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The Effect of Perspective Taking and Phenotypicality on Racial Stereotyping

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The Effect of Perspective Taking and Phenotypicality on Racial Stereotyping

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Abstract

The goal of the present study was to examine the effects that phenotype and perspective taking have on stereotyping. In Experiment 1, participants were randomly assigned to one of two perspective taking conditions (perspective taking and no perspective taking) and a phenotype condition (high and low) and completed several explicit and implicit stereotyping measures (i.e., the stereotyping IAT, Amodio & Devine, 2006). Experiment 2 replicated Experiment 1; however, it used the Race-Weapons Association Task (Payne, 2001a; Payne 2001b) to measure implicit stereotyping. It also included an additional phenotypic target. The results of Experiment 1 indicate perspective takers who see a high phenotypic outgroup member explicitly stereotype the target more than non-perspective takers who see the same target and more than perspective takers who see the low phenotypic target. Experiment 2's results indicate a trend towards that same prediction; however, the target used seems to play a role.

Keywords: perspective taking, phenotype, stereotyping

The Effect of Perspective Taking and Phenotypicality on Implicit and Explicit Stereotyping

Outward stereotyping of ethnic and social groups is a phenomenon that social researchers actively seek to examine and evaluate due to the negative outcomes associated with stereotyping (Thames et al., 2013). One factor that can increase stereotyping is how much an individual resembles the prototypical phenotypic features of their group. For instance, those who have more phenotypic features are more likely to experience stereotyping and discrimination than those who have fewer phenotypic features (Maddox & Gray, 2002; Stepanova & Strube, 2012). Since these features are hard to change (i.e., people are born with these features), it is important to investigate methods that may help ameliorate the stereotyping that seems to naturally occur. One method that has received some attention as potentially helping reduce stereotyping is taking the perspective of an outgroup member. Research on perspective taking and stereotyping suggests that perspective taking can help disperse and reduce stereotyping (Galinsky & Moskowitz, 2000; Galinsky, Ku, & Wang, 2005). However, research has also found that when an outgroup member confirms negative stereotypes of its group perspective taking can worsen stereotyping (Skorinko & Sinclair 2013). No published research examines how perspective takers deal with phenotypic targets and how this effects stereotyping. The present study investigates this relationship between perspective taking and phenotypicality and how these factors influence stereotyping.

Perspective Taking

Perspective taking is the ability to cognitively consider the world from other possible viewpoints and use knowledge from other viewpoints to anticipate the actions and behaviors of

other individuals (Galinsky, Maddux, Gilin, & White, 2008). Empathy, on the other hand, is an emotional response to the feelings of other individuals, typically witnessed as concern to another's suffering (Galinsky, et al., 2008). In relation to stereotyping, some research indicates that perspective taking may help combat stereotyping of out-group members (Galinsky & Moskowitz, 2000) and help improve intergroup relationships (Vescio, Sechrist, & Paolucci, 2003). For instance, Galinsky and Moskowitz (2000) found in three experiments that perspective taking while writing a day in the life essay about an outgroup member reduced explicit stereotyping. Galinsky and colleagues (2005) further observed that when the perspective taker internalizes an outgroup target's perspective they reduce stereotyping of that target but may engage in more stereotypic behavior in an attempt to increase social bonds with the outgroup target. Laurent and Myers (2011) expanded upon this work and found that perspective taking allows perspective takers to see more connections between themselves and a target and this perception of connectedness can then influence changes in how the perspective taker sees themselves.

While some research suggests that perspective taking can help reduce stereotyping and increase feelings of connection between oneself and a target, other research finds that perspective taking can increase stereotyping if the target of the perspective taking endeavor is highly stereotypic in nature, due to stereotype confirmation (Skorinko & Sinclair, 2013). Additional research even suggests that perspective taking and consideration of others increases self-centered and egoistic thoughts and judgements, indicating additional negative products of perspective taking (Epley et al, 2006). Thus, perspective taking, depending on the context and scenario, can decrease or increase stereotyping of outgroup individuals.

Phenotype

For out experiment, phenotypicality refers to the degrees of variation between the appearances of individuals that belong to a particular group (Maddox, 2004). An individual is considered to have highly phenotypic features if their physical features are consistent with that of their social or ethnic group (Maddox & Gray, 2002). For example, according to common stereotypes, a highly phenotypic elderly person may appear more frail and ill, while a low phenotypic elderly person may instead appear fit and healthy.

Research shows that individuals with high phenotypic features are perceived by others to identify more with their ethnic group than those with low phenotypic features (Wilkins, Kaiser, & Rieck, 2010). In addition, phenotypicality influences how individuals are viewed, as those with high phenotypic features (e.g. Black individuals with darker skin tone) were evaluated more negatively than those will low phenotypic features (Maddox & Gray, 2002; Stepanova & Strube, 2012). Eberhardt and colleagues (2006) examined the effects that phenotypicality might have in courtroom decisions. The researchers found that if a court case involved a White victim, Black defendants with high phenotypic features (referred to as stereotypicality in the study) were more likely to be sentenced to death compared to Black defendants with low phenotypic features. Research also found that individuals were more likely to shoot a high phenotypic Black target than a low phenotypic Black target or a White target in a "shoot/don't shoot" computer game (Kahn & Davies, 2011). Overall, the research suggests that individuals with high levels of phenotypicality (i.e., those who appear consistent with the stereotype of their social or ethnic group) are evaluated more negatively and stereotyped more than those with low levels of phenotypicality (i.e., those who are inconsistent with the stereotype of their social or ethnic group).

Current Study

Past research suggests that individuals are stereotyped differently based on their phenotypic features (Wilkins, Kaiser & Rieck, 2010; Maddox & Gray, 2002; Stepanova & Strube, 2012; Eberhardt et al, 2006; Kahn & Davies, 2011). Likewise, research suggests that perspective taking helps reduce stereotyping (Galinsky & Moskowitz, 2000; Vescio, et al., 2003; Galinsky et al., 2005; Laurent & Myers, 2011), unless the target confirms negative stereotypes of their group (Skorinko & Sinclair, 2013). However, no published research has examined how perspective takers and phenotypicality effect stereotyping. Thus, the present research examines the effects that perspective taking and phenotypicality have on stereotyping. Since individuals with high phenotypic features are stereotyped more (Wilkins, et al., 2010; Maddox & Gray, 2002; Stepanova & Strube, 2012; Eberhardt et al, 2006; Kahn & Davies, 2011), it is hypothesized that seeing a high phenotypic target will be similar to seeing a target that confirms negative stereotypes of a group (Skorinko & Sinclair, 2013). Therefore, it is predicted that perspective takers will stereotype a high phenotypic target more than a low phenotypic target. To examine this prediction, two experiments were conducted. In each experiment, participants viewed either a high or low phenotypic target, and were prompted to either perspective take with the target or not. Participants then completed explicit and implicit stereotyping measures. Experiment 1 measures implicit stereotyping (Amodio & Devine, 2006). Experiment 2 measures Race-Weapons Associations (Payne, 2001a; Payne, 2001b).

Experiment 1 Method

Participants

Three hundred and five individuals participated in Experiment 1. Thirty-seven participants were excluded from the analyses for not completing the study (N =28), inputting the same number throughout the explicit measures (N = 1), being suspicious and not passing

attention checks ($N = 4$), or having outlying responses ($N = 4$). Since the outgroup target was based on ethnicity (Black male target) and we were interested in White reactions, all non-White participants were excluded from the analysis as well (70 total: 27 Black participants, 18 Asian, 3 American Indian/Alaskan Native/ Hawaiian Native/Other Pacific Islander, 10 multi-racial, 12 Other or did not disclose).

Thus, the analyses were based on a total of 198 White participants (74 Male, 122 female, 2 did not disclose) individuals participated in Experiment 1. One hundred and ninety individuals participated through Amazon's Mechanical Turk (MTURK) and eight individuals participated through a psychology research lab at a private institution in the Northeastern United States. Participants varied in age from 18 to 75. MTURK participants received a small monetary compensation, and psychology lab participants were compensated with course credit. All participants gave informed consent.

Materials and Design

This study uses a 2 (Perspective Taking: Perspective Taking vs. Control) by 2 (Phenotypicality: High vs. Low) between-participants design.

Perspective taking manipulation. Perspective taking was manipulated by having participants write a day in the life essay about a target individual while either considering the individual's perspective or not. To do this, participants wrote a day in the life essay but received different instructions on how to complete the essay (adapted from Galinsky & Moskowitz, 2000; Skorinko & Sinclair, 2013). Half the participants were prompted to write a day in the life essay (control condition) and half the participants were prompted to take the perspective of the target as they wrote their essay (perspective taking condition). The control condition prompted:

> "In this task, we are interested in your ability to construct life-event details from visual information alone. Please write a short essay about a typical day in the life of this individual."

The perspective taking condition prompted:

> "In this task, we are interested in your ability to construct life-event details from visual information alone. We would like for you to adopt the perspective of the individual in this photograph and imagine a day in the life of this individual as if you were that person, looking at the world through his/her eyes and walking through the world in his/her shoes. Try to imagine how the individual feels about their daily experiences and how these experiences affect his/her life. Please write a short essay about a typical day in the life of this individual."

Phenotypicality Manipulation. Phenotypicality was manipulated by having participants view a photograph of a Black individual exhibiting high or low phenotypic features. The same Black male face was used for both the high and low phenotype condition. This face was taken from the Chicago Face database (Ma, Correll, & Wittenbrink, 2015), it had a previously verified neutral expression and was edited using Adobe Photoshop®. To create the high phenotypic face, the base image was edited to have slightly darker skin and no other edits were made. To create the low phenotypic face, the base image was edited to make the nose slenderer, have thinner lips, and lighter skin. Additionally, all faces were peer reviewed after editing to make sure they looked real and not edited, prior to implementation of the study. See Appendix A for used images.

Stereotyping implicit association task (IAT). Implicit stereotyping was measured using the Stereotyping IAT developed by Amodio and Devine (2006), which measures how quickly

participants categorize images of Black and White faces and "Physical" words (e.g., athletic) and "Mental" words (e.g., Scientist). First, participants categorized photographs as "White" or "Black". Participants then categorized words as "Physical" or "Mental". Then, participants were randomly assigned to categorize an object as either "White/Physical or Black/Mental", or to categorize objects as "White/Mental or Black/Physical". The participant then repeated these trials; however, the White and Black categories were counterbalanced (the category switched sides on the computer screen, if White was on the left, it was now on the right). Higher scores indicate stronger levels of implicit stereotyping towards Blacks.

Stereotypicality of day-in-life essays. Each day-in-the-life essay was read by two independent coders who were blind to the experimental conditions. Based on past work (Galinsky & Moskowitz, 2000; Skorinko & Sinclair, 2013), each coder rated the overall stereotypicality of each essay on a 9-point Likert-Type scale (1 = not at all; 9 = very stereotypic). Inter-rater reliability was high, Cronbach $\alpha = .96$. The coder's ratings were averaged together and higher numbers indicate more stereotypic essays.

Stereotypic trait rating task. To also measure explicit stereotyping, participants completed a trait rating task consisting of a 7-point Likert-Type scale (1 = Not at All; 7 = Very Much). Participants rated the extent to which they believed 38 traits described the individual they saw in the photograph. Traits were adapted from Galsinky and Moskowitz (2000). A principle components factor analysis with varimax rotation identified six traits as being stereotypic of Blacks ("Aggressive", "Arrogant", "Hateful", "Ignorant", "Lazy", and "Self-Indulgent"; (Eigenvalue = 4.86; % Variance = 32.42; Cronbach $\alpha = .89$). Three of the traits were reverse-coded for counter stereotypes of Blacks ("Competent", "Hardworking", and "Intelligent")

Stereotypic beliefs scale. In addition to trait ratings, we also measured explicit stereotyping using a Stereotypic Beliefs Scale (Dukes, 2018). This scale uses a 7-point Likert-Type scale (1 = Not at All Likely; 7 = Very Likely) to rate 34 items, 16 of which are reverse scored. This questionnaire asked participants to rate the likelihood that the person in the photograph engaged in stereotypic scenarios of Blacks (e.g. "Lives in a neighborhood comprised of mostly minorities", "Has fathered children with more than one woman"). See Appendix B for items.

Interpersonal reactivity index. For exploratory purposes, participants also completed the 14-item perspective taking and empathetic concern subscales from the Interpersonal Reactivity Index (Davis, 1980) on a 7-point Likert-Type scale (1 = Strongly Disagree; 7 = Strongly Agree). Four of the items are reverse scored. Example items include: "I sometimes try to understand my friends better by imagining how things look from their perspective", "When I'm upset at someone, I usually try to 'put myself in his shoes' for a while". See Appendix C for all items. Higher scores indicate a greater propensity to engaged in perspective taking and empathetic concern.

Demographics. Participants provided demographic information including age, gender, ethnicity, current undergraduate status, native language, U.S. citizenship, and whether they participated through MTURK or in the research lab.

Procedure

After giving informed consent, participants learned that the study investigated story creation and processing of visual information. In line with this cover story, participants learned that they would view a target and then write a day-in-the-life essay about the person they viewed. Participants were randomly assigned to view a target who was high or low in phenotypic

features. Participants were also randomly assigned to either take the perspective of the individual as they wrote the day in life essay, or to write a day in the life essay with no perspective taking instructions. After finishing the essay, participants completed a Stereotyping Implicit Association Task (Amodio & Devine, 2006). Following this, they completed a modified version of the Stereotypic Trait Attribution Task (Galinsky & Moskowitz, 2000), the Stereotypic Beliefs Scale (Dukes, 2018), and the perspective taking and empathetic concern subscales from the Perspective Taking Interpersonal Reactivity Index (Davis, 1980). Participants also provided basic demographic information, including age, sex, and race. Finally, participants were thanked and debriefed. The study was identical regardless if individuals participated online through MTURK or in the research laboratory on a laboratory computer.

Results and Discussion

All measures were analyzed using a 2 x 2 ANOVA with perspective taking and phenotypicality as between-participants factors. Refer to Table 1 for complete descriptive and inferential statistics.

Explicit Stereotyping Measures

Essay task. There was a significant main effect for Perspective Taking, F (1, 192 = 9.349, p = .003, η^2p = .046, but not for Phenotype (p = .485). As seen in Figure 1, there also was a significant interaction between Perspective Taking and Phenotype, F (1, 192) = 7.188, p = .008, η^2p = .036. Simple effects analyses show that perspective takers who saw the high phenotypic target (M = 4.3, SD = 2.29) wrote more stereotypic essays than those who saw the low phenotypic target (M = 3.38, SD = 1.72), F (1, 192) = 5.37, p = .02, η^2p = .03. However, there was no difference in the essays written for non-perspective takers based on the

phenotypicality of the target, $p = .15$. For the high phenotypic target, perspective takers ($M = 4.3$, $SD = 2.29$) wrote more stereotypic essays than non-perspective takers ($M = 2.74$, $SD = 1.61$), $F(1, 192) = 15.47$, $p < .001$, $\eta^2 p = .08$. However, there was no difference in the essays written for Low Phenotypic targets based on perspective taking, $p = .78$.

Stereotypic trait task. There were no main effects for Perspective Taking ($p = .252$) or Phenotype ($p = .312$). Contrary to our predictions, there was no interaction between Perspective Taking and Phenotype on stereotypic trait attributions towards the Black target, $p = .199$.

Stereotype beliefs scale. There were no main effects for Perspective Taking ($p = .317$) or Phenotype ($p = .075$). However, as seen in Figure 2, there was a significant interaction between Perspective Taking and Phenotype, $F(1, 193) = 4.454$, $p = .036$, $\eta^2 p = .023$. Simple effects analyses show that perspective takers who saw the high phenotypic target ($M = 4.1$, $SD = .91$) endorsed more stereotypic beliefs about the target than those who saw the low phenotypic target ($M = 3.66$, $SD = .73$), $F(1, 193) = 7.17$, $p = .008$, $\eta^2 p = .04$. However, there was no difference in the stereotypic beliefs for non-perspective takers based on the phenotypicality of the target, $p = .814$. For the high phenotypic target, perspective takers ($M = 4.1$, $SD = .91$) endorsed more stereotypic beliefs than non-perspective takers ($M = 3.75$, $SD = .72$), $F(1, 193) = 4.535$, $p = .034$, $\eta^2 p = .023$. However, there was no difference in the stereotypic beliefs for low phenotypic targets based on perspective taking, $p = .418$.

Implicit Measures

Stereotyping IAT. There were no main effects for Perspective Taking ($p = .217$) or Phenotype ($p = .541$). Contrary to our predictions, there was no interaction between Perspective Taking and Phenotype on stereotypic beliefs towards Blacks, $p = .279$.

Exploratory Analyses

Interpersonal reactivity index (IRI). For exploratory purposes, we examined whether Perspective Taking and/or Phenotypicality influenced participants' responses on the perspective taking and empathetic concern subscales of the IRI. We averaged the two subscales together to create one index of the propensity to engage in perspective taking and empathetic concern. There were no main effects for Perspective Taking ($p = .069$) or Phenotype ($p = .979$) on participants responses for perspective taking and empathetic concern. There was also no interaction between Perspective Taking and Phenotype ($p = .241$).

Discussion

The analyses suggest that perspective takers who saw the high phenotypic target engaged in more explicit stereotyping (e.g., more stereotypic essays and more endorsement of stereotypic beliefs towards the target) than non-perspective takers who saw the same target. In addition, perspective takers who saw the high phenotypic target engaged in more explicit stereotyping than perspective takers who saw the low phenotypic target. Contrary to our predictions, the implicit stereotyping measure was not significant. An exploratory look at the means suggests that perspective takers who saw the low phenotypic target had the least amount of implicit stereotyping. We examine another implicit measure in Experiment 2.

Experiment 2

There has been growing public outrage in a series of fatal police shootings of typically unarmed Black men in the United States. Most notably, nationwide protests erupted after the shooting of Michael Brown, a Black teenager, by a White police officer in Ferguson, Missouri (McLaughlin, 2014). The shootings typically involve a Black teenage or adult male. For

instance, in 2012, Trayvon Martin, a Black teenager, was shot and killed by a White policeman (Bothelo, 2012). In 2016, Alton Sterling, a Black male, was shot and killed by two police officers who were not charged for the fatal shooting (Berman & Lowery, 2018). And, just recently, Stephon Clark an unarmed Black male was shot repeatedly (in the back) by police (Robles & Del Real, 2018). Past experimental research has found racial biases on shooter bias tasks (Correll, Urland, & Ito, 2006) and race-weapon association tasks (Payne, 2001a; Payne, 2001b). Some work has even looked at phenotypicality of the target. For instance, Kahn & Davies (2011) found that participants were more likely to erroneously shoot an unarmed target when the target was a high phenotypic (or stereotypic) Black male than when the target was a low phenotypic Black male or White.

Given the current unrest and that past research indicates that highly phenotypic targets may be more likely to be erroneously shot, we set out in Experiment 2 to examine the effects that perspective taking and phenotypicality have on implicit biases, especially race-weapon associations. Experiment 2 directly replicates Experiment 1 with two changes. First, the implicit Stereotyping IAT is replaced with a Race-Weapons Association Task (Payne, 2001a; Payne, 2001b) to gauge implicit race-weapon associations. Additionally, another Black male face is added in the phenotype manipulation used to investigate whether the results are based on the face itself or phenotypicality.

Method

Participants

One hundred eighty-nine individuals participated in Experiment 2. Nine participants were excluded from the analyses for not completing the study (N =6) or inputting the same number throughout the explicit measures (N = 3). As in Experiment 1, all non-White participants were

excluded from the analysis as well (36 total: 8 Black participants, 16 Asian, 1 American Indian/Alaskan Native, 3 multi-racial, 8 did not disclose).

Thus, the analyses were based on a total of 144 White participants (59 Male, 84 female, 1 did not disclose) individuals participated in Experiment 2. One hundred and twenty-three individuals participated through Amazon's Mechanical Turk (MTURK) and 21 individuals participated through a psychology research lab at a private institution in the Northeastern United States. Participants varied in age from 18 to 70. MTURK participants received a small monetary compensation, and psychology lab participants were compensated with course credit. All participants gave informed consent.

Procedure and Materials

The procedure for Experiment 2 was exactly the same as Experiment 1 except instead of using the Stereotyping IAT, we used the Race-Weapons Association Task (Payne, 2001b). In addition, we added an additional target to ensure that the results from Experiment 1 were not contingent upon the target used. The images of the new target were also in grayscale to examine whether the type of photograph mattered (grayscale versus color). The day-in-life essays were again coded for stereotypicality by two different independent coders who were blind to the experimental conditions. The interrater reliability was high, Cronbach $\alpha = .80$. In addition, a principle components factor analysis with varimax rotation identified the same six traits as being stereotypic of Blacks from Experiment 1 ("Aggressive", "Arrogant", "Hateful", "Ignorant", "Lazy", and "Self-Indulgent"; (Eigenvalue = 5.06; % Variance = 33.7; Cronbach $\alpha = .89$).

Phenotypicality manipulation. In Experiment 2, we added an additional target image. This new image was also taken from the Chicago Face Database (Ma, et al., 2015). Pretesting of this image deemed it to be highly phenotypic in nature and was left unedited for the high

phenotypic condition. To create the low phenotypic image, this original face was edited to have thinner lips, a slender nose, and lighter skin tone. Both images were then filtered to be grayscale. See Appendix D for used images.

Race-Weapons association task. The Race-Weapons Association Task (Payne, 2001b) measures how quickly participants categorize images of handguns or hand tools when primed by a Black face or a White face. For each trial in the task, an image of a Black or White face appears on screen for 500 ms (half a second), followed by an image of a handgun or hand tool for 200 ms. This is followed by a visual mask to cognitively "obscure" the previous pictures. The mask lasts until the participant submits a response that categorizes what they saw as either a gun or a tool. The reaction time to make a decision (tool or gun) is recorded. There are 192 trials in the task, each one having a unique combination of a face image and a handgun or hand tool image. Two measures inside the Race-Weapons task were examined – Reaction Time and Error. Reaction time is how fast (in ms) participants input what they believed they saw in each trial. Reaction times were log transformed as done in previous research (Payne, 2001b). Error is the rate (in percentage) of errors participants made when completing each trial.

Note: After running Experiment 2, we identified an error in the Race-Weapons Task script that was used. In the original Payne (2001b) article the prime appeared on the screen for 200ms, but in the version that was available at Inquisit by Millisecond's library it appeared for 500ms. This issue was reported to Inquisit and it has been resolved as of April 2018 (https://www.millisecond.com/download/library/weaponsidtask/).

Results and Discussion

As in Experiment 1, all explicit measures were analyzed using a 2 x 2 ANOVA with perspective taking and phenotypicality as between-participants factors. For the Race-Weapons Association Task, a repeated measures ANOVA was used with responses to the face and stimuli primed (i.e., Black gun, White gun, Black tool, White tool) as the within-participants factors and the perspective taking and phenotypicality as the between-participants factors. The analyses reported below are based on the scores for both targets used, and exploratory analysis examined whether the target influenced the results. Refer to Table 2 for complete descriptive and inferential statistics for explicit stereotyping measures.

Explicit Stereotyping Measures

Essay task. As seen in Figure 3, there was a significant main effect for Perspective Taking, F (1,139) = 7.67, p = .01, $\eta^2 p$ = .052. Perspective takers (M = 3.08, SD = 1.69) wrote more stereotypic essays than non-perspective takers (M = 2.33, SD = 1.51). There was no main effect for Phenotype (p = .28). Contrary to Experiment 1, there was no interaction between Perspective Taking and Phenotype on the stereotypicality of the essays written, p = .98.

Stereotypic trait task. As in Experiment 1, there were no main effects for Perspective Taking (p = .55) or Phenotype (p = .45). There was also no interaction between Perspective Taking and Phenotype on the stereotypic trait attributions made, p = .68.

Stereotype beliefs scale. There were no main effects for Perspective Taking (p = .34) or Phenotype (p = .29). Contrary to Experiment 1, there was no interaction between Perspective Taking and Phenotype on stereotypic beliefs towards the target, p = .99.

Implicit Measure

Race-Weapons association task. First, we look at the reaction times of how quickly participants responded to the different primed stimuli (e.g., Black gun, White gun, Black tool, White tool) using log transformed reaction times (see Figures 4a and 4b and Table 3 for descriptive statistics). There was a significant within-participants effect for the reaction time to the different stimuli, F (1, 140) = 26.03, $p < .001$, $\eta^2 p = .12$. Participants responded fastest when the Black face was paired with a gun ($M = 6.24$; $SD = .20$). However, there was no interaction between the primed stimuli and the Perspective Taking manipulation ($p = .73$). There was also no interaction between the primed stimuli and the Phenotypicality of the target ($p = .78$). And there was no interaction between the primed stimuli, Perspective Taking, and the Phenotype ($p = .26$). None of the between-participants factors were significant either, p's > .14.

In addition to reaction time, we also looked at the percentage of errors made based on each primed stimuli (see Figures 5A and 5b and Table 4 for descriptive statistics). There were no significant within-participants effect for the primed stimuli, $p = .1$. There was no interaction between the primed stimuli and the Perspective Taking manipulation ($p = .30$). There was also no interaction between the primed stimuli and the Phenotypicality of the target ($p = .49$). And there was no interaction between the primed stimuli, Perspective Taking, and the Phenotype ($p = .22$). For the between-participants factors, there was no main effect for Perspective Taking ($p = .32$) or Phenotype ($p = .07$). However, there was a significant interaction between Perspective Taking and Phenotypicality on the total percentage of errors made, F (1, 140) = 9.16, $p = .003$, $\eta^2 p = .06$. A simple effects analysis revealed that Perspective Takers who saw the high Phenotypic target ($M = .03$, $SE = .02$) made less errors than Perspective Takers who saw the low Phenotypic target ($M = .10$, $SD = .02$), F (1, 140) = 10.03, $p = .002$, $\eta^2 p = .07$. There was no difference for Non-Perspective Takers ($p = .35$). For those who saw the low Phenotypic target,

Perspective Takers (M = .10, SD = .02) made more errors than Non-Perspective Takers (M = .05, SD = .01), F (1, 140) =8.03, p = .01, $\eta^2 p$ = .05. There was no difference for those who saw the high Phenotypic target (p = .15).

Exploratory Analysis--IRI

Interpersonal reactivity index (IRI). For exploratory purposes, we examined whether Perspective Taking and/or Phenotypicality influenced participants' responses on the perspective taking and empathetic concern subscales of the IRI. There were no main effects for Perspective Taking (p = .817) or Phenotype (p = .07) on participants' responses for perspective taking and empathetic concern. There was no interaction between Perspective Taking and Phenotype on participants' responses for perspective taking or empathetic concern, p = .835.

Exploratory Analyses—Did the Target Matter?

An exploratory set of analyses were conducted to examine whether the two targets influenced the results. The explicit measures were analyzed using an ANOVA with Perspective Taking, Phenotypicality, and Target as between-participants factors. For the Race-Weapons Association Task, a repeated measures ANOVA was used with responses to the face and stimuli primed (i.e., Black gun, White gun, Black tool, White tool) as the within-participants factors and the Perspective Taking, Phenotypicality, and Target as the between-participants factors.

Essay task. There was a significant main effect for Perspective Taking, F (1, 135) = 6.26, p = .014, $\eta^2 p$ =.044. Perspective takers (M =3.08, SD =1.70) wrote more stereotypic essays than non-perspective takers (M = 2.33, SD = 1.51). There were no main effects for Phenotype (p = .35), or the Target (p = .52). There were no two-way interactions between Perspective Taking and Phenotype, (p = .93), Perspective Taking and Target (p = .38), or Phenotype and Target (p =

.87). There was also no three-way interaction between Perspective Taking, Phenotype and Target (p = .225).

Stereotypic trait task. There was no significant main effect for Perspective Taking (p = .65), Phenotype (p = .60), or Target (p = .93). There were no two-way interactions between Perspective Taking and Phenotype, (p = .90), Perspective Taking and Target (p = .43), or Phenotype and Target (p = .44). However, there was a marginal three-way interaction between Perspective Taking, Phenotype and Target, F (1, 136) = 3.76, p = .055, $\eta^2 p$ = .027.

Exploratory simple effects analyses showed that Non-Perspective Takers who saw the low Phenotypic target used in Experiment 1 (M = 2.92, SD = 1.01) attributed more stereotypic traits to the target than those who saw the new grayscaled Target (M = 2.27, SD = .79), F(1, 136) = 3.81, p = .05, $\eta^2 p$ = .027. Non-Perspective Takers with the high Phenotypic target attributed the same amount of stereotypic attributes regardless of the Target viewed (p = .32). Perspective Takers also attributed the same about of stereotypic attributes regardless of Phenotypicality and Target viewed (ps > .38).

Looking at the interaction in a different way, Non-Perspective Takers who saw the new grayscaled Target attributed more stereotypic attributes when this Target was high in \Phenotypicality (M = 2.88; SD = 1.10) than low in Phenotypicality (M = 2.27, SD =.79), F(1, 136) = 4.19, p = .04, $\eta^2 p$ = .030. Non-Perspective Takers viewing the Target used in Experiment 1 did not vary their stereotypic trait attributions based on Phenotypicality (p = .31). Perspective Takers also did not vary their stereotypic traits attributions based on the Target viewed or their Phenotypicality (ps > .46).

Finally, there were no differences for those viewing the low Phenotypic image based on Target or Perspective Taking (*p*s > .08). There were no differences for those viewing high Phenotypic images based on target or Perspective Taking (*p*s > .46).

Stereotype beliefs scale. There was no significant main effect for Perspective Taking (*p* = .43), Phenotype (*p* = .39), or Target (*p* = .94). There were no two-way interactions between Perspective Taking and Phenotype, (*p* = .83), Perspective Taking and Target (*p* = .55), or Phenotype and Target (*p* = .78). There was a marginal three-way interaction between Perspective Taking, Phenotype and Target (*p* = .065). Exploratory simple effects analyses showed no significant differences between any of the conditions (*p*s > .09).

Race-Weapons association task. There was a significant within-participants effect for the reaction time to the different stimuli, F (1, 136) = 23.28, $p < .001$, $\eta^2 p = .15$. Participants responded fastest when the Black face was paired with a gun (M = 6.24; SD = .20). However, there was no interaction between the primed stimuli and the perspective taking manipulation (*p* = .67). There was also no interaction between the primed stimuli and the Phenotypicality of the target (*p* = .96). There was also no interaction between the primed stimuli and the Target used (*p* = .69). There was no interaction between the primed stimuli, Perspective Taking, and the Phenotype (*p* = .23). There was no interaction between the primed stimuli, Perspective Taking, and the Target (*p* = .41). There was no interaction between the primed stimuli, Phenotype , and the Target (*p* = .72). And, there was no interaction between the primed stimuli, Perspective Taking, Phenotype, and Target (*p* = .07). None of the between-participants factors were significant either, *p*'s > .16.

For errors, there was a no significant within-participants effect for the primed stimuli, *p* = .06. There was no interaction between the primed stimuli and the Perspective Taking

manipulation (p = .23). There was also no interaction between the primed stimuli and the Phenotypicality of the target (p = .71). There was also no interaction between the primed stimuli and the Target (p = .24). There was no interaction between the primed stimuli, Perspective taking, and the Phenotype (p = .10). There was no interaction between the primed stimuli, Perspective taking, and the Target (p = .56). There was no interaction between the primed stimuli, Phenotype, and the Target (p = .15). But, there was a significant interaction between the primed stimuli, Perspective Taking, Phenotype, and the Target, F (1, 136) = 4.52, p = .04, $\eta^2 p$ = .03. Simple effects analyses showed no significant effects when comparing based on the Target, ps> .11.

For the between-participants factors, there was no main effect for Perspective Taking (p = .36), Phenotype (p = .1), or Target (p = .97). There was no interaction between Perspective Taking and Target (p = .56) or between Phenotype and Target (p = .79). There was no three-way interaction between Perspective Taking, Phenotype, and Target (p = .88). However, there was a significant interaction between Perspective Taking and Phenotypicality on the total percentage of errors made, F (1, 136) = 8.62, p = .004, $\eta^2 p$ = .06. A simple effects analysis revealed that Perspective Takers who saw the high Phenotypic target (M = .04, SE = .02) made less errors than P{erspective Takers who saw the low Phenotypic target (M = .10, SD = .02), F(1, 136) = 9.08, p = .003, $\eta^2 p$ = .06. There was no difference for Non-Perspective Takers (p = .33). For those who saw the low Phenotypic target, Perspective Takers (M = .10, SD = .02) made more errors than Non-Perspective Takers (M = .05, SD = .01), F (1, 136) =87.42, p = .01, $\eta^2 p$ = .05. There was no difference for those who saw the high Phenotypic target (p = .16).

Discussion

Overall, the results of Experiment 2 are non-significant and do not immediately replicate Experiment 1. The results are a little inconclusive as to the effect that the target is having on the results. In some cases, the effect is marginal with the differences appearing for the new grayscale image used in Experiment 2. Even though the images were pretested prior to use, more research will need to be done to make sure that the two images are being viewed similarly

General Discussion

Previous research that indicates that high phenotypic individuals are stereotyped more than low phenotypic individuals (Maddox & Gray, 2002; Stepanova & Strube, 2012). In addition, previous research found that perspective taking with an individual that confirmed negative stereotypes of their group increased stereotyping (Skorinko & Sinclair, 2013). Therefore, it was predicted that perspective taking with a high phenotypic target would also lead to increased stereotyping.

The results of Experiment 1 suggest that this is the case for explicit stereotyping. Perspective takers who saw the highly phenotypic target wrote more stereotypic essays and endorsed more stereotypic beliefs about the Black target than perspective takers who saw the low phenotypic target and non-perspective takers who saw the high phenotypic target. While the trait attribution task was not significant, the pattern of the means indicated a similar pattern. In addition, while the scores on the Stereotyping IAT score were not significant, there was an interesting pattern in the means such that the perspective takers who saw the low phenotypic target had the lowest implicit stereotyping. While not significant in the current study, it is an area that future research may want to continue to explore to see if this pattern continues to emerge.

The results from Experiment 2 do not replicate those of Experiment 1 when looking across both targets used. Though, we do find that participants are the quickest at responding when they were primed with a Black face and a gun on the Race-Weapons Association Task, replicating past work (Payne, 2001a; Payne, 2001b). However, the results are inconclusive to whether the target used is influencing the outcome of this data. Future research needs to explore these two targets to get a better understanding of why the study is not replicating. There was a smaller sample size in Experiment 2, so it is possible the target is influencing the data, but there is not enough power to detect it at this time. In addition, there was an error in the programming of the Race-Weapons Association Task used in Experiment 2 where the face prime was displayed for 500ms rather than 200ms. This may also be impacting the results in Experiment 2.

One limitation of the current work is that it only examined Black male targets—as this was the main target used in previous phenotypicality work (Eberhardt et al, 2006; Maddox & Gray, 2002; Stepanova & Strube, 2012). Future research should expand beyond Black males and look at different ethnicities (Karafantis & Pierre-Louis, 2012; Brown et al, 2013; Mange, Chun, Sharvit & Belanger, 2012) and gender (Davies, Hutchinson, Osborne, & Eberhardt, 2016) to ensure that the results generalize to other phenotypic targets.

In addition, future work should examine other factors that have been shown to interact with perspective taking ability. For instance, Galinsky and Ku (2005) have found in their research that the perspective takers who have higher self-esteem typically engage in less stereotypic behavior and have better intergroup relationships than perspective takers with lower self-esteem. Future research should investigate if the self-esteem also plays a role when individuals take the perspective of a high phenotypic target.

Future research may also examine cultural background as a factor of perspective taking. Wu and Keysar (2007) found that in their research, when American and Chinese participants played a game that relied on perspective taking, the Chinese participants performed better than the American participants. Wu and Keysar (2007) attributed these findings to the collectivist mindset of placing group needs above personal needs compared to the individualistic mindset of placing personal needs over group needs. Therefore, future research should investigate if collectivists would be more likely to engage in perspective taking with targets that vary in phenotypicality compared to individualists.

In conclusion, the results of Experiment 1 suggest that perspective taking with a high phenotypic target results in increased explicit stereotyping. One possible interpretation for this result is that the phenotypicality subtly confirms negative stereotypes of the group. Future work needs to examine whether this effect extends to implicit stereotypes and attitudes. Future work also needs to replicate the findings to make sure they are consistent. This work provides preliminary evidence that the phenotypicality may influence perspective taking endeavors and stereotyping.

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Table 1

Descriptive and Inferential Statistics Explicit and Implicit Stereotyping in Experiment 1.

DV	*N*	*M*	*SD*	*F*	*p*	η_p^2
Explicit Stereotyping Measures						
Day In Life Essays	196	3.38	1.96			
Perspective Taking (PT)				9.359	.003*	.046
Perspective Taking	92	3.79	2.04			
No Perspective Taking	104	3.02	1.94			
Phenotypicality (Pheno)				.490	.485	.003
High	92	3.45	2.09			
Low	104	3.32	1.83			
PT x Pheno				7.188	.008*	.036
PT High	42	4.29	2.29			
PT Low	50	3.38	1.71			
No PT High	50	2.74	1.61			
No PT Low	54	3.28	1.94			
Trait Attributions	197	2.8	1.08			
Perspective Taking (PT)				1.332	.252	.007
Perspective Taking	93	2.88	1.07			
No Perspective Taking	104	2.7	1.09			
Phenotypicality (Pheno)				1.027	.312	.005
High	92	2.87	1.45			
Low	105	2.73	1.03			
PT x Pheno				1.661	.199	.009
PT High	42	3.08	1.17			
PT Low	51	2.72	.958			
No PT High	50	2.7	1.11			
No PT Low	54	2.74	1.09			

DV	*N*	*M*	*SD*	*F*	*p*	η_p^2
Stereotypic Beliefs	197	3.81	.795			
Perspective Taking (PT)				1.008	.317	.005
Perspective Taking	93	3.86	.841			
No Perspective Taking	104	3.77	.752			
Phenotypicality (Pheno)				3.194	.075	.016
High	92	3.91	.83			
Low	105	3.72	.756			
PT x Pheno				4.454	.036*	.023
PT High	42	4.1	.913			
PT Low	51	3.66	.727			
No PT High	50	3.75	.724			
No PT Low	54	3.79	.784			
Implicit Stereotyping Measures						
Stereotyping IAT	197	3.069	.868			
Perspective Taking (PT)				1.388	.24	.007
Perspective Taking	93	3.37	.871			
No Perspective Taking	104	3.25	.866			
Phenotypicality (Pheno)				2.1	.149	.011
High	92	3.39	.921			
Low	105	3.23	.816			
PT x Pheno				3.13	.078	.016
PT High	42	3.59	.983			
PT Low	51	3.19	.729			
No PT High	50	3.23	.84			
No PT Low	54	3.27	.896			

*Note: * indicates $p \leq .05$*

Table 2

Descriptive and Inferential Statistics Explicit Stereotyping in Experiment 2.

DV	*N*	*M*	*SD*	*F*	*p*	η_p^2
Explicit Stereotyping Measures						
Day In Life Essays	143	2.65	1.63			
Perspective Taking (PT)				7.672	.006*	.052
Perspective Taking	60	3.08	1.69			
No Perspective Taking	83	2.33	1.51			
Phenotypicality (Pheno)				1.162	.283	.008
High	72	2.78	1.55			
Low	71	2.5	1.7			
PT x Pheno				.001	.976	.000
PT High	30	3.22	1.6			
PT Low	30	2.93	1.8			
No PT High	42	2.48	1.46			
No PT Low	42	2.15	1.55			
Trait Attributions	144	2.69	1.06			
Perspective Taking (PT)				.359	.550	.003
Perspective Taking	60	2.75	1.17			
No Perspective Taking	84	2.65	.974			
Phenotypicality (Pheno)				.563	.454	.004
High	73	2.76	1.02			
Low	71	2.62	1.09			
PT x Pheno				.176	.675	.001
PT High	30	2.78	1.04			
PT Low	30	2.72	1.29			
No PT High	43	2.75	1.01			
No PT Low	41	2.54	.932			

DV	*N*	*M*	*SD*	*F*	*p*	η_p^2
Stereotypic Beliefs	144	3.8	.827			
Perspective Taking (PT)				.933	.336	.007
Perspective Taking	60	3.87	.868			
No Perspective Taking	84	3.74	.797			
Phenotypicality (Pheno)				1.117	.292	.008
High	72	3.87	.804			
Low	71	3.73	.849			
PT x Pheno				.000	.995	.000
PT High	30	3.95	.89			
PT Low	30	3.8	.854			
No PT High	43	3.82	.744			
No PT Low	41	3.67	.851			

*Note: * indicates* $p \leq .05$

Table 3

Descriptive Statistics for the Race-Weapons Task (Reaction Time Log Transformed) in Experiment 2.

Stimulus Type	*N*	*M*	*SD*
Black Gun	144	6.24	.198
Perspective Taking (PT)			
Perspective Taking	60	6.22	.222
No Perspective Taking	84	6.26	.177
Phenotypicality (Pheno)			
High	73	6.25	.172
Low	71	6.23	.221
PT x Pheno			
PT High	30	6.26	.172
PT Low	30	6.23	.221
No PT High	43	6.25	.198
No PT Low	41	6.26	.156
White Gun	144	6.25	.204
Perspective Taking (PT)			
Perspective Taking	60	6.23	.21
No Perspective Taking	84	6.26	.2
Phenotypicality (Pheno)			
High	73	6.26	.195
Low	71	6.24	.213
PT x Pheno			
PT High	30	6.2	.272
PT Low	30	6.3	.116
No PT High	43	6.25	.237

No PT Low	41	6.27	.154
Stimulus Type	*N*	*M*	*SD*
Black Tool	144	6.24	.198
Perspective Taking (PT)			
Perspective Taking	60	6.25	.215
No Perspective Taking	84	6.3	.195
Phenotypicality (Pheno)			
High	73	6.3	.182
Low	71	6.26	.225
PT x Pheno			
PT High	30	6.29	.099
PT Low	30	6.2	.283
No PT High	43	6.29	.225
No PT Low	41	6.31	.161
White Tool	144	6.27	.218
Perspective Taking (PT)			
Perspective Taking	60	6.25	.233
No Perspective Taking	84	6.28	.207
Phenotypicality (Pheno)			
High	73	6.28	.197
Low	71	6.26	.239
PT x Pheno			
PT High	30	6.29	.097
PT Low	30	6.2	.312
No PT High	43	6.27	.245
No PT Low	41	6.3	.16

Table 4

Descriptive Statistics for the Race-Weapons Task (Error Rate) in Experiment 2.

Stimulus Type	*N*	*M*	*SD*
Black Gun	144	.063	.114
Perspective Taking (PT)			
Perspective Taking	60	.07	.129
No Perspective Taking	84	.058	.102
Phenotypicality (Pheno)			
High	73	.053	.105
Low	71	.074	.122
PT x Pheno			
PT High	30	.031	.042
PT Low	30	.11	.17
No PT High	43	.069	.131
No PT Low	41	.047	.057
White Gun	144	.065	.092
Perspective Taking (PT)			
Perspective Taking	60	.068	.088
No Perspective Taking	84	.063	.095
Phenotypicality (Pheno)			
High	73	.055	.093
Low	71	.076	.09
PT x Pheno			
PT High	30	.028	.034
PT Low	30	.11	.107
No PT High	43	.073	.115
No PT Low	41	.053	.068

Stimulus Type	*N*	*M*	*SD*
Black Tool	144	.058	.081
Perspective Taking (PT)			
Perspective Taking	60	.067	.097
No Perspective Taking	84	.051	.066
Phenotypicality (Pheno)			
High	73	.05	.061
Low	71	.067	.096
PT x Pheno			
PT High	30	.041	.035
PT Low	30	.096	.129
No PT High	43	.056	.074
No PT Low	41	.046	.056
White Tool	144	.053	.089
Perspective Taking (PT)			
Perspective Taking	60	.066	.112
No Perspective Taking	84	.044	.067
Phenotypicality (Pheno)			
High	73	.046	.069
Low	71	.061	.105
PT x Pheno			
PT High	30	.035	.035
PT Low	30	.097	.149
No PT High	43	.053	.084
No PT Low	41	.035	.04

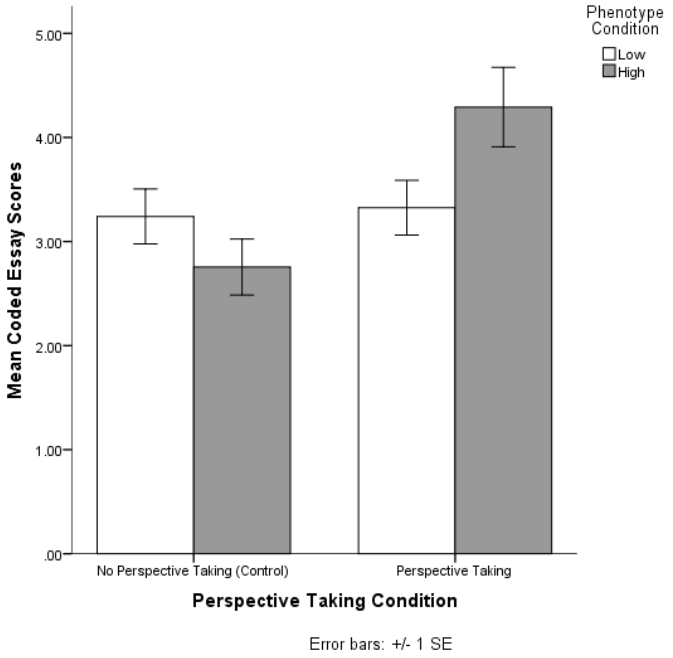

Figure 1. The effect of perspective taking and phenotypicality on the stereotypic nature of the day-in-life-essays written in Experiment 1.

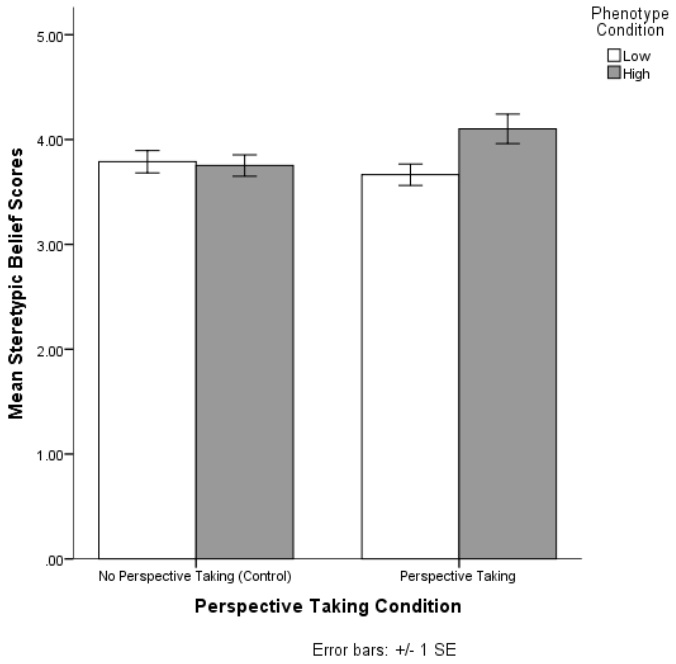

Figure 2. The effects of perspective taking and phenotypicality on stereotypic beliefs endorsed in Experiment 1.

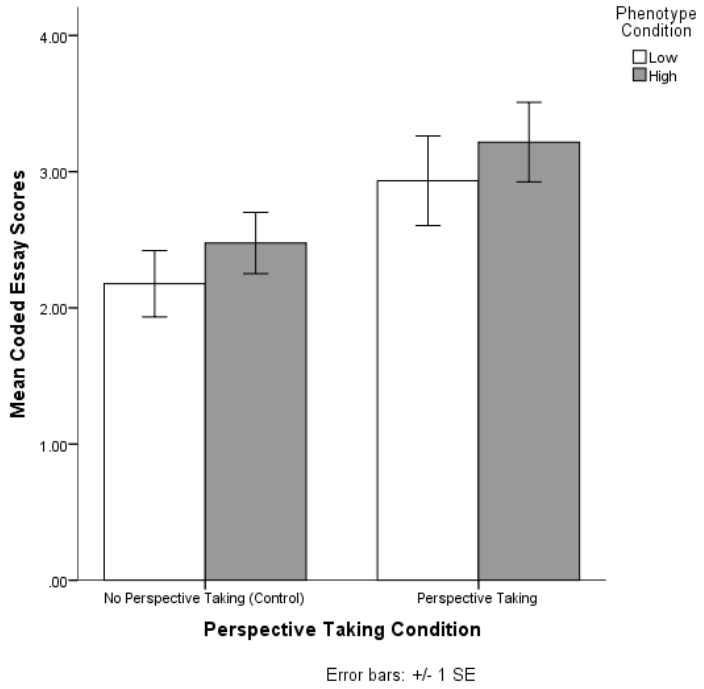

Figure 3. The effect of perspective taking and phenotypicality on the stereotypic nature of the day-in-life-essays written in Experiment 2.

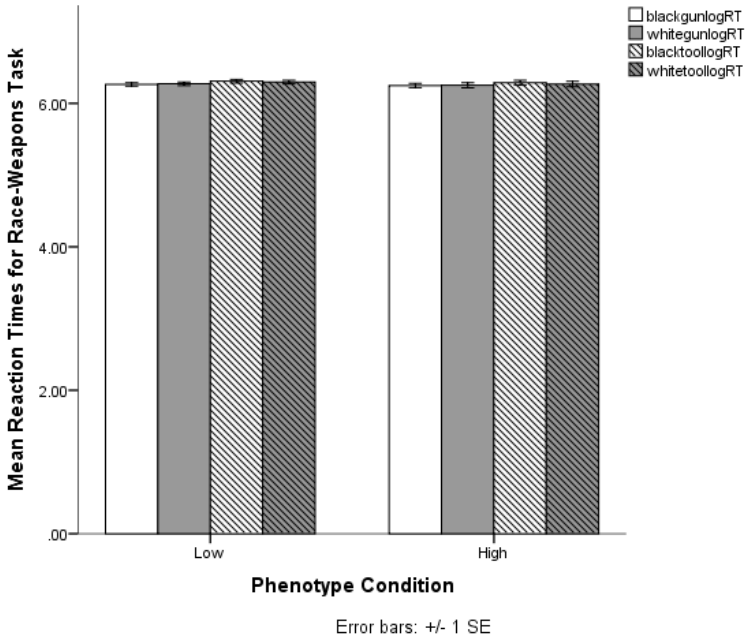

Figure 4A. The effect of phenotypicality in the no perspective taking condition on log transformed reaction times for the primed stimuli in the Race-Weapons Task in Experiment 2.

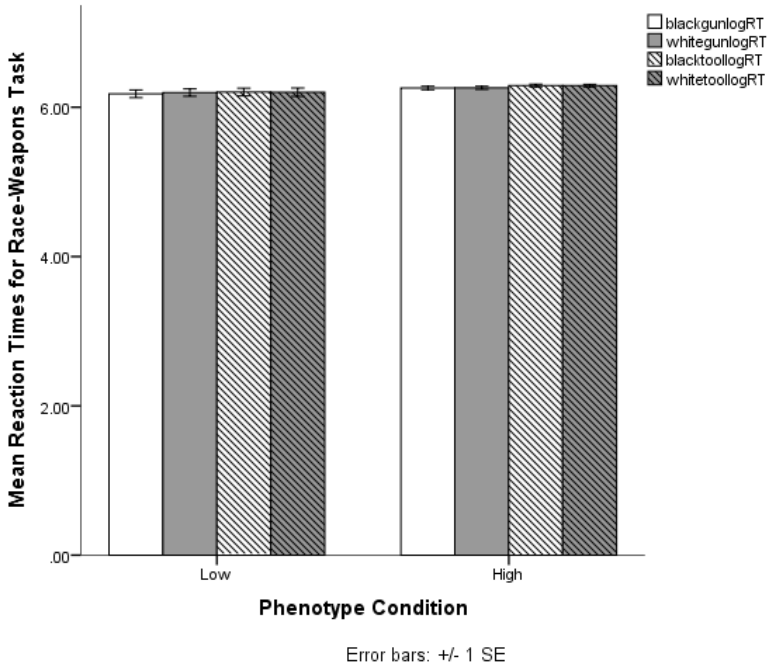

Figure 4B. The effect of phenotypicality in the perspective taking condition on log transformed reaction times for the primed stimuli in the Race-Weapons Task in Experiment 2.

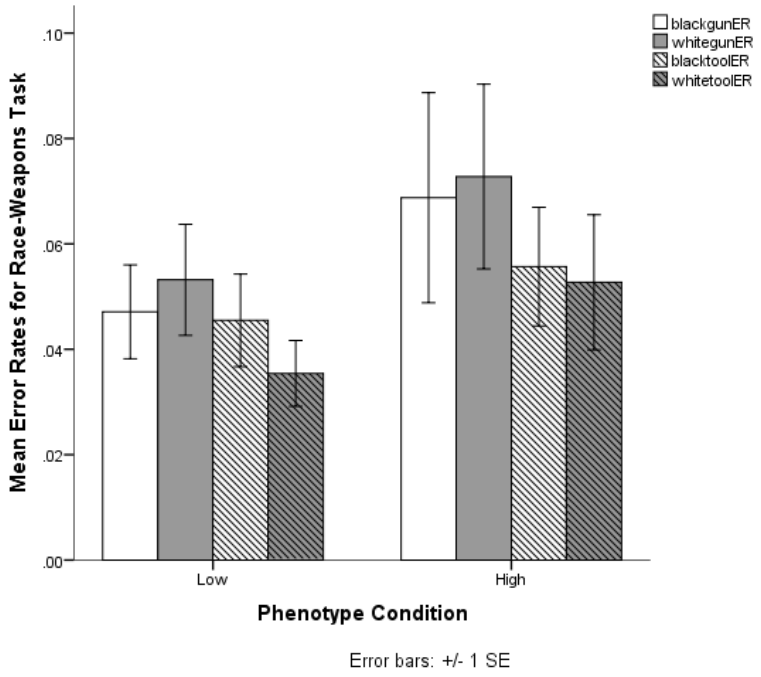

Figure 5A. The effect of phenotypicality in the no perspective taking condition on error rates for the primed stimuli in the Race-Weapons Task in Experiment 2.

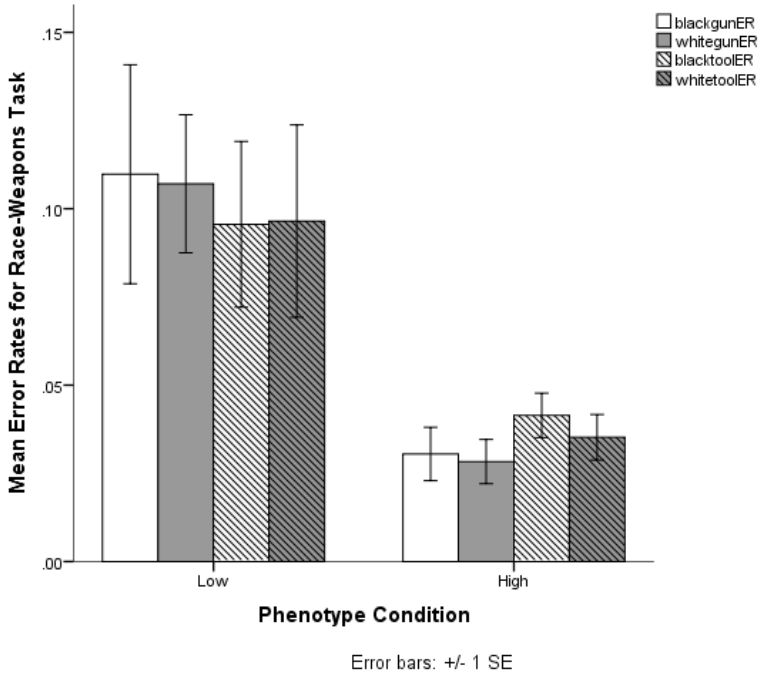

Figure 5B. The effect of phenotypicality in the perspective taking condition on error rates for the primed stimuli in the Race-Weapons Task in Experiment 2.

Appendix A

Experiment 1 Phenotypicality Manipulation (Low Phenotype on left, High Phenotype on right)

Appendix B

Trait Attribution Task

Participants rate from 1 to 7 (1 = not at all likely, 7 = very likely). “RS” indicates that the item is reverse scored for analysis.

- "Aggressive"
- "Arrogant"
- "Athletic"
- "Attractive"
- "Calm"
- "Caring"
- "Compassionate"
- "Competitive"
- "Competent" – RS
- "Confident"
- "Dependent"
- "Emotional"
- "Faithful"
- "Hardworking" – RS
- "Happy"
- "Hateful"
- "Humorous"
- "Ignorant"
- "Insensitive"
- "Insecure"
- "Intelligent" – RS
- "Lazy"
- "Masculine"
- "Moody"
- "Outspoken"
- "Overachiever"
- "Powerful"
- "Selfish"
- "Self-Indulgent"
- "Self-Reliant"
- "Shy"
- "Streetwise"
- "Strong"
- "Stubborn"
- "Talkative"
- “Warm"
- "Weak"
- "Worrisome"

Appendix C

Stereotypic Beliefs Scale

Participants rate from 1 to 7 (1 = not at all likely, 7 = very likely).

"RS" indicates that the item is reverse scored for analysis.

- "Is described as 'smooth operator' or 'ladies man' by friends."
- "Currently attends Harvard University and is majoring in Biochemistry." - RS
- "Has a season subscription to the Boston Symphony." - RS
- "Failed several classes in high school."
- "Has been charged with drug possession."
- "Spends a lot of time hanging out with friends and listening to hip-hop music."
- "Lives in a neighborhood comprised of mostly minorities."
- "Works autonomously without much prodding to complete a task." - RS
- "Attends a local Baptist church regularly and is very involved in church activities."
- "Rarely or never displays violent behavior towards others." - RS
- "Takes responsibility for his actions and failures in life " - RS
- "Has been unemployed for the past six months and struggling to find employment."
- "Constantly looks for breaks and the easy way out in life."
- "Aspires to be an investment banker like his father." - RS
- "Prides himself on being a law-abiding and model citizen." - RS
- "Grew up and continues to live in an upscale, suburban neighborhood." - RS
- "Was recruited by several colleges because of his athletic ability."
- "Believes it is important to wait until marriage to have children." - RS
- "Has been in and out of jail for several crimes and is now on probation."
- "Is not interested in material things." - RS
- "Has fathered children with more than one woman."
- "Disagrees with most organized religion and recently became agnostic." - RS
- "Was raised by grandparents and other extended family members."
- "Has no interest in sports and was never good at sports as a child." - RS
- "Completed a GED (high school equivalency) program this past year."
- "Spends majority of his free time playing basketball at the neighborhood court."
- "Dreams of a career in the entertainment industry as a rapper or singer."
- "Currently has an internship at Mass General and plans to attended medical school next Fall." - RS
- "Received academic scholarship offers from a number of prestigious universities." - RS
- "Was fired from his job because of a physical altercation with another employee."
- "Is passionate about football and played football in high school."
- "Drives a car with expensive tires, rims, and sound system."
- "Has never has been in any type of legal trouble"
- "Plans to get married soon and hopes to have a lasting marriage like his parents." – RS

Appendix D

Experiment 2 Additional Phenotype Manipulation Photographs (Low Phenotype on left, High Phenotype on right)