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Perceptions of Age, Maturity, and Self-Control

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Abstract

Race is a major source of bias in person perception. Decades of research have shown, for example, that non-Black perceivers tend to see Blacks as threatening (Hugenberg & Bodenhausen, 2003; Wilson, Rule, & Hugenberg, 2017), and that such threat stereotypes may feed into biased age judgements, such that Black adolescents are also judged to be older than same-aged White adolescents (Goff, Jackson, Di Leone, Culotta,& DiTomasso, 2014). Other work has examined possible consequences of such stereotypes. For example, some work has shown that Black children are perceived more as troublemakers than their White counterparts, and that teachers may be especially more likely to inflict harsher punishments to Black students even for small infractions (Okonofua & Eberhardt, 2015). I followed up on this work to explicitly examine the link between age perceptions and one component of troublemaking behavior: self-control. Participants viewed the faces of White and Black adolescents aged 12 to 18 and judged either the age of each target (a preliminary study) or the extent to which each target was likely able to exert self-control (the current thesis). I found that although perceivers showed a strong bias to judge the Black adolescents as older than the White adolescents, they did not ascribe Black targets more self-control. Furthermore, confirming the primary hypothesis, the positive correlation between perceived age and perceived self-control was much stronger for White targets than Black targets. The results suggest that although people may see Black adolescents as older than White adolescents, these adolescents may not benefit from other related perceptions that come along with perceived age and maturity. I discuss the implications of these findings for stereotyping and teacher-student interactions.

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Perceptions of Age, Maturity, and Self-Control

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It has been documented in psychological research that compared with Whites, Black people are subject to negative stereotypes and prejudice. These stereotypes involve not only a pervasive negative view of Blacks, but also link this population to violence, threat, crime and harsher punishments. For example, Blacks are more likely than Whites to be seen as threatening or aggressive (e.g., Duncan, 1976; Hugenberg & Bodenhausen, 2003; Sagar & Schofield, 1980). Additionally, the propensity to associate Blacks with danger has been documented in attention allocation research in which Black faces capture and hold attention faster and longer than White faces (Correll, Guillermo, & Vogt, 2014). Moreover, threat stereotypes and preconditioned fear responses have been shown to lead to negative outcomes such as Black men being more likely than White men to be misremembered as carrying a weapon (Allport & Postman, 1947), and more likely to facilitate the visual recognition of a weapon (Payne, 2001). Threat stereotypes have also been found to exist in videogame stimulations in which Black men are more likely to be shot erroneously, even when holding a non-threatening object (Correll, Urland, & Ito, 2006). In addition to crime related biases Black individuals have been implicitly linked to negative/unpleasant words, which is likely an activated response to perceived danger (Greenwald, McGhee, & Schwartz, 1998). Furthermore, research has shown that the prototypicality of Black individuals (e.g., broad nose, large lips, coarse hair, darker skin tone), affects perception and evaluation, finding that more biases exist towards prototypic Black targets than less prototypic targets (Ma & Correll, 2011).

Person perception research has focused on how African Americans activate race-related stereotypes, and have found that there are societal consequences such as longer or more severe criminal sentences, particularly for men (Blair, Judd, & Chapleau, 2004; Eberhardt, Davies,

Purdie-Vaughns, & Johnson, 2006). Additionally, the stereotypes that link Black men to criminality seems to be further facilitated by threat perception, which extends even into viewing adolescents and young children. In work by Todd, Thiem and Neel (2016) participants performed sequential priming tasks in which they categorized threatening and non-threatening objects after brief presentations of faces of varying race (Black and White) and age (children and adults). This task was used to test for automatic threat responses even to young children. The results consistently revealed that participants had less difficulty (i.e., faster response times, fewer errors) identifying threatening stimuli and more difficulty identifying nonthreatening stimuli after seeing Black faces than after seeing White faces. More noteworthy though, was that the racial bias was equally strong following both adult and child faces. These results suggest that threat stereotypes generalize even to young Black people.

With research suggesting that young Black adolescents are linked more strongly to threat than Whites, it becomes imperative to consider what other types of negative perceptions this population may experience. Racial disparities have been well documented; with past research showing negative life outcomes including areas related to education, employment, housing, media, health care, health outcomes and the criminal justice system for black children in the Unites States compared to their white peers (Yoo & Pituc, 2013). When specifically considering educational disparities as a negative life outcome, the stereotype that Black children display more misbehavior and that they earn lower grades compared to White children has been a common finding (Neal, McCray, Webb-Johnson, & Bridgest, 2003). Past research has also examined the possibility that Black children are perceived more as troublemakers than their White counterparts, finding that teachers may be especially more likely to inflict harsher punishments to Black students.

In research by Okonofua & Eberhardt (2015) teachers were shown a picture of a middle school class and asked to imagine themselves as teachers for this classroom. They then viewed a school record, which was adapted from actual office referrals, for a student who had misbehaved twice. The race of the student was manipulated by using stereotypical Black (Darnell or Deshawn) or White (Greg or Jake) names that were taken from previous research (Greenwald, McGhee, & Schwartz, 1998; Levitt & Dubner, 2005). Teachers read about the student's infractions (one for insubordination and the other for class disturbance), the order that they read the scenario was counterbalanced across participants. After each infraction, participants were asked "How severe was the student's misbehavior?" "To what extent is the student hindering you from maintaining order in your class?" "How irritated do you feel by the student?" and "How severely should the student be disciplined?" Teachers were also asked to rate how likely it was they would say the student is a trouble maker. The results, showed that teachers escalated their responses to a Black student more than for a White student. More importantly though, the results revealed that the first infraction also influenced how severely the second infraction was rated for a Black student but not for the White student. Additionally, Black students were rated as being more of a trouble maker than the White students. This research suggests that isolated infractions across time may more readily signal a pattern of bad behavior for a Black student, leading to the label of trouble maker and to subsequent and more severe discipline when compared to a White student.

Research in the area of racial stereotypes in school setting suggests that there are disturbing implications for Black children's future success and teacher perceptions and punishments can facilitate the achievement gap between Black and White children (Townsend, 2000; Garibaldi, Blanchard, & Brooks, 1996). Furthermore, it has been shown in a report by the

Office for Civil Rights (2012), that Black students are more likely to be suspended and expelled than White children. This finding has led to further research in the area, suggesting that because of the high percentage of school drop-outs, Black children may become more likely to be incarcerated later in life (Balfanz, Spiridakis, Neild, & Legters, 2003; Fenning & Rose, 2007; Rocque & Paternoster, 2011; Wald & Losen, 2003; Western, 2006). Clearly, racial biases that start early in life can facilitate serious life outcomes, putting these individuals at an unfair advantage and increasing the achievement gap between Black and White individuals.

Certainly, with all of the implications mentioned, one important question that arises from the previous literature is what drives differentiated stereotypes between White and Black children. One possibility that will be explored further in the present research is the inferences people make from looking at another individual's face. Research looking into the reasoning behind these perceptions has found differences in perceived facial maturity and age. Goff, Jackson, Di Leone, Culotta and DiTomasson (2014), asked participants to rate innocence of White children, Black children, or children generally (i.e., without race specified). In order to avoid ceiling effects, where the youngest children (i.e., newborns and toddlers) might invariably be seen as innocent, each survey asked participants to rate individuals within six age subgroups, ranging from birth to young adulthood: 0– 4, 5– 9, 10– 13, 14– 17, 18– 21, and 22– 25. Ratings of innocence were measured with a novel scale that asked 7 questions related to the participants assigned racial subgroup; How much do ___ (e.g., 10- to 13-year old's) need protection?"; "How much do ___ need care?"; "How well can ___care for themselves?"; "How much are ___ a danger to others?"; "How much are ___ a danger to themselves?" The results found that Blacks were seen as less innocent than Whites and people with an ambiguous race. Additionally, for every age group after the age of 9 (i.e., 10- 13 through 22- 25), Black children were rated as

significantly less innocent than White children or children where the race was not specified. The research provides evidence that Black children may not be given the same privilege of innocence that other children are afforded and that they may also be seen as more similar to adults starting at a premature age.

The difference in facial perception has been shown in multiple domains. In research by Zebrowitz , Kendall-Tackett and Fafel, (1991), facial maturity in children was found to be linked to the difficulty of tasks that the targets were assigned. These results suggested that more cognitively but not physically demanding chores were likely assigned to mature faced 11-year old's depicted in photographs than to baby-faced children of the same age and attractiveness (Zebrowitz, Kendall-Tackett & Fafel, 1991). Additionally, research by Rattan, Levine, Dweck and Eberhardt (2012), looked at race as a factor in facial maturity perceptions and found that participants viewed juvenile Black (vs. White) offenders as more similar to adults and therefore more inherently blameworthy of a crime. This idea of greater punishment based on facial maturity and race has been supported by research done by Goff et al. (2014), finding that Black children were seen as being less innocent than their White counterparts.

Interestingly, though not much research has looked at the link between perceived age as a function of race and the perceived self-control that a target may exhibit. In academic settings it has been found that lower levels of effortful control in children, such as failing to stand in line or raise their hand, leads to less positive views from teachers (Liew, Chen & Hughes, 2010). Additionally, African American students are considerably more likely than their White peers to be rated as disruptive by their teacher and to also experience more severe school disengagement when their teacher is of a different race. However, African-American students in classes with an African-American teacher tend to be suspended less often, suggesting that school discipline

decisions are moderated by the racial intergroup-outer group status of the teacher (Kinsler, 2011). Furthermore, juvenile delinquency has often been linked to a lack of school success and provides an idea for why minority students may be more likely to disengage from school at an earlier age. It becomes evident that school success starts from an early age and that negative perceptions from teachers can have life-long impacts on student achievement and life outcomes associated with education.

Therefore, the current research plans to look at how facial perceptions of age relate to perceptions of self-control for both Black and White children. Based on the previous findings regarding race and a perceived facial maturity effect (Goff, Jackson, Di Leone, Culotta, & DiTomasso, 2014), I first conducted a preliminary study in which I collected age ratings of Black and White adolescent targets (Wilson & Troy, in prep). There was a main effect for race such that perceivers rated Black targets as substantially older than White targets across adolescence. For the current study, perceivers rated these same target images on perceived self-control.

Despite the fact that research on self-control shows that maturity positively correlates with increased self-control (Kochanska, Coy, & Murray, 2001), I suspected that this effect of positive correlation would be attenuated when perceivers looked at Black children compared to White children. Based on existing stereotypes that Black children are associated with troublemaking, through external behavioral responses more so than White children (Rudasill & Rimm-Kaufman, 2009), it is plausible that adult perceivers would rate Black targets as having less self-control than White targets. However, I registered no specific hypothesis regarding a main effect of race on perceived self-control.

Additionally, I was interested in exploring gender differences of the targets for perceived maturity and self-control. Past research has found that even as early as preschool, boys are rated

as being more aggressive than girls and more likely to externalize their behaviors (Rudasill & Rimm-Kaufman, 2009). Additionally, it has been found that shy children initiate fewer interactions with teachers, and children lower in effortful control receive more teacher-initiated interactions that are often more negative. Interestingly, these interactions are gendered such that boys are seen to lack effortful control and girls are perceived as shyer during the academic years of first to third grade (Rudasill & Rimm-Kaufman, 2009). Although, there are behavioral differences exhibited between genders, Black male and female children are rated by adult participants as being less innocent and more adult-like than their White peers (Epstein, Blake, & Gonzalez, 2017). Despite the fact that both male and female Black children compared to their White counterparts are perceived as older, it is predicted that stereotypes of different behavioral responses between genders will attenuate ratings of self-control for males.

Based on the reviewed literature, I predicted that older targets would be perceived as having more self-control than younger targets, and that targets perceived as older would be perceived as having more self-control than targets perceived as younger. Critically however, I predicted that this positive relationship between perceived age and self-control would be attenuated for Black targets relative to White targets. Other possible relationships regarding gender will be explored, although I registered no explicit hypotheses regarding these analyses.

Method

The study procedures, measures, recruitment strategy, and analysis plans were all pre-registered, and documentation can be found at Open Science Framework .

Participants

Participants were 137 (28 men and 109 women) undergraduates at Montclair State University. Participants' median age was 20, and they described themselves as White

(42.3%), Black (13.9%), Latino/a (24.1%), Multiracial (3.5%), Asian (10.2%), Arabic (3.5%), and Other (2.2%). The sample was larger than the pre-registered sample size due to faster-than-anticipated participant sign-ups. I did not analyze the data at any intermediate data collection points. Participants were recruited through SONA. All participants read a prospective agreement form before completing the study. This form explained the basic procedure and risks and benefits. They were informed that they could leave at any time and that their responses would be confidential.

Materials

The primary materials were presented to participants via a Qualtrics web survey. All of the target photographs were taken from a school year book and consisted of Black and White male and female student's ranging from 12-18 years (grades 6-12). The image order was randomized, and each participant saw a randomly selected subset of 135 faces (60 male & 75 female). The stimulus set consisted of a total of 154 White female, 164 Black female, 122 White male and 136 Black male target photographs. The breakdown for the total number of unique individual people in the subset consisted of 60 White female, 63 Black female, 55 White male, and 58 Black male targets. Each target face was rated by between 19 and 45 raters (M= 31.9, SD = 4.9) The age estimation ratings used in the primary analysis were obtained in a preliminary study. The dependent measure in the current study consisted of a 7-point Likert Scale for self-control. For each target participants responded to the question: On the scale below indicate, "How good at exerting self-control (Low scores = very bad at exerting self-control & High Scores = very good at exerting self-control)."

Procedure

Before beginning the experiment, participants were informed that the study involved rating initial perceptions of school aged children and were instructed not to spend too much time thinking about their responses. After, consenting to participate in the study, participants were asked to judge the targets on the dependent measure of perceived self-control on a 7-point Likert scale. They were asked to use their gut to make these judgements. All participants rated a subset of target images. Black and White targets were intermixed randomly, but participants rated male and female faces in separate blocks. Lastly, all participants completed a demographics questionnaire and were debriefed about the nature of the study.

Results

Preliminary Analysis

I first conducted a preliminary analysis, in which participants' self- control ratings for each target were subject to a linear mixed-model analysis to test for a main effect of age on self-control ratings. In this analysis, Black targets ($M = 4.54$, $SD = 0.51$) were not rated significantly higher on self-control than white targets[1] ($M = 4.32$, $SD = 0.61$), $t(4724.03) = 1.58$, $p = .11$. I then conducted a similar analysis to test for a main effect of target sex on self-control ratings. Again here, there was no significant difference, $t(590.02) = -1.55$, $p = .12$. Female targets ($M = 4.57$, $SD = 0.55$) were not seen as having more self-control than male targets ($M = 4.27$, $SD = 0.55$).

[1] Although analyses were conducted using multilevel models, the reported means and standard deviations are based on values computed at the target level. I took this approach because participants only rated a subset of targets. Reporting these means at the perceiver level would have been subject to distortion for participants who may have randomly viewed a disproportionate number of older or younger targets.

Unsurprisingly, there was a significant effect of actual age on perceived self-control, $t(18191.01) = 3.68$, $p < .001$, such that older targets were perceived to have more self-control than younger targets.

Relationship between Perceived Age and Self-Control

The primary confirmatory analysis involved a test to determine whether there was a difference in the sensitivity correlation between self-control and age perceptions based on target race. For each participant, I calculated the Pearson correlation between self-control perceptions for each target that they rated and each target's mean perceived age rating (from Pilot Study 1). I subsequently converted each Pearson correlation to a Fisher's z-score for inferential analysis (see Judd, Ryan, & Park, 1991). I predicted that the correlation between age ratings and self-control, would be higher for White targets than for Black targets, indicating that race moderates the relationship between perceived age and self-control. The mean correlation was positive for both groups. As White targets were perceived as older, they were also perceived to have more self-control ($M = .30$, $SD = .22$), $t(136) = 16.2$, $p < .001$, Cohen's $d = 1.38$.

A relationship in the same direction also emerged for Black targets ($M = .12$ SD=.20), $t(136) = 7.36$, $p < 0.001$, Cohen's $d = 0.63$. Critically, supporting the central hypothesis, the difference between these two mean sensitivity correlations was significant and large in effect size, $t(136) = 10.6$, $p < 0.001$, Cohen's $d = 0.92$, as depicted in Figure 1. Together this suggests that as perceived age increased, so did self-control ratings, but that they did so far less for Black adolescents than for White adolescents.

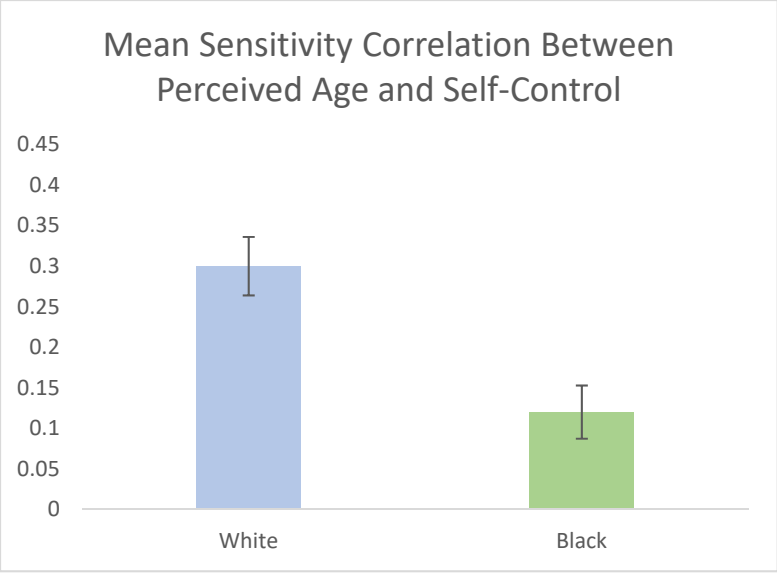

Figure 1: Mean sensitivity correlation between perceived age and self-control. Error Bars represent a 95% confidence interval

I then conducted an exploratory paired-samples t-test to compare the age/self-control sensitivity correlations between perceived age and self-control for female vs. male targets. Once, again the mean correlation was positive for both groups as depicted in Figure 2, but there was a significant difference in the scores for female targets (M = .24, SD =.21) vs. male targets (M =.15 SD=.21) targets; t (135) = 4.6, $p < 0.001$, Cohen's d = 0.43. This analysis suggests that as perceived age increased, so did self-control ratings, but that they did so more for female adolescents than for male adolescents.

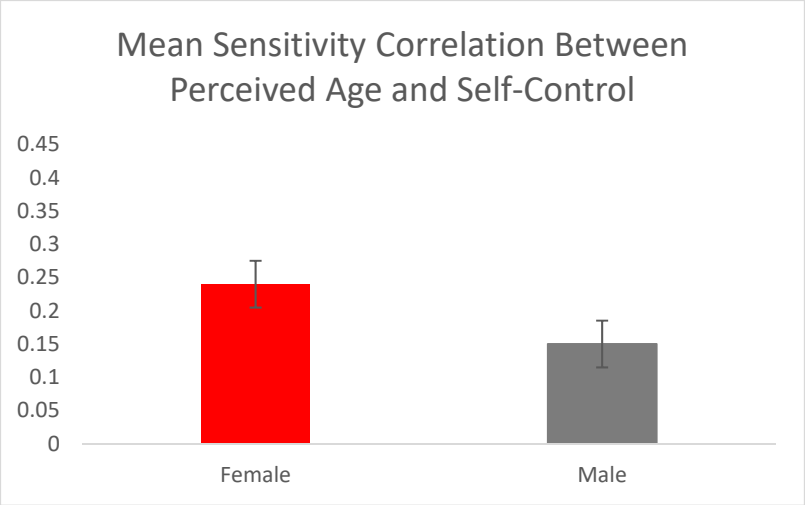

Figure 2. Mean sensitivity correlation between perceived age and self-control. Error Bars represent a 95% confidence interval

Discussion

In today's world Black men and boys still continue to endure the negative outcomes of being stereotyped in society, but the number of people who display outright explicit prejudice has shown decline over the last century (Greenwald & Banaji,1995). Research in social psychology has instead found that Americans are consciously aware that Black people deserve equal treatment but at an unconscious level still express implicit biases based on their perceptions (Bobo, & Charles, 2009). Additionally, social psychologi80—

ts have reported findings that link Black men to a variety of negative associations, including viewing Black individuals as more aggressive and threatening (Devine, 1989), making more automatic decisions to categorize non-weapons as weapons when preceded by the face of a Black man (Payne, 2001), and the overall speed at which people will shoot someone holding a weapon if they are Black (Correll, et al., 2002). Moreover, it is important to note that implicit biases (either negative towards Blacks or more positive towards Whites) can translate into a wide range of behaviors that not only effect decision making but also effect day-to day interactions which can lead to differential life outcomes for Black versus White individuals (Deitch, Barsky,

Butz, Chan, Brief & Bradley, 2003; Williams & Williams-Morris, 2000).

Unfortunately, differential treatment based on race is not only subjected to adults but has also been found to be experienced by Black adolescents. In most societies' children are seen as a distinct group with characteristics of innocence and the need for protection afforded to them. However, research by Goff et al., (2014) found that Black boys as young as 10 years old were not viewed in the same light as White peers of the same age, and instead more likely to be mistaken as older. Additionally, the perception of maturity has also been linked to more extreme accusations of a crime and sentencing compared to White adolescents (Rosenberg, Groves & Blankenship, 2016).

In addition to Black youth being associated to higher rates of criminality, there is also an obvious achievement gap in education that has been found for Black youth (Gregory, Skiba, & Noguera, 2010). Although, the majority of teachers should have the best of intentions for their students, the evidence points out that implicit bias still affects the classroom (Kinsler, 2013). One prominent example of classroom discrimination is the type of discipline that the children receive. There is a clear disproportionate rate of suspension between boys versus girls in general but it is even further facilitated by race. In general, suspension rates are higher for boys, with males being suspended twice as often as girls (9.1% vs. 4.5%), but the problem is much more extreme for Black boys who are suspended at twice the rate of Hispanic boys and three times the rate of White boys (15.0%, 6.8%, and 4.8%, respectively; Gregory, Skiba & Noguera, 2010). Moreover, a male student of color who has been suspended is three times more likely to drop out of school by the 10th grade and is in turn more likely to end up incarcerated later in life (Dupper & Bosch, 1996; Goertz, Pollack, & Rock, 1996). It has also been shown that both teachers and administrators tend to suspend Black boys more readily based on subjective violations such as

disrespect, nosiness or uncooperating (Skiba et al., 2000). Whereas, White boys are typically suspended for observable violations such as smoking, fighting, or obscenity (Skiba et al., 2000). These findings unfortunately indicate that racial biases may alter perceptions of an individual's actions/behavior and can lead to differential treatment for Black versus White youth. Furthermore, differences in treatment at school can lead to negative life outcomes (e.g., increased criminality, incarceration), which presumably can further enhance the already existing stereotypes that hinder the Black population.

In social psychology research facial perception has shown that Black adolescents are in fact rated as older and more mature looking (Goff et al, 2014), but are also seen as more disruptive and uncooperative (Skiba et al., 2000). With all things considered there seems to be a lack of research demonstrating whether or not these negative behavioral judgments are made at an implicit level by just observing an individual's appearance without any prior knowledge of past behavior. The current study sought to explore whether or not measures of self-control, which is positively correlated with age, would actually be attenuated for Black versus White individuals, even though Black youth is often being perceived as older. The present research extended previous findings on racial biases in perceptions, specifically for adolescents, finding that ratings of self-control were in fact attenuated when perceivers rated Black adolescents. Additionally, self-control ratings were also attenuated when participants viewed male vs. female faces. The findings from the current study demonstrate that age does in fact positively correlate with perceptions of an individual's ability to exert self-control but that racial biases seem to disrupt these judgments.

The current research also demonstrated that Black youth are in fact perceived differently than their same aged White peers. One of the major strengths of the current study was the design

that allowed the researchers to incorporate previously-collected age ratings with self-control ratings from this study. Additionally, the stimuli used the study were novel and longitudinal in nature which allows for age and self-control estimates across adolescents. This sets the present work apart from similar research by Goff et a. 2014 in which participants only rated a set of 8 targets of unspecified age between 10 and 17. Since the actual ages of the targets were known (at least to the extent that they were labeled by year in school) and the targets were displayed multiple times in the subset of images at different ages (12-18); this study provided a more systematic manipulation of target age than approaches used in previous research. Despite the studies strengths there were some limitations including the convenience sample that was used. The research used a population of college student perceivers, which may not allow the current study to generalize to a more diverse population. Additionally, the study does not control for target emotion (e.g., smiling or seriousness) which could have influenced the way the targets were perceived and rated. Future research should take both these limitations into consideration and use a more diverse population of perceivers including; teachers, school administrators or other authority figures. In addition to using a more diverse sample, looking at perceiver race as a factor could be an interesting way to test for in-group versus outgroup perceptions of age and self-control. Future research in this domain, should also control for target emotions, which could be achieved by coding the existing targets for facial affect.

A wealth of research has shown that negative perceptions of Black men and adolescents can be held unconsciously by many teachers, health care professionals, police officers, lawmakers, members of the media and by a variety of other individuals (Baker, 2005; Hall 2015; Plous 2003; Kang at al., 2012). These perceptions can fuel discriminatory practices in nearly every aspect of society and can create unequal success rates and opportunities for Black

individuals. The current research provides further knowledge about the process involved in the perceptions of adolescent's age and perceived maturity. Certainly, the implications based on racial perceptions for children are especially important for our understanding of how race can bias adults' perceptions of young people, specifically teachers and other authority figures. Furthermore, race-based perceptions can mean that Black youth lose the protection provided by assumed childhood innocence well before their adult years. Continued research on perception biases, should explore ways to reduce stereotypes and associations linking race and behavior, because it could continue to lead to negative life outcomes for Black individuals.

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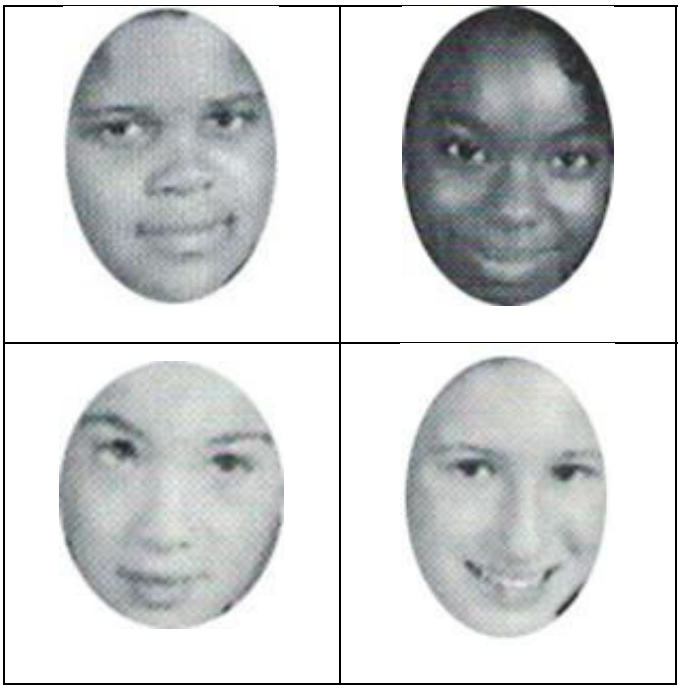

Figure 3. Sample Stimuli for 12-year-old targets

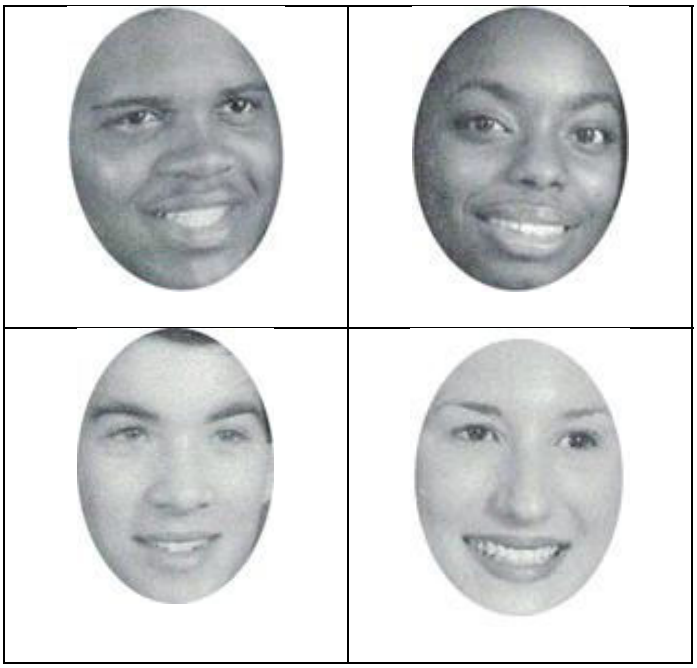

Figure 4. Sample Stimuli for 18-year-old targets