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Implicit and Explicit Perceptions of Biracial Targets

A thesis submitted in partial fulfillment of the requirement for the degree of Bachelors of Arts in Psychology from The College of William and Mary

by

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Implicit and Explicit Perceptions of Biracial Targets

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Abstract

Two studies were conducted to examine categorization of biracial targets and subsequent judgments made about those targets. The researchers found that the contextual stereotypic cues shown in a social networking profile as well as stereotypic word primes did affect the categorization of the ambiguous target. Though explicit judgments overall did not vary with the categorization of the target, the targets’ ambiguity in itself drove negative judgments from certain personality types. Judgments about work-related traits were particularly harsh, which could have serious ramifications for biracial or ambiguous individuals in the real world.
Introduction

Years of social psychological research on person perception have shown that social perceivers make rapid judgments about the people whom they encounter. These judgments are made from the attributes of target individuals encountered in the environment, typically based on readily available physical features (Stangor et al., 1992). Much of this research examining person perception has focused on the perception of faces (Berry & Zebrowitz-McArthur, 1986; Hassin & Trope, 2000), and research has found that perceivers read attributes into faces such as trustworthiness, competence, likeability, aggressiveness, and attractiveness (Willi & Todorov, 2006). Additionally, upon seeing a face, perceivers quickly and automatically categorize the face, based on visibly salient physical characteristics, such as skin color (Brewer & Feinstein, 1999), which can also lead to judgments about attributes of the target.

Research has shown that social perceivers identify individuals based on their group membership relatively quickly (Zarate & Smith, 1990) and automatically (Fiske & Neuberg, 1998). In fact, studies have indicated that social perceivers can categorize targets based on race and gender within 200 ms of perceiving them (Dickter & Bartholow, 2007; Ito & Urland, 2005). Social categorization studies have demonstrated that visually prominent features capture attention and are often given preference during categorization (Brewer, 1988; Fiske & Neuberg, 1998). Physical features allow perceivers to categorize others into “primary” groups, such as age, sex, and race (Stangor et al, 1992). These three categories are the most commonly used social categories, and much research has focused on examining categorization based on these social groups.
One way in which perceivers form judgments based on race, sex, and age is through ingroup and outgroup categorization. A perceiver’s ingroup is the social group to which the perceiver belongs, while the perceiver’s outgroup is any group to which he or she does not belong. Social groups can be any groups that are salient at a given time, and can be defined by physical characteristics (e.g., race, sex, ethnicity) or less physically identifiable characteristics such as religion or sexual orientation. Research has demonstrated that grouping in this way can have important outcomes for person perception and social categorization. For example, the perceiver’s outgroup is seen as more homogenous than his/her ingroup (Linville, Fischer, & Salovey, 1989; Park & Judd, 1990), and can be regarded with hostility or indifference, even if the differentiation between the groups is minimal or arbitrary (Sherif, 1961; Tajfel, 1971). Therefore, perceivers can and do use physical cues from faces of targets to categorize the targets as ingroup or outgroup members and then assign attributes to the targets quickly (Ito & Urland, 2005).

Although social categorization can be beneficial because it is a cognitive heuristic, thus preserving cognitive resources and activating relevant scripts, categorizing people into groups, especially by their age, race, and sex can be a “precondition for treating them differently” based on these categories (Kurzban et al, 2001, p. 15387). In other words, categorizing others by the “primary” dimensions allows for making judgments of the target based on those dimensions. That is, engaging in social categorization can lead to the automatic activation of learned negative social stereotypes (e.g., Bartholow & Dickter, 2008). Activating stereotypes can in turn lead perceivers to make ungrounded or unfair judgments about individuals based solely on group
Perceptions

additional stereotypes can be dangerous because they are based more on
social constructs rather than truth; that is, stereotypes are learned sociohistorical beliefs
that members of certain groups possess certain traits (Kassin et al, 2008). Although some
stereotypes are based on a glimmer of truth (Ashmore & Del Boca, 1981), they are often
inaccurate when directed towards individuals or groups of people. Thus, stereotyping
leads social perceivers to apply generalizations to a group and assume that individual
members of a group necessarily have certain qualities only because of their membership
in that group.

Such overgeneralization of a characteristic to a group can result in discrimination
against members of that group. If a group is persistently discriminated against due to
stereotyping, that group can become stigmatized. Stigmatized groups are “vulnerable to
being labeled as deviant, and are devalued in society” (Crocker et al, 1993, p.345). Once
a group is stigmatized, it is difficult to overcome the effects of those stereotypes. One
reason for the persistence of stereotypes is that people tend to interpret information in a
way that confirms their biases (Stone et al., 1997), which can lead to the perpetuation of
stereotypes. Another way in which stereotypes persist is through stereotype threat (Steele,
1997). That is, knowledge of a stereotype about one’s group can lead to fear of
confirming the stereotype and thus ultimately leads to underperformance (Steele &
Aronson, 1995). This can be especially problematic in areas such as academics. For
example, if a woman is aware of the stereotype that women are less gifted in mathematics
than men, she may perform poorly on a math test in response to stress caused by that
stereotype. Other negative effects of stereotypes on targets include lowered self-esteem,
health problems, and higher stress levels (see Whitley & Kite, 2010, for a review).
Social psychologists have examined the prevalent stereotypes that social perceivers hold about different groups based on social category membership. Studies that focus on racial stereotypes have asked individuals to provide lists of commonly held stereotypes about various racial groups. As social change often leads to changing stereotypes, these lists must be updated regularly. A series of studies were conducted over a span of 36 years to examine changing stereotypes about Blacks and Whites in the United States. In these studies, college students at Princeton University were asked to identify common stereotypes about these two racial groups by checking off stereotypes from a provided list. Called The Princeton Trilogy studies (Katz & Braly, 1933; Gilbert, 1951; Karlins, Coffman, & Walters, 1969), these studies found that over three decades, racial stereotypes about Blacks became more positive and the authors of the final study claimed that this was evidence that prejudice against Blacks was declining. However, in more recent years, Devine and Elliot (1995) have argued that these studies did not measure prejudice per se, but instead examined stereotype content. This argument was supported by research conducted by Devine (1989), in which she provided clearer instructions by asking participants to list stereotypes about Blacks of which they were aware, but that were not necessarily stereotypes that they believed themselves. Results from this study indicated both high- and low–prejudiced participants were equally aware of racial stereotypes about Blacks and that the presence of a Black face was enough to automatically activate these stereotypes for all perceivers. However, low-prejudiced participants who were motivated to be egalitarian were able to consciously control prejudicial responses, if given time and if sufficient cognitive resources were available. The subsequent model that was developed from this study makes a distinction between
the automatic and controlled components of stereotyping, and suggests that “the stereotype is automatically activated in the presence of a member (or some symbolic equivalent) of the stereotype group and that low-prejudice responses require controlled inhibition of the automatically activated stereotype” (Devine, 1989, p.5).

In addition to the studies reviewed above, more recent studies have also attempted to gather information about the current content of stereotypes about Blacks and Whites in the United States (Lepore & Brown, 1997; Wittenbrink, Judd, & Park, 1997; Augoustinos et al, 1994). Together, these studies have shown that contemporary stereotypes about Blacks include perceptions that Blacks are lazy, aggressive, and athletic. Stereotypes about Whites include perceptions that Whites are uptight, wealthy, and intelligent. Although research has examined stereotypes about other groups, most of the research has focused on stereotypes about Blacks and Whites.

As the research above demonstrates, perceivers high and low in racial prejudice are aware of these stereotypes and this can lead to the stereotype activation as a result of social categorization (Devine, 1989). Stereotype activation can be either explicit or implicit. Explicit stereotypes are beliefs that the perceiver is aware of and may subscribe to or endorse. A person who explicitly states that (s)he holds stereotypes is considered an explicitly prejudiced person. However, stereotypes and prejudice are not inextricably related. As reviewed above, mere knowledge of a stereotype (implicit or automatic activation) does not necessarily match up with participants’ prejudice scores (an explicit measure; Devine, 1989). However, implicit activation of stereotypes can still lead to discriminatory behaviors, even if the individual does not consciously endorse the stereotypes (Bargh, 1997a, 1997b; Greenwald et al., 1998). Because stereotypes are
learned and encoded throughout the lifespan (Allport, 1954; P. Katz, 1976; Proshansky, 1966), they are activated often and subconsciously simply by being presented with a stimulus from the stereotyped group (Devine, 1989). Evidence for discrepancies between implicit and explicit stereotype activation is the Implicit Association Test (IAT). This test, created by Greenwald et al (1998), is a reaction time test in which participants pair a concept (i.e., good) with a category (i.e., Black). Faster responses indicate that it was easier (and more automatic) for the participant to pair the concept with the category. Greenwald and colleagues (1998) found that though they explicitly stated an indifference towards either race or even a slight preference towards Blacks, Whites were quicker to pair “White” with “pleasant” than “Black” with “pleasant,” indicating a negative implicit attitude towards Blacks. Taken together, these studies make clear the distinction between explicit and implicit stereotype activation, and illustrate the importance of studying both explicit and implicit processes when examining stereotype activation processes.

Much research on stereotype activation has focused on individuals who can visually be placed into unambiguous categories such as “White” or “Black.” However, less research has focused on target individuals who have multiple racial categorizations and/or racially ambiguous physical features. As the numbers of biracial and multiracial individuals in the US continue to increase, this is becoming a more pertinent issue to study. Since the Supreme Court case overturning a ban on biracial marriages in 1967, the US has experienced a “biracial baby boom” (Colker, 1996; King & DaCosta, 1996; Root, 1992, 1996). The presence of well-known multiracial individuals also continues to increase, with bi-racial athletes such as Tiger Woods, celebrities, such as Halle Berry, and even politicians, such as Barack Obama, gaining media attention.
Even with the increase in the number of multiracial Americans, there is some ambiguity in how these individuals are racially categorized. Multiracial individuals often report experiences with strangers approaching them and asking them “What are you?” and research has shown that perceivers have a need to categorize targets along one racial dimension (Peery & Bodenhausen, 2008). The race of the current U.S. President is even often misidentified; that is, Barack Obama has been hailed as “the first Black president,” when in fact he is multiracial. Specifically, Obama’s mother is White while his father is Black. Although he was raised by his mother and his White grandparents, Barack Obama has said that he categorizes himself as Black because that’s how he was perceived by others for his entire life. Even the United States Census has experienced problems with categorizing multiracial individuals. Before the 2000 census, multiracial individuals had to choose a single race; there were no multiracial categories or options to choose more than one race. The 2000 census, however, allowed citizens to select “all that apply,” increasing options for individuals who do not fall into one racial category. Taken together, these examples illustrate how difficult it may be for social perceivers to categorize multiracial or ambiguously racial individuals.

Statistics and personal stories like those described above highlight the importance of understanding the perception of biracial and multiracial individuals. How do perceivers categorize and then make judgments about multiracial targets? Historically, the oldest adage of categorizing biracial (Black and White) individuals comes from the days of slavery in which a White slave owner would take advantage of his Black female slaves. The child resulting from the union would be considered Black (and the father usually could not or would not acknowledge his part of the union). This led to laws, both
written and understood, that classified any person with “one drop” of Black blood as Black; this was called the “one-drop rule” or hypo-descent (Leyens & Yzerbyt, 1992; Banks & Eberhardt, 1998; Peery & Bodenhausen, 2008). Thus, these historical references imply that Black-White biracial individuals are likely to be categorized as “Black,” and less likely to be categorized as multiracial or White.

Research has shown that there are several factors that affect the categorization of multiracial individuals. Several recent studies (MacLin and Malpass, 2001; Shutts & Kinzler, 2008; Peery & Bodenhausen, 2008; Willadsen-Jensen & Ito, 2006; Willadsen-Jensen & Ito, 2009) have used “cues” to manipulate the categorization of ambiguous targets. These cues range from the physical features of the target to the contextual features of the target’s environment.

MacLin and Malpass (2001) conducted a study in which they varied the physical appearance of an ambiguous target by manipulating the stereotypicality of the target’s hairstyle. The participants were shown a target face that had been created by digitally morphing a Black face and a Hispanic face together. The biracial morphed face was presented with either a stereotypical Hispanic hairstyle or a stereotypical Black hairstyle and participants were asked to categorize the face into one of six racial categories (Indian, Asian, Black, Hispanic, White, Other), and asked to indicate the degree to which the face appeared to belong to the category that they chose. Next, participants were asked to rate the ambiguous face on facial features and personality traits. The researchers found that though the faces were identical, the target was perceived to be a member of the race to which the hair marker was consistent. Participants’ trait ratings also varied based on hairstyle such that they were consistent with the group’s traits. For instance, when the
target face had an afro (stereotypically Black) hairstyle, participants were more likely to say that the face had a broader nose, wider lips, and a darker complexion. Additionally, Hispanic participants had better memory for the morphs presented with the stereotypical Hispanic hairstyle in comparison for their memory of the ambiguous faces with the stereotypical Black hairstyle. Participants’ qualitative judgments of the ambiguous faces also varied as a function of racial markers. The researchers used an IAT and found that faces with a same-race marker (Hispanic) were associated with positive words and the other-race faces (Black) were associated with negative words. These results suggest that racial markers can impact the categorization and subsequent perception of ambiguous-race targets.

A subsequent study investigated the perception of biracial individuals by varying biological cues, such as the purported parents and siblings of a bi-racial target (Shutts & Kinzler, 2008). The researchers used children as their participants and were interested in the differences between children’s and adult’s memories for ambiguous faces. Interest in this concept comes from previous research on the cross-race effect (CRE), the well-documented finding that perceivers recognize ingroup faces with higher rates of accuracy, relative to outgroup faces (e.g., Anthony, Copper, & Mullen, 1992; Chance & Goldstein, 1982; Meissner & Brigham, 2001). The CRE has been explained in terms of the perceptual-expertise model, which suggests that perceivers may have less interaction with racial outgroup members and thus have difficulty distinguishing among racial outgroup faces has been used to explain the CRE (see Meissner & Brigham, 2001, for a review). Support for this model comes from research demonstrating that accuracy in cross-race identification is modified by contact with outgroup members (Chiroro &
Valentine, 1995). Most of the research on the CRE has been conducted with adults and this pattern persists even when the faces are ambiguous and paired with racial cues (Chance & Goldstein, 1996; Malpass & Kravitz, 1969). Shutts and Kinzler aimed to see if this phenomenon was also present in children’s memory. They hypothesized that the children, like adults, would be influenced by the racial cues and have better memory for the faces that they perceived to be of their own race. Children were presented with slides, which had a face that had been digitally morphed from a picture of a Black face and a White face above a picture of its parent Black or White face. The child was told that the parent face was the sibling of the target face. Next, the child was asked to indicate which one was the target (given a name) face. Overall, children (the majority of whom were White) had better memory for ambiguous faces paired with a White “sibling” face. The children’s perception (and therefore memory) of the ambiguous faces was affected by the biological cues, the race of the sibling, when the sibling looked similar to the target. More importantly, this study shows that varying context surrounding identical photographs can influence the perception of the target in the photograph.

Other studies have looked at the importance of biological cues in comparison to cultural cues (Peery & Bodenhausen, 2008). In their study, Peery and Bodenhausen (2008) used profiles, with a picture and a brief description, to vary the available cues about an ambiguous target. They were interested in both quick reflexive categorization of an ambiguous target, as well as more contemplative categorization. The cues they manipulated were either “biological” or “cultural.” Biological cues referred to the parentage of the target, the race of the target’s parents. Cultural cues referred to the neighborhood and school of the target, his social environment. The researchers
hypothesized that biological cues would affect categorization more so than cultural cues. Specifically, they hypothesized that biological cues would affect the participant’s reflexive judgment such that they would categorize the target as monoracial Black, but after further consideration would categorize the target as multiracial. The participants were shown each profile and asked to judge whether the target was “White” or “not White” in one set of trials and “Black” or “not Black” in another set. Because of the two sets of trials, the participants could categorize a target as Black, White, Both, or Neither. The researchers found, when given biological (one Black parent) and cultural (mixed race neighborhood) information, participants were more likely to categorize an ambiguous target as “Black” in a reactive task. They also found that response times were faster when biological cues were present, but did not find a difference for cultural cues. In the reflective portion of the study, participants were asked to deliberately describe the race of the ambiguous targets. After reflecting, the participants were more likely to categorize the ambiguous targets as “multiracial,” especially when biological information was present. This study indicates that the participants reflexively categorized biracial individuals as monoracial Black, but with the help of cues and after more time had elapsed, the participants were more likely to categorize the biracial target as “multiracial.” This effect can be attributed to automatic versus controlled responses. Controlled responses are usually explicit; that is, the participant has the opportunity to think about and censor the response. Automatic responses are implicit; the participant does not have time to censor responses when he has to react quickly. In this study (Peery & Bodenhausen, 2008), participants automatically categorized the biracial target as “Black” but when they had the opportunity to reflect and give a controlled response, they categorized the individual
as multiracial. As previously reviewed, research has demonstrated the differences between participant’s self reported (controlled responses) prejudice levels and their implicit attitudes (Dovidio et al., 1997).

Categorization of racially ambiguous faces has been tested using non-White participants as well. In Willadsen-Jensen and Ito’s (2008) study, they used event-related potentials (ERPs) to measure implicit attention and therefore automatic categorization of ambiguous faces by Asian participants. They also varied the racial context in which the ambiguous faces were presented to determine if cues would change the attention and social categorization of the ambiguous target. The researchers found that at first Asian participants paid more attention to (processed more deeply) the (outgroup) White faces than ambiguous faces or the (ingroup) Asian faces. This pattern of allocating more early attention to the outgroup is congruent with prior research (Dickter & Bartholow, 2007; Hillyard & Munte, 1984; Ito & Urland, 2003). However, when the faces were presented in the context of either primarily White or primarily Asian faces, the processing/attention of the perceiver changed. When shown many White faces at once, Asian participants showed just as much attention to White outgroup faces as they did to Asian ingroup faces. This indicates that minority group members may be more fluid in person perception, probably because they are usually surrounded by more White than minority individuals in their daily lives.

Another study by these authors (Willadsen-Jensen & Ito, 2006) found that White participants did not differentiate racially ambiguous faces from White faces at 200ms but they were differentiated from Asian and Black faces. However, at 500ms, they were differentiated from White faces. Overall, the racially ambiguous faces were perceived as
more similar to White faces than minority faces. Explicit measures of categorization reflected the ambiguity of the faces, such that, when given time to think about the social categories, perceivers were able to recognize that some targets did not easily fall into one racial group. Taken together, these findings indicate that quick, implicit categorization may differ from later, explicit categorization in important ways. That is, when perceivers engage in the automatic process of social categorization upon seeing a biracial face, they may categorize this individual along one social category, but when given more time, they may engage in controlled processing and categorize this individual as a multiracial person (see also Peery & Bodenhausen, 2008). Because this research is in the beginning stages, further research is needed to explore the implicit and explicit processes that emerge during the social categorization of biracial and multiracial individuals.

The current set of studies was designed to further explore the process by which social categorization occurs when perceivers view faces that are ambiguous in their race. These studies explored the automatic and controlled components surrounding the social categorization process. That is, Study 1 was designed to examine how contextual cues lead to the automatic social categorization of a biracial target individual, and how this categorization affects explicit stereotype activation. Study 2, on the other hand, explored how the presence of stereotypes can automatically affect the social categorization of a biracial target individual. Thus, together, these studies were designed to shed some more light on both the implicit and explicit aspects of social categorization and stereotype activation, as they apply to biracial individuals.

Study 1
The goal of Study 1 was to explore how contextual information regarding biracial targets affects categorization and leads to stereotype activation. Thus, participants viewed profiles of the same biracial target that varied between conditions on stereotypic features consistent with the social categories of Whites and Blacks. It was expected that the stereotypic contextual information provided would lead participants to categorize the target individuals as White or Black, and then activate stereotypes about the relevant social group as a result of categorization, as assessed by trait judgments about this target individual. An additional goal of the present studies was to examine the role that personality type plays in the social categorization of ambiguous-race individuals. That is, it was expected that perceivers with a high need for cognitive closure (NFC) would react more negatively towards the ambiguous targets, rating the target more negatively, due to the discomfort associated with ambiguity in high NFC individuals (Webster & Kruglanski, 1994). Individuals high in Right Wing Authoritarianism (RWA) were also expected to rate ambiguous targets more negatively, given authoritarians' discomfort (Kruglanski & Webster, 1994) and anger (Altemeyer, 1996) when presented with ambiguity. Because Social Dominance Orientation (SDO) is correlated with RWA and together they have been shown to predict prejudice scores (Sidanius & Pratto, 1999), the researchers also hypothesized that high SDO and high RWA participants would rate the ambiguous target more negatively than the participants with lower scores on these scales. We also expected that participants with higher prejudice scores on the IMS and ATB would react more negatively towards the targets depending on the stereotypicality of the profile; that is, it was expected that higher prejudice individuals would be unwilling or
unable to let the stereotypes activated by the profiles affect their ratings of the outgroup target.

Method

Participants

Participants were 77 undergraduate students enrolled in William and Mary Introductory Psychology classes. There were 40 female participants (52%) and 37 male participants (48%). The participants were between the ages of 18 and 22; the mean age was 18.9. There were 53 White/Caucasian participants (69%), 3 Black/African American participants (4%), 15 Asian/Pacific Islander participants (18%), 3 Multiracial participants (4%), and 3 Hispanic participant (4%). In exchange for their role in the study, the participants received course credit for their Introductory Psychology class.

Design and Materials

This study was a between-subjects design in which the independent variable was the type of profile. There were five levels of the independent variable, which consisted of five versions of a document providing participants with information about a target individual. The format in which the document was presented was similar to the individual web pages of popular social networking sites such as MySpace (www.myspace.com) and Facebook (www.facebook.com). This format was chosen because the college student participants would be comfortable looking at these profiles, and because it was relatively easy to slightly manipulate characteristics of the profile to fit the experimental parameters. Additionally, using a social networking format would make the procedure of the study more consistent with “real-world” judgments that college students often make, based on the availability of limited information. Thus, a “MyFace” profile was created
that appeared to be a generic social networking page. Each of the five conditions was
denoted by slight changes in the personal information of the profile to match
stereotypicality (see Appendices A-E for the profiles). Each profile contained the same
picture of a face that was displayed in the upper right-hand corner of the document. The
picture was a 50/50 morph of a Black male and a White male face, created so that the
race was ambiguous to most perceivers. The selected picture was chosen from a pilot test
with 35 participants, in which 33 male morphed faces were categorized by race and rated
on attractiveness. All participants in the pilot test came from the same population as the
current study and were similar in demographic characteristics such as age, gender, and
race. The target face was chosen because it was rated as being neutral in attractiveness
and ambiguous in race.

In addition to the picture, the profiles also contained other sections of information,
including pictures (mundane landscape pictures of Washington DC), favorite television
shows (Sports Center, The Office), favorite movies (James Bond movies, Oceans 11, The
Matrix), and activities (watching sports, going to the gym, playing video games). The
movies and activities were also tested in a pilot test and were considered “typical”
activities and movies that males might enjoy. There were 48 participants in this second
pilot test. They were asked to list three movies typically associated with and/or marketed
towards masculine audiences. The participants were also asked to “list 3
stereotypically masculine pastimes that college men might do in their spare time.” The
researchers chose movies and activities from the most commonly listed movies and
activities in the pilot test. The two television shows were chosen with help from research
assistants. “The Office” is a very popular show amongst college students that was
determined to be equally liked by males and females; “Sports Center” was chosen based on its congruency with the sports-related activities listed in the profile as a stereotypically male television show.

All five profiles were identical, with the exception that they varied in stereotypicality of the school attended, name of the target, and the target’s major. It was necessary to pilot test for stereotypicality to be sure that the cues were appropriate and would lead to a Black/White (or neutral) categorization. The cues had to activate the proper stereotype. Therefore, these variables were also examined in the second pilot test, in order to measure the stereotypicality. Participants rated the prestige of 14 schools. Based on the ratings of prestige, Howard University (3.41) and American University (4.03) were both chosen to have levels of prestige that were not significantly different from one another. Howard University was chosen because of its status as a historically Black university in which a majority of its students are Black and American University was chosen because most of its students are White. The schools were also matched for location, national ranking, and size (both schools are small private universities with approximately 10,000 students). Additionally, we also included a control university that matched both schools in terms of location and status but with no racial information about student body, with the following description: “an unnamed private university in Washington, D.C.”

A series of 18 academic majors were pilot tested for perceived racial makeup of students. Participants were asked to indicate whether there were more White or Black students in each major, or whether there was no difference. The scale ranged from 1-7, with 1 indicating that the major consisted of “mostly White students” and 7 indicating
that the major consisted of “mostly Black students.” Results show that Black Studies (5.87) classes were perceived to be made up of mostly Black students, English (2.81) classes were perceived to be made up of mostly White students, and Sociology (3.83) classes were perceived to be populated by an equal number of Black and White students.

Forty-five first names were also pilot tested for stereotypicality. First, names were chosen based on their prevalence in the US population (US Census, 1990). After the most common Black, White, and no-difference names were chosen, pilot participants indicated whether or not each name was more closely associated with Black individuals, White individuals, Bi-racial individuals, or to indicate if the name had no racial association. The researchers chose the names mostly closely associated with White individuals, Black individuals, and with no association and chose from those names based on their prevalence in the US population. Participants (90%) indicated that the name Tyrone was most closely associated with Black. Jay was the most neutral name, with 37% of respondents indicating that “Jay” was most closely associated with Black, 4% most closely associated the name with Mixed Race individuals, 27% associated Jay with Whites, and 29% indicated that the name Jay had no racial association. Eighty percent of participants said that the name Brett was most closely associated with Whites.

Based on the results of the pilot tests, five profiles were designed to conform to the following five conditions: high stereotypically Black, low stereotypically Black, neutral, low stereotypically White, high stereotypically White. For the high stereotypically Black condition, the target’s name was Tyrone and he was described as a Black Studies major at Howard University. The low stereotypically Black target was also named Tyrone, a Sociology major at Howard University. The neutral condition portrayed
Jay, a Sociology major at an unidentified private university in Washington DC. The low stereotypically White target was Brett, a Sociology major at American University. The high stereotypically White profile portrayed Brett, an English major at American University.

There were two packets of questionnaires that each participant completed. The first survey was used to measure judgments made about the target, such as likeability, hireability, and stereotyped traits (see Appendix F). It contained statements such as “I would confide in this person” with a 7-point Likert-type scale ranging from “strongly disagree” to “strongly agree”. These questions were designed to assess various stereotypical and non-stereotypical perceptions of the targets associated with the categories of Black and White Americans. Additionally, there were items assessing judgments about the target’s potential as a job candidate, which were expected to be affected by RWA. These items were taken from previous research (Bartholow & Dickter, 2008; Dickter & Newton, under review).

The second survey (see Appendix G) was a battery of personality tests including Attitudes towards Blacks Scale (ATB; Brigham, 1993), Internal and External Motivation to Appear Non-Prejudiced (IMS and EMS; Plant & Devine, 1998), Social Dominance Orientation (SDO; Pratto et al., 1994), Right Wing Authoritarianism (RWA; Altemeyer, 1981), and Need for Cognitive Closure (NFC; Kruglanski & Webster, 1996). There were several other scales included in the study, but they were not analyzed. The ATB is a 16-question survey designed to measure prejudice towards African Americans. The IMS and the EMS measure a participant’s motivation to control prejudice. A person with an internal motivation to appear non-prejudiced has internalized egalitarian ideals and will
act in a non-prejudiced way because being egalitarian is personally important. A person with an external motivation to appear non-prejudiced will act in a non-prejudiced manner because it is important for them that other people do not think that they are prejudiced. The IMS and EMS represent separate constructs (Plant & Devine, 1998). The IMS is correlated with the ATB, but the ATB is not correlated with the EMS (Plant & Devine, 1998).

SDO measures a person’s desire to maintain inequality between social groups (Pratto, Sidanius, Stallworth, & Malle, 1994; Sidanius & Pratto, 1999; Pratto, 1999). RWA measures a person’s submission to authority, adherence to social conventions, and their aggressiveness when they believe aggression is allowable by an authority (Altemeyer, B, 1981). Pairing the SDO and RWA scales in personality tests have shown to predict a person’s prejudice level (Sidanius & Pratto, 1999). Participants with high SDO and RWA scores are significantly more prejudiced than participants with lower scores on both scales. Lastly, the NFC predicts a participant’s need for order or predictability in his/her life. People with a higher NFC are uncomfortable with ambiguity and are close minded. NFC scores are correlated with authoritarianism scores, especially in the areas of “rigidity, conventionalism, and intolerance of those who violate conventional norms” (Webster & Kruglanski, 1994).

Procedure

Participants completed the experiment in groups of 2-4 students. Upon arriving at the experiment, participants were each seated in front of a computer with desk space. They were given an informed consent form (see Appendix H) and written instructions (see Appendix I). After the participants read the written instructions, the researcher
reiterated the instructions verbally and allowed for the participants to ask questions. Each participant was randomly assigned to review one of the five profiles. Participants were given several minutes to review the profile, which was printed out on an 8 by 11 sheet of computer paper. Then they were given a survey packet in which they made judgments about the individual in the profile that they had just seen. At this time, all the measures of interest to the current study were completed. However, participants also viewed and rated two more profiles, with the same format as the first one, that were not related to the current study. Since they are not of theoretical interest to the current study, and the dependent variables of the current study were administered before these tasks, they will not be described here. After participants had viewed the three profiles and answered the three surveys, they were escorted into another room and fully debriefed.

Results

The stereotypicality of the profiles was expected to change the racial categorization of the target. Additionally, based on this categorization, the researchers predicted that the stereotypically Black profiles would be rated more negatively than the stereotypically White profiles. The researchers also expected the stereotypically Black profiles to have higher scores on the stereotypically Black traits. The stereotypically White profiles were expected to be rated higher on the stereotypically White traits. Lastly, the researchers predicted that the participants’ scores on the ATB, NFC, IMS, EMS, RWA, and SDO scales would modify these ratings.

Categorization

In order to examine whether the stereotypic information affected categorization, the percentage of participants who indicated the race of the target was Black, White, or
“other” was computed for each condition. A chi-square analysis revealed that these percentages differed based on condition, $\chi^2(8) = 18.51$, $p<.05$. This result indicates that participants did categorize the target based on the stereotype-consistent cues (see Table 1 for percentages). Specifically, the high stereotypically Black target was categorized as Black by 87% of the participants. The low stereotypically Black target was categorized as Black by 33% of the participants, White by 33%, Hispanic by 20%, and Other by 13%. As expected, the neutral target had the most variation in its categorization. Fifty-four percent of the participants believed the neutral target to be White, 23% categorized the target as Black, and 23% categorized him as Hispanic, Pacific Islander, or Other. The low stereotypically White target was categorized as White 47% of the time, Black 27%, and Hispanic or Other 27%. Lastly, the high stereotypically White target was categorized by participants as White (57%), Black (14%), and Hispanic or Other (29%).

Traits

In order to test the hypothesis that the judgments of the targets would be affected by the stereotypicality of the profile, several one-way Analyses of Variance (ANOVAs) were conducted with profile as the five-factor between-subjects variable and judgments about the targets as dependent variables. Additionally, although there were no specific hypotheses about gender differences, additional two-way ANOVAs with participant gender as an additional factor were also conducted to explore potential gender effects, but these analyses revealed no effect of gender. Thus, gender was collapsed across the following analyses and all analyses are reported with one-way ANOVAs.

Before the analyses were conducted, several new dependent variables were computed based on the traits on which the participants rated the target. The new
dependent variables were: positive traits, negative traits, negative stereotypically Black traits, positive stereotypically Black traits, negative stereotypically White traits, and positive stereotypically White traits. These traits were calculated by combining the scores of the individual traits by their valence and stereotypicality and dividing by the number of measures to get the mean. The positive traits consist of: popular, wanting to befriend, would confide in, wanting to hang out with, hireability, would be a good boss, likely to succeed, likeability, competent, ability to be a good leader, wealthy, similarity to the participant, well-educated, will be successful, has a high GPA, warm, independent, approachable, would like as a coworker, would like to work with on a group project, attractiveness, good dancer, responsible, reliable, powerful, friendly, smart, deserving of respect, outgoing, pleasant, safe, moral, and knowledgeable. The negative traits consist of: lazy, snobbish, uptight, do not like, aggressive, weak, cold, naive, promiscuous, arrogant, not respected, abrasive, immoral, and ignorant. The negative stereotypically Black traits included: lazy, aggressive, stupid, and dangerous. The positive stereotypically Black traits included: athletic and good dancer. The negative stereotypically White traits were snobbish, uptight, weak, and cold. Finally, the positive stereotypically White traits were wealthy, well educated, and ability to succeed.

The ANOVAs with averaged positive traits and negative traits as the dependent variables yielded no significant results for profile as the independent variable. Because the stereotyped traits were both positive and negative, the researchers then compiled the stereotyped traits into the race that they referred to and their valence. There were no effects of profile condition for judgments on the collapsed positive Black stereotypes or the negative Black stereotypes. However, the results were marginally significant for the
positive White stereotype traits, $F(4,67)=1.65$, $p=.172$, such that the high ($M=4.43$, $SD=0.43$) and low ($M=4.57$, $SD=0.70$) stereotypically White profiles were rated higher in the positive White stereotype traits than the high ($M=4.03$, $SD=0.72$) and low ($M=4.07$, $SD=0.59$) stereotypically Black profiles (See Figure 1). The negative White stereotype traits (see Figure 2) were also marginally significant, $F(4, 67)=2.47$, $p=.053$ such that participants rated the highly stereotypically White profile higher on the negative White traits ($M=3.25$, $SD=1.09$) than they did with the highly stereotypically Black ($M=2.50$, $SD=1.13$) profile (See Figure 2). When only White participants were included in analyses, there was a marginally significant effect of profile on the averaged positive stereotypically Black traits, $F(4,43)=2.34$, $p=.070$. Examination of the means indicated that White participants gave higher ratings to the high stereotypically Black target ($M=4.63$, $SE=.26$) than they gave to the other targets ($M=3.97$, $SE=.21$; $M=4.08$, $SE=.27$; $M=4.46$, $SE=.27$; $M=3.67$, $SE=.24$).

After examining the overall model collapsing over types of traits, several more ANOVAs were conducted for exploratory purposes, predicting individual traits (as dependent variables) from profile condition. Although most of these analyses did not yield any significant results, some revealed significant effects of the profile variable (see Figure 3). Specifically, participants indicated that they would be more likely to befriend the low stereotypically Black target ($M=4.93$, $SD=1.10$) than the low stereotypically White ($M=3.52$, $SD=1.25$) or high stereotypically White ($M=3.29$, $SD=1.44$) targets, $F(4,67)=3.35$, $p<.05$. Additionally, perceptions of laziness also significantly differed by condition, $F(4,67)=2.75$, $p<.05$. Post-hoc Tukey tests revealed that the high
stereotypically Black target \((M=3.80, SD= 1.21)\) was rated as more lazy than the low stereotypically White target \((M=2.80, SD=0.68)\).

There was a significant difference between “wealthy” rating of the profiles, \(F(4,67)=5.12, p<.05\). The post-hoc Tukey test revealed a significant difference between the high stereotypically Black target \((M=3.20, SD=.86)\) and the low stereotypically White target \((M=4.60, SD=1.06)\). These results indicated that the participants viewed the low stereotypically White target as wealthier than the high stereotypically Black target. There was also a marginally significant difference between the “wealthy” rating of the low stereotypically Black target \((M= 3.73, SD=.80)\) and the low stereotypically White target \((M=4.60, SD=1.06)\). Again, the low stereotypically White target was rated as more wealthy than the (low) stereotypically Black target. Additionally, there was a significant difference between “snobbish” rating of the profiles, \(F(4,67)=4.09, p<.05\), such that post-hoc tests revealed a significant difference between the high stereotypically Black profile \((M= 2.27, SD= 1.03)\) and the high stereotypically White profile \((M=3.71, SD= 1.38)\). There was also a significant difference between the low stereotypically Black profile \((M=2.47, SD= 0.83)\), and the high stereotypically White profile \((M=3.71, SD= 1.38)\). There were marginal differences between the low stereotypically White profile \((M=2.80, SD=.94)\) and the high stereotypically White profile \((M=3.71, SD= 1.38)\), as well as between the high stereotypically White profile \((M=3.71, SD= 1.38)\) and the neutral profile \((M=2.77, SD=.93)\). Overall, participants rated the high stereotypically White target as more snobbish than all of the other profiles, to varying degrees.

There was also a significant effect of profile for participants’ responses to the statement “I do not like this individual,” \(F (4,67) =2.69, p<.05\). The post-hoc Tukey test
revealed that there was a significant difference between the dislikeability rating of the low stereotypically Black ($M=2.33$, $SD=1.11$) and low stereotypically White targets ($M=3.6$, $SD=1.45$). There was also a marginally significant difference between the low stereotypically Black ($M=2.33$, $SD=1.11$) and high stereotypically White targets’ ($M=3.57$, $SD=.85$) ratings of dislikeability. Overall, the participants disliked the stereotypically White profiles in comparison to the stereotypically Black profiles.

**Personality Measures**

On the self-reported prejudice measure (Attitudes Towards Blacks Scale; ATB; Brigham, 1993), appropriate items were reverse-coded and then individual items were averaged to form a composite score (with a possible range of 1-7), with higher scores indicating more prejudiced attitudes ($\alpha = .92$). Participants generally reported egalitarian values, which is typical with a college sample, with data indicating a positive skew and scores ranging from 1.05 - 6.15 with a mean of 2.54 ($SD = 0.98$). There were no differences in the descriptive data on this measure when all participants were included compared to analyses conducted with minority participants excluded, so results are reported with the entire sample. Two other prejudice measures included the Internal Motivation to Appear Non-Prejudiced (IMS; Plant & Devine, 1998) as well as the External Motivation to Appear Non-Prejudiced (EMS; Plant & Devine, 1998). For both tests, individual items were averaged to form a composite score (with a possible range of 1-7), with lower scores indicating more prejudice. Participants generally reported egalitarian values, which is typical with a college sample, with IMS scores ($\alpha = .84$) negatively skewed and ranging from 2.00 - 7.00 with a mean of 5.80 ($SD = 0.86$); EMS scores ($\alpha = .86$) ranged from 1.00-7.00 with a mean of 3.69 ($SD=1.63$). There were no
differences in the descriptive data on this measure when all participants were included compared to analyses conducted with minority participants excluded, so results are reported with the entire sample.

Social Dominance Orientation scores (SDO; Sidanius & Pratto, 1992) were created by reverse-coding appropriate items and then averaging together individual items to form a composite score (with a possible range of 1-7), with higher scores indicating higher SDO (α = .89). Participants generally indicated low levels of SDO; data were positively skewed, with scores ranging from 1.81 – 5.75 with a mean of 3.17 (SD = 0.86).

Right Wing Authoritarian scores (RWA; Altemeyer, 1981) were created by reverse-coding appropriate items and then averaging together individual items to form a composite score (with a possible range of 1-7), with higher scores indicating an authoritarian personality (α = .86). Data was normally distributed with scores ranging from 1.81 – 5.75 with a mean of 3.17 (SD = 0.86).

Need for Cognitive Closure (NFC; Kruglanski & Webster, 1996) scores were created by reverse-coding appropriate items and then averaging together individual items to form a composite score (with a possible range of 1-7), with higher scores indicating a higher need for cognitive closure (α = .87). Data were positively skewed with scores ranging from 2.66 – 5.23 with a mean of 3.83 (SD = 0.52).

Correlations between tests (see Table 2) have been supported by the literature. The participants’ IMS score was negatively correlated with RWA, \( r = -.36, p < .01 \), SDO, \( r = -.52, p < .01 \), and ATB, \( r = -.63, p < .01 \). That is, a participant with a high IMS score was more likely to have a low RWA score, a low SDO score, and a low ATB score. A high IMS score indicates less prejudice, and high ATB scores indicate more prejudice.
High SDO and high RWA scores have also been linked to higher prejudice. The participants’ ATB scores were significantly positively correlated with RWA, $r = .59, p < .01$, SDO, $r = .77, p < .01$, and NFC, $r = .30, p < .05$. These correlations indicate that high-prejudiced participants were also likely to be high in authoritarianism, social dominance, and need for closure, consistent with previous literature (Kruglanski & Webster, 1994; Duckitt, 1992; Pratto et al, 1994).

Participants’ SDO scores were significantly positively correlated with the RWA scores, $r = .60, p < .01$, and marginally positively correlated with NFC scores $r = .22, p = .060$. NFC and RWA scores were also positively significantly correlated, $r = .43, p < .01$. If a participant scored higher on the SDO, (s)he was more likely to score higher on both the RWA and NFC; (s)he would be scored as someone high in social dominance, high in authoritarianism, and high in the need for cognitive closure. Similarly, if a participant scored higher on the NFC, (s)he was more likely to score higher on the RWA. Previous research has supported a correlation between SDO and RWA (Pratto et al, 1994), as well as the correlations between prejudice (IMS, ATB) and SDO (Kreindler, 2005), RWA (Kreindler, 2005), and NFC (Kruglanski & Webster, 1994, 1996).

**Relationships Between Personality Variables and Dependent Variables**

In order to examine whether overall perceptions of the biracial target were affected by personality variables, correlational analyses were conducted to predict judgments of the targets from personality variables. Some interesting correlations between the personality test scores and the rankings of the participants were discovered. The participants’ ATB scores were significantly positively correlated with perceived immorality of the target, $r = .23, p < .05$, such that participants with higher levels of racial
prejudice rated the biracial targets as less moral than those lower in prejudice. Additionally, ATB was marginally significantly correlated with overall collapsed negative traits, $r = .22, p = .073$, such that higher-prejudiced participants rated the biracial targets more negatively on average than lower-prejudiced participants.

SDO was significantly positively correlated with the personality traits cold, $r = .28, p < .05$, dangerous, $r = .29, p < .05$, and overall negative traits, $r = .293, p < .05$. SDO was also significantly negatively correlated with perceived morality, $r = -.34, p < .01$, perceived knowledge, $r = -.26, p < .05$. Participants with high SDO scores (that is, they were high in social dominance) were more likely to rate the targets more negatively overall. Participants high in social dominance specifically rated the targets as being more cold, immoral, ignorant, and dangerous than participants low in social dominance. SDO scores were also marginally significantly negatively correlated with hireability, $r = -.21, p = .09$, ability to be a good boss, $r = -.23, p = .06$, and would like as a co-worker, $r = -.23, p = .06$. Thus, those higher in social dominance rated the target as being less hireable, less likely to be a good boss, and indicated that they would not like him as a co-worker than those lower in social dominance.

NFC was negatively correlated with the participants’ desire to befriend the target, $r = -.26, p < .05$, belief that the target would be a good boss, $r = -.26, p < .05$, the belief that the target is similar to the participant, $r = -.32, p < .01$, belief that the target had a high GPA, $r = -.31, p < .05$, desire to have the target as a co-worker, $r = -.30, p < .05$. The NFC scores were also marginally negatively correlated with desire to hang out with the target, $r = -.24, p < .052$, perceived ability of the target to become successful, $r = -.22 p = .076$, desire to work with the target on a group project, $r = -.24, p = .053$, positive traits, $r = -.24$
Thus, participants higher in NFC rated the biracial target less positively than those lower in NFC; specifically, they rated the targets as less desirable as a friend, a boss, a co-worker, and a partner on a group project. Participants high in NFC also indicated that they did not want to “hang out” with the target, did not believe that they were similar to the target, and did not believe that the target had a high GPA or the ability to be successful.

Lastly, the participants’ RWA scores were significantly negatively correlated with the target’s perceived ability to be a good boss, \( r = -.26, p < .05 \), perceived competence, \( r = -.25, p < .05 \), belief that the target is well-educated, \( r = -.26 p < .05 \), belief that the target will be successful, \( r = -.26, p < .05 \), and target’s desirability as a co-worker, \( r = -.28, p < .05 \). Participants’ RWA scores were also marginally negatively correlated with hireability, \( r = -.24 p = .052 \), and marginally positively correlated with perceived danger of the target, \( r = .25 p = .073 \). Thus, high RWA participants judged the biracial targets as less competent in work-related traits. When scores were collapsed across all positive traits, the participants higher in authoritarianism rated the biracial target as marginally less positive overall, \( r = -.21 p = .076 \).

Regression Analyses

In order to test the hypothesis that participants with higher prejudice scores on the IMS and ATB would react more negatively towards the biracial targets depending on the stereotypicality of the profile, simple linear regression analyses were performed with each set of compiled traits as dependent variables and the profile, scale score, and an interaction variable as the independent variables. The interaction variable was computed by first mean centering the personality variable (i.e., creating a compiled mean for each
score by subtracting the mean from the total score), and then multiplying that compiled mean score by the profile. There were no significant effects for the analyses conducted with either the IMS or the ATB.

Discussion

Participants viewed five ambiguous profiles that varied in stereotypicality. The researchers manipulated contextual information to attempt to vary the categorization of the target based on different cues presented in each profile. The researchers also hypothesized that the categorization of the targets based on these cues would affect the judgments of the targets. Lastly, the researchers expected the participants’ scores on various personality measures to affect their judgments of the target.

The first hypothesis, that the participants would categorize the ambiguous target based on the given cues, was supported. Participants were more likely to categorize the ambiguous target in the stereotypically Black profiles as Black and the stereotypically White profiles as White, even though the person in the picture was still the same biracial individual. There was more variation in the categorization between the low stereotypical and neutral profiles, indicating that the different levels of cues were successful in varying the categorization of the target. These results support previous results found in the literature. Though the cues were different, other studies (Maclin & Malpass, 2003; Shutts & Kinzler, 2007; Peery & Bodenhausen, 2008) have shown that varying the stereotypic cues can aid in categorization. Previous studies have used biological cues, in which the researchers manipulated the race of the “parent” (Peery & Bodenhausen, 2008) or the “sibling” (Shutts & Kinzler, 2007) of the target. Other studies have used visual cues, such as hairstyle and phenotypicality (Maclin & Malpass, 2003) of facial features. All of these
studies showed that biological and visual cues do affect categorization of ambiguous targets. The current study was more closely related to Peery & Bodenhausen’s (2008) study in which the researchers manipulated “cultural cues,” which Peery & Bodenhausen operationally defined as information about different neighborhoods. The cues used in the present research could be defined as cultural cues because they indicate the target’s preference for a certain school and subject matter, as well as his first name chosen by his parents (cultural) and last name (could arguably be a “biological” cue). The current study’s cues followed the same basic pattern of the previous research, in that they were stereotypic, but the current study also added to the different types of cues that can be considered when conducting research in this area. To the researchers’ knowledge, no other studies have manipulated the name of the target, the school the target attends, or the academic major of the target. These particular cues were chosen because of their application to real-life person perception processes. That is, these cues represent basic information with which individuals are presented when first interacting with another individual, and therefore may play a role in automatic social categorization. Consistent with this idea, the results of Study 1 showed that these “real-world” cultural cues do in fact affect categorization.

Although overall stereotypical judgments did not significantly vary with the categorization of the profile as expected, some judgments were significantly correlated with the profile, and partially supported the second hypothesis. The collapsed stereotypically positive White traits and negative White traits varied slightly based on the profiles (although these analyses failed to reach significance) such that participants were more likely to rate the stereotypically White profiles higher on the stereotypically White
traits than they rated the stereotypically Black or neutral profiles. This could be due to censorship on the part of the participant. Participants may have been more reluctant to give high ratings to the Black targets on stereotypical traits, so that they do not appear to be prejudiced. This phenomenon is called social desirability bias, and is especially prevalent in tasks that require explicit judgments made about a target. Other studies have also illustrated that when participants are asked to explicitly rate Black targets on negative stereotypical traits, they tend to rate them overwhelmingly positively, so as not to appear biased (e.g., Crandall & Eshleman, 2003). This has been shown to be especially likely in samples of people who have a motivation to control prejudice; studies have indicated, for example, that perceivers high in internal motivation to control prejudice show less stereotype activation and less biased responding than individuals without this internal motivation (Devine, Plant, Amodio, Harmon-Jones, & Vance, 2002). Given the particular sample of participants in this study who demonstrated high levels of IMS and EMS, it is likely that this motivation played a role in the lack of stereotypical responding of the targets categorized as Black.

Exploratory analyses revealed that there were also some individual trait ratings that were affected by the stereotypicality of the profile. Specifically, participants were more likely to befriend the high stereotypically Black target than either of the stereotypically White targets. Similarly, participants indicated that they disliked both of the targets in the stereotypically White profiles more than they disliked the high stereotypically Black target. In overall collapsed traits, participants rated the White profiles negatively overall, and White participants rated the high stereotypically Black profile high on positive Black stereotyped traits. Again, the experimenters believe this to
be related to social desirability, due to varying levels of social acceptability to display prejudicial attitudes towards certain groups (Franco & Maass, 1999; Crandall, Eshleman, & O’Brien, 2002). One can surmise that the participants in this sample were more comfortable with judging the stereotypically White target more harshly because that was more socially acceptable than passing harsh judgments on the stereotypically Black target. Additionally, it may be the case that, because of their motivation to appear non-prejudiced, these results were driven by participants’ explicit inflation of liking for the targets categorized as Blacks or caused by less negative stereotype activation in this high-IMS sample (Devine et al., 2002).

Some of the participants’ ratings were consistent with the hypothesis that contextual information would affect stereotypical judgments about the targets. Specifically, participants rated the high stereotypically Black target as lazier than the high or low stereotypically White target; laziness is one of the most prevalent negative stereotypes of American Blacks (Devine, 1989). Participants were also more likely to rate the stereotypically White targets as snobbish and wealthy, in comparison to their ratings of the stereotypically Black targets. Snobbishness and wealth are also two commonly stereotyped traits of Whites (Bartholow & Dickter, 2008).

Lastly, though judgments of the target individuals did not vary jointly as a function of personality variables and stereotypicality of the profile, the personality variables themselves did yield some interesting results in their relationship with the judgments about the targets. To test the hypothesis that individuals high in RWA, SDO, and NFC would judge the ambiguous-race targets more harshly because of their racial ambiguity, correlational analyses were conducted, predicting positive and negative
judgments from personality score. Consistent with this hypothesis, the ambiguous profiles were judged differently overall according to the participants’ personality scores such that when confronted with an ambiguous target, regardless of the stereotypicality of the target, personality variables affected ratings of the target. For example, more prejudiced individuals (according to their high ATB scores) were more likely to rate the ambiguous target as “immoral” and rate him negatively overall. It is not surprising that high-prejudice participants would be more likely to subscribe negative characteristics to a non-White target, regardless of contextual information.

Additionally, participants with a high social dominance orientation also rated the ambiguous target more negatively overall. High SDO participants were more likely to rate the ambiguous target as cold, dangerous, immoral, and ignorant. These individuals were also less likely to rate the participant as being hireable, being a good boss, or being a good co-worker. Research has shown that individuals with high SDO scores are more likely to be prejudiced, especially against racial minorities (Kreindler, 2005). Individuals with high SDO scores prefer a social hierarchy, especially one in which their group is dominant. Taking into account that the majority of the participants in the current study were White, those with a high SDO score most likely considered the target to be in their outgroup and therefore reacted negatively towards the target. Thus, the current study adds to the literature on perceptions of monoracial minorities by high-SDO individuals to perceptions of biracial individuals.

Participants high in authoritarianism were also more likely to rate the ambiguous target more negatively and more dangerous than those low in authoritarianism. Specifically, high RWA individuals rated the ambiguous target as being less competent
and less desirable in work-related traits (hireability, ability to be a good boss, competence, level of education, perceived future success, and desirability as a co-worker). Previous research (Kreindler, 2005) has also found authoritarians (high RWA) to be more prejudicial towards Blacks. This research may also expand authoritarians’ tendency towards prejudice to biracial targets. To the researchers’ knowledge, no prior research has found an interaction between work-related judgments of biracial individuals and RWA scores. The researchers surmise that the authoritarian personality, which is largely based on order and rules (Altemeyer, 1981), would predispose an authoritarian to judge harshly on traits that would relate to work and the carrying out of work.

Lastly, high NFC participants (with a high need for cognitive closure) rated the ambiguous target less positively overall. High NFC participants also rated the ambiguous target negatively on the work-related traits (desire to have as a co-worker, desire to have as a partner in a group project, ability of the target to be a good boss, belief that the target had a high GPA, and perceived ability to be successful). In addition to negative ratings on work-related traits, the high NFC participants also indicated that they believed the target to be dissimilar from themselves and that they would not like to befriend or “hang out” with the target. High NFC individuals are particularly uncomfortable with ambiguity (Kruglanski, Webster, & Klem, 1993), and therefore much more likely to use cognitive heuristics (Van Hiel and Mervielde, 2003) which leads to stereotyping (Kruglanski & Webster, 1994, 1996). These two factors related to high NFC were probably the driving force behind the overall negative ratings of the ambiguous targets by those high in NFC.

Taken together, the analyses exploring the relationships between personality variables and judgments of biracial targets has shown that individuals high in RWA,
SDO, NFC, and ATB may be especially likely to judge biracial targets negatively, because of the status of these individuals as outgroup members and as ambiguous targets. It was not the case that negative reactions towards the target were moderated by the stereotypicality of the profile provided by contextual information, but that the biracial targets were judged more negatively by authoritarian, prejudiced, and high need for closure individuals. More research should be done in order to further explore how these personality characteristics influence perceptions of biracial targets, but one can surmise that the ambiguity of the target drove the negative reactions to the target. Individuals high in these personality traits are usually high in prejudice and support the idea of a hierarchical society (Pratto et al., 1994). It is likely, then, that individuals high in SDO, RWA, and NFC perceived the biracial target as outgroup members who were not easily categorizable, and thus rated them negatively. For high SDO individuals, the ambiguity may have caused negative judgments because the targets represented members of dissident or minority groups, or may have threatened the conventionality of monoracial groups (Altemeyer, 1996; Kreindler, 2005). Because authoritarians and individuals high in NFC both prefer order and predictability (Webster & Kruglanski, 1994), they may have based their harsh judgments of the biracial targets particularly on work-related traits. Lastly, individuals with a high need for cognitive closure are particularly uncomfortable with ambiguity (Van Hiel and Mervielde, 2003) and are quicker to use cognitive heuristics, such as stereotypes, in order to eliminate ambiguity (Kruglanski & Webster, 1994). Their discomfort with ambiguity paired with a propensity towards stereotyping mostly likely contributed to their negative ratings of the ambiguous targets.
More research needs to be done in order to test this hypothesis, but one can surmise that it was the ambiguity of the target that made the participants with high NFC, RWA, and SDO scores react so negatively to the target. Individuals high in RWA and SDO personality traits are usually high in prejudice (Kreindler, 2005). If individuals high in SDO and RWA perceive biracial target as part of their outgroup, it follows that they would rate the target negatively. These individuals high in NFC have also been said to be intolerant of ambiguity (Kruglanski & Webster, 1994). Each of these personalities have slightly different reasons for their prejudice, these differences should be studied in terms of biracial targets. High SDO individuals want to maintain a social hierarchy in which their group is dominant and outgroups are subordinate (Sidanius & Pratto, 1992). Again, if high SDO individuals put ambiguous targets in their outgroup, they would rate these targets more negatively. Authoritarians (high RWA) mostly likely rated the ambiguous targets negatively because they typically exhibit anger and aggression towards dissident groups and minority groups (Altemeyer, 1996; Kreindler, 2005). In addition to prejudice against outgroups, authoritarians are also conventional. Given the rather new phenomenon of the biracial baby boom, authoritarians may be particularly offended by biracial individuals. Authoritarians and individuals high in NFC both prefer order and predictability, (Kruglanski & Webster, 1994), which may be good reasons for their harsh judgments of the biracial targets particularly on work-related traits. Lastly, individuals with a high need for cognitive closure are particularly uncomfortable with ambiguity (Kruglanski & Webster, 1994) and are quicker to use cognitive heuristics, such as stereotypes, in order to eliminate ambiguity (Kruglanski & Webster, 1994). Their
discomfort with ambiguity paired with a propensity towards stereotyping mostly likely contributed to their negative ratings of the ambiguous targets.

Taken together, the results of Study 1 have added to previous research that has demonstrated the malleability of the social categorization of ambiguous-race individuals (Peery & Bodenhausen, 2008; Shutts & Kinzler, 2007; Maclin & Malpass, 2003). This is, as with previous studies, manipulating contextual cues successfully varied the categorization of an ambiguous target. Results from Study 1 also suggest that salient contextual information may not only affect the categorization of biracial or multiracial individuals, but also the judgments that are made about these individuals during person perception. That is, not only are ambiguous-race individuals being categorized into social groups to which they may or may not feel they belong to, they may also be regarded negatively simply for their ambiguity, especially by individuals who are high in racial prejudice or personality variables related to authoritarianism. This could have negative consequences in their professional lives, as indicated by the cluster of work related items for which the ambiguous target was rated negatively by high RWA and high NFC individuals.

Additionally, these findings have implications not only for perceptions of ambiguous-race individuals, but also for self-identity. For example, prior research (Sue, 1981; Suzuki-Crumly & Hyers, 2004) has found detrimental consequences when biracial targets are mislabeled by perceivers. When stripped of the ability to choose their own definition of their ethnic identity, biracial individuals are disenfranchised. Ethnic identity allows a sense of pride in one’s cultural identity and it assists in attitude formation (Sue, 1981). Social identity is an important aspect of a person’s self concept; an individual’s
self-esteem is inextricably linked to his/her social identity and can be beneficial to one’s well-being (Lewin, 1948). Thus, denial of one’s heritage can lead to a negative self concept (Helms, 1990). Other research has also been able to link this miscategorization or forcible categorization to lowered self-esteem in biracial targets (Townsend et al, 2009). Because social perceivers categorize biracial individuals monoracially (Peery & Bodenhausen, 2008) and biracial individuals are more likely to categorize themselves as biracial (Suzuki-Crumly & Hyers, 2004), racially ambiguous individuals are at more of a risk of being categorized differently by social perceivers than how they categorize themselves. A disconnect between a target’s own perception of his/her ingroup and the group to which perceivers assign the target could be cause for alarm. For social perceivers to judge an ambiguous target based on a categorization that the target does not endorse himself/herself, can be particularly harmful to the target’s self-esteem and well-being.

Like any study, the current study does suffer from some limitations. The survey was subject to social desirability bias, as evidenced by the overall positive ratings of the stereotypically Black targets and the overall negative ratings of the stereotypically White targets. The participants were more likely to rate the target harshly on White stereotyped traits, but not Black stereotyped traits. This pattern of results seem to indicate not that the participants are ignorant of stereotypes, but that they were uncomfortable with explicitly rating the stereotypically Black targets on the Black stereotyped traits for fear of appearing prejudiced. Previous research has shown this to be a problem in experiments studying explicit racism and prejudice. Study Two was designed to temper this social
desirability bias and to examine the social categorization of biracial individuals using a more implicit procedure.

Study 2

The results of Study 1 failed to show that social categorization overwhelmingly affected the explicit judgments of target individuals in terms of stereotyped traits. As previously mentioned, failure to find these effects may have been due to social desirability concerns, as well as the participants’ high self-reported levels of internal and external motivation to appear non-prejudiced. By today’s standards, outwardly expressed racism and prejudice is unacceptable, so many participants do not report prejudicial attitudes for fear of appearing prejudiced (Paulhus, 1991). Studies such as Devine’s (1989) have found that even though participants do not report holding prejudicial attitudes, they are still certainly aware of stereotypes about certain groups. As mentioned earlier, researchers (Devine, 1989; Dovidio, Kawakami, & Beach, 2001) have made a distinction between explicit and implicit categorization of individuals. When participants have time and control over their responses, some perceivers respond differently than if they must quickly and automatically make a judgment (Dovidio et al., 1997). A famous example of this is the IAT. When a participant is asked to categorize a positive word with a Black face (or a negative word with a White face), (s)he may take longer to do so, depending on how strongly these two concepts are linked; the strength of this learned associated is usually indicative of the automatic activation of stereotypes (Greenwald et al., 1998). In order to overcome the limitations of Study One, a second study was designed as a priming study in order to measure the implicit categorization of an ambiguous target.
Priming studies, in particular, have been found to be excellent tools in the uncovering of implicit attitudes. In a priming study involving reaction time tasks, the participant is primed with a word or a picture and is then asked to make a judgment (e.g., hitting one of two keys on the keyboard) as quickly as possible. Because participants are making extremely quick judgments (often under 700 ms), participants are unable to censor their responses and therefore the response given is thought to be consistent with the automatic associations that exist in their cognitive networks. Additionally, researchers can investigate specific pairings of concepts with specific categories to examine differences in associations between them; these differences are measured in terms of reaction time (RT). Researchers have demonstrated that the longer the participant takes to respond to a stimulus pair, the less association the perceiver has between the prime and stimulus. For example, perceivers would respond more quickly to the word “nurse” when the prime is “doctor” than when the prime is “tree,” due to a stronger cognitive association between the concepts of doctor and nurse. Research has shown that even subliminally primed cues can trigger stereotype activation (Bargh, 1999). Other groundbreaking research in the field has shown that White participants, when primed with the word “White” or “Black” are faster to categorize positive and negative stereotypes (respectively) associated with the race with which they were primed (Dovidio et al, 1986). Studies based on Dovidio’s research have replicated these findings. When a category is presented, perceivers automatically access associations between the category and information, such as stereotypes, about that category (Macrae & Bodenhausen, 2000).

In order to investigate the effects of stereotype primes on categorization of biracial individuals, researchers designed a reaction time study in which participants were
asked to categorize monoracial and biracial targets. The researchers wanted to create an implicit measure in order to overcome some of the limitations of Study One. Specifically, the researchers hoped that the implicit measure would be able to measure the participant’s automatic categorization of ambiguous targets. Similar to the first study, the researchers used “cues” in order to influence the participants’ categorization. In this case, the cues were not presented in a profile. Instead, the cues were stereotyped word primes. Since the participants in Study One appeared to be censoring their explicit association of categorization and stereotypes, the researchers designed Study Two in order to show that perceivers automatically associate stereotypes with the categorization that they assign to biracial individuals. Researchers hypothesized that the stereotyped word prime would activate categorization of the biracial target into the corresponding category. Researchers also believed that the reaction times would be slower for biracial faces in comparison to monoracial faces, indicating confusion when categorizing ambiguous faces.

**Method**

**Participants**

Participants were 42 undergraduate students enrolled in William and Mary Introductory Psychology classes. There were 28 female participants (67%) and 14 male participants (33%). The participants were between the ages of 18 and 22; the mean age was 18.9. There were 29 White/Caucasian participants (69%), five Black/African American participants (12%), two Asian/Pacific Islander participants (5%), three Multiracial participants (7%), and two Hispanic participants (5%). In exchange for their role in the study, the participants received course credit for their Introductory Psychology class.
Design and Materials

This study was a priming study that employed a within-subjects 2 x 3 design in which stereotyped prime (positive vs. negative) and race of target face (Black, White, or Ambiguous) were manipulated. The prime consisted of Black and White stereotype words taken from previous studies (Bartholow & Dickter, 2008; Lepore & Brown, 1997; Wittenbrink, Judd, & Park, 1997). The Black stereotype words were all negative stereotypes (stupid, poor, messy, violent, lazy, danger, threat, rude, loud, harm, deceive, crime), and the White stereotype words were positive (smart, rich, success, scholar, educate, wealthy, honest, bright, safe, truth, loyal, kind). These words were randomly paired with Black, White, and morphed ambiguous faces. The morphed faces were created using Morpheus Software (www.morpheussoftware.net) that digitally combined a Black and a White male face together to form a face with 50% of the characteristics of one face and 50% of the characteristics of the other. None of the Black or White faces used to create the morphs were chosen as the monoracial faces in the study. The 63 faces chosen (23 Black, 23 White, 20 Biracial; see Appendix J) did not differ from one another in terms of attractiveness or familiarity.

In total, there were two blocks of 122 priming trials. Each trial consisted of the following: a fixation cross presented in the middle of the screen for 500ms, followed by a positive or negative word prime for 250ms, followed by a blank screen displayed for 100ms, followed by a target face which remained on the screen until the participant’s response. The intertrial interval randomly varied between 1000ms, 1500ms, and 2000ms. Each trial was randomly selected from a list of word/face pairs. Each Black face was paired with two positive (White stereotype) words and two negative (Black stereotype)
words, yielding a total of 92 trials with Black faces. Each White face was also paired with two positive/White stereotype words and two negative/Black stereotype words, also yielding 92 White face pairs. Lastly, the ambiguous faces were each paired with one negative word and one positive word, creating 40 ambiguous faces from which to choose. These proportions were chosen in order to provide a majority of trials with unambiguous categorization, so that participants in the biracial trials would be forced to choose either Black or White. Additionally, this proportion was chosen to more closely resemble a real world situation in which ambiguous faces were less frequent than mono-racial faces.

Procedure

Participants completed the experiment in groups of two-four students. Upon arriving at the experiment, participants were each seated in front of a computer with desk space. They were given an informed consent form and instructions about completing the task. Specifically, participants were told that they would complete a series of trials in which they would see a word presented on the computer screen, followed by a face. They were told that the word would simply signal the participants that the face would be appearing shortly, and were instructed to ignore the words and just pay attention to the faces. Next, participants were given instructions about the priming task. Participants were told that for each trial, their job was to indicate the race of the target individual by pressing one of two keys on the keyboard; the keys were counterbalanced across participants. Before completing the experimental trials, participants completed a block of 12 practice trials to familiarize themselves with the task. After the practice block, participants completed the blocks of trials while their response and reaction time for each trial was recorded. After the participants completed these trials, they were escorted into
another room and fully debriefed.

Results

The researchers hypothesized that the participants would be more likely to categorize the ambiguous face as “Black” if they were primed with a negative stereotypically Black word and “White” if they were primed with a positive stereotypically White word. It was also hypothesized that the reaction time for the ambiguous faces would be longer than the reaction time for the mono-racial faces and, consistent with previous research (e.g., Bartholow & Dickter, 2008), reaction times would be quicker in stereotype-congruent pairs (e.g., monoracial Black target with negative prime). In order to examine differences in categorical responses and reaction times based on condition, repeated-measures analyses of variances (ANOVAs) were conducted for both of these dependent variables. For all analyses involving multiple numerator degrees of freedom, Greenhouse-Geisser adjusted $p$-values are reported.

Responses. In order to examine whether participants’ responses would differ as a function of race and prime, the researchers calculated the number of trials on which each participant categorized the target faces as Black or White. These counts were classified by race and valence; that is, the number of times each participant categorized a face in each of the six conditions (positive word-Black face, positive word-biracial face, positive word-White face, negative word-Black face, negative word-biracial face, negative word-White face) was calculated. The resulting proportions were analyzed across participants using a 2 (Prime Valence: positive or negative) x 3 (Target Race: Black, Biracial, White) repeated-measures ANOVA was used. Results revealed a main effect for Race, $F(2,39) = 16.45, p < .001, \eta^2 = .30$, but no other significant effects. Inspection of the means (see
Figure 4) indicated that accuracy was high. That is, participants correctly categorized Black faces as Black 100% of the time ($M=1.00$, $SE=.09$) and correctly categorized White faces as White 79% of the time ($M=.21$, $SE=.14$). As hypothesized, Biracial faces were categorized as both Black ($M=.72$, $SE=.03$) and White, although these faces were categorized as Black 72% of the time. This race effect served as a sort of manipulation check, establishing that accuracy was extremely high on monoracial trials, but there was variance on the biracial trials. In order to further explore this variance and to evaluate the first hypothesis that categorization on biracial trials would differ based on word valence, a planned comparison was conducted for biracial trials using a paired-samples $t$-test. This analysis revealed a significant effect for word valence, $t(40)=2.16$, $p<.05$. This result indicated that when paired with a Black stereotype negative word, the ambiguous face was more likely to be categorized as Black ($M=.74$, $SE=.19$). When paired with a White stereotype positive word, the ambiguous face was more likely to be categorized as White ($M=.70$, $SE=.17$).

*Reaction Time.* Reaction times three standard deviations above and below the mean for each participant were excluded and average reaction times were created for each condition for each participant. These data were then analyzed using a 2 (Prime Valence: positive or negative) x 3 (Target Race: Black, Biracial, White) x 2 (Response: Black or White) repeated-measures ANOVA. Results indicated a main effect for race (see Figure 5), $F(2,22) = 9.94$, $p < .01$, $\epsilon^2=.48$. Examination of the means (see Figure 5) revealed that participants took longer to respond to the Biracial faces ($M=558.82$, $SE=39.52$) than the Black ($M=468.99$, $SE=24.22$) or the White ($M=491.47$, $SE=22.98$) faces. No other significant effects were found (all $Fs < 1.20$, $ps > .28$).
An additional reaction time analysis was conducted with only White participants. The researchers performed a 2 X 2 repeated-measures ANOVA with valence of the primed word (negative Black stereotype, positive White stereotype) and the racial categorization of the target (Black or White). Consistent with previous findings, there was an interaction between reaction time and race, $F(1,25)= 5.21, p < .05, \varepsilon^2 = .17$ such that White participants were quicker to categorize Black faces. There was also a significant interaction between valence and categorization of target race, $F(1,25) = 8.86, p < .01, \varepsilon^2 = .26$. White participants were slowest to categorize White faces when preceded by a negative (Black stereotyped) word ($M= 513.95, SE= 17.89$), in comparison to White faces preceded by positive (White stereotyped) words ($M= 4.96.09, SE= 13.47), Black faces preceded by positive words ($M= 483.42, SE= 20.61$), and Black faces preceded by negative words ($M= 478.26, SE= 21.61$).

Discussion

Participants took part in a reaction time study in which they were shown a series of trials with a stereotyped word prime followed by a Black, White, or biracial face. They were then responsible for categorizing the face as “Black” or “White” as quickly as possible by pressing one of two keys on a keyboard. The researchers hypothesized that the participants would take longer to categorize the biracial faces, and that the word prime preceding the biracial face would affect the categorization of the face.

The participants did take longer to categorize the biracial faces, and they also allowed the word prime to dictate their categorization of the individual. These results suggest that individuals use stereotype cues in order to categorize biracial or ambiguous individuals. This has real-world implications, such that a person’s categorization (and
therefore, judgments of that person) can be determined by stereotyped cues. For instance, if a racially ambiguous individual is poor, he may be categorized as Black; but if the same individual is wealthy, he may be categorized as White. As referenced above, the categorization of an individual by others has mental health repercussions for the target.

Another interesting finding was that participants (the majority of whom were White) categorized the Black faces more quickly than the White faces. This finding is consistent with other research (e.g., Bartholow & Dickter, 2008), and is thought to represent greater early attention to outgroup faces (Dickter & Bartholow, 2007; Ito & Urland, 2005). Since most of the participants in Study 1 were White, Black targets represented an outgroup for these participants and thus may have captured more attention which led to faster RTs to these targets. When minority participants were removed from the sample, researchers found that White participants did pay more attention (have faster reaction times) to the Black faces. Consistent with previous research, White participants also had slower reaction times for White faces presented after a negative word than they did with the other monoracial faces.

General Discussion

These two studies were designed to jointly explore the implicit and explicit perception of biracial individuals. Study One examined how different cues can affect the categorization of biracial targets; specifically, it was demonstrated that stereotypical information in the form of contextual cues can affect the racial categorization of ambiguous-race targets. This finding is consistent with previous studies that have used biological cues (i.e., manipulating the race of the “parent” [Peery & Bodenhausen, 2008] or the “sibling” of the target [Shutts & Kinzler, 2007]), visual cues of facial features (i.e.,
hairstyle and phenotypicality [Maclin & Malpass, 2003]), and “cultural” cues (Peery & Bodenhausen, 2008). The current work extends these findings and supports previous research that contextual information affects the racial categorization of ambiguous targets.

Although the cultural stereotypic information affected the racial categorization of the targets in Study One, there was limited evidence that this categorization affected negative stereotypical judgments made about the target. This result does not necessarily mean that racial categorization did not affect the activation of stereotypes of the racial group; rather, the lack of significant findings here may be attributed to social desirability bias. That is, modern participants tend to censor themselves when asked explicitly to make judgments about targets categorized as Black. In fact, the results of Study One suggest that participants had no problem making stereotype-consistent judgments about the targets judged to be White. Participants rated the White profiles higher on both positive and negative White stereotypes, and White participants rated the high stereotypically Black profile higher on positive Black stereotypes. Our findings are consistent with other research that has also illustrated that when participants are asked to explicitly rate Black targets on negative stereotypical traits, they tend to rate them overwhelmingly positively, so as not to appear biased (e.g., Crandall & Eshleman, 2003). This has been shown to be especially likely in samples of people who have a motivation to control prejudice. Studies have indicated that perceivers high in internal motivation to control prejudice show less stereotype activation and less biased responding than individuals without this internal motivation (Devine, Plant, Amodio, Harmon-Jones, & Vance, 2002). Given the particular sample of participants in this study who demonstrated
high levels of internal and external motivation to control prejudiced responses, it is likely that this motivation played a role in the lack of stereotypical responding of the targets categorized as Black.

The findings of Study One replicate and extend the findings of previous research in several important ways. First, this study replicated previous findings that the categorization of ambiguous targets was affected by cultural contextual information (Peery & Bodenhausen, 2008). Secondly, the researchers presented a unique format for judgments through a social networking profile in order to examine the real-world applications of this research, especially given our sample. That is, college-aged participants are familiar with social networking profiles and typically make judgments about others based on the information provided in social networking profiles. Thus, this methodology is unique in that it takes into consideration the ways in which this particular sample perceives others on a day-to-day basis. Because social networking profiles are increasingly being used by many individuals via Facebook or dating websites, the results of this study have important implications for judgments made about individuals on these sites. Additionally, the findings of this study are also applicable to other important areas. The contextual cues used reflect real-world features that are consistent with the basic cues in the environment that are often provided to perceivers in other arenas as well such as forming a judgment when meeting someone for the first time or when interviewing someone for a job interview. In these cases, a perceiver does not have access to information used in the other studies cited above (parents, siblings, neighborhood, etc). Thus, the results of Study One have some very serious real world implications for both social life and the workplace.
Previous research has focused on differences between explicit and implicit racial attitudes and stereotype application when it comes to person perception of monoracial targets, and the current set of studies have supported this distinction for biracial targets as well. In Study One, participants used stereotypes in their judgments about the targets they categorized as White, but for the most part did not rely on stereotypical judgments about the Black targets, which was likely driven by a motivation to not appear prejudiced. This finding has been supported in other studies using monoracial targets. For example, when participants have control over their responses, some respond differently than if they must automatically make a judgment (Dovidio et al, 1997). Although Study One gave some insight into the social categorization of biracial individuals, Study Two was designed in order to explore the automatic (as opposed to controlled) processes of categorization and stereotyping, which were not possible in the first study, as it relied on explicit judgments. Thus, Study Two was designed as a priming study. Priming studies have been found to be excellent tools for examining automatic categorization and the activation of stereotypes (Bargh, 1999). In priming studies, participants are unable to censor their responses and therefore the response given is thought to be consistent with the automatic associations that exist in their cognitive networks (Dovidio et al., 1997). Researchers have demonstrated that the longer the participant takes to respond to a stimulus pair, the less association the perceiver has between the prime and stimulus (e.g., Bargh, 1999). In Study Two, consistent with hypotheses, participants took longer to categorize the biracial targets than the monoracial targets. The researchers believe that this delayed reaction when presented with the biracial faces is due to the confusion created by the ambiguity of the face.
Study Two was also designed to use a priming study in a unique way – to examine the effect that stereotype activation has on categorization. Most priming studies have examined reaction time to monoracial categories, but this study allowed for the examination of whether categorization was affected by word prime when there was no correct categorization (i.e., the targets could be categorized as Black or White). Results indicated that stereotype activation did affect racial categorization for the ambiguous-race targets; that is, participants categorized the biracial targets according to the stereotyped word with which they were primed. These results provide evidence that the stereotyped words primed a category in the participants’ cognitive framework and then influenced the categorization of the ambiguous target. Although previous research has shown that reaction times to monoracial targets differ based on congruency with stereotypic primes, this study offers the first evidence that categorization of ambiguous-race targets can be affected by stereotypic information.

Another goal of the present research was to explore the role that personality variables played in social categorization processes. The first study examined several personality variables related to racial prejudice, and the researchers found that those variables do affect judgments of ambiguous targets. Results indicated that several personality variables predicted judgments of the ambiguous target. Though judgments did not differ based on the interaction between stereotypicality of the profile and personality variable, individuals with higher scores on the ATB, SDO, RWA, and NFC rated the ambiguous individuals more negatively than individuals scoring lower on these scales. Interestingly, many of the traits for which the target was judged negatively were work-related traits. These results are consistent with previous research suggesting that order, hierarchy, and
authority are important concepts for individuals high in RWA, SDO, and NFC (Sibley &
Duckitt, 2008). Individuals who score high on these scales are also typically
uncomfortable or even hostile when confronted with ambiguity (Altemeyer, 1996;
According to these results, if individuals with these personality traits are in charge of
hiring for a company, this could be very detrimental for biracial applicants. Considering
the role that personality differences played in categorization and judgments of biracial
targets in Study One, the researchers believe that these personality variables may also
influence automatic social categorization in priming studies such as Study Two.
Specifically, it is expected that high-prejudiced individuals, as well as individuals high in
authoritarianism and social dominance would be more likely to make stereotype-
congruent categorizations than their counterparts. Future research should address this
possibility.

Although the current research sheds some light on person perception processes
involving ambiguous-race targets, both of these studies are limited in their
generalizability due to the sample. The majority of the participants were White college
students, which compromises how much the results may apply to the rest of the
population. It is important to investigate the role of perceiver race during categorization,
given the perceiver race differences in processing seen in other research with monoracial
(Dickter & Bartholow, 2007) and biracial (Willadsen-Jensen & Ito, 2008) targets. Future
research should examine comparative analyses for these studies between White
participants and minority participants, especially in reaction time tasks. Additionally, in
order to hide the true intent of the study, the researchers were limited in the amount of
questions they could dedicate to stereotype traits. The researchers predict that there would be stronger results for those stereotyped trait clusters if there were more ratings of the individual on these traits, and future research should address this. Study Two was also limited in that it only used negative Black words and positive White words. Though these primes came from prior research, more research should be done using different valence terms. Finally, the current studies were limited in that they only examined male targets; future research should explore perceptions of biracial females and biracial targets of different race combinations with different degrees of stereotypicality in the pictures.

These two studies, taken together, add important and interesting findings to the growing research on the perception of biracial individuals. Study One showed that specific cues in the environment can affect the categorization of biracial targets on an explicit task, whereas Study Two demonstrated that stereotyped primes can also affect the automatic categorization of biracial targets. Additionally, Study Two showed how quickly this categorization occurs in processing, and illustrated the how biracial faces are processed differently than monoracial faces, as reflected by differences in reaction time, which may be reflective of confusion and ambiguity during the processing of these ambiguous targets. Importantly, this ambiguity seems to have led to harsh judgments by participants high in NFC, RWA, ATB, and SDO.

With an ever-growing biracial and racially ambiguous population in the United States, it is necessary that researchers who study race begin to take these individuals into account. As much of the stereotyping literature has focused on monoracial groups, the present studies provide compelling evidence that research be expanded to include other multiracial groups as well. Previous research (MacLin and Malpass, 2001; Shutts &
Kinzler, 2008; Peery & Bodenhausen, 2008; Willadsen-Jensen & Ito, 2006; Willadsen-Jensen & Ito, 2009) has found that cues can affect the categorization of biracial targets. These cues may affect the target in many ways. The target may become a victim of stereotyping due to the categorization that others assign to him/her. Or, as other studies have found, the forced categorization of the biracial individual by perceivers may conflict with his/her own perceptions of himself/herself and have negative consequences for his/her self-esteem and self-concept (Suzuki-Crumly & Hyers, 2004).

These two studies have shown that simple, everyday cues can affect categorization of an ambiguous target. The researchers found that the contextual cues shown in a social networking profile as well as stereotypic word primes did affect the categorization of the ambiguous target. Aside from a few traits, judgments were not overwhelmingly affected by the categorization of the target. However, regardless of the categorization, simply appearing racially ambiguous seems to have an effect on judgments, especially when that judgment was made by certain personality types. The negative judgments by certain personality types (those high in RWA, SDO, and NFC) were mostly related to the work-place (hireability, ability to succeed, intelligence, etc).

This could have serious ramifications for biracial individuals in the workplace, especially considering that the information provided to participants in this study is the basis of the information usually given to employers when applying for a job. According to this study, the ambiguity of a biracial individual may lead others to devalue this person, which can have detrimental implications for ambiguous-race individuals in the workplace.


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Appendix A

MyFace
A social networking site.

Tyrone
Profile #: 1A

I’m a junior majoring in Black Studies at Howard University.

Gender: Male
Sexual Orientation: Straight
Birthday: July 20, 1989

Interests: watching sports, going to the gym, playing video games
Favorite TV Shows: Sports Center, The Office
Favorite Movies: James Bond movies, Oceans 11, The Matrix

Photos
Appendix B

MyFace
A social networking site.

Tyrone
Profile #: 1B

I'm a junior majoring in Sociology at Howard University.

Gender: Male
Sexual Orientation: Straight
Birthday: July 20, 1989

Interests: watching sports, going to the gym, playing video games
Favorite TV Shows: Sports Center, The Office
Favorite Movies: James Bond movies, Oceans 11, The Matrix

Photos
MyFace
A social networking site.

Jay
Profile #: 1C

I'm a junior majoring in Sociology at a private research university in DC.

Gender: Male
Sexual Orientation: Straight
Birthday: July 20, 1989

Interests: watching sports, going to the gym, playing video games
Favorite TV Shows: Sports Center, The Office
Favorite Movies: James Bond movies, Oceans 11, The Matrix

Photos
Appendix D

MyFace
A social networking site.

Brett
Profile #: 1D

I'm a junior majoring in Sociology at American University.

Gender: Male
Sexual Orientation: Straight
Birthday: July 20, 1989

Interests: watching sports, going to the gym, playing video games
Favorite TV Shows: Sports Center, The Office
Favorite Movies: James Bond movies, Oceans 11, The Matrix

Photos
Appendix E

MyFace
A social networking site.

Brett
Profile #: 1E

I'm a junior majoring in English at American University.

Gender: Male
Sexual Orientation: Straight
Birthday: July 20, 1989

Interests: watching sports, going to the gym, playing video games
Favorite TV Shows: Sports Center, The Office
Favorite Movies: James Bond movies, Ocean's 11, The Matrix

Photos
Appendix F

Thank you for participating in our Social Networking Study. Please answer the following questions.

Profile Number: _______
Participant Number: _______

Please indicate the number corresponding to your level of agreement with the following statements. The statements pertain to your perception of the person in the profile that you just viewed.

1. This person is popular.
   1 2 3 4 5 6 7
   Strongly Disagree [ ] [ ] [ ] [ ] [ ] [ ] [ ] Strongly Agree

2. I would befriend this person.
   1 2 3 4 5 6 7
   Strongly Disagree [ ] [ ] [ ] [ ] [ ] [ ] [ ] Strongly Agree

3. I would confide in this person.
   1 2 3 4 5 6 7
   Strongly Disagree [ ] [ ] [ ] [ ] [ ] [ ] [ ] Strongly Agree

4. I would like to hang out with this person.
   1 2 3 4 5 6 7
   Strongly Disagree [ ] [ ] [ ] [ ] [ ] [ ] [ ] Strongly Agree

5. I would hire this person.
   1 2 3 4 5 6 7
   Strongly Disagree [ ] [ ] [ ] [ ] [ ] [ ] [ ] Strongly Agree

6. I would like to hang out with this person.
   1 2 3 4 5 6 7
   Strongly Disagree [ ] [ ] [ ] [ ] [ ] [ ] [ ] Strongly Agree

7. This person would make a good boss.
   1 2 3 4 5 6 7
   Strongly Disagree [ ] [ ] [ ] [ ] [ ] [ ] [ ] Strongly Agree

8. This person will succeed in his/her profession.
9. I like this person.

10. This person is competent.

11. This person would be a good leader.

12. This person is lazy.

13. This person is wealthy.

14. This person is snobbish.

15. This person is similar to me.

16. This person is well educated.

17. This person will be successful.

18. This person has a high GPA.
19. This person is warm.

   1  2  3  4  5  6  7
   Strongly Disagree いません いません いません いません いません いません ません
   Strongly Agree ません ません ません ません ません ません ません

20. This person is uptight.

   1  2  3  4  5  6  7
   Strongly Disagree いません いません いません いません いません いません ません
   Strongly Agree ません ません ません ません ません ません ません

21. I do not like this person.

   1  2  3  4  5  6  7
   Strongly Disagree いません いません いません いません いません いません ません
   Strongly Agree ません ません ません ません ません ません ません

22. This person is athletic.

   1  2  3  4  5  6  7
   Strongly Disagree いません いません いません いません いません いません ません
   Strongly Agree ません ません ません ません ません ません ません

23. This person is independent.

   1  2  3  4  5  6  7
   Strongly Disagree いません いません いません いません いません いません ません
   Strongly Agree ません ません ません ません ません ません ません

24. This person is aggressive.

   1  2  3  4  5  6  7
   Strongly Disagree いません いません いません いません いません いません ません
   Strongly Agree ません ません ません ません ません ません ません

25. This person is approachable.

   1  2  3  4  5  6  7
   Strongly Disagree いません いません いません いません いません いません ません
   Strongly Agree ません ません ません ません ません ません ません

26. I would like this person as a co-worker.

   1  2  3  4  5  6  7
   Strongly Disagree いません いません いません いません いません いません ません
   Strongly Agree ません ません ません ません ません ません ません

27. This person is emotional.

   1  2  3  4  5  6  7
   Strongly Disagree いません いません いません いません いません いません ません
   Strongly Agree ません ません ません ません ません ません ません

28. This person is competitive.
29. I would choose to work with this person on a group project.

Strongly Disagree Strongly Agree

30. This person is attractive.

Strongly Disagree Strongly Agree

31. This person could deal with stress on the job.

Strongly Disagree Strongly Agree

32. This person is weak.

Strongly Disagree Strongly Agree

33. This person is probably a good dancer.

Strongly Disagree Strongly Agree

34. This person is religious/spiritual.

Strongly Disagree Strongly Agree

35. This person is responsible.

Strongly Disagree Strongly Agree

36. This person is cold.

Strongly Disagree Strongly Agree

37. This person is submissive.

Strongly Disagree Strongly Agree

38. This person is domineering.
Perceptions 80

1 2 3 4 5 6 7
Strongly Disagree  ☐ ☐ ☐ ☐ ☐ ☐ ☐  Strongly Agree

39. This person is reliable.
1 2 3 4 5 6 7
Strongly Disagree  ☐ ☐ ☐ ☐ ☐ ☐ ☐  Strongly Agree

40. This person is powerful.
1 2 3 4 5 6 7
Strongly Disagree  ☐ ☐ ☐ ☐ ☐ ☐ ☐  Strongly Agree

41. This person is modest.
1 2 3 4 5 6 7
Strongly Disagree  ☐ ☐ ☐ ☐ ☐ ☐ ☐  Strongly Agree

42. This person is naive.
1 2 3 4 5 6 7
Strongly Disagree  ☐ ☐ ☐ ☐ ☐ ☐ ☐  Strongly Agree

43. This person is sexually promiscuous.
1 2 3 4 5 6 7
Strongly Disagree  ☐ ☐ ☐ ☐ ☐ ☐ ☐  Strongly Agree

For this part of the survey, please rate the person in the profile on the following characteristics. Click on the circle on each trait continuum that represents how you feel about his/her characteristics.

44. I feel that this person is:
1 2 3 4 5 6 7
Cold ☐ ☐ ☐ ☐ ☐ ☐ ☐  Friendly

45. I feel that this person is:
1 2 3 4 5 6 7
Stupid ☐ ☐ ☐ ☐ ☐ ☐ ☐  Smart

46. I feel that this person is:
1 2 3 4 5 6 7
Not worthy of my respect ☐ ☐ ☐ ☐ ☐ ☐ ☐  Worthy of my respect

47. I feel that this person is:
1 2 3 4 5 6 7
Introverted ☐ ☐ ☐ ☐ ☐ ☐ Outgoing

48. I feel that this person is:
   1  2  3  4  5  6  7
   Abrasive ☐ ☐ ☐ ☐ ☐ ☐ Pleasant

49. I feel that this person is:
   1  2  3  4  5  6  7
   Dangerous ☐ ☐ ☐ ☐ ☐ ☐ Safe

50. I feel that this person is:
   1  2  3  4  5  6  7
   Immoral ☐ ☐ ☐ ☐ ☐ ☐ Moral

51. I feel that this person is:
   1  2  3  4  5  6  7
   Humble ☐ ☐ ☐ ☐ ☐ ☐ Arrogant

52. I feel that this person is:
   1  2  3  4  5  6  7
   Ignorant ☐ ☐ ☐ ☐ ☐ ☐ Knowledgeable

Please answer the following questions about the person in the profile:

53. What school does this person attend? ____________________

54. How confident are you in the correctness of your answer to the previous question?
   1  2  3  4  5  6  7  8  9  10  11
   0% ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ 100%

55. What is his/her gender? (circle one)
   Male ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ 100%
   Female ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ 100%

56. How confident are you in the correctness of your answer to the previous question?
   1  2  3  4  5  6  7  8  9  10  11
   0% ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ 100%

57. What is his/her race? (circle one)
   American Indian or Alaskan Native ☐
   Asian ☐
   Black or African American ☐
   Hispanic or Latino ☐
   Native Hawaiian or other Pacific Islander ☐
   Other ☐
   White ☐

58. How confident are you in the correctness of your answer to the previous question?
59. What is his/her sexual orientation? (circle one)

- Homosexual/Lesbian
- Straight
- Bi-sexual

60. How confident are you in the correctness of your answer to the previous question?

0% 1 2 3 4 5 6 7 8 9 10 11

61. What is his/her major? ______________

62. How confident are you in the correctness of your answer to the previous question?

0% 1 2 3 4 5 6 7 8 9 10 11

Please let the experimenter know that you are finished with this portion of the study.
Appendix G

Attitudes

Participant Number:________________

In this questionnaire, we are interested in getting a representative sample of college students' attitudes about a variety of topics. Please answer each question honestly and be assured that your answers will be completely confidential and anonymous.

For the following questions, please indicate the extent to which you agree with these statements.

2. Laws have to be strictly enforced if we were going to preserve our way of life.
   1 2 3 4 5 6
   Disagree Strongly ☐ ☐ ☐ ☐ ☐ ☐ Agree Strongly

3. People should pay less attention to the Bible and the other old traditional forms of religious guidance, and instead develop their own personal standards of what is moral and immoral.
   1 2 3 4 5 6
   Disagree Strongly ☐ ☐ ☐ ☐ ☐ ☐ Agree Strongly

4. Women should always remember the promise they make in their marriage ceremony to obey their husband.
   1 2 3 4 5 6
   Disagree Strongly ☐ ☐ ☐ ☐ ☐ ☐ Agree Strongly

5. Our customs and national heritage are the things that have made us great, and certain people should be made to show greater respect for them.
   1 2 3 4 5 6
<table>
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<tr>
<th></th>
<th>Capital punishment should be completely abolished.</th>
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<td>1       2       3       4       5       6</td>
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<tr>
<td></td>
<td>Disagree Strongly ☐ ☐ ☐ ☐ ☐ ☐ Agree Strongly</td>
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<thead>
<tr>
<th></th>
<th>National anthems, flags, and glorification of one’s country should all be deemphasized to promote the brotherhood of all men.</th>
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<td>1       2       3       4       5       6</td>
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<tr>
<td></td>
<td>Disagree Strongly ☐ ☐ ☐ ☐ ☐ ☐ Agree Strongly</td>
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<th>The facts on crime, sexual immorality, and the recent public disorders all show we have to crack down harder on deviant groups and trouble makers if we are going to save our moral standards and preserve law and order.</th>
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<td>1       2       3       4       5       6</td>
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<tr>
<td></td>
<td>Disagree Strongly ☐ ☐ ☐ ☐ ☐ ☐ Agree Strongly</td>
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<tr>
<th></th>
<th>A lot of our society’s rules regarding modesty and sexual behavior are just customs which are not necessary any better or holier than those which other peoples follow.</th>
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<td>1       2       3       4       5       6</td>
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<td>Disagree Strongly ☐ ☐ ☐ ☐ ☐ ☐ Agree Strongly</td>
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<th>Our prisons are a shocking disgrace. Criminals are unfortunate people who deserve much better care, instead of so much punishment.</th>
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<td></td>
<td>Disagree Strongly ☐ ☐ ☐ ☐ ☐ ☐ Agree Strongly</td>
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11. Obedience and respect for authority are the most important virtues children should learn.

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<td>Disagree Strongly</td>
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12. Organizations like the army and the priesthood have a pretty unhealthy effect upon men because they require strict obedience of commands from supervisors.

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<td>Disagree Strongly</td>
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13. One good way to teach certain people right from wrong is to give them a good stiff punishment when they get out of line.

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<td>Disagree Strongly</td>
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14. Youngsters should be taught to refuse to fight in a war unless they themselves agree the war is just and necessary.

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<td>Disagree Strongly</td>
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15. It may be considered old-fashioned by some, but having a decent, respectable appearance is still the mark of a gentleman and, especially a lady.

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16. In these troubled times laws have to be enforced without mercy, especially when dealing with the agitators and revolutionaries who are stirring things up.

Disagree Strongly ☐ ☐ ☐ ☐ ☐ ☐ Agree Strongly

17. Atheists and others who have rebelled against the established religions are no doubt every bit as good and virtuous as those who attend church regularly.

Disagree Strongly ☐ ☐ ☐ ☐ ☐ ☐ Agree Strongly

18. Young people sometimes get rebellious ideas, but as they grow up they ought to get over them and settle down.

Disagree Strongly ☐ ☐ ☐ ☐ ☐ ☐ Agree Strongly

19. Rules about being “well-mannered” and respectable are chains from the past which we should question very thoroughly before accepting.

Disagree Strongly ☐ ☐ ☐ ☐ ☐ ☐ Agree Strongly

20. The courts are right in being easy on drug offenders. Punishment would not do any good in cases like these.

Disagree Strongly ☐ ☐ ☐ ☐ ☐ ☐ Agree Strongly

21. If a child starts becoming a little too unconventional, his parents should see to it he returns to the normal ways expected by society.
22. Being kind to loafers or criminals will only encourage them to take advantage of your weakness, so it’s best to use a firm, though hand when dealing with them.

23. A “woman’s place” should be wherever she wants to be. The days when women are submissive to their husbands and social conventions belong strictly in the past.

24. Homosexuals are just as good and virtuous as anybody else, and there is nothing wrong with being one.

25. It’s one thing to question and doubt someone during an election campaign, but once a man becomes the leader of our country we owe him our greatest support and loyalty.

26. Some groups of people are simply inferior to other groups.
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<th>Perceptions   88</th>
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<td>27.</td>
<td>In getting what you want, it is sometimes necessary to use force against other groups.</td>
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<td>1 2 3 4 5 6</td>
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<td></td>
<td>Disagree Strongly ☐ ☐ ☐ ☐ ☐ Agree Strongly</td>
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<td>28.</td>
<td>It’s OK if some groups have more of a chance in life than others.</td>
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<td>Disagree Strongly ☐ ☐ ☐ ☐ ☐ Agree Strongly</td>
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<td>29.</td>
<td>To get ahead in life, it is sometimes necessary to step on other groups.</td>
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<td>Disagree Strongly ☐ ☐ ☐ ☐ ☐ Agree Strongly</td>
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<td>30.</td>
<td>If certain groups stayed in their place, we would have fewer problems.</td>
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<td>1 2 3 4 5 6</td>
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<td>Disagree Strongly ☐ ☐ ☐ ☐ ☐ Agree Strongly</td>
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<tr>
<td>31.</td>
<td>It’s probably a good thing that certain groups are at the top and other groups are at the bottom.</td>
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<td>32.</td>
<td>Inferior groups should stay in their place.</td>
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33. Sometimes other groups must be kept in their place.

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34. Sometimes other groups must be kept in their place.

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35. Group equality should be our ideal.

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36. All groups should be given an equal chance in life.

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37. We should do what we can to equalize conditions for different groups.

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38. Increased social equality.
39. We would have fewer problems if we treated people more equally.

   1   2   3   4   5   6
Disagree Strongly ◯ ◯ ◯ ◯ ◯ ◯ Agree Strongly

40. We should strive to make incomes as equal as possible.

   1   2   3   4   5   6
Disagree Strongly ◯ ◯ ◯ ◯ ◯ ◯ Agree Strongly

41. No group should dominate in society.

   1   2   3   4   5   6
Disagree Strongly ◯ ◯ ◯ ◯ ◯ ◯ Agree Strongly

42. Because of today's PC (politically correct) standards I try to appear nonprejudiced toward Black people.

   1   2   3   4   5   6   7
Strongly Disagree ◯ ◯ ◯ ◯ ◯ ◯ ◯ Strongly Agree

43. I try to hide any negative thoughts about Black people in order to avoid negative reactions from others.

   1   2   3   4   5   6   7
Strongly Disagree ◯ ◯ ◯ ◯ ◯ ◯ ◯ Strongly Agree
44. If I acted prejudiced toward Black people, I would be concerned that others would be angry with me.

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<td>Strongly Disagree</td>
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45. I attempt to appear nonprejudiced toward Black people in order to avoid disapproval from others.

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46. I try to act nonprejudiced toward Black people because of pressure from others.

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47. I attempt to act in nonprejudiced ways toward Black people because it is personally important to me.

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<tbody>
<tr>
<td>Strongly Disagree</td>
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<tr>
<td>Strongly Agree</td>
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</tbody>
</table>

48. According to my personal values, using stereotypes about Black people is OK.

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</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agree</td>
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</tbody>
</table>

49. I am personally motivated by my beliefs to be nonprejudiced toward Black people.

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</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agree</td>
<td></td>
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</tr>
</tbody>
</table>
50. Because of my personal values, I believe that using stereotypes about Black people is wrong.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>

51. Being nonprejudiced toward Black people is important to my self-concept.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>

52. I think that having clear rules and order at work is essential for success.

<table>
<thead>
<tr>
<th>Disagree Strongly</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Agree Strongly</th>
</tr>
</thead>
</table>

53. Even after I've made up my mind about something, I am always eager to consider a different opinion.

<table>
<thead>
<tr>
<th>Disagree Strongly</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Agree Strongly</th>
</tr>
</thead>
</table>

54. I don't like situations that are uncertain.

<table>
<thead>
<tr>
<th>Disagree Strongly</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Agree Strongly</th>
</tr>
</thead>
</table>

55. I dislike questions which could be answered in many different ways.
<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>56.</td>
<td>I like to have friends who are unpredictable.</td>
<td>Disagree Strongly</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>57.</td>
<td>I find that a well ordered life with regular hours suits my temperament.</td>
<td>Disagree Strongly</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>58.</td>
<td>I enjoy the uncertainty of going into a new situation without knowing what might happen.</td>
<td>Disagree Strongly</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>59.</td>
<td>When dining out, I like to go to places where I have been before so that I know what to expect.</td>
<td>Disagree Strongly</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>60.</td>
<td>I feel uncomfortable when I don't understand the reason why an event occurred in my life.</td>
<td>Disagree Strongly</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
61. I feel irritated when one person disagrees with what everyone else in a group believes.

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<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Disagree Strongly</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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</tbody>
</table>

62. I hate to change my plans at the last minute.

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<tr>
<th></th>
<th>1</th>
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<th>4</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Disagree Strongly</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

63. I would describe myself as indecisive.

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<thead>
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<th>4</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Disagree Strongly</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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</tbody>
</table>

64. When I go shopping, I have difficulty deciding exactly what it is I want.

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</thead>
<tbody>
<tr>
<td></td>
<td>Disagree Strongly</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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</tbody>
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65. When faced with a problem I usually see the one best solution very quickly.

<table>
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<tbody>
<tr>
<td></td>
<td>Disagree Strongly</td>
<td>☐</td>
<td>☐</td>
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66. When I am confused about an important issue, I feel very upset.

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<tbody>
<tr>
<td></td>
<td>Disagree Strongly</td>
<td>☐</td>
<td>☐</td>
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</table>
67. I tend to put off making important decisions until the last possible moment.

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<tr>
<th>1</th>
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<tbody>
<tr>
<td>Disagree Strongly</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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</tbody>
</table>

68. I usually make important decisions quickly and confidently.

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</thead>
<tbody>
<tr>
<td>Disagree Strongly</td>
<td>☐</td>
<td>☐</td>
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69. I have never been late for an appointment or work.

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<tr>
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<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disagree Strongly</td>
<td>☐</td>
<td>☐</td>
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<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

70. I think it is fun to change my plans at the last moment.

<table>
<thead>
<tr>
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<th>2</th>
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<th>4</th>
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<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disagree Strongly</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

71. My personal space is usually messy and disorganized.

<table>
<thead>
<tr>
<th>1</th>
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<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disagree Strongly</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

72. In most social conflicts, I can easily see which side is right and which is wrong.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disagree Strongly</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
73. | I have never known someone I did not like. |
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<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1  2  3  4  5  6</td>
</tr>
<tr>
<td>Disagree Strongly □ □ □ □ □ □  Agree Strongly</td>
</tr>
</tbody>
</table>

74. | I tend to struggle with most decisions. |
<table>
<thead>
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</thead>
<tbody>
<tr>
<td>1  2  3  4  5  6</td>
</tr>
<tr>
<td>Disagree Strongly □ □ □ □ □ □  Agree Strongly</td>
</tr>
</tbody>
</table>

75. | I believe orderliness and organization are among the most important characteristics of a good student. |
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<tbody>
<tr>
<td>1  2  3  4  5  6</td>
</tr>
<tr>
<td>Disagree Strongly □ □ □ □ □ □  Agree Strongly</td>
</tr>
</tbody>
</table>

76. | When considering most conflict situations, I can usually see how both sides could be right. |
<table>
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<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>1  2  3  4  5  6</td>
</tr>
<tr>
<td>Disagree Strongly □ □ □ □ □ □  Agree Strongly</td>
</tr>
</tbody>
</table>

77. | I don't like to be with people who are capable of unexpected actions. |
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<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>1  2  3  4  5  6</td>
</tr>
<tr>
<td>Disagree Strongly □ □ □ □ □ □  Agree Strongly</td>
</tr>
</tbody>
</table>

78. | I prefer to socialize with familiar friends because I know what to expect from them. |
|-----------------------------------------------|
79. I think that I would learn best in a class that lacks clearly stated objectives and requirements.

80. When thinking about a problem, I consider as many different opinions on the issue as possible.

81. I don't like to go into a situation without knowing what I can expect from it.

82. I like to know what people are thinking all the time.

83. I dislike it when a person's statement could mean many different things.
84. It's annoying to listen to someone who cannot seem to make up his or her mind.

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<tbody>
<tr>
<td>Agree Strongly</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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85. I find that establishing a consistent routine enables me to enjoy life more.

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<tbody>
<tr>
<td>Agree Strongly</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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</table>

86. I enjoy having a clear and structured mode of life.

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<th>4</th>
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</thead>
<tbody>
<tr>
<td>Agree Strongly</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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</table>

87. I prefer interacting with people whose opinions are very different from my own.

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<th>4</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Agree Strongly</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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</table>

88. I like to have a plan for everything and a place for everything.

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<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree Strongly</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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</table>

89. I feel uncomfortable when someone's meaning or intention is unclear to me.

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<tr>
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<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree Strongly</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
90. I believe that one should never engage in leisure activities.
   1  2  3  4  5  6  
   Disagree Strongly ☐ ☐ ☐ ☐ ☐ ☐ Agree Strongly

91. When trying to solve a problem I often see so many possible options that it's confusing.
   1  2  3  4  5  6  
   Disagree Strongly ☐ ☐ ☐ ☐ ☐ ☐ Agree Strongly

92. I always see many possible solutions to problems I face.
   1  2  3  4  5  6  
   Disagree Strongly ☐ ☐ ☐ ☐ ☐ ☐ Agree Strongly

93. I'd rather know bad news than stay in a state of uncertainty.
   1  2  3  4  5  6  
   Disagree Strongly ☐ ☐ ☐ ☐ ☐ ☐ Agree Strongly

94. I feel that there is no such thing as an honest mistake.
   1  2  3  4  5  6  
   Disagree Strongly ☐ ☐ ☐ ☐ ☐ ☐ Agree Strongly

95. I do not usually consult many different options before forming my own view.
   1  2  3  4  5  6  
   Disagree Strongly ☐ ☐ ☐ ☐ ☐ ☐ Agree Strongly
<table>
<thead>
<tr>
<th>Question</th>
<th>Rating Scale</th>
<th>Disagree Strongly</th>
<th>Disagree</th>
<th>Agree</th>
<th>Agree Strongly</th>
</tr>
</thead>
<tbody>
<tr>
<td>96. I dislike unpredictable situations.</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disagree Strongly:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Agree Strongly:</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>97. I have never hurt another person's feelings.</td>
<td>1 2 3 4 5 6</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Disagree Strongly:</td>
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<tr>
<td></td>
<td>Agree Strongly:</td>
<td></td>
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</tr>
<tr>
<td>98. I dislike the routine aspects of my work (studies).</td>
<td>1 2 3 4 5 6</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Disagree Strongly:</td>
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<td></td>
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<tr>
<td></td>
<td>Agree Strongly:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>99. If a Black person were put in charge of me, I would not mind taking advice and direction from him or her. (REVERSE)</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Strongly Disagree:</td>
<td></td>
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<tr>
<td></td>
<td>Strongly Agree:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100. If I had a chance to introduce Black visitors to my friends and neighbors, I would be pleased to do so. (REVERSE)</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Strongly Disagree:</td>
<td></td>
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<td></td>
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<tr>
<td></td>
<td>Strongly Agree:</td>
<td></td>
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</tr>
<tr>
<td>101. I would rather not have blacks live in the same apartment building I live in</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Strongly Disagree:</td>
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<td></td>
<td>Strongly Agree:</td>
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</tbody>
</table>
102. I would probably feel somewhat self-conscious dancing with a Black person in a public place.

1 2 3 4 5 6 7
Strongly Disagree   Strongly Agree

103. I would not mind it at all if a Black family with about the same income and education as me moved in next door. (REVERSE)

1 2 3 4 5 6 7
Strongly Disagree   Strongly Agree

104. I think that Black people look more similar to each other than White people do

1 2 3 4 5 6 7
Strongly Disagree   Strongly Agree

105. Interracial marriage should be discouraged to avoid the “who-am-I?” confusion which the children feel.

1 2 3 4 5 6 7
Strongly Disagree   Strongly Agree

106. I get very upset when I hear a White person make a prejudicial remark about Black people. (REVERSE)

1 2 3 4 5 6 7
Strongly Disagree   Strongly Agree
### 107. I favor open housing laws that allow more racial integration of neighborhoods.

(REVERSE)

<table>
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<tr>
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**Strongly Disagree**  
**Strongly Agree**

### 108. It would not bother me if my new roommate was Black. (REVERSE)

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**Strongly Disagree**  
**Strongly Agree**

### 109. It is likely that Blacks will bring violence to neighborhoods when they move in.

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**Strongly Disagree**  
**Strongly Agree**

### 110. I enjoy a funny racial joke, even if some people might find it offensive.

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**Strongly Disagree**  
**Strongly Agree**

### 111. The federal government should take decisive steps to override the injustices Blacks suffer at the hands of local authorities. (REVERSE)

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</table>

**Strongly Disagree**  
**Strongly Agree**

### 112. Black and White people are inherently equal. (REVERSE)

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**Strongly Disagree**  
**Strongly Agree**
<table>
<thead>
<tr>
<th>Perceptions 103</th>
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<tbody>
<tr>
<td>113. Black people are demanding too much too fast in their push for equal rights.</td>
</tr>
<tr>
<td>Strongly Disagree □ □ □ □ □ □</td>
</tr>
<tr>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>Strongly Agree</td>
</tr>
<tr>
<td>114. Whites should support Blacks in their struggle against discrimination and segregation. (REVERSE)</td>
</tr>
<tr>
<td>Strongly Disagree □ □ □ □ □ □</td>
</tr>
<tr>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>Strongly Agree</td>
</tr>
<tr>
<td>115. Generally, Blacks are not as smart as Whites.</td>
</tr>
<tr>
<td>Strongly Disagree □ □ □ □ □ □</td>
</tr>
<tr>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>Strongly Agree</td>
</tr>
<tr>
<td>116. I worry that in the next few years I may be denied my application for a job or a promotion because of preferential treatment given to minority group members.</td>
</tr>
<tr>
<td>Strongly Disagree □ □ □ □ □ □</td>
</tr>
<tr>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>Strongly Agree</td>
</tr>
<tr>
<td>117. Racial integration (of schools, businesses, residences, etc.) has benefited both Whites and Blacks. (REVERSE)</td>
</tr>
<tr>
<td>Strongly Disagree □ □ □ □ □ □</td>
</tr>
<tr>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>Strongly Agree</td>
</tr>
<tr>
<td>118. Some Blacks are so touchy about race that it is difficult to get along with them.</td>
</tr>
<tr>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>
119. Some Blacks are so touchy about race that it is difficult to get along with them.

Strongly Disagree  ☐  ☐  ☐  ☐  ☐  ☐  ☐  Strongly Agree
Appendix H

Informed Consent Form
Perceptions Based on Internet Profiles
Psychology Department - College of William & Mary

The purpose of this study is to determine how people perceive individuals in regards to their internet profiles.

This experiment involves the following steps:
1. You will view a MyFace profile description of an individual for about one minute. The experimenters ask you to not judge the profile view based on any missing information; some information has been hidden. The profile picture of the individual has been cropped to prevent participants from making judgments on clothing.

2. Then you will answer a questionnaire in regards to the individual’s profile that you viewed.
3. You will repeat this two more times, viewing a total of three profiles.

Your privacy is important to us and we will make every effort to protect your privacy. An arbitrary code number has been assigned to you for this study. The link between this code number and information that could be used to personally identify you will be kept in a password-protected database in a locked location. The results of this experiment will not be linked to any specific individual; we are only interested in group averages. No identifying information will ever be made public.

Please read the paragraph below and sign at the bottom.
The general nature of this study has been explained to me. I understand that I am participating in a study that is being done to determine how internet profile views influence perception of individuals. My participation in this study should take a total of about one hour. I understand that my responses will be confidential and that my name will not be associated with any results of this study. I know that I do not have to participate in this study and that if I do choose to participate, I may stop at any time without any penalty. I know that I may refuse to answer any question asked and I also understand that any credit for participation will not be affected by my responses or by my exercising any of my rights. I am aware that I may report dissatisfactions with any aspect of this experiment to the Chair of the Protection of Human Subjects Committee, Dr. Michael Deschenes, 757-221-2778 or mrdesc@wm.edu. I understand that I may contact Dr. Cheryl Dickter about this experiment to ask any questions or to obtain the results of this study after it is completed at 757-221-3722 or cldickter@wm.edu. I am aware that I must be at least 18 years of age to participate. My signature below signifies my voluntary participation in this project, and that I have received a copy of this consent form.

_________________________ ________________________________
Date Signature

________________________________
Print Name
Appendix I

Social Networking Study: Instructions for Participants

Thank you for taking part in this study. In this experiment, we are interested in college students’ evaluations of social networking websites. We are interested in the impressions that people make about people based on the information they provide on sites such as Facebook and MySpace.

For this study, we had college students from another university create a social networking website based on their interests and personality. All of the participants in this study will be assigned to judge a total of three profiles, randomly selected from our student group.

You will have approximately one minute to look at each profile. We would like you to pay careful attention to the contents of the profiles, as you will be asked to recall some of the information later. You will also make judgments based on your impressions of each person.

Please do not judge the profile based on missing information. We have tried to control the types of information presented in the profiles in order to keep this consistent for all the students’ profiles. Also, we chose each profile picture because of the neutral facial expression and cropped it so that any extraneous information (i.e., hairstyle, clothing) would not affect your judgment. Keep this in mind when making your judgments.

Here is the procedure for this study:

1. You will view Profile #1 for 1 minute.
2. The experimenter will hand you a survey, and you will answer questions about the person shown in the profile. When you have completed this questionnaire, alert the experimenter and (s)he will give you the next profile.
3. You will then be given Profile #2 and asked to view it for 1 minute.
4. The experimenter will have you complete the same survey (with the same questions) based on this new person. Let the experimenter know when you have completed the survey for Profile #2.
5. You will view Profile #3 for 1 minute.
6. You will again complete the same survey for this person. Tell the experimenter when you’re done.

Again, thank you very much for your time. It is important to the integrity of this research that you try to answer the questions as accurately as possible based on your impressions of the students depicted in the profiles. If you have any questions at any time, please ask the experimenter.

When you are ready to begin, give this piece of paper to the experimenter, and she will give you the first profile. Thank you for your participation in this study, and for your help with our research.
Appendix J

Monoracial Black Target

Monoracial White Target

Biracial Target
Appendix K

Informed Consent Form
Perceptions Based on Internet Profiles
Psychology Department - College of William & Mary

The purpose of this study is to determine how people perceive other individuals.

This experiment involves the following steps:
- You will be presented with a fixation cross on a screen
- A word will flash on the screen
- The word will be followed by a picture of a face
- You must indicate if the face is a Black or a White face
- Each block will contain 122 trials, you will complete 2 blocks
- After you complete the trials, you will be asked to complete a survey on Opinion

Your privacy is important to us and we will make every effort to protect your privacy. An arbitrary code number has been assigned to you for this study. The link between this code number and information that could be used to personally identify you will be kept in a password-protected database in a locked location. The results of this experiment will not be linked to any specific individual; we are only interested in group averages. No identifying information will ever be made public.

Please read the paragraph below and sign at the bottom:

The general nature of this study has been explained to me. I understand that I am participating in a study that is being done to determine how internet profile views influence perception of individuals. My participation in this study should take a total of about 30 minutes. I understand that my responses will be confidential and that my name will not be associated with any results of this study. I know that I do not have to participate in this study and that if I do choose to participate, I may stop at any time without any penalty. I know that I may refuse to answer any question asked and I also understand that any credit for participation will not be affected by my responses or by my exercising any of my rights. I am aware that I may report dissatisfaction with any aspect of this experiment to the Chair of the Protection of Human Subjects Committee, Dr. Michael Deschenes, 757-221-2778 or mrdesc@wm.edu. I understand that I may contact Dr. Cheryl Dickter about this experiment to ask any questions or to obtain the results of this study after it is completed at 757-221-3722 or cldickter@wm.edu. I am aware that I must be at least 18 years of age to participate. My signature below signifies my voluntary participation in this project, and that I have received a copy of this consent form.

__________________________________
Date     Signature

__________________________________
Print Name
Table/Figure Captions

Table 1: Percentage of Categorizations by Profile- Study One
Table 2: Correlations between Personality Variables- Study One
Figure 1: Ratings of Positive White Stereotype Traits by Profile- Study One
Figure 2: Ratings of Negative White Stereotype Traits by Profile-Study One
Figure 3: Individual Trait Ratings by Profile-Study One
Figure 4: Mean Percentage of Trials in Which Targets were Labeled "Black"- Study Two
Figure 5: Reaction Time by Target- Study Two
Table 1

_Percentage of Categorizations by Profile- Study One_

<table>
<thead>
<tr>
<th>Categorization</th>
<th>Black</th>
<th>White</th>
<th>Other</th>
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<tbody>
<tr>
<td>High Stereotypically Black Profile</td>
<td>87%</td>
<td>7%</td>
<td>6%</td>
</tr>
<tr>
<td>Low Stereotypically Black Profile</td>
<td>33%</td>
<td>33%</td>
<td>33%</td>
</tr>
<tr>
<td>Neutral Profile</td>
<td>23%</td>
<td>54%</td>
<td>23%</td>
</tr>
<tr>
<td>Low Stereotypically White Profile</td>
<td>27%</td>
<td>47%</td>
<td>27%</td>
</tr>
<tr>
<td>High Stereotypically White Profile</td>
<td>14%</td>
<td>57%</td>
<td>29%</td>
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Table 2

*Correlations between Personality Variables - Study One*

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<tr>
<th>Variables</th>
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<td>2. SDO</td>
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<td>3. NFC</td>
<td>.43**</td>
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<td>4. ATB</td>
<td>.59**</td>
<td>.77**</td>
<td>.31*</td>
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<td>5. IMS</td>
<td>-.36**</td>
<td>-.52**</td>
<td>-.18</td>
<td>-.63**</td>
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<td>6. EMS</td>
<td>.21†</td>
<td>.70</td>
<td>.30*</td>
<td>.23†</td>
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‡ marginal significance
* $p < .05$
** $p < .01$
Figure 1

*Ratings of Positive White Stereotype Traits by Profile - Study One*
Figure 2

*Ratings of Negative White Stereotype by Profile- Study One*
Figure 3

*Individual Trait Ratings by Profile- Study One*
Figure 4

Mean Percentage of Trials in Which Targets were Labeled “Black” - Study Two
Figure 5

*Reaction Time by Target- Study Two*