, such that it becomes acceptable to "treat people in such a way that would be morally objectionable if they were fully human" (Goff et al., 2014, p. 527; Opotow, 1990).

Though typically studied in the context of intergroup violence, Haslam (2006) posited that dehumanization occurs in the context of everyday social cognition and interaction. In a study evaluating neuroimaging responses, researchers found that extreme outgroup members (i.e., people deemed to be stereotypically hostile and incompetent, such as homeless people and drug

addicts) are often dehumanized (Harris & Fiske, 2003; Wheeler & Fiske, 2005). More specifically, they found that participants' medial pre-frontal cortex, a brain area involved in perceptions of social organism (Amodio & Frith, 2006; Ochsner, 2005), was activated when viewing photographs of all social groups *except* those that were deemed to be extreme outgroups. These findings support the idea that some people are perceived as less than human, or dehumanized, on an everyday basis, outside of the context of violence.

Importantly, researchers posit that there are two distinct forms of dehumanization: mechanistic and animalistic (Haslam, 2006). *Mechanistic* dehumanization contrasts humans with machines and typically involves denial of humanness through denial of human nature. Human nature refers to characteristics that are universal across cultures and that connect humans to the natural world (e.g., biological disposition, emotional responsiveness, and cognitive openness or curiosity) and is thought to be fundamental or inborn to all humans (Haslam, 2006; Haslam, Bastian, & Bisset, 2004). Targets of mechanistic dehumanization are often perceived as cold, rigid, and automaton-like (Haslam, 2006). They are also seen as passive and as having a lack of agency. Conversely, *animalistic* dehumanization—the form of dehumanization that is central to the current research study—contrast humans with non-human animals and involves denial of uniquely human characteristics. Uniquely human characteristics refer to qualities that differentiate humans from non-human animals (e.g., refined emotion, culture, socialization, and internalized moral sensibility) and are thought to be acquired (Haslam, 2006; Haslam, Bastian, & Bisset, 2004). Targets of animalistic dehumanization are perceived as animal-like and uncultured. They are also thought to lack self-control, civility, higher cognition, and moral sensibility. Recent research has shown that people tend to associate individuals from different social groups from theirs (i.e., outgroup members) with uniquely human characteristics less

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frequently than individuals from the same social groups (i.e., ingroup members; Boccato, Capozza, Falvo, & Durante, 2008; Saminaden, Loughnan, & Haslam, 2010).

Of the two forms of dehumanization, it is animalistic dehumanization that is studied most often in association with bias targeting Black Americans. Animalistic dehumanization has been seen throughout history in rhetoric surrounding anti-Black racism and bias, specifically in relation to the mass enslavement of people of African descent in America (Opotow, 1990). This rhetoric can be traced back to the formation of this country, and the dehumanizing language used in the Constitution and other laws of the United States that were used to maintain slavery. An example of this is the statement that "all other persons," meaning enslaved Africans, should be counted as three fifths human when figuring state populations in the first article of the United States Constitution.

Although forms through which this bias and dehumanization of Black Americans manifests has changed from the explicit to more implicit ones, contemporary explorations of dehumanization have found it still persists in our present society. According to the dehumanization literature, people often falsely believe that races are biologically defined and that Black Americans are inherently inferior to White Americans (Goff et al., 2008). Additionally, US citizens often associate Black Americans with apes (Goff et al., 2008). This Black-ape association, referred to as the Negro-Ape metaphor, has been shown to decrease empathy and contribute to racial disparities in the criminal justice system (Goff et al., 2008; Mekawi, Bresin, & Hunter, 2016). For example, Goff and his colleagues (Study 5, 2008) primed participants with ape-related words (e.g., ape, monkey, and baboon) or big cat-related words (e.g., lion, tiger, and panther). Participants were then shown a two-minute video of a police officer using violence to subdue a suspect, which was followed by either a Black or White mug

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shot of the suspect. Results showed that participants who were primed with ape-related words were significantly more likely to believe the police were justified in using violence to subdue the Black suspect than participants who were primed with big cat-related words. In contrast, there was no difference between participants who were primed with ape- vs. big cat-related words when the suspect was White. Goff and his colleagues (Study 6, 2008) have also found that Black defendants are typically portrayed in the news with more ape-related words (e.g., ape, monkey, or gorilla) than White defendants, and that Black defendants who were sentenced to the death penalty were more likely to be represented as ape-like in the press than Black defendants who were spared the death penalty.

Mekawi and colleagues (2016) also conducted a study investigating the role of White Americans' fear of minorities in racial disparities in shooting bias, exploring dehumanization and empathy as moderators. In this study, participants first completed a dehumanization Implicit Association Task (IAT) categorizing stereotypically Black and White names with either animal-related (e.g., animals, nature, instinct) or human-related (e.g., culture, society, mind) words. Next, participants completed a virtual shooting task using photographs of Black, White, and East Asian males that had been matched for age and attractiveness. Finally, participants completed questionnaires that were designed to assess fear of racial minorities and empathy. Fear of racial minorities was assessed using the White Fear subscale of the Psychosocial Costs of Racism to Whites questionnaire (PCRW; Spanierman & Heppner, 2004), which is a five-item subscale rated on a Likert scale that includes such items as "I often find myself fearful of people of other races." Results found that individuals who scored high on measures of racial/ethnic minority fear showed less inhibition for shooting Black versus White and East Asian targets. Importantly, such shooting bias was further moderated by dehumanization, such that the association between White

fear and shooting bias was only present in participants who had a tendency to dehumanize Black individuals (Mekawi et al., 2016). Finally, White fear was only related to shooting bias at low, as opposed to high, levels of empathy, as those with higher levels of empathy did not exhibit the racial shooting bias irrespective of their level of White fear.

Although the number of studies that examine the mechanisms and consequences of dehumanization of Black adults has been increasing particularly in the context of criminal justice, very little research has investigated to what extent and in what context dehumanization of Black children occurs. To date, to my knowledge, there has been only one empirical paper aimed at investigating dehumanization of Black youth by adults (see Goff et al., 2014). In a series of studies, researchers have found that Black children, specifically Black boys, are perceived as less childlike, less innocent, and thus more responsible for their behaviors than their White peers (Goff et al., 2014). For example, Goff and Colleagues (2014; Study 2) conducted a laboratory study in which 59 college students were instructed to complete a battery of questionnaires. Participants first completed an age-assessment task, where they were shown 8 photos of either Black, Latino, or White children ages 10-17 and asked to estimate the age of each child. Each photo was paired with either a description of a misdemeanor or a felony. Participants then completed a 4-item culpability scale that examined participant perceptions of how innocent the child was in the criminal context presented. Participants also completed The Attitudes Toward Blacks Scale (ATB, an explicit measure of anti-Black prejudice), the personalized IAT (an implicit measure of pro-White/anti-Black prejudice), and the dehumanization IAT (an implicit measure of animalistic dehumanization). Results found that participants significantly overestimated the age of Black targets. Black targets were also perceived as more culpable for their actions than White or Latino targets, and this perception was exacerbated when Black

targets were accused of serious crimes. Particularly poignant was the finding that Black felony suspects were perceived as an average 4.53 years older than they actually were, such that Black felony suspects around 13.5 years of age were misperceived as legal adults. While the researchers did not formally test dehumanization as a moderator in this study because it was measured after the study manipulations, dehumanization was found to be significantly associated with overestimation of target age and culpability, such that higher dehumanization scores were indicative of higher target age overestimation as well as higher ratings of target culpability for both Black misdemeanor and felony suspects.

Black-ape association was also found to predict real-life racial disparities in police violence toward Black children in a study evaluating the relationship between intergroup attitudes and the use of force against Black children using personnel records in a sample of police officers (Study 3b, Goff et al., 2014). One hundred sixteen police officers were recruited to complete a battery of questionnaires, including the ATB scale, the personalized IAT and the dehumanization IAT. Officer personnel data, which included use of force incident reports from throughout each officer's career, was then paired with their psychological data. Use of force incident reports range in severity from verbal warnings to striking a suspect (e.g., kicking, punching, or using a blunt object), to using outside measures of force (e.g., police dog, restraints, or chemical agents such as Mace), and to using deadly force (e.g., firearm or chokehold). Results indicated that dehumanization of Black Americans was a significant predictor of use of force against those children, such that more Black-ape association was predictive of more frequent violent encounters with Black children as opposed to children of other races throughout the officers' careers. Taken together, the evidence supporting the relationship between

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dehumanization and increased discriminatory behavior toward Black adults and children is strong (Goff et al., 2014; Goff et al., 2008; Haslam & Loughnan, 2014; Mekawi et al., 2016).

Factors that Mediate the Relationship between Dehumanization and Discriminatory Behaviors toward Black Americans

Empathy. The role of empathy—or the ability to take the perspective of others—in shaping perceptions of race and racial attitudes has been previously documented (Bäckström and Björklund, 2007; Eres & Molenberghs, 2013; Gutsell & Inzlicht, 2012; Trawalter, Hoffman, & Waytz, 2012). Research has shown that empathic reactions are denied to racial outgroup members as individuals tend to reserve these concerns for members of their own racial group (Eres & Molenberghs, 2013; Gutsell & Inzlicht, 2012). For example, results from neuroimaging studies documenting electroencephalographic (EEG) alpha oscillations showed brain activation when individuals felt sad themselves as well as when they observed ingroup members feeling sad, but not when they observed outgroup members feeling sad (Gutsell & Inzlicht, 2012). Similarly, neuroimaging and neurophysiological studies have found empathic reactivity when observing pain in strangers for ingroup members but not racial/ethnic outgroup members (Avenanti, Sirigu, & Aglioti, 2010). Specifically, this study used transcranial magnetic stimulation with Black and White participants who displayed implicit, but not explicit, ingroup favoritism to examine sensorimotor empathic brain responses (i.e., physiological activation of similar biological systems). Participants were asked to either watch a clip of a needle penetrating the muscles of a Black or White stranger's hand, or a Q-tip touching the same muscle, while motor-evoked potentials (i.e., activation readings of the left motor cortex) were recorded from the participant's hand muscles. Participants also completed an empathy questionnaire. Findings revealed that participants who scored higher on the empathy questionnaire showed enhanced

empathic pain responses. Results from participant's muscle recordings also indicated empathic pain responses (e.g., inhibited corticospinal activity as if they were feeling pain themselves) when they had observed the pain of an ingroup member. Conversely, no evidence of an empathic pain response was found when participants observed the pain of racial/ethnic outgroup members.

This racial empathy gap may stem from an inability to take the world-view of outgroup members, as individuals may not share the emotional and motivational states of outgroup members (Gutsell & Inzlicht, 2012). Likewise, research has documented a significant negative relationship between empathy and prejudicial attitudes over and above factors that are typically related to prejudice, such as right-wing authoritarianism and social dominance orientation (Bäckström and Björklund, 2007). Research has further shown that improving individual's ability to take the perspective of outgroup members, such as through intergroup contact, can lead to a reduction in prejudicial attitudes (Aron et al., 2004; Vescio, Sechrist, & Paolucci, 2003; see Pettigrew & Tropp, 2008 for a review), suggesting a causal relationship between empathy and bias.

Lack of empathy has been also linked to dehumanization of Black Americans in a study reviewed earlier (Mekawi et al., 2014). Specifically, empathy was found to moderate the relationship between dehumanization, fear of racial minorities, and shooting bias, such that fear of racial minorities and dehumanization were only related to shooting bias at low, as opposed to high, levels of empathy. In other words, those with higher levels of empathy did not exhibit the racial shooting bias irrespective of their level of fear of racial minorities.

Additionally, researchers have argued that dehumanization may be a psychological response involving avoidance of ingroup responsibility for past wrongdoings against outgroup members (Castano & Giner-Sorolla, 2006). In a study examining the psychological reactions of

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non-Indigenous Chileans when confronted with their ingroup's past wrongdoings against the Mapuche, the largest group of Indigenous Chileans, researchers provide some evidence that empathy is both related to and predictive of dehumanization and vice versa (Čehajić, Brown, & González, 2009). In this study, 124 non-Indigenous Chileans college students first read a description of Mapuche history and the consequences of the arrival and colonization of non-Indigenous Chileans. The description of Mapuche history was experimentally manipulated, such that such that one description indicated that the consequences the Mapuche incurred were the responsibility of some non-Indigenous Chileans, while the other description indicated that the consequences the Mapuche incurred were the responsibility of all non-Indigenous Chileans. Participants then completed measures that were designed to assess their perception of responsibility, attribution of emotions to the Mapuche (a proxy to dehumanization), and general empathy. Attribution of emotion was measured by asking participants to indicate the extent to which they believed the Mapuche were likely to feel primary positive and negative emotions (e.g., happiness, euphoria, sadness, and disgust) and secondary positive and negative emotions (e.g., tenderness, hope, remorse, and guilt) based on a list of 16 emotion words. Findings revealed that descriptive reminders of ingroup responsibility (non-Indigenous Chileans) toward outgroups members (the Mapuche) facilitated greater perception of ingroup responsibility as well as less attribution of emotions to outgroup members, which both were significant predictors of increased empathy. In short, dehumanization, as measured by decreased attribution of emotion, was associated with and predictive of less empathy (Čehajić, Brown, & González, 2009). Finally, researchers posit that empathy may be a requirement to overcoming dehumanization, as developing a greater ability to understand and relate to the emotions and lived experiences of outgroup members may lessen bias and the perception of outgroup members as less than human

(Halpern & Weinstein, 2004). Thus, lack of an empathic ability to see Black Americans as fully human may lead to dehumanization of Black Americans, such that it predicts preference for harsher disciplinary measures against Black students.

Attribution of mind. Another potential mediating factor is the attribution of mind. Animalistic dehumanization in particular has been posited to rest upon the idea or belief that members of the dehumanized group have inferior or missing cognitive aspects and abilities, such as rationality, curiosity, and mental flexibility (Haslam, 2006; Pacilli, 2016). Deficit perception of the minds of socially marginalized groups, termed mind perception or attribution of mind (see Gray, Gray, & Wegner, 2007; Morera, Quiles, Correa, Delgado, & Leyens, 2016) has been found to influence or contribute to dehumanization of those groups. For example, in one study, researchers had 485 Spanish participants complete a questionnaire consisting of pictures of 10 targets accompanied by brief descriptions that were similar in length and detail (Morera et al, 2016). The pictures depicted targets who were either from typically socially dehumanized groups or from groups typically considered human as a control. Two different groups of socially dehumanized individuals were depicted in the pictures: individuals who are considered incompetent (e.g., drug addicts and people experiencing homelessness), and individuals who are considered cruel (e.g., mercenaries and terrorists). Professional individuals (e.g., veterinarians, radiologists, and bankers) were included as a control for people who are typically considered human. After each target, participants were asked to discuss the extent to which they felt each of two mind characteristics were present in the target. The mind characteristics included were: (1) agency (i.e., the ability to plan one's action and act morally); and (2) experience (i.e., the ability to experience refined or uniquely human emotions and be conscious of one's environment). Results showed that professional individuals were perceived as humans with high agency and

experience, while drugs addicts and people experiencing homelessness (or people perceived to be low in competence and warmth) were perceived as having the lowest level of agency and an intermediate level of experience. Finally, the category of targets denoting cruel or evil individuals (e.g., mercenaries and terrorists) were perceived as having more agency than those considered to be low in competence and warmth, but were perceived as having the lowest level of experience. These findings provide evidence that individuals in dehumanized groups are perceived as having fewer or inferior mental capabilities.

Furthermore, according to a theory of blatant animalistic attribution, perceptions of animality of an outgroup are associated with moral disengagement (Bandura, 1999). More specifically, such perceptions are thought to be a tool by which negative attitudes toward and sometimes even violence against an outgroup may be justified and accepted despite one's moral beliefs and sensibilities (Bandura, 1999). For instance, researchers have found empirical evidence that animalistic dehumanization predicts violence toward outgroup members across religious affiliations (Viki, Osgood, & Phillips, 2013). In the first study, 68 Christian participants were randomly assigned into one of two conditions in which they read vignette descriptions (presented to participants as anthropological research) of Muslims with either low or high humanity. The low humanity condition involved descriptions of Muslims with weak humanity-related words (e.g., unemotional, relaxed, comfortable), while the high humanity conditioned involved descriptions with strong humanity-related words (e.g., passion, ambitious, irresponsible). Participants then completed a dehumanization measure which involved reading a list of 20 animal- and human-related words and indicating which words they believed best described Muslims. Subsequently, participants viewed images of torture from Abu Ghraib prison and were asked to imagine how they would have behaved in that setting on a 7-item Likert scale

measure. Results found that participants who were in the high-humanity condition selected more human-related words on the dehumanization measure (or scored lower on the dehumanization measure). Furthermore, attribution of fewer human-related words to Muslims was significantly negatively associated with greater proclivity to torture Muslim prisoners (Viki, Osgood, & Phillips, 2013).

Additionally, Viki et al. (2013) conducted a second study in which 61 Christian participants completed the same dehumanization measure described in the first study, but were asked to differentially select 8-10 words that they associated with Christians and Muslims. Once they completed the dehumanization measure, participants then reported perceived threat of Muslims on an 18-item measure, and subsequently completed the torture proclivity task described in the first study. Findings revealed that participants associated more human-related word with Christians than Muslims, and that perceptions of the humanity of Muslims was again significantly negatively associated with torture proclivity. Additionally, results indicated that perceived threat moderated the association between dehumanization and proclivity to torture Muslims, such that the association was stronger in individuals with high, as opposed to low, scores on perceived Muslim threat. Taken together, findings from the previous studies provide evidence that lack of attribution of mind to Black Americans may lead to dehumanization of and moral disengagement from Black Americans, such that it predicts preference for harsher disciplinary measures against Black students.

Perceived Threat. One final potential mediating factor of the relationship between dehumanization and choice of disciplinary measure is perceived threat. The term perceived threat refers to the degree to which individuals perceive other individuals to be threatening to them in some way (e.g., physically, socially, economically, etc.). It has been found to be associated with

both perceptions of Black Americans and dehumanization (Louis, Esses, & Lalonde, 2013; Maner et al., 2005; Opotow, 1990; Payne, 2001; Prati, Crisp, Meleady, & Rubini, 2016; Staub, 1989; Wilson, Hugenberg, & Rule, 2017). Research demonstrates that Black Americans are often perceived to be more threatening than their White counterparts in American society (Maner et al., 2005; Payne, 2001; Wilson, Hugenberg, & Rule, 2017). Specifically, social psychological research on intergroup bias has shown that subliminal priming of Black faces is associated with heightened threat perception in White participants, as opposed to priming of White faces (Maner et al., 2005; Payne, 2001; Trawalter, Todd, Baird, & Richeson, 2008). Similarly, research provides evidence that Americans often perceive Black young men to be larger, more physically threatening, and capable of harm than White young men of similar body size and strength (Wilson, Hugenberg, & Rule, 2017).

Previous research findings also indicate that perceived threat often precedes dehumanization (Louis, Esses, & Lalonde, 2013; Opotow, 1990; Prati, Crisp, Meleady, & Rubini, 2016; Staub, 1989). Specifically, Staub (1989) and Opotow (1990) both asserted that the belief that inhumane treatment of outgroup members was justified based a perception of outgroup members as having threatening intentions. Furthermore, research conducted by Louis, Essess, & Lalonde (2013) provides evidence that perceived threat is associated with dehumanization of immigrants in a sample of 126 Australian citizens and 124 Canadian citizens ranging in age from 17-54. The Canadian sample consisted of participants recruited online as well as undergraduate psychology students, while the Australian sample consisted solely of participants recruited online. Participants in this study completed a single-item measure of national identification (i.e., *When thinking about immigration and recent immigrants to [Australia/Canada], I think of myself as [an Australian/a Canadian]*," an 8-item measure of

zero-sum beliefs about immigrants (e.g., "*[Australians/Canadians] already living here lose out when immigrants make political and economic gains;*" Esses et al., 2001), a 6-item measure of dehumanizing perceptions of immigrants as cheaters (e.g., "*The problem with potential immigrants to [Australia/Canada] is that they try to 'cheat the system';*'" Esses et al., 2008), a measure assessing participants intergroup emotions (e.g., the extent to which immigrants made them feel contemptuous or admiring), and a single-item measure of negative attitudes toward immigrants (i.e., "*In general, how favorable or unfavorable do you feel about immigrants?*") on a scale from 0 (extremely unfavorable) to 100 (extremely favorable). Results revealed that perception of immigrants as a threat was significantly associated with participants' dehumanizing beliefs and negative emotions (i.e., contempt) toward immigrants. It was also found that the relationship between perceived threat and prejudice toward immigrants was mediated by dehumanizing beliefs and negative emotions toward immigrants.

Researchers have also found that perceived threat influences the extent to which multiple categorization—a strategy used to deconstruct ingroup-outgroup distinctions and thus reduce bias—successfully reduces intergroup dehumanization of immigrants in a sample of Italian undergraduate students (Study 2; Prati et al., 2016). In this study, social categorization of immigrants was experimentally manipulated. Specifically, participants read a scenario that describes immigrants in one of four ways: (1) simple categorization (i.e., "*immigrants*"); (2) multiple *ingroup* categorization (i.e., "*young, students, living in the same town, without children, and of the same gender as the participants*"); (3) multiple *outgroup* categorization (i.e., "*middle aged, workers, living in countryside, with children, and of the opposite gender of the participants*"); and (4) multiple mixed categorization (i.e., "*young, students, living in the same town, with children, and of the opposite gender of the participants*"). Participants then completed

a series of outcome measures, including dehumanization (through ascription of primary and secondary emotions such as fear and pessimism, respectively), individuation, and perceived threat. The perceived threat measure assessed both realistic threat (i.e., whether social and economic capital gained by immigrants impacted Italians) and symbolic threat (i.e., whether they were fearful of, worried about, or threatened by immigrants). Results of the study revealed evidence of a significant sequential mediation model whereby individuation and perceived threat mediated the relationship between multiple categorization and humanization. Specifically, participants who read scenarios in which the immigrants were categorized by more than just their immigrant status (i.e., participants in the multiple ingroup, outgroup, and mixed categorization conditions) were more likely to individuate immigrants, less likely to perceive threat from immigrants, and in turn more likely to humanize the immigrants in the scenarios. Taken together, findings from prior research provide evidence that perceived threat and dehumanization, while separate constructs, are related in critical ways.

The Present Study

Given that schools are becoming more criminalized settings (Mallet, 2015) and that dehumanization has been linked with racial disparities in sanctioning decisions and mistreatment of Black Americans in the criminal justice system (Goff et al., 2008), it follows that dehumanization may contribute to racial disparities in school discipline. In support of this claim, Okonofua & Eberhardt (2015) posit that harsher sanctioning measures to misbehaviors among Black students in school may be associated with the heightened sanctioning measures and mistreatment of Black Americans in the criminal justice system. The overall goal of this research was to investigate whether and how dehumanization of Black students can at least partially explain the pervasive racial disparities in school disciplinary measures. It also sought to examine

whether the relationship between dehumanization and preference for harsher disciplinary measures against Black students was mediated by empathy, attribution of mind, and/or perceived threat.

Drawing upon prior research, it was hypothesized that educators who dehumanize Black students to a greater degree (i.e., those who endorse false beliefs that Black students are inherently inferior to White students and more similar to apes) would be more likely than those who dehumanize Black children to a lesser degree to believe that Black students need to be disciplined through harsher measures. It was further hypothesized that the link between dehumanization and choice of harsher disciplinary measures against Black students may be mediated by three potential factors: 1) a lack of empathy towards Black Americans; 2) a belief that animals are better disciplined through conditioning than reasoning; and 3) a heightened perceived threat. Specifically, it was hypothesized that lack of empathy towards Black Americans may cause individuals who are high in dehumanization to treat or view Black Americans through a lens of moral disengagement. This is because empathic reactions are often reserved for racial/ethnic ingroup members (Eres & Molenberghs, 2013; Gutsell & Inzlicht, 2012; Trawalter, Hoffman, & Waytz, 2012) and also because outgroup members may not share or experience the same emotional and motivational states as racial/ethnic groups members (Gutsell & Inzlicht, 2012).

Likewise, lack of attribution of mind to Black Americans in general may serve as a mediator of the hypothesized relationship between dehumanization and preference for harsher disciplinary measures for Black students. The perception of Black Americans as less human and more animal-like may lead to an implicit belief that Black Americans should be disciplined through conditioning as opposed to reasoning. Given that most animal learning is studied within

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and explained by the conditioning paradigm (e.g., classical or operant conditioning; Pavlov, 1927; Skinner, 1937; Skinner, 1938; Staddon & Cerutti, 2003), the belief that Black Americans are less human and more animal-like may lead to preference for harsher disciplinary measures against Black students in those high in dehumanization of Black Americans, or Black-ape association. Thus, it was hypothesized that the perception that individuals with fewer mental capabilities are better disciplined through conditioning as opposed to reasoning would mediate the relationship between dehumanization and preference for harsher disciplinary measures for Black students.

Finally, it was hypothesized that participants who read scenarios with Black students would perceive a greater threat from the students, and that such heightened threat perception would in turn mediate a relationship between dehumanization and choice of harsher disciplinary measure for Black students. This is because White Americans often perceive threat from Black Americans (Maner et al., 2005; Payne, 2001; Wilson, Hugenberg, & Rule, 2017) and also because threat has been found to precede dehumanization (Louis, Esses, & Lalonde, 2013; Opotow, 1990; Prati et al., 2016). Study 1 tested these hypotheses using a correlational research design, and Study 2 aimed to establish causal associations among hypothesized variables.

Study 1

The overall goal of Study 1 was to establish associations among dehumanization (i.e., Black-ape association), potential mediators (i.e., empathy, perceived effectiveness of conditioning vs. reasoning for both animal and human learning, and perceived threat), and preference of harsher disciplinary measures in the general college student population. It was hypothesized that higher levels of dehumanization would be associated with stronger preference for use of harsh disciplinary measures against Black students, but not White students. Given that

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previous research found the biggest effects of dehumanization with Black men (Goff et al., 2014; Goff et al., 2008; Mekawi et al., 2016), student gender was also included in a model, resulting in a 2 (student race: Black vs. White) x 2 (student gender: Boy vs. Girl) x 2 (participant race: Black vs. White) x Black-ape association design, with the first three being between-subject variables and the last being a continuous variable.

Method

      Participants. A total of 456 undergraduate psychology students were recruited from the SONA online participant registry for participation in this study.[1] Two hundred and twenty-eight participants who had below 75% study completion or experienced computer malfunctions and did not complete all 3 sections of the survey were excluded from the current analysis, resulting in a total of 228 analyzable cases. The majority of participants were female (65.8%), and were from diverse racial/ethnic backgrounds, with most participants identifying as White American (37.3%), Black/African American (28.9%), Asian (18.4%), Latinx (3.9%), and Multiracial (10.1%). Participants ranged in age from 18 to 66 (age $M = 19.54$, $SD = 4.11$), though the majority of participants were between the ages of 18 and 23 (70.2%).

      Procedure. Participants first read a description of the study on SONA (Appendix A). Interested students who met the eligibility criteria (i.e., at least 18 years old) were then re-directed to the actual study. Participants were asked to read an information sheet carefully (Appendix B). Only participants who agreed to participate in the study proceeded to the study.

      In the study, participants first read one of four scenarios describing a middle-school student misbehaving in a classroom (Appendix C). The four scenarios were exactly the same

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[1] The target sample size was two hundred and eighty participants. This sample size was determined based on a rule of thumb for conducting multinomial logistic regressions that a minimum sample of 10-30 observations per independent variable in the model is required to detect the moderate effect with adequate power (Hosmer, Lemeshow, & Sturdivant; Leblanc & Fitzgerald, 2000; Schwab, 2002).

except for student race and gender (i.e., Black boy, Black girl, White boy, and White girl).

Student race and gender were manipulated by using names that clearly represent each social group: DeShawn, Lakisha, Brad, Allison (Bertrand & Mullainathan, 2002). After reading the scenario, participants reported what disciplinary measure they would choose to address the misbehavior, perceived effectiveness of the selected disciplinary measure, perceived harshness of each disciplinary measure, empathy toward the student in the scenario, beliefs about animal and human learning, and perceived threat of both physical danger and classroom misbehavior. Next participants completed the implicit measure of dehumanization. Finally, they completed both implicit and explicit measures of racial bias. The entire study was administered online.

Measures.

Independent Variables.

Dehumanization of Black Americans. Participants' tendency to dehumanize Black Americans was assessed with the dehumanization Implicit Association Test (D-IAT; see Appendix D). The D-IAT is designed to assess the strength of the association between Blacks and apes (Goff et al., 2008). It requires participants to provide responses to pairings of Black/White, ape/big cat words (e.g., ape, monkey, baboon, and lion, tiger, panther). It contrasts apes and big cats based on research that has shown that big cats tend to be seen as more aggressive and associated with Africa and that they are less likely to be popular or liked by people (Goff et al., 2008). Thus, big cats, as a control, lessen the possibility that Black-ape pairings stem from associations between Black Americans and violence, Africa, or other negative perceptions (Goff et al., 2008). *D*-scores (indices of effect size) were computed based on participant response times using the suggested procedure (Greenwald, Nosek, & Banaji, 2003). Higher scores on D-IAT indicate higher levels of dehumanization. Though there is no

psychometric information available from previous studies regarding the D-IAT, research has found that IATs typically show internal consistency between .70 - .90 (Hofmann, Gawronski, Gschwendner, Le, & Schmitt, 2005; Nosek, Greenwald, & Banaji, 2006).

Demographic information. Participants reported their race. Additionally, participant age and gender were recorded to assess potential associations with dehumanization scores and/or outcomes (Appendix E).

Dependent variables.

Choice of disciplinary measure. Choice of disciplinary measure was assessed by asking participants to indicate their response to the following question: "Which of the following disciplinary measures would best address the student's misbehavior?" Responses were multiple choice and included seven options: (1) engaging in a discussion with the student, (2) giving the student a warning, (3) calling the student's parent's, (4) sending the student to the main office, (5) bringing a school security into the classroom, (6) giving the student detention, and (7) referring the student for suspension. After making the selection, participants were asked to explain why they chose that particular disciplinary measure in an open-end format (Appendix F).

Perceived effectiveness of selected disciplinary measure. Participants were asked to report how effective they thought the disciplinary measure they chose would be in correcting the student misbehavior by using a 5-point scale ranging from 1 (Not at all effective) to 5 (Very effective) (Appendix F).

Perceived harshness of disciplinary measures. Participants were asked to rank each of the seven disciplinary measures on a scale ranging from 1 (least harsh) to 7 (most harsh) (Appendix F). The seven disciplinary measures were listed in the above order of harshness based on preliminary pilot data from 12 research assistants.

Mediators.

Empathy with the student. Participants' ability to empathize with the student in the scenario was assessed using a 4-item measure newly developed for this study (Appendix G). The measure was adapted from the 7-item Perspective Taking Subscale of the Interpersonal Reactivity Index (IRI). The original IRI is designed to evaluate the empathic ability to view the world from the psychological point of view of others (Davis, 1980; Pulos, Elison, & Lennon, 2004). In this study, participants were asked to indicate how well statements regarding their empathic tendencies toward the student in the scenario describe them. Items were scored on a 5-point Likert scale from 1 (Does not describe me well) to 5 (Describe me very well). The scale was found to have acceptable internal consistency in this study ($\alpha = .70$).

Beliefs about animal learning. Participants' beliefs about effective strategies for animals to learn were assessed using a single item measure developed for the study: "Nonhuman animals (e.g., dogs, apes, pigeons, etc.) learn best through conditioning processes (e.g., rewards, punishment, reinforcement, etc.) than through reasoning processes (e.g., speak to their morality, emotion, and logic)" (Appendix H). Participants indicated how much they agreed with the statement on a scale that ranges from 1 (Strongly disagree) to 4 (Strongly agree).

Beliefs about human learning.[2] Participants' beliefs about effective strategies for humans to learn were also assessed using a 2-item measure developed for the present study (Appendix H). Those items were: "Human is the only animal that can learn through reasoning processes" and "Humans learn best through reasoning processes (e.g., speak to their morality, emotion, and

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[2] The *Beliefs about animal learning* and *Beliefs about human learning* measures were created for this study and originally constituted one 3-item scale intended to assess participant perceptions of how both animals and humans learn. An exploratory factor analysis was conducted after data were collected to further assess the constructs and structure of the measure. The analyses indicated that two distinct factors were underlying participant beliefs about organismal learning. Thus, the measure was separated and assessed as two separate scales.

logic) than through conditioning processes. (e.g., rewards, punishment, reinforcement, etc.)."

Participants indicated how much they agreed with each statement on a scale that ranges from 1 (Strongly disagree) to 4 (Strongly agree). The scale was found to have high internal consistency in this study ($r = .85$).

Perceived threat of physical danger.[3] The extent to which participants perceived the student as a threat to the physical wellbeing of the teacher and/or other students was assessed using a 4-item measure developed for this study (Appendix I). Example items include: "I fear that the student poses a physical danger to other students in the classroom" and "I fear that the student will take hostile action toward the teacher." Participants indicated how much they agreed with each statement on a 5-point Likert scale from 1 (Strongly Disagree) to 5 (Strongly Agree). The scale was found to have high internal consistency in this study ($\alpha = .87$).

Perceived threat of classroom misbehavior. The extent to which participants perceived the student as a threat to the teacher's authority and classroom learning environment was assessed using a newly developed 4-item measure (Appendix I). Example items include: "The student's misbehavior may disrupt the classroom learning environment" and "The student's misbehavior may undermine the teacher's authority in the classroom." Participants indicated how much they agreed with each statement on a 5-point Likert scale from 1 (Strongly Disagree) to 5 (Strongly Agree). The scale was found to have acceptable internal consistency in this study ($\alpha = .63$).

Control variables.

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[3] The *Perceived threat of physical danger* and *Perceived threat of classroom misbehavior* measures were created for this study and originally constituted one 8-item scale intended to assess participants' perceptions of threat from the students in the scenarios. An exploratory factor analysis was conducted after data were collected to further assess the constructs and structure of the measure. The analyses indicated that two distinct factors were underlying participant perceptions of student threat. Thus, the measure was separated and assessed as two separate scales.

Racial bias. Participants' racial bias was assessed using both implicit and explicit measures. Race-IAT (Appendix J; Rudman & McLean, 2015; $\alpha = .73$) is an implicit measure of racial bias and designed to assess the strength of the association between race (e.g., Black vs. White) and positive or negative words (e.g., wonderful vs. evil). Similarly to the D-IAT, *d*-scores were computed to assess participants' pro-White/anti-Black attitudes (Greenwald et al., 2003). Participants' racial bias was also assessed with the 8-item Symbolic Racism 2000 scale (Appendix K; Henry & Sears, 2002; Sears & Henry, 2005), which is an explicit measure of racial bias. Example items include "It's really a matter of some people not trying hard enough; if blacks would only try harder they could be just as well off as whites" and "How much of the racial tension that exists in the United States today do you think blacks are responsible for creating?" The scales vary item to item. A composite score was computed such that higher numbers indicating greater anti-Black racial attitudes. The scale demonstrated high internal consistency in this study (i.e., $\alpha = .81$).

Analysis Plan

Data were tested first for assumption violations for normality, linearity, and homoscedasticity using descriptive statistics. Because the choice of disciplinary measures was significantly and positively skewed, with less than 30% above option 3 (i.e., calling home), the variable was dichotomized based on two broad categories of disciplinary measures: teacher-mediated vs. exclusionary discipline.[4] Additionally, bivariate correlations among all variables

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[4] In order to examine the effects student race and gender on participant choice of disciplinary measure, a multinomial logistic regression was conducted first. However, the test resulted in too many zeroes, which could result in an unreliable estimate, due to the large number of outcomes assessed simultaneously (i.e., seven outcomes). Consequently, we aggregated the seven disciplinary measures to create a dichotomous variable. Specifically, the dichotomized variable encompassed two-different types of disciplinary measures: teacher-mediated disciplinary measures and exclusionary disciplinary measures. Teacher-mediated disciplinary measures involved disciplinary measures that only involved the teacher and the student themselves (i.e., discussing the misbehavior with the student or giving the student a warning),

were conducted and evaluated before the main hypothesis testing. Participant demographic characteristics that are significantly associated with other predictors (i.e., student race, student gender, and dehumanization scores) and/or the outcomes were included in the hypothesis testing as control variables. Examinations of correlation coefficients revealed that participant age was significantly associated with student gender. Therefore, participant age was included in all the analyses as a control variable. Because the hypotheses were concerned about the effects of dehumanization above and beyond the general racial bias, Race-IAT and symbolic racism scores were also included in the hypotheses testing as covariates.

Next, participant rankings of disciplinary measure harshness were evaluated. This was done by generating frequency tables for each disciplinary measure. The goal of this analysis was to examine whether and how participants conceptualized and rank-ordered seven different disciplinary measures was consistent with how we conceptualized them prior to conducting hypothesis testing.

In order to address the first goal of Study 1 (i.e., whether dehumanization predicts endorsement of harsher disciplinary measures toward Black vs. White students over and above racial attitudes), a binomial logistic regression was conducted. The full model included covariates (i.e., implicit bias, explicit bias, and participant age), the main effects of each predictor (i.e., student race, student gender, dehumanization, and participant race), six two-way interactions (i.e., student race X student gender; student race X participant race; student race X dehumanization; student gender X participant race; student gender X dehumanization; participant race X dehumanization), four three-way interactions (student race X student gender X participant

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while exclusionary discipline included disciplinary measures that involved the teacher, the student, and a third-party such as a parent or other school official (i.e., calling home, calling in a school resource officer, sending the student to the main office, giving the student detention, or referring the student for suspension).

race; student race X student gender X dehumanization; student gender X participant race X dehumanization; student race X participant race X dehumanization), and the four-way interaction between all predictors. Note that all categorical variables were dummy-coded (White and female as the reference group for race and gender, respectively), and continuous variables were grand-mean-centered. When lower-order effects were significant while the higher-order effects were not, the step-down procedure suggested by Aiken and West (1991) was used to further probe these results. Specfiically, it was examined if lower-order effects remain significant even after removing non-significant higher-order interactions. The presence of either a significant two-way interaction between student race and dehumanization or the three-way interaction among participant race, student race, and dehumanization would provide initial evidence supporting the hypothesis. All inferential tests employed the traditional $p < .05$ threshold of statistical significance.

Finally, a moderated parallel multiple mediator model using PROCESS (Hayes, 2013) was conducted to address the second goal (i.e., to investigate whether the link between dehumanization and disciplinary measures are mediated by empathy, beliefs about animal and human learning, perceived threat of physical danger, and perceived threat of classroom misbehavior) for Black students but not for White students. Specifically, all potential mediators were entered in the model simultaneously (i.e., Model 10 in PROCESS; see Figure 1 below) with dehumanization as a predictor, choice of exclusionary discipline as an outcome, implicit bias, explicit bias, participant age and participant race as control variables, and student race and student gender as moderators. The analysis was run with $N = 5,000$ resamples.

Figure 1. Moderated mediation analysis predicting choice of exclusionary discipline
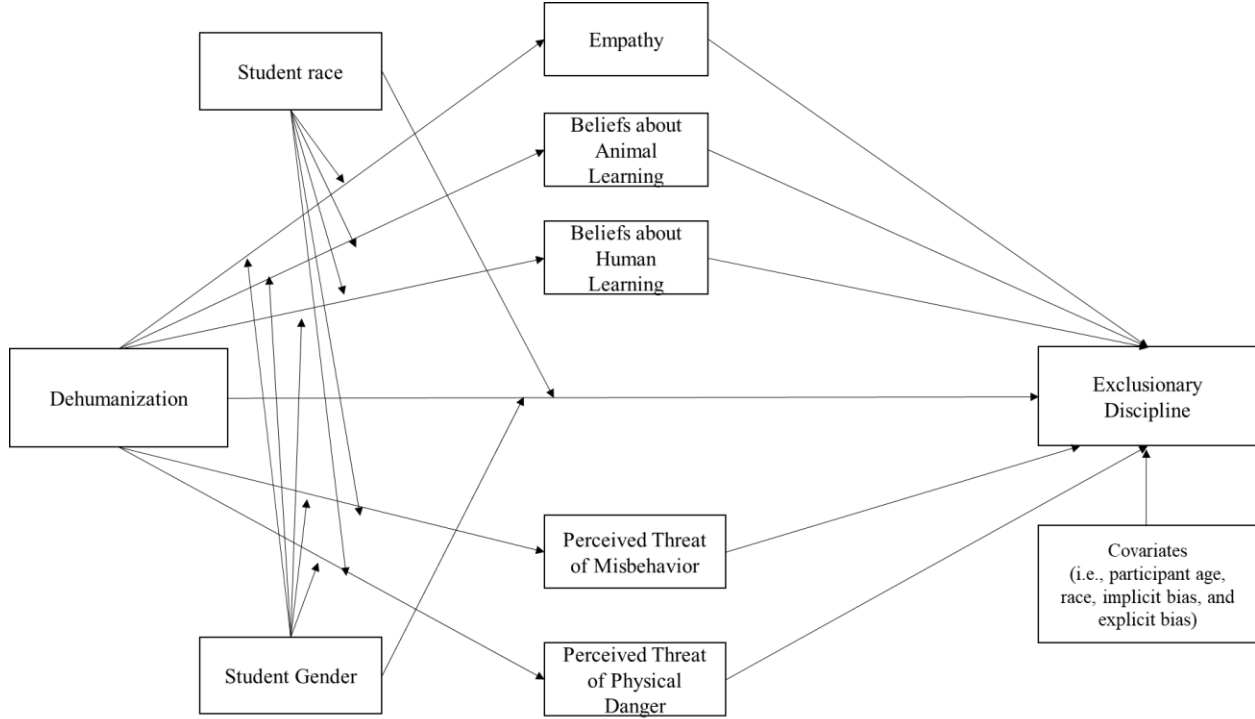
Results

Descriptive Statistics

D-IAT d-scores were significantly and positively associated with Race-IAT d-scores. This indicates that participant who were more likely to dehumanize Black Americans were also likely to have higher levels of implicit pro-White/anti-Black racial bias. However, the strength of the correlation between the D-IAT and Race-IAT was small, which is consistent with prior research (Goff et al., 2014; Haslam, 2006). This suggests that dehumanization and implicit racial bias are interrelated, yet independent psychological processes. Dehumanization was not significantly associated with participant choice disciplinary measures, nor with any other variable.

Further examination of the correlation coefficients suggests that non-White participants scored significantly lower on the Race-IAT than White participants. This indicates that non-

White participants were less likely to have a pro-White/anti-Black bias than their White counterparts within this sample. Additionally, participant race was associated with perceived threat of physical danger, such that Black participants perceived more threat of physical danger from the student in the scenario, as compared to White participants. Finally, student gender was negatively associated with perceived threat of classroom misbehavior, such that participant perception of misbehavior was significantly lower in the male student misbehavior scenarios (i.e., DeShawn and Brad) than in female student misbehavior scenarios (i.e., Lakisha and Allison). This suggests that participants perceived female student misbehaviors as a greater threat to the classroom than male student misbehaviors. Table 1 presents the means, standard deviations, and bivariate correlations among all major variables.

Table 1. Correlations among the main variables (Study 1)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Dehumanization	—	-.027	.025	-.063	.046	.041	.044	-.024	.035	-.096	-.039	.142*	-.019	-.053	.053
2. Student Race		—	.009	.047	.002	-.012	-.088	-.043	.065	-.008	-.049	-.130	.036	.052	-.052
3. Student Gender			—	.118	.070	.144*	.002	-.067	-.093	-.010	-.171**	.030	.030	.009	-.009
4. Participant Race				—	-.055	-.104	.098	-.051	-.010	.136*	.003	-.248**	-.098	-.011	.011
5. Participant Gender					—	-.004	-.029	-.125	-.184**	.076	-.146*	.104	.296**	-.062	.062
6. Age						—	.001	-.161*	.076	.020	.049	.037	.037	.010	-.010
7. Empathy							—	.106	-.115	-.134*	.000	-.044	-.202**	-.109	.109
8. Beliefs - Animal Learning								—	.001	-.146*	.270**	-.041	.201**	.179**	-.179**
9. Beliefs - Human Learning									—	-.056	.108	-.021	-.104	.050	-.050
10. Perceived Threat: Danger										—	.001	-.061	.224**	.086	-.086
11. Perceived Threat: Misbehavior											—	.045	-.009	.080	-.080
12. Race-IAT												—	.154*	-.075	.075
13. Symbolic Racism													—	.041	-.041
14. Exclusionary Discipline														—	-1.00**
15. Teacher Discipline															—
Mean or Frequency	.237	103	114	85	150	19.53	3.74	3.36	2.55	1.87	3.58	0.25	3.12	133	95
Standard Deviation or Proportion	.024	45.2%	50.0%	37.3%	67.6%	.411	.973	.717	1.424	.763	.636	.421	.473	58.3%	41.7%

Note. * indicates $p < .05$, and *** indicates $p < .0001$.
Note. Frequency and proportion provided for each dichotomous variable are the number/proportion of participants in the reference group.

Table 2 presents participant's rankings of perceived harshness of each disciplinary measure. Examinations of the frequency table revealed how the participants rank-ordered the seven disciplinary measures in terms of their harshness was generally consistent with how we rank-ordered them except for two disciplinary measures. It was originally thought that giving the student the detention would be ranked as a harsher disciplinary measure than calling the school security officer based on preliminary pilot data from a sample of 12 research assistants. Additionally, based on personal anecdotes, it was thought that discipline through exclusion (i.e., removing a student from a classroom) would be considered harsher. However, the majority of participants ranked calling a school security officer as being harsher than giving the student detention. Overall rankings of disciplinary measures in order from least to most harsh among the participants are as follows: 1) discuss with the student why texting in class is an inappropriate behavior, 2) give the student a warning, 3) call the student's parents, 4) send the student to the main office, 5) give the student detention, 6) bring in a school security officer, and 7) refer the student for suspension.

Table 2. *Frequency and proportion of participants who gave the 1ˢᵗ-7ᵗʰ ranking within each disciplinary measure*

	1st	2nd	3rd	4th	5th	6th	7th
Discussion	152 (66.7%)	63 (27.6%)	1 (.4%)	2 (.9%)	0 (0%)	7 (3.1%)	3 (1.3%)
Warning	68 (29.8%)	147 (64.5%)	4 (1.8%)	0 (0%)	1 (.4%)	3 (1.3%)	5 (2.2%)
Call the student's parents	2 (.9%)	3 (1.3%)	91 (39.9%)	77 (33.8%)	39 (17.1%)	14 (6.1%)	2 (.9%)
Send the student to the main office	1 (.4%)	2 (.9%)	85 (37.3%)	92 (40.4%)	43 (18.9%)	4 (1.8%)	1 (.4%)
Call the school security officer	3 (1.3%)	6 (2.6%)	5 (2.2%)	17 (7.5%)	65 (28.5%)	89 (39.0%)	43 (18.9%)
Give the student detention	0 (0%)	3 (1.3%)	38 (16.7%)	37 (16.2%)	79 (34.6%)	69 (30.3%)	2 (.9%)
Refer the student for suspension	2 (.9%)	4 (1.8%)	4 (1.4%)	3 (1.3%)	1 (.4%)	42 (18.4%)	172 (75.4%)

Note. The presentation order in this table was based on the original disciplinary measure ranking based on preliminary pilot data for a sample of research assistants. Participants were asked to rank the harshness of each disciplinary measure from 1 (least harsh) to 7 (most harsh).

Hypothesis Testing

Table 3 presents the results from the logistic regression examining the relationship between the predictors (i.e., student race, student gender, participant race, and dehumanization) and participant choice of disciplinary measure. The overall logistic regression model was not statistically significant $\chi^2(18) = 11.804$, $p = .857$, suggesting that the full model does not describe the data well. Additionally, analysis of the regression coefficients revealed no significant main effects or interactions, suggesting that there is no evidence to support the hypothesized association between dehumanization and choice of harsh disciplinary measures for Black students as compared to White students.

Table 3. Dehumanization predicting choice of exclusionary discipline

	B	S.E.	Wald	Sig.	Exp (B)	95% C.I. for Exp (B)	
						Lower	Upper
Age	.017	.034	.251	.617	1.017	.952	1.087
Race-IAT scores	-.424	.632	1.375	.241	.654	.322	1.330
Symbolic Racism scores	.121	.289	.176	.675	1.129	.640	1.991
Dehumanization scores	2.581	1.601	2.599	.107	13.217	.573	304.890
Student Race	.382	.616	.384	.536	1.465	.438	4.898
Student Gender	.724	.712	1.032	.310	2.062	.510	8.328
Participant Race	.812	.633	1.647	.199	2.253	.652	7.788
Dehumanization X Student Race	-3.707	1.978	3.514	.061	.025	.001	1.184
Dehumanization X Student Gender	-3.584	2.055	3.043	.081	.028	.000	1.557
Dehumanization X Participant Race	-2.291	1.838	1.554	.213	.101	.003	3.710
Student Race X Student Gender	1.540	1.041	2.187	.203	4.663	.606	35.884
Student Race X Participant Race	1.261	.990	1.623	.288	3.528	.507	24.544
Student Gender X Participant Race	1.245	.902	1.905	.167	3.472	.593	20.332
Dehumanization X Student Race X Student Gender	3.858	2.704	2.036	.154	47.372	.237	9485.846
Dehumanization X Student Race X Participant Race	2.287	2.378	.925	.336	9.843	.093	1041.105
Dehumanization X Student Gender X Participant Race	2.991	2.382	1.577	.209	19.913	.187	2123.365
Student Race X Student Gender X Participant Race	-1.874	1.228	2.330	.127	.154	.014	1.703
Dehumanization X Student Race X Student Gender X Participant Race	-1.862	3.231	.332	.564	.155	.000	87.448
Constant	-1.881	1.224	2.361	.124	.152		

Note. † indicates p < .10

Finally, results of the moderated mediation analysis revealed that the overall model was not significant, $-2LL(12) = 290.522$, $p = .202$, *Nagelkerke* $R^2 = .103$, suggesting that the specified model did not fit the data well. The results also showed that there is no evidence of a conditional direct effect of dehumanization on choice of exclusionary measure: Allison ($b = .34$, $SE = .63$, $z = .54$, $p = .59$, $CI = [-.89, 1.58]$); Brad ($b = -.08$, $SE = .60$, $z = -.14$, $p = .89$, $CI = [-1.25, 1.09]$); Lakisha ($b = .21$, $SE = .61$, $z = -.34$, $p = .73$, $CI = [-1.43, 1.00]$); and DeShawn ($b = -.64$, $SE = .63$, $z = -1.01$, $p = .31$, $CI = [-1.88, .60]$).There was also no evidence of indirect effect of dehumanization on choice of exclusionary measure through any of the five mediators (Table 4).

Table 4. Conditional indirect effects between dehumanization and disciplinary measure choice

	B	*SE*	*Lower CI*	*Upper CI*
Empathy				
Allison	.006	.084	-.179	.172
Brad	.057	.093	-.074	.297
Lakisha	-.113	.129	-.448	.045
DeShawn	-.067	.094	-.304	.075
Animal Learning				
Allison	-.166	.169	-.531	.134
Brad	.091	.176	-.220	.489
Lakisha	-.160	.164	-.553	.091
DeShawn	.097	.146	-.171	.405
Human Learning				
Allison	.018	.068	-.116	.178
Brad	.029	.072	-.102	.202
Lakisha	-.016	.069	-.185	.101
DeShawn	-.005	.055	-.129	.112
Physical Danger				
Allison	-.023	.081	-.227	.116
Brad	-.039	.074	-.215	.089
Lakisha	-.034	.073	-.217	.076
DeShawn	-.050	.088	-.266	.103
Misbehavior				
Allison	-.011	.067	-.179	.118
Brad	-.005	.056	-.132	.110
Lakisha	-.009	.064	-.165	.107
DeShawn	-.003	.057	-.133	.107

Follow-Up Analyses

Given that the majority of participants chose teacher-mediated disciplinary measures (n = 133, 58.3%) as opposed to exclusionary disciplinary measures (n = 95, 41.7%), follow-up analyses were conducted to determine if there were significant differences between the two groups. A Chi-square analysis revealed that participants who chose exclusionary disciplinary measures did not differ significantly from participants who chose teacher-mediated disciplinary measures by gender [χ^2(1, 222)= .844, p = .36] or by race [χ^2(1, 222) = .026, p = .87]. Additionally, an independent samples t-test revealed that participants who chose exclusionary disciplinary measures (M = 19.50, SD = 4.47) did not differ significantly from participants who chose teacher-mediated disciplinary measures (M = 19.59, SD = 3.58) by age, t(226) = -.155, p = .88.

Table 5 provides the correlations between all major variables split by choice of disciplinary measure (i.e., exclusionary discipline vs. teacher-mediated discipline). Results revealed that the pattern of correlations was largely the same between both participants whose selected exclusionary disciplinary measures and those who did not.

However, there was a significant difference between the two groups of participants in perceived effectiveness of the chosen disciplinary measures. Specifically, results of an independent samples t-test revealed that participants who chose exclusionary disciplinary measures (M = 2.81, SD = .66) perceived their chosen disciplinary measures to be more effective at addressing the student's misbehavior than participants who chose teacher-mediated disciplinary measures (M = 2.35, SD = .64), t(226) = -5.249, p <.000.

Table 5. Correlations among the main variables (Study 1) split by choice of exclusionary vs. teacher-mediated discipline

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Dehumanization	—	-.071	.020	-.077	.028	.036	.123	.027	.047	-.141	.030	.049	-.096
2. Student Race	.029	—	.009	.081	.015	.111	-.116	-.161	.066	-.015	.141	-.126	.054
3. Student Gender	.043	.008	—	.138	.078	.199	-.004	-.137	-.096	.101	-.162	.093	-.108
4. Participant Race	-.053	.025	.103	—	-.041	-.102	.186	-.054	.014	.093	.007	-.158	-.201
5. Participant Gender	.055	-.002	.066	-.066	—	.089	.007	-.038	-.156	.065	-.074	-.055	.123
6. Age	.045	-.082	.114	-.106	-.053	—	-.014	-.015	.175	.064	.012	.169	-.119
7. Empathy	-.033	-.059	.008	.033	-.065	.012	—	.023	-.145	-.084	-.110	-.135	-.243*
8. Beliefs - Animal Learning	-.041	.002	-.036	-.049	-.157	-.229*	.186*	—	-.117	-.210*	.206*	.042	-.016
9. Beliefs - Human Learning	.030	.059	-.091	-.026	-.199*	.01	-.085	.050	—	.106	-.024	.104	.038
10. Perceived Threat: Danger	-.042	-.010	-.107	.176*	.094	-.012	-.163*	-.144	-.208*	—	.024	-.033	.229*
11. Perceived Threat: Misbehavior	-.086	-.183*	-.179*	.001	-.185*	.069	.087	.290**	.193*	.030	—	.194	.157
12. Race-IAT	.213*	-.127	-.013	-.314**	.216*	-.036	.004	.065	-.104	-.074	-.043	—	.069
13. Symbolic Racism	.049	.021	.015	-.022	.419**	.071	-.167	-.320*8	-.214*	.216*	-.127	.221*	—

Note. * indicates p < .05, and ** indicates p < .01.
Note. Correlations above the diagonal line represent associations for participants who selected exclusionary discipline measures, while correlations below the diagonal line represent associations for those who selected teacher-mediated disciplinary measures.

Study 1 Discussion

Study 1 sought to determine whether participant's choice of disciplinary measure for students would systematically differ based on participant dehumanization, participant race, student race, and/or student gender. It also examined whether the relationship between dehumanization and choice of disciplinary measure is mediated by factors such as empathy with the student, an individual's beliefs about how animals and humans learn, and perceived threat of physical danger or misbehavior from the students. The present results failed to provide evidence supporting the hypotheses. This suggests that, at least in the present sample, the presence of dehumanizing beliefs about Black Americans may not always trigger negative behavioral responses (i.e., choice of harsher disciplinary measure) toward Black students.

Interestingly, the belief that animals, not humans, learn best through conditioning as opposed to reasoning predicted choice of exclusionary disciplinary measures. This finding is consistent with prior research about animal learning indicating that behavior is best shaped through conditioning or punishment (Pavlov, 1927; Skinner, 1937; Skinner, 1938; Staddon & Cerutti, 2003). However, in the absence of the association between dehumanization and animal learning, our hypothesis that perceptions of individuals as less than human are associated with harsher treatment (Viki, Osgood, & Phillips, 2013) cannot be supported.

Study 2

The overall goal of Study 2 was to establish a *causal* relationship between dehumanization and preference for use of harsher disciplinary measures for Black students than for White students. It was hypothesized that participants who were primed with ape-related words would prefer to use harsher disciplinary measure for Black students than those who were primed with big cat-related words. It was further hypothesized that the link between the ape

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priming and harsh disciplinary measure would be mediated by (a) decreased empathy toward the

student, (b) a belief that nonhuman animals, like apes, are better disciplined through conditioning

than through reasoning, (c) a belief that humans are better disciplined through reasoning than

conditioning, (d) the perception that the student posed a threat of physical danger, and/or (e) the

perception that the student posed a threat of misbehavior in the classroom. Finally, it was

hypothesized that there would be no difference in the preferred disciplinary measures for White

students between participants who were primed with ape-related words and those who were

primed with big cat-related words. The study design was a 2 (priming: apes vs. big cats) x 2

(student race: Black vs. White) x 2 (student gender: Boy vs. Girl) x 2 (participant race: Black vs.

White) between-subjects design.

Method

      Participants. A total of 379 undergraduate psychology students[5] were recruited from the

SONA online participant registry for participation in this study.[6] Two hundred and thirty-five

participants who had below 75% study completion or experienced computer malfunctions and

were not able to complete all 3 sections of the survey were excluded from the current secondary

analysis, resulting in a total of 144 analyzable cases. Similar to participants in Study 1, the

majority of the participants were female (65.6%). There were more participants who self-

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[5] Master's of Teaching Students (pre-service teachers) in the School of Education at Virginia Commonwealth University (VCU), the College of William & Mary (W&M), and the University of Maryland, Baltimore County (UMBC) were originally proposed as the sample size and recruited to participate in the study. Due to recruiting difficulties, however, VCU undergraduate students were recruited to participant instead.

[6] The target sample was two hundred and eighty participants. this sample size was determined based on the rule of thumb for conducting multinomial logistic regressions with 14 predictors and 20 participants/predictor. However, it should be also noted that an a priori power analysis for conducting ANCOVA by using G*Power (Faul, Erdfelder, Lang, & Buchner, 2007) indicated that a minimum of 130 participants were necessary to detect a medium effect size ($f = .25$) at .80 power for the continuous outcome.

identified as White American (42.2%) than in Study 1; however, participants were still relatively

racially/ethnically diverse, with most participants identifying as Black/African American (18%),

Asian (17.6%), Latinx (8.6%), and Multiracial (13.5%). Participants ranged in age from 18 to 36

(age $M = 19.93$, $SD = 2.49$), though the majority of participants were between the ages of 18 and

20 (77.5%).

Procedure. Participants first read a description of the study (Appendix A). Interested

students who met the eligibility criteria (i.e., at least 18 years old) were then re-directed to an

information sheet (Appendix B). If they agreed to participate in the study, they were asked to

click a button on the computer screen in order to proceed to the study.

First, participants were randomly assigned to one of two priming conditions: apes vs. big

cats (Goff et al., 2008). Participants were primed using an animal differentiation task adapted

from the attentional vigilance task (Eberhardt et al., 2004; Goff et al., 2008 Study 1).

Specifically, participants in each condition were asked to differentiate pictures of real animals

from images of animal drawings and toys taken from Google Images (Appendix L). Participants

saw 5 sets of images, each containing an image of one real and one fake animal corresponding to

their prime condition (e.g., either apes or big cats) and were asked to select the real animal as

quickly as possible.

After the priming, participants read one of the four student scenarios same as Study 1.

Next, participants completed the series of measures included in Study 1 above (i.e., a disciplinary

measure the teacher should use, perceived effectiveness of the selected disciplinary measure,

perceived harshness of all the disciplinary measures included as options, empathy toward the

student in the scenario, beliefs about animal and human learning, perceived threat of the student

in the scenario).

Analysis Plan

First, the same set of descriptive statistics as in Study 1 was conducted to test for assumption violations for normality, linearity, and homoscedasticity. Examinations of skewness, kurtosis, and histograms indicated choice of disciplinary measures was significantly and positively skewed. Thus, the outcome was dichotomized based on two broad categories of disciplinary measures: teacher-mediated vs. exclusionary discipline. Several other variables (i.e., student race, student gender, and prime condition) were slightly kurtotic, but no corrections were made to them given that multivariate approaches are robust to violations of the normality assumption (Tabachnick & Fidell, 2012). Bivariate correlations suggest that none of the demographic characteristics systematically varied across conditions. The frequency table for rankings of harshness for the disciplinary measures revealed the same results as in Study 1 (Table 6).

Table 6. *Frequency and proportion of participants who gave the 1ˢᵗ-7ᵗʰ ranking within each disciplinary measure*

	1st	2nd	3rd	4th	5th	6th	7th
Discussion	147 (60.2%)	78 (32.0%)	0 (0%)	1 (.4%)	1 (.4%)	7 (2.9%)	10 (4.1%)
Warning	78 (32.0%)	143 (58.6%)	3 (1.2%)	0 (0%)	2 (.8%)	9 (3.7%)	9 (3.7%)
Call the student's parents	1 (.4%)	3 (1.2%)	87 (35.7%)	79 (32.4%)	62 (25.4%)	11 (4.5%)	1 (.4%)
Send the student to the main office	0 (0%)	3 (1.2%)	86 (35.2%)	90 (36.9%)	52 (21.3%)	11 (4.5%)	2 (.8%)
Call the school security officer	7 (2.9%)	6 (2.5%)	11 (4.5%)	20 (8.2%)	55 (22.5%)	93 (38.1%)	52 (21.3%)
Give the student detention	1 (.4%)	5 (2.0%)	53 (21.7%)	52 (21.3%)	66 (27.0%)	65 (26.6%)	2 (.8%)
Refer the student for suspension	7 (3.8%)	5 (2.7%)	3 (1.6%)	2 (1.1%)	3 (1.6%)	39 (21.3%)	124 (67.8%)

Note. The presentation order in this table was based on the original disciplinary measure ranking based on preliminary pilot data for a sample of research assistants. Participants were asked to rank the harshness of each disciplinary measure from 1 (least harsh) to 7 (most harsh).

In order to address the first goal of Study 2 (i.e., to determine if preference for harsher disciplinary measures toward a student differ as a function of animal prime condition, student race, and student gender), a 2 (Prime: Apes vs. Big cats) x 2 (Student race: Black vs. White) X 2 (Student gender: Male vs. Female) X 2 (Participant race: Black vs. White) binominal logistic regression was conducted. In the analysis, participants' pre-existing dehumanizing beliefs in addition to implicit and explicit racial bias were entered in the model as covariates. It should be noted that all categorical variables were dummy-coded, and continuous variables were grand-mean-centered before being entered into the model. Specifically, prime condition was coded such that apes were the reference group (i.e., 0 = apes, 1 = big cats). White and female served as the reference groups for race and gender, respectively.

To test the second hypothesis, I conducted a moderated parallel multiple mediator model with *N* = 5,000 resamples using PROCESS (Hayes 2013). Specifically, I used Model 10 in PROCESS (see conceptual model below) with the prime condition (Apes vs. Big cats) as a predictor, choice of exclusionary disciplinary measures as an outcome, empathy, beliefs about animal learning, beliefs about human learning, perceived threat of physical danger, and perceived threat of classroom misbehavior as mediators, student race and gender as moderators, and participant race, dehumanization, implicit bias, and explicit bias as covariates.

Figure 2. Moderated mediation analysis predicting choice of exclusionary discipline
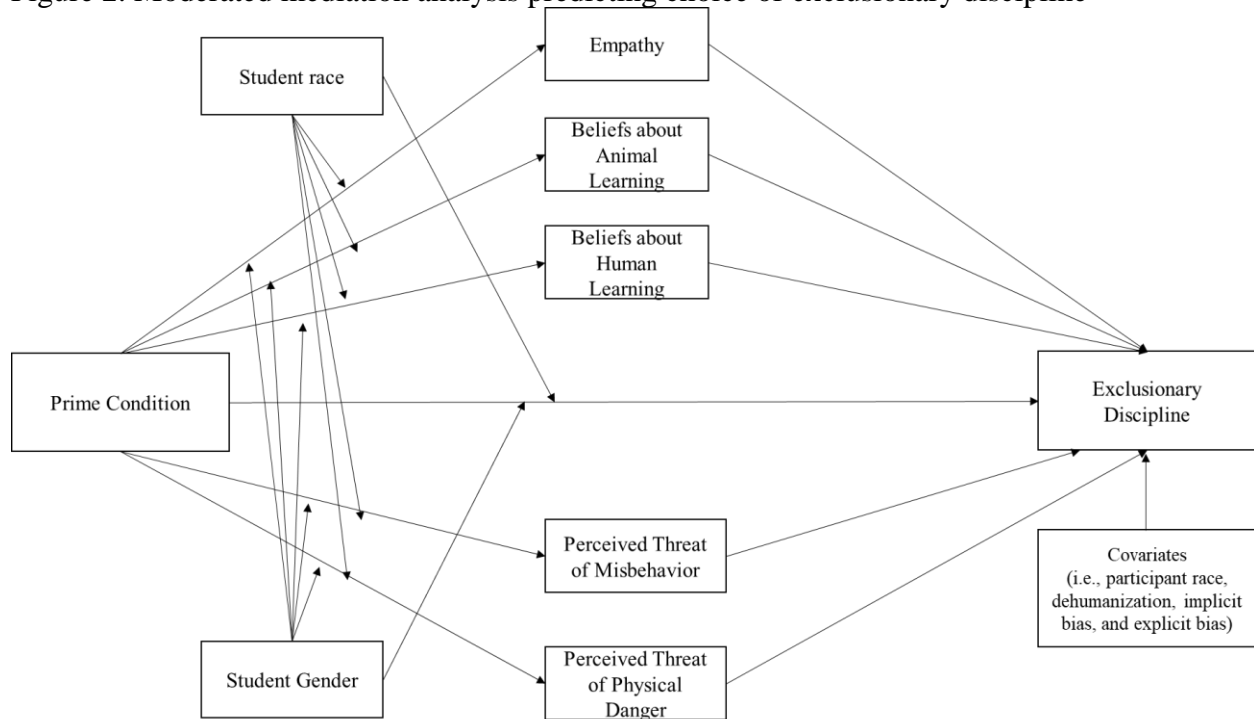
Results

Descriptive Statistics

Table 7 presents the means, standard deviations, and bivariate correlations among all major variables. Prime condition was not correlated with any other variable. Participant race was significantly negatively associated with the Race-IAT scores and composite Symbolic Racism scores. That is, White participants scored higher on the Race-IAT and Symbolic Racism scale than Black participants. Much like in Study 1, participant race was also positively correlated with perceived threat of physical danger from the student in the scenario, suggesting that Black participants perceived more threat of physical danger from the student, as compared to White participants. Furthermore, perceived threat of classroom misbehavior from the student in the scenarios was significantly and positively correlated with choice of exclusionary discipline. That is, as perceived threat of class misbehavior increased, so did the likelihood of participants choosing an exclusionary disciplinary measure based on the scenario.

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Table 7. Correlations among the main variables (study 2)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Prime Condition	—	.024	.017	-.091	-.084	-.041	-.019	-.025	-.071	-.006	-.079	-.041	.071	.100	-.121	.121
2. Student Race		—	-.008	-.123	.094	.006	-.020	.068	-.148*	-.250**	.010	.176**	.007	.062	.006	-.006
3. Student Gender			—	-.049	.088	-.039	-.001	.018	-.031	-.060	-.043	-.072	-.110	.080	.067	-.067
4. Participant Race				—	-.055	.151	.036	-.141	.204*	.048	-.101	-.053	-.381**	-.244*	.143	-.143
5. Participant Gender					—	.066	.030	-.025	.038	-.018	-.189**	-.070	-.013	.041	.100	-.100
6. Participant Age						—	-.039	-.026	.067	.043	.060	.090	-.031	.031	-.033	.033
7. Dehumanization							—	-.058	-.014	.010	.042	.061	.064	.028	.082	-.082
8. Empathy								—	-.327**	-.152*	.045	-.031	-.157*	-.078	-.152*	.152*
9. Threat - Danger									—	.233**	-.121	.053	.112	.258**	.070	-.070
10. Threat – Misbehavior										—	.132*	.100	.116	.161*	.152*	-.152*
11. Beliefs - Animal Learning											—	.270**	.056	-.072	-.056	.056
12. Beliefs - Human Learning												—	.009	-.032	.092	-.092
13. Race-IAT													—	.281**	-.005	.005
14. Symbolic Racism														—	.073	-.073
15. Exclusionary Discipline															—	-1.00**
16. Teacher Discipline																—
Mean or Frequency	127	124	121	103	160	19.53	.269	3.36	1.83	3.55	3.24	3.383	.269	.417	137	107
Standard Deviation or Proportion	52%	50.8%	49.6%	70.1%	65.6%	.411	.417	.717	.719	.696	.706	.983	.417	.494	56.1%	43.9%

Note. * indicates p < .05, and ** indicates p < .01.
Note. Frequency and proportion provided for each dichotomous variable are the number/proportion of participants in the reference group.

There are additional significant correlations that are worth mentioning. For example, Symbolic Racism scores were significantly positively correlated with perceived threat of both physical danger and misbehavior from the student. This finding suggests that individuals who endorse higher, as opposed to lower, levels of explicit racist bias perceived both greater physical danger and greater classroom misbehavior after reading the scenarios in general, regardless of student race or gender. Inconsistent with the prediction, but consistent with findings from Study 1, dehumanization was not associated with participant choice or with any other variable. Interestingly, student race was significantly and negatively associated with participant beliefs about human learning, which is inconsistent with our prediction driven by prior dehumanization research. Specifically, participants in the Black student scenario conditions reported greater endorsement of beliefs that humans learn best through rationalization as opposed to conditioning. Student race was also significantly negatively associated with perceived threat of physical danger and misbehavior in the classroom from students in the scenarios, such that participants perceived more threat after reading the White student scenarios than the Black student scenarios. Potential explanations for this counterintuitive finding are provided in the "Study 2 Discussion" section below.

Hypothesis Testing

Table 8 presents the results of the binomial logistic regression. The overall model was not statistically significant, $\chi^2(18) = 26.378$, $p = .091$, suggesting that the full model does not fit well with the actual data. Further examinations of regression coefficients revealed significant effects of participant race, the student race X participant race interaction, the student gender X participant race interaction, the prime condition X student gender X participant race interaction, and the student race X student gender X participant race interaction.

Table 8. Prime condition predicting choice of exclusionary discipline

	B	S.E.	Wald	Sig.	Exp (B)	95% C.I. for Exp (B)	
						Lower	Upper
Dehumanization IAT scores	.801	.484	2.737	.098	2.228	.862	5.755
Race-IAT scores	-.227	.438	.269	.604	.797	.338	1.879
Symbolic Racism	.180	.550	.107	.743	1.197	.407	3.518
Prime Condition	.606	1.120	.292	.589	1.833	.204	16.463
Student Race	-.635	.842	.569	.451	.530	.102	2.761
Student Gender	-1.185	.828	2.050	.152	.306	.060	1.548
Participant Race	-1.671	.972	2.953	.086	.188	.028	1.265
Prime Condition X Student Race	-.206	1.345	.023	.878	.814	.058	11.357
Prime Condition X Student Gender	-1.211	1.367	.784	.376	.298	.020	4.345
Prime Condition X Participant Race	-.016	1.518	.000	.992	.984	.050	19.279
Student Race X Student Gender	-.616	1.128	.298	.585	.540	.059	4.932
Student Race X Participant Race	-2.123	1.330	2.548	.110	.120	.009	1.622
Student Gender X Participant Race	-1.946	1.368	2.024	.155	.143	.010	2.086
Prime Condition X Student Race X Student Gender	.640	1.654	.150	.699	1.896	.074	48.458
Prime Condition X Student Race X Participant Race	.290	1.838	.025	.875	1.336	.036	49.038
Prime Condition X Student Gender X Participant Race	1.942	1.841	1.113	.292	6.973	.189	257.343
Student Race X Student Gender X Participant Race	1.706	1.730	.972	.324	5.506	.185	163.539
Constant	2.087	2.246	.863	.353	8.059		

Note. † indicates $p < .10$

However, all of these significant effects became non-significant after removing non-significant higher-order interactions from the full model by following the step-down procedure suggested by Aiken and West (1991), which indicates that the model is unstable. The lack of a significant interaction between prime condition and student race indicates that there is no evidence to support the hypothesized association between ape prime and choice of harsh disciplinary measures for Black vs. White students. Taken together, these findings suggest that prime condition, student race, student gender, and participant race may shape perceptions of student misbehaviors, but do not necessarily results in differential choice of disciplinary measure for students of different races and genders.

Next, results of the moderated mediation analysis revealed that the overall model was not significant, $-2LL(14) = 175.007$, $p = .112$, *Nagelkerke* $R^2 = .179$, suggesting that the specified model did not fit well with the data. The results also showed no evidence of a conditional direct effect of dehumanization on choice of exclusionary measure in three of the four conditions: Allison ($b = -.64$, $SE = .69$, $z = -.94$, $p = .35$, $CI = [-1.99, .70]$); Lakisha ($b = -.29$, $SE = .70$, $z = -.41$, $p = .67$, $CI = [-1.66, 1.08]$); and DeShawn ($b = -1.02$, $SE = .65$, $z = -1.58$, $p = .11$, $CI = [-2.28, .25]$). However, the conditional direct effect of prime condition on choice of exclusionary discipline for Brad was significant ($b = -1.37$, $SE = .64$, z $= -2.143$, $p = .03$, $CI = [-2.63, -.12]$). Specifically, participants were more likely to choose an exclusionary disciplinary measure for Brad when they were primed with apes as opposed to big cats. This finding is counter to our prediction. Potential explanations are discussed below in the Discussion section. Finally, similar to Study 1, there was no evidence of indirect effects of dehumanization on choice of exclusionary measure (Table 9).

Table 9. Conditional indirect effects between dehumanization and disciplinary measure choice

	B	SE	Lower CI	Upper CI
Empathy				
Allison	.036	.147	-.238	.386
Brad	.104	.175	-.174	.545
Lakisha	.047	.153	-.252	.395
DeShawn	.115	.145	-.102	.470
Animal learning				
Allison	-.003	.097	-.177	.244
Brad	.010	.087	-.164	.216
Lakisha	.024	.117	-.125	.364
DeShawn	.037	.118	-.146	.334
Human Learning				
Allison	.052	.119	-.137	.352
Brad	.084	.136	-.122	.425
Lakisha	-.059	.129	-.386	.141
DeShawn	-.027	.115	-.317	.160
Physical Danger				
Allison	.099	.150	-.139	.458
Brad	.089	.143	-.117	.443
Lakisha	-.078	.137	-.421	.140
DeShawn	-.089	.133	-.396	.132
Misbehavior				
Allison	-.193	.202	-.675	.111
Brad	-.038	.123	-.288	.234
Lakisha	-.101	.176	-.539	.139
DeShawn	.054	.128	-.155	.389

Follow-Up Analyses

As in Study 1, the majority of participants in Study 2 selected teacher-mediated disciplinary measures (n = 137, 56.1%) as opposed to exclusionary disciplinary measures (n = 107, 43.9%). Consequently, follow-up analyses were conducted to determine if there were significant differences between the two groups. A Chi-square analysis revealed that participants who chose exclusionary disciplinary measures did not significantly differ from participants who chose teacher-mediated disciplinary measures by gender [$\chi^2(2, 244)= 3.08$, $p = .21$] or by race [$\chi^2(2, 244) = 3.51$, $p = .06$]. Furthermore, results of an independent samples t-test revealed that participants who chose exclusionary disciplinary measures ($M = 19.84$, $SD = 2.07$) did not significantly differ from participants who chose teacher-mediated disciplinary measures ($M = 20.00$, $SD = 2.77$) bye age, $t(242) = .517$, $p = .605$.

Table 10 reports correlations between all major variables split by choice of disciplinary measure (i.e., exclusionary discipline vs. teacher-mediated discipline). The results demonstrate that the pattern of correlations was largely the same between the two groups of participants, except in the case of one association. More specifically, the association between prime condition and participant beliefs about animal learning was significant and negative for participants who selected exclusionary disciplinary measures, but not for those who selected teacher-mediated disciplinary measures. These results indicate that participants who chose exclusionary disciplinary measures demonstrated greater endorsement of the belief that animals learn best through conditioning as opposed to reasoning when they were primed with ape images rather than to big cat images.

Table 10. Correlations among the main variables (study 2) split by choice of exclusionary vs. teacher-mediated discipline

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Prime Condition	—	.046	-.147	.077	-.118	.000	-.009	-.035	.021	-.019	-.193*	-.095	.054	.123
2. Student Race	.009	—	-.027	-.224	.141	-.087	-.162	.066	-.147	-.230*	-.051	.166	-.004	.171
3. Student Gender	.157	.006	—	-.108	.125	-.089	.041	-.019	-.009	-.220*	-.127	-.174	-.095	.055
4. Participant Race	-.175	-.040	-.027	—	-.104	.385**	.185	-.086	.228	.037	-.089	-.061	-.461**	-.292*
5. Participant Gender	.149	.032	-.008	.080	—	.118	.039	-.011	.047	-.058	-.268**	-.115	-.022	.044
6. Participant Age	-.072	.061	-.008	.099	.136	—	.056	-.168	.312**	.167	-.009	.003	-.011	.137
7. Dehumanization	-.011	.064	-.035	-.080	.004	-.080	—	.060	-.019	.071	.060	-.121	.104	.040
8. Empathy	-.051	.073	.066	-.150	-.083	.047	-.111	—	-.248*	-.104	-.051	-.037	.022	.028
9. Threat - Danger	-.129	-.151	-.057	.186	-.004	-.074	-.019	-.379**	—	.028	-.089	.063	.015	.251**
10. Threat – Misbehavior	.035	-.271**	.038	.018	.100	-.020	-.043	-.153	.373**	—	.278**	.204*	.058	.114
11. Beliefs - Animal Learning	.004	.062	.034	-.113	.049	.102	.037	.111	-.142	.033	—	.273**	.170	-.106
12. Beliefs - Human Learning	.027	.182*	.005	-.066	.058	.156	.177**	.000	.032	-.007	.281**	—	.071	-.013
13. Race-IAT	.084	.016	-.122	-.301**	.081	-.044	.040	-.306**	.194*	.165	-.043	-.046	—	.169
14. Symbolic Racism	.101	-.020	.091	-.220*	.174*	-.023	.011	-.139	.257**	.178*	-.038	-.060	.367**	—

Note. * indicates p < .05, and ** indicates p < .01.
Note. Correlations above the diagonal line represent associations for participants who selected exclusionary discipline measures, while correlations below the diagonal line represent associations for those who selected teacher-mediated disciplinary measures.

Finally, consistent with Study 1, results of an independent samples *t*-test revealed that participants who chose exclusionary disciplinary measures (*M* = 1.65, *SD* = .75) perceived their chosen disciplinary measures to be more effective at addressing the student's misbehavior than participants who chose teacher-mediated disciplinary measures (*M* = 1.34, *SD* = .61), *t*(242) = -3.65, *p* < .001.

Study 2 Discussion

Study 2 aimed to build on Study 1 by adding in an experimental manipulation of dehumanization and to test a causal relationship between dehumanization and choice of disciplinary measure. It also examined whether the relationship between animal prime condition and choice of disciplinary measure is mediated by factors such as empathy with the student, perceived threat of physical danger or misbehavior from the students, and an individual's beliefs about how animals and humans learn. The overall pattern of results for Study 2 were similar to those of Study 1; the results of this study failed to provide evidence supporting the hypotheses.

However, a mediation analysis using the Bootstrap method revealed a conditional direct effect of prime condition on participant choice of exclusionary disciplinary measure that was moderated by student race and gender. More specifically, participants were more likely to choose an exclusionary disciplinary measure for White male students when they were primed with apes as opposed to big cats. This finding was counter to our prediction but may stem from the racialized nature of perceptions about student misbehaviors (Lewis & Diamond, 2015; Okonofua & Eberhardt, 2015; Okonofua, Walton, & Eberhardt, 2016). Specifically, if participants associated the misbehavior presented in the scenario with White students more so than Black students, then it could be the case that animal prime would only shape the pattern of results for White students and not Black students. Recent research has shown that people perceive greater

threat of more disruptive misbehaviors from Black students (Gilliam et al., 2016; Goyer et al.,2016), and thus it may follow that the misbehavior present in the scenario about a student refusing to put their phone away may have been perceived as more in line with what an educator may expect from a White student. Additionally, the association between White males and apes could stem from a greater association of ape primes with misbehavior, as big cat primes may instead invoke perceptions of violence. This finding is at least partially supported by the correlation between student race and perceived threat of misbehavior in this study, such that participants who saw scenarios with Black students perceived less threat of misbehavior from the student.

It may also be the case that participants perceived more threat of misbehavior from White students, and were influenced by animal prime for White male students only, due to the recent uptick in school shootings by White male students (Pan, 2018; Triplet, Allen, & Lewis, 2014). Participant awareness of these recent school tragedies being carried out by a majority of White male shooters may have shaped their responses. Alternatively, the present finding might be simply due to chance. Further research is needed to understand the specific role animal perceptions and recent events play in shaping both animalistic dehumanization and disciplinary decisions and outcomes.

General Discussion

Across two studies, the impact of animalistic dehumanization on participants' disciplinary decisions was assessed using both correlation and experimental study designs. Results from the present studies failed to support the main hypotheses. However, they supported several important findings from prior research. First, both studies demonstrated the presence of Black-ape association in the general population. That is, participants in both studies

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demonstrated an implicit tendency to link stereotypically Black American names with ape-related words. This finding is consistent with prior research examining Black-ape association and indicate that dehumanization of Black Americans continues to persist in American society as Black-ape association has historically been an indicator of the perception that Black Americans are less than human (Goff et al., 2008). Both studies also demonstrated the presence of more pro-White/anti-Black attitudes in White participants in comparison to participants of color, which is consistent with previous research on racial bias (Sawyer & Gampa, 2018). Finally, Study 1 demonstrated that participants who dehumanize Black Americans to a greater degree were more likely to express pro-White/anti-Black attitudes at the implicit level as well (Opotow, 1990; Powell, 2012; Staub, 1989). These findings indicate that dehumanization of and negative attitudes toward Black Americans are still prevalent and related in American society, demonstrating further need to examine and conduct intervention research to mitigate anti-Black bias in the general population.

The present research also highlights novel findings that add to the current literature of disciplinary measures in the school system. The research provides initial evidence that participant perceptions of non-human animals may shape their disciplinary decisions. Specifically, Study 1 demonstrated that higher endorsement of the belief that animals learn best through conditioning, as opposed to reasoning, predicted choice of exclusionary disciplinary measures. Furthermore, Study 2 found evidence that participant perceptions of animal learning were positively associated with perceived threat of misbehavior, such that participants who endorsed the belief that animals learn best through conditioning as opposed to reasoning were more likely to perceive threat of misbehavior from the students in the scenario.

The present research has documented that participants' beliefs that animals learn best through conditioning as opposed to reasoning was associated with both their choice of harsher discipline and greater perceived threat of misbehavior from students. This indicates that participants' disciplinary decisions and perceptions were shaped by their belief that behavior is shaped best through conditioning. Given that much of the research on animal learning examines behavior through conditioning paradigms (i.e., rewards and punishments; Pavlov, 1927; Skinner, 1938; Staddon & Cerutti, 2003), the present findings suggest that ideas of punishment might play a critical role in participants' beliefs about school discipline.

Both studies also demonstrated that participants who read scenarios involving Black students reported less perceived threat of both physical danger and classroom misbehavior. This finding is inconsistent with our predictions. However, participants may have been more likely to associate the misbehavior in the scenario with White students given the racialized nature of school discipline as mentioned above (Lewis & Diamond, 2015; Okonofua & Eberhardt, 2015; Okonofua, Walton, & Eberhardt, 2016). Specifically, research demonstrates that individuals often expect more disruptive misbehaviors from Black students (Gilliam et al., 2016; Goyer et al.,2016), and thus it may follow that a scenario about a student refusing to put their phone away may have been perceived as more in line with what an educator may expect from a White student. Alternatively, these findings could be due to chance. Further research is needed to fully understand the relationship between student race, perceived threat, and disciplinary decisions.

Additionally, there was no evidence that student race and/or student gender predicted choice of disciplinary measure. However, there was evidence that student gender influenced participant perceptions of students. Specifically, participants who read scenarios about male students, regardless of race, perceived less threat of misbehavior than those who read scenarios

about female students. At first glance, this seems counter-intuitive because perceptions of threat are often associated with the presence of men rather than women in general (Hester, 2018). However, the current results must be interpreted within the unique context of the present research. Specifically, the scenario used in the present study involved a student refusing to stop texting and put away their cell phone. Given stereotypes that girls are more social than boys (and thus like to talk to others), participants might have expected that girls would be more disruptive than boys in this particular scenario. In fact, prior research has found that girls often struggle more socially and behaviorally in schools (Tan, Oe, & Hoang Le, 2018).

Furthermore, participant race was associated with perceived threat of both danger and misbehavior, such that Black participants reported greater perception of threat from students in the scenarios than White participants. This finding was counter to our prediction. However, given a robust body detailing the extent to which Black Americans, and Black men in particular, are perceived as both implicitly and explicitly threatening (Cottrell & Neuberg, 2005; Maner et al., 2005; Payne, 2001; Wilson, Hugenberg, & Rule, 2017), this pattern of results could reflect a heightened sense of awareness and protectiveness within the Black participants themselves. Indeed, a robust and growing body of research provides evidence that Black Americans are currently vigilant and aware of their surroundings and potential threats to their wellbeing, and that such hyperawareness functions as protective mechanisms against anti-Black discrimination and treatment (Clark, Benkert, et al., 2006; Feagin & Sikes, 1994; Harrell, Hall, & Taliaferro, 2003; Lewis, Cogburn, & Williams, 2015; Warner & Swisher, 2015). Thus, this finding, while surprising, may actually reflect a larger process of threat perception and response in Black participants, as opposed to reflecting Black participants specific and unique perception of threat from the student misbehavior scenarios.

Finally, symbolic racism was positively correlated with participant beliefs about animal learning in Study 2, such that participants who were higher in explicit racial bias were more likely to endorse the belief that animals learn best through conditioning as opposed to reasoning. This finding was in direct opposition to the finding that symbolic racism was negatively associated with beliefs about animal learning in Study 1. Further research empirically examining the relationship between explicit racial bias and beliefs about animal learning is needed to clarify these contradictory findings.

Limitations

Though we found no evidence that participant dehumanization tendencies impacted their choice of disciplinary measures, it is important to note that this does not indicate that racial perceptions and bias do not impact educator's treatment of their students (see Lewis & Diamond, 2015; Oates, 2009; Tenenbaum & Ruck, 2007). Lack of evidence supporting the impact of implicit dehumanization on disciplinary measures may be partially explained by methodological limitations, environmental/contextual constrains, or both. One methodological limitation across both studies is how the question for the outcome measure (i.e., choice of disciplinary measure) was worded. Specifically, participants were asked to report which disciplinary measure *they* would use after each scenario, and not the disciplinary measure they thought a *teacher* should or would use or recommend. Thus, the question made the participants' perspectives salient instead of an educator's perspective, and previous research on participant response bias in self-report measures provides evidence suggesting that what is made salient in a question may induce a different response (Singer et al., 2010). Given that the participants were students themselves, the phrasing of this question could have led participants to respond from a student's perspective of how they would want to be handled when caught using their cell phones when asked which

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disciplinary measure they would choose. Participants may have also been more inclined to responded in socially desirable ways when their perspective was made salient, as responding as themselves may have led them to consider how their response would be perceived. However, participants may have responded with more consideration of a classroom context and been less likely to respond in socially desirable ways if the question had instead made an educator's perspective salient.

A second methodological limitation is the use of undergraduate psychology student samples as opposed to samples of educators. Though the majority of the samples in the present study matched the teaching force on several characteristics (i.e., race and gender; Taie & Goldring, 2017), it is important to note that findings based on these samples cannot be generalized to the teaching force and thus must be interpreted within the unique context of this research. For example, the present research did not account for the unique teacher-student relationships that last over time, but instead relied on initial judgments of students in one hypothetical interaction. Prior research has demonstrated the impact previous interactions between teachers and students have on disciplinary decisions (Okonofua & Eberhardt, 2015; Okonofua, Walton, & Eberhardt, 2016) as well as the role students' intersectional identities (e.g., race, gender, cultural style and presentation, and economic background) play in shaping teachers' responses to student misbehaviors (Lewis & Diamond, 2015; Neal, McCray, Webb-Johnson, and Bridgest, 2003). The present research also ignored the psychological toll of classroom management, which can deprive teachers of cognitive resources that are critical for self-monitoring behaviors that are associated with their bias (Govorun & Payne, 2006; Leung & Ho, 2001; Lewis, 1999; Shen et al., 2009). Taken together, the findings from the present research are devoid of classroom context.

Additionally, the study was conducted at Virginia Commonwealth University (VCU) located in Richmond, Virginia. VCU is as a predominantly White higher education institution with above-average enrollment of students of diverse racial backgrounds. More specifically, 43% of enrolled students are racial minorities (e.g., Asian American), while 29% of students are underrepresented racial minorities (e.g., Black/African American, Hispanic/Latinx, Native American/Alaska Native, Hawaiian/Pacific Islander, or multiracial; Virginia Commonwealth University, 2018). Furthermore, 61% of Richmond City residents are people of color, with 48.6% of the city's residents identifying as Black/African American (U.S. Census Bureau, 2017). Given the relatively diverse context of the university and the city in which the research took place, it is important to note that findings of the present research may be impacted by the participants' experiences in racially diverse settings. That is, participants may have had a great deal of opportunities to interact and engage with Black Americans, and such exposure may have shaped the pattern of results found across both studies. Indeed, previous research has demonstrated that intergroup exposure and proximity on college campuses improve racial attitudes and increase the frequency of intergroup contact, (Baker, Mayer, & Puller, 2011; Boisjoly, Duncan, Kremer, Levy, & Eccles, 2006; Larr, Levin, Sinclair, & Sidanius, 2005; Marmaros & Sacerdote, 2006). Research has also found that intergroup contact (i.e., interracial friendships) foster empathy and the ability to see the world through another's perspective (Killen, Crystal, & Ruck, 2007a). In light of these findings, the present samples of undergraduate psychology students from VCU may have had high exposure to Black Americans and thus been less likely to engage in negative or discriminatory toward Black students. Consequently, future research should assess exposure to and relationships with Black Americans when assessing

whether and how educators' racial biases impact their disciplinary decisions toward Black students.

A third limitation was that the animal differentiation task employed in Study 2 did not expressly link Black Americans with apes. That is, the priming activated a certain animal category (either apes or big cats); however, it did not activate the association between apes and Black Americans or between big cats and Black Americans. The activation of a category "apes" alone might not have been strong enough to affect participant responses to Black vs. White students in the scenarios. Future studies should develop a task that directly activates the Black-ape association.

There was another confound of note regarding the animal differentiation task employed in Study 2. Specifically, the task used in this study required participants to differentiate between colored images of apes and big cats. However, the colors of the animals themselves may have driven any racial association between the animals and the Black and White names, as apes are Black in color while big cats are often yellow in color and thus closer to the complexion of White Americans. Given this confound, it is not possible to know whether any successful manipulation of dehumanization through this task stemmed from an actual non-human animal characterization of Black Americans as being more closely linked with apes, or the color of the animals in the images. Thus, future research should remedy this confound by using color-matched images of apes and big cats (e.g., Black images on White backgrounds or vice versa).

Finally, both of the present studies were designed to assess the role of dehumanization that was assessed at the implicit level on the choice of disciplinary measure that was assessed at the explicit level. One potential explanation for the null finding is the incongruence in the level of analysis between the predictor and the outcome. Recent research in both social psychology

and health research provide evidence that examinations of implicit bias on measures of explicit choice may provide incongruent information when predicting participant behaviors (Diederich & Trueblood, 2018; Maina, Belton, Ginzberg,Singh, & Johnson, 2018), and thus future research should examine whether and how explicit dehumanization impacts participant choice of disciplinary measure.

Future Directions

Given the present finding that implicit dehumanizing perceptions of Black Americans may not translate directly into negative behaviors towards Black students, as well as previous research on dehumanization of Black youth (Goff et al., 2014), future research should examine the impact of explicit dehumanization, or even other forms of dehumanization (i.e., mechanistic dehumanization or infrahumanization), on choice of exclusionary discipline for Black and White students. Future research should also examine the impact of dehumanization on choice of exclusionary discipline in a sample of educators and assess factors such as teacher motivations and relationships with students. Such study designs would provide a more comprehensive understanding of dehumanizing beliefs and tendencies in educators and provide more targeted information for bias intervention researchers.

Furthermore, future research should examine how education policy and school context influence choice of exclusionary disciplinary measures within the education system. Though the present study focused on educators as stakeholders with the power to make disciplinary decisions in classrooms, it is crucial to note that educators operate within the constraints and policies of the education system. Consequently, researchers must carefully consider the context and circumstances in which educators engage in exclusionary discipline of students in future investigations, as they often do so at the behest of zero-tolerance policies that mandate various

disciplinary sanctions based on specific student misbehaviors. Additionally, classroom management in large classroom contexts and in the face of standardized assessments often presents very real demands and stressors for educators that are not easily remedied.Finally, future research should move beyond simply investigating processes underlying the racial disparities in school disciplinary measures and evaluate potential outcomes of such disparities, including health (Goff et al., 2008; Smedley, Stith, & Nelson, 2003; Williams & Mohammed, 2009) and career-related outcomes (Bertrand, & Mullainathan, 2004; Quillian, Pager, Hexel, & Midtbøen, 2017).

Conclusion

Black students are more likely than their White counterparts to face harsh disciplinary measures. It is crucial to understand what factors in educators and school contexts drive these disparities and, as such, contribute to a reproduction of inequity and limited social mobility for Black students. Such scientific understanding will help educational researchers, educators, and administrators work to develop interventions and educator training programs to mitigate the influence of racial bias in education and reduce racial discipline disparities. Although the present research used undergraduate samples and did not account for teacher-student relationships, the results provide some evidence that Black-ape association continues to exist in American society, and that many factors (e.g., student race and gender, educator race, empathy toward and perceptions of threat from students, and beliefs about animal and human learning) impact educator's disciplinary decisions toward students. Future research should examine the potential role explicit dehumanization and racial bias play in shaping racial disparities in discipline.

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Appendices
Appendix A: Study Description on SONA

Study Name: Factors Impacting School Discipline

Study Type: Survey study

Credits: 0.5

Duration: 30 minutes

Sign-Up Restrictions: None

Abstract: This study seeks to investigate what factors influence decision-making in school discipline.

Description: If you consent to participate in this study, you will be asked to complete a series of measures and computer task that are designed to assess your attitudes, beliefs, and perceptions.

Eligibility Requirements: You must be at least 18 years of age.

Information Sheet

Title: Factors Impacting School Discipline

VCU IRB NO:

If any information contained in this consent form is not clear, please contact the study staff to explain any information that you do not fully understand. You may take as much time as you need to answer any and all questions asked in this survey.

PURPOSE OF THE STUDY
The purpose of this laboratory-based study is to investigate what factors impact the way disciplinary measures are chosen for student misbehaviors. You are being asked to participate in this study because you have registered on SONA.

DESCRIPTION OF THE STUDY AND YOUR INVOLVEMENT
If you agree to take part in this research study, you will complete a series of measures and computer task that are designed to assess your attitudes and beliefs as well as your perceptions toward different disciplinary measures that can be used to address student misbehaviors at school. Overall, the study should take about 30 minutes. You will NOT be asked to provide any personal information (e.g., name, email, phone number).

RISKS AND DISCOMFORTS
The risk for participating in this research study is minimal. However, some questions may cause some people to feel uncomfortable. You are free to only answer questions that you want to answer. Additionally, taking part in this study is voluntary. You have the right to choose not to take part in this study. You are free to withdraw from participation in this study at any time. If you become upset, contact the study staff and they will give you names of counselors to contact so you can get help in dealing with these issues.

BENEFITS TO YOU AND OTHERS
As a participant in this research study, no direct benefits to you are expected. However, information from this study may be used to benefit other people in the future.

COSTS
There are no costs for participating in this study other than the time you will spend completing the study.

PAYMENT FOR PARTICIPATION
You will not be paid for taking part in this study. Instead, you will receive 0.5 research credit for your participation in this study toward your class requirement or extra credits.

ALTERNATIVES

The alternative is to not participate in the study. You can either sign up for another study on SONA or complete alternative assignments provided by our instructor in order to fulfill your course requirements.

CONFIDENTIALITY
No identifying information will be collected in the survey. Additionally, once all data are collected, your responses will be reported in aggregate, and individual participants will never be identified.

Access to all data will be limited to study personnel, and data will be stored for five years after the possible publication of research coming from this project---as specified by the American Psychological Association.

We will not tell anyone the answers you give us; however, information from the study of the consent form signed by you may be looked at or copied for research or legal purposes by Virginia Commonwealth University.

What we find from the study may be presented at meetings or published papers, but your name will never be used in these presentations or papers.

VOLUNTARY PARTICIPATION AND WITHDRAWAL
You do not have to participate in this study. If you choose to participate, you may stop at any time without any penalty. You may also choose not to answer particular questions that are asked in the study.

QUESTIONS
If you have any questions, complaints, or concerns about your participation in this research, contact:

> **Dr. Nao Hagiwara**
> **Department of Psychology**
> **808 West Franklin Street, Room 301**
> **804-828-6822**
> **nhagiwara@vcu.edu**
>
> OR
>
> **Ebony Lambert**
> **Department of Psychology**
> **lambertea@vcu.edu**

The researcher/study staff named above is the best person(s) to call for questions about your participation in this study.

If you have any general questions about your rights as a participant in this or any other research, you may contact:

Office of Research
Virginia Commonwealth University
800 East Leigh Street, Suite 113
P.O. Box 980568
Richmond, VA 23298
Telephone: (804) 827-2157

Contact this number for general questions, concerns or complaints about research. You may also call this number if you cannot reach the research team or if you wish to talk with someone else. General information about participation in research studies can also be found at http://www.research.vcu.edu/irb/volunteers.htm.

CONSENT
I have been given the chance to read this consent form. I understand the information about this study. Questions that I wanted to ask about the study have been answered. By clicking the button below, I am agreeing to participate in this study.

Appendix C: Student Misbehavior Scenarios in Study 1

When a teacher noticed that [DeShawn/Lakisha/Brad/Allison], a 7th grade student at Middleton Middle School, was texting on a cell phone in a class, the teacher politely asked [him/her] to stop texting and put [his/her] cell away. Although [DeShawn/Lakisha/Brad/Allison] put [his/her] cell phone away at that moment, [he/she] quickly started texting again. The teacher noticed that [DeShawn/Lakisha/Brad/Allison] was texting again and came to [his/her] desk this time. Although [DeShawn/Lakisha/Brad/Allison] was told to hand over [his/her] cell phone, [he/she] refused and continued to read text messages.

Appendix D: Dehumanization Implicit Association Task (D-IAT)

Stimuli used in two categories representing stereotypical names (Black vs. White):
> Black names: *Tyrone, Tremayne, Leroy, Kareem, Tamika, Latonya, Keisha, Latoya*
> White names: *Brad, Todd, Matthew, Brett, Anne, Sarah, Emily, Jill*

Stimuli used in two categories representing animal names (ape vs. big cat):
> Ape words: *Ape, Monkey, Baboon, Chimp, Chimpanzee, Orangutan, Gorilla, Primate*
> Big cat words: *Lion, Tiger, Panther, Puma, Cheetah, Cougar, Leopard, Feline*

Sequence of trial blocks in the standard Race-IAT:

Block	# of trials	Function	Condition 1		Condition 2	
			Items assigned to "e" on the keyboard	Items assigned to "i" on the keyboard	Items assigned to "e" on the keyboard	Items assigned to "i" on the keyboard
1	20	Practice	Black names	White names	White names	Black names
2	20	Practice	Ape words	Big cat words	Ape words	Big cat words
3	20	Practice	Ape words + Black names	Big cat words + White names	Ape words + White names	Big cat words + Black names
4	40	Test	Ape words + Black names	Big cat words + White names	Ape words + White names	Big cat words + Black names
5	20	Practice	White names	Black names	Black names	White names
6	20	Practice	Ape words + White names	Big cat words + Black names	Ape words + Black names	Big cat words + White names
7	40	Test	Ape words + White names	Big cat words + Black names	Ape words + Black names	Big cat words + White names

Note. Half of the participants will be randomly assigned to Condition 1 order, and the other half of the participants will be assigned to Condition 2 order.
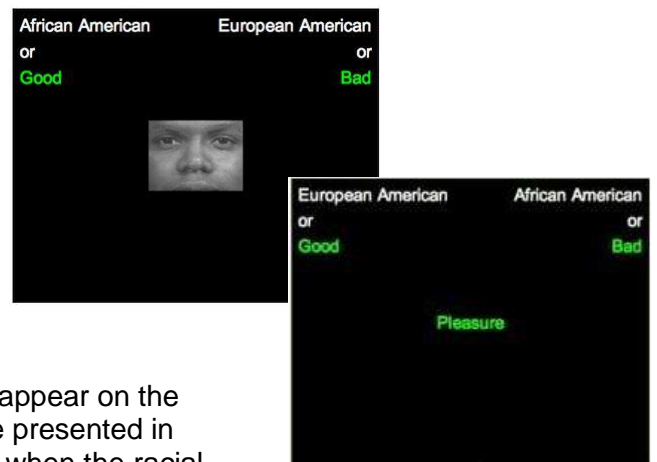
Example trials:
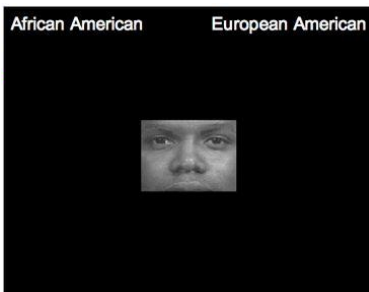
Block 1 & 5 — Block 2 — Block 3, 4, 6, & 7

For test trials (Blocks 4 & 7), participants classify items that appear on the center of the computer screen into four categories which are presented in pairs. The premise is that participants respond more quickly when the racial group and animal names mapped onto the same response are strongly associated than when they are weakly associated.

Appendix E: Demographics

1. How old are you (in years)?

               ___ years

2. What is your gender
   a. Male
   b. Female
   c. Other (Specify: _____)

3. With which race/ethnicity do you most closely identify?
   a. White/Caucasian American
   b. Black/African American
   c. Asian American
   d. Latino American
   e. Native American
   f. Multiracial/Other (Specify: _____)
   g. International student

4. What is your family's annual income?

5. How many bedrooms and bathrooms did you have in the house you grew up in?

6. Please indicate how many courses on cultural competency.
   a. 0 courses
   b. 1 course
   c. 2 courses
   d. 3+ courses

7. Please indicate how many years of experience you have working in multicultural classrooms.
   a. 0 years
   b. 6 months - 1 year
   c. 1-2 years
   d. 2-3 years
   e. 4+ years

Appendix F: Choice of Disciplinary Measure

1. Which of the following disciplinary measures would best address the student's misbehavior?
    1. Discuss with the student why texting in class is an inappropriate behavior
    2. Give the student a warning
    3. Call the student's parents
    4. Send the student to the main office
    5. Bring in a school security officer
    6. Give the student detention
    7. Refer the student for suspension

2. How effective do you think [selected disciplinary measure] would be at correcting [DeShawn/Lakisha/Brad/Allison]'s misbehavior?

3. Please rank order the following disciplinary measures from the least harsh to the most harsh:
    1. Discuss with the student why texting in class is an inappropriate behavior
    2. Give the student a warning
    3. Call the student's parents
    4. Send the student to the main office
    5. Bring in a school security officer
    6. Give the student detention
    7. Refer the student for suspension

Appendix G: Empathy with the Student

1. I found it difficult to see things from the [DeShawn/Lakisha/Brad/Allison]'s point of view. (PT) (-)
2. I tried to look at both teacher's and [DeShawn/Lakisha/Brad/Allison]'s side of a disagreement before I make a decision. (PT)
3. I tried to understand [DeShawn/Lakisha/Brad/Allison] better by imagining how things look from [his/her] perspective. (PT)
4. Before criticizing [DeShawn/Lakisha/Brad/Allison], I tried to imagine how I would feel if I were in [his/her] place. (PT)

*NOTE: (-) denotes item to be scored in reverse fashion

Appendix H: Beliefs about Animal and Human Learning

Beliefs about animal learning (1-item measure)
1. Nonhuman animals (e.g., dogs, apes, pigeons, etc.) learn best through conditioning processes (e.g., rewards, punishment, reinforcement, etc.) than through reasoning processes (e.g., speak to their morality, emotion, and logic).
   a. Strongly disagree
   b. Somewhat disagree
   c. Somewhat agree
   d. Strongly agree

Beliefs about human learning (2-item measure)
2. Human is the only animal that can learn through reasoning processes.
   a. Strongly disagree
   b. Somewhat disagree
   c. Somewhat agree
   d. Strongly agree

3. Humans learn best through reasoning processes (e.g., speak to their morality, emotion, and logic) than through conditioning processes. (e.g., rewards, punishment, reinforcement, etc.).
   a. Strongly disagree
   b. Somewhat disagree
   c. Somewhat agree
   d. Strongly agree

*Note: both measures were assessed on a scale from 1 (Strongly disagree) to 4 (Strongly agree)

Appendix I: Perceived Threat (2 measures)

Perceived threat of physical danger (4-item measure)
1. I fear that [DeShawn/Lakisha/Brad/Allison] poses a physical danger to the teacher.
2. [DeShawn/Lakisha/Brad/Allison] may take hostile action towards the teacher.
3. I fear that [DeShawn/Lakisha/Brad/Allison] poses a physical danger to other students in the classroom.
4. [DeShawn/Lakisha/Brad/Allison] may take hostile action towards other students in the classroom.

Perceived threat of classroom misbehavior (4-item measure)
1. [DeShawn/Lakisha/Brad/Allison]'s misbehavior may disrupt the classroom learning environment.
2. [DeShawn/Lakisha/Brad/Allison]'s misbehavior may damage an image of the teacher as an authority figure.
3. [DeShawn/Lakisha/Brad/Allison] may undermine the teacher's authority in the classroom.
4. I fear that [DeShawn/Lakisha/Brad/Allison]'s misbehavior hinders effective learning environment

Appendix J: Racial Bias Implicit Association Task (IAT)

Stimuli used in two categories representing racial groups (white vs. black):

Stimuli used in two categories representing valence (positive vs. negative):
Positive words: *Joy, Love, Peace, Wonderful, Pleasure, Glorious, Laughter, Happy*
Negative words: *Agony, Terrible, Horrible, Nasty, Evil, Awful, Failure, Hurt*

Sequence of trial blocks in the standard Race-IAT:

Block	# of trials	Function	Condition 1		Condition 2	
			Items assigned to "e" on the keyboard	Items assigned to "i" on the keyboard	Items assigned to "e" on the keyboard	Items assigned to "i" on the keyboard
1	20	Practice	Black faces	White faces	White faces	Black faces
2	20	Practice	Positive words	Negative words	Positive words	Negative words
3	20	Practice	Positive words + Black faces	Negative words + White faces	Positive words + White faces	Negative words + Black faces
4	40	Test	Positive words + Black faces	Negative words + White faces	Positive words + White faces	Negative words + Black faces
5	20	Practice	White faces	Black names	Black faces	White faces
6	20	Practice	Positive words + White faces	Negative words + Black faces	Positive words + Black faces	Negative words + White faces
7	40	Test	Positive words + White faces	Negative words + Black faces	Positive words + Black faces	Negative words + White faces

Note. A half of the participants will be randomly assigned to Condition 1 order, and the other half of the participants will be assigned to Condition 2 order.

Example trials:

Block 1 & 5   Block 2   Block 3, 4, 6, & 7
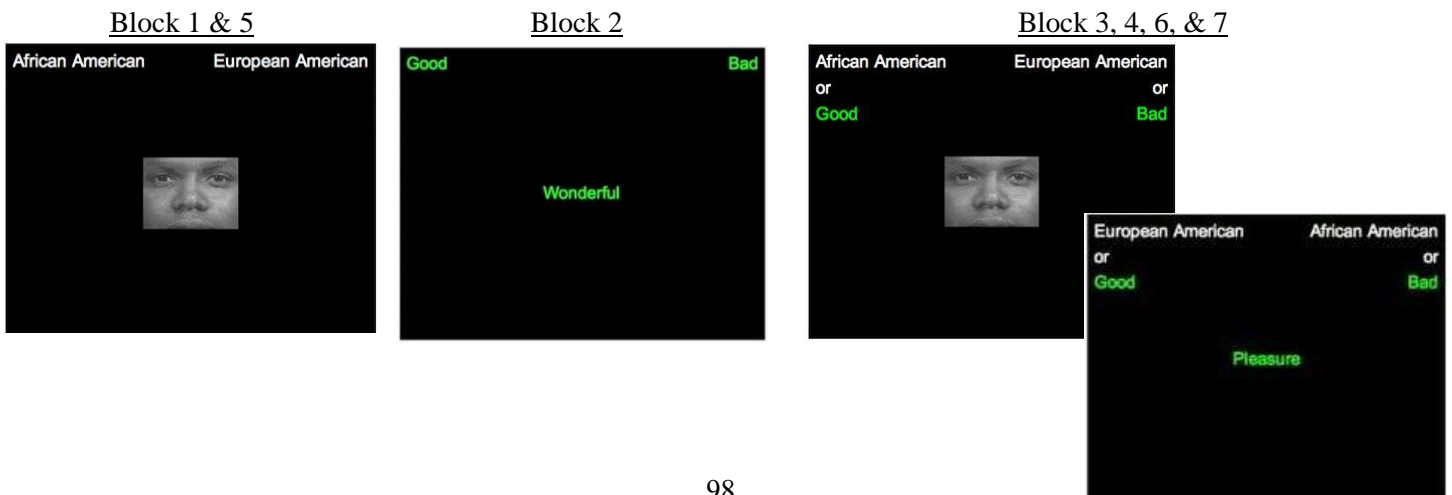
For test trials (Blocks 4 & 7), participants classify items that appear on the center of the computer screen into four categories which are presented in pairs. The premise is that participants respond more quickly when the racial group and valence mapped onto the same response are strongly associated than when they are weakly associated.

Appendix K: The Symbolic Racism 2000 Scale

1. It's really a matter of some people not trying hard enough; if blacks would only try harder they could be just as well off as whites.
    1. Strongly agree
    2. Somewhat agree
    3. Somewhat disagree
    4. Strongly disagree

2. Irish, Italian, Jewish and many other minorities overcame prejudice and worked their way up. Blacks should do the same.
    1. Strongly agree
    2. Somewhat agree
    3. Somewhat disagree
    4. Strongly disagree

3. Some say that black leaders have been trying to push too fast. Others feel that they haven't pushed fast enough. What do you think?
    1. Trying to push very much too fast
    2. Going too slowly
    3. Moving at about the right speed

4. How much of the racial tension that exists in the United States today do you think blacks are responsible for creating?
    1. All of it
    2. Most
    3. Some
    4. Not much at all

5. How much discrimination against blacks do you feel there is in the United States today, limiting their chances to get ahead?
    1. A lot
    2. Some
    3. Just a little
    4. None at all

6. Generations of slavery and discrimination have created conditions that make it difficult for blacks to work their way out of the lower class.
    1. Strongly agree
    2. Somewhat agree
    3. Somewhat disagree
    4. Strongly disagree

7. Over the past few years, blacks have gotten less than they deserve.
    1. Strongly agree
    2. Somewhat agree

3. Somewhat disagree
4. Strongly disagree

8. Over the past few years, blacks have gotten more economically than they deserve.
   1. Strongly agree
   2. Somewhat agree
   3. Somewhat disagree
   4. Strongly disagree

Appendix L: Priming Task

Participants were primed with an animal differentiation task, inspired by the dot probe task in Goff et al., (2008; see attached article). In the current study, participants were asked to differentiate pictures of real animals (apes/big cats) from images of animal drawings and toys taken from Google Images. Participants in the ape condition differentiated between images of monkeys, orangutans, baboons, and apes, while participants in the big cat condition saw lions, tigers, pumas, cougars, and cheetahs.

Sample Images:
- Big Cats Condition (e.g., puma)

- Ape Condition (e.g., apes)

Vita

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