

DOES MOTIVATED REASONING HELP PEOPLE MAINTAIN AN
UNPREJUDICED SELF-IMAGE?

AN ABSTRACT

SUBMITTED ON THE TWENTY-EIGHTH DAY OF JULY 2015

TO THE DEPARTMENT OF PSYCHOLOGY

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

OF THE SCHOOL OF SCIENCE AND ENGINEERING

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FOR THE DEGREE

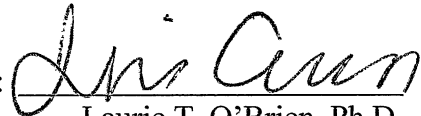
OF

MASTER OF SCIENCE

BY

Aaron J. Moss

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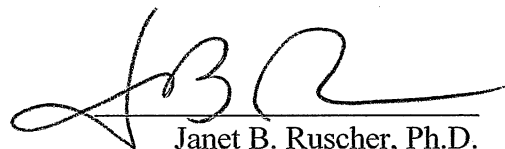


Laurie T. O'Brien, Ph.D.

Director



Lisa A. Molix, Ph.D.



Janet B. Ruscher, Ph.D.

Abstract

Most White Americans believe they are not prejudiced people despite evidence suggesting that most people hold and express racial bias. How is this possible? Drawing on research from motivated cognition, I tested whether people engage in motivated reasoning when facing a threat to their unprejudiced self-image. Students in this study were randomly assigned to a control condition or a threat of prejudice condition. Afterward, they read an article connecting either introversion or extraversion to racial prejudice and explained why that relationship might be true. Finally, they answered how well introversion and extraversion traits describe themselves. Although I hypothesized that students would respond by shifting their self-concept away from the traits they believed are related to prejudice, the data only supported this prediction in the control condition. In the threat of prejudice condition, there was no support for the motivated reasoning explanation. In fact, it appears that students were more likely to acknowledge their racial bias in the threat of prejudice condition. Despite the lack of evidence for motivated reasoning, I discuss the implications of this study for maintaining an unprejudiced self-image.

Keywords: prejudice, racism, self-image, motivated cognition

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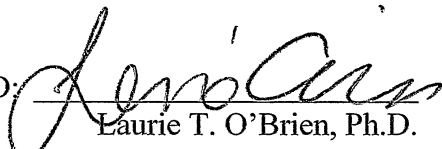
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Does Motivated Reasoning Help People Maintain an Unprejudiced Self-Image?

In April 2014, a 67 year-old Nevada rancher, named Cliven Bundy, haphazardly stepped into the spotlight of national news. After engaging in an armed standoff with Federal Bureau of Land Management rangers—the tipping point in a decades-long dispute over grazing rights and federal land—Cliven Bundy made racist comments about Black Americans. According to *The New York Times*, he wondered aloud at a press conference whether Black Americans were better off under slavery or government subsidies, just before expressing his beliefs that abortion, criminality, and laziness are rampant among Black people (Nagourney, 2014). While few Americans would argue that his comments were not racist, that is exactly what Mr. Bundy did less than a week later when he appeared on CNN's *New Day*. In response to allegations of racism, he said:

“No, I’m not racist... Maybe I sinned, and maybe I need to ask forgiveness, and maybe I don't know what I actually said, but when you talk about prejudice, we're talking about not being able to exercise what we think... We need to get over this prejudice stuff.”

Although few people ever face a situation like Cliven Bundy's, everyday Americans are not immune from doing and saying racist things and denying racism afterward. Even well intentioned and relatively egalitarian people rarely acknowledge race as a factor in their behavior when confronted by other people (Czopp, Monteith, & Mark, 2006). And, beyond merely acknowledging race, few people ever admit to holding racial bias despite evidence that most people do (Axt, Ebersole, & Nosek, 2014). So, how do people convince themselves they are not prejudiced? And, how can someone like

Cliven Bundy stand on national TV after making racist comments and sincerely proclaim, “No, I’m not racist?”

In this paper, I suggest that people engage in motivated reasoning to maintain an unprejudiced self-image, and I offer three reasons to believe this is true. First, people are motivated to appear unprejudiced to both the self and others. Second, the nature of motivated reasoning—the biased strategies people use to access, construct, and evaluate information—allows people to accomplish self-deception and generally reach the conclusions they want. Third, motivated reasoning allows people to manage threats to their self-image. I review each of these reasons below and then describe one experiment to test whether people engage in motivated reasoning when they feel threatened about holding racial bias.

Motivated to Minimize Prejudice

The average social psychologist accepts as a fact that most people are prejudiced and that institutional racism exists in the U.S., yet the average White person probably consumes this news with skepticism. Although White Americans readily judge other people as more prejudiced than themselves (O’Brien, 2002), they routinely underestimate the amount of racism and discrimination in society. In public opinion polls, White people report low levels of discrimination against minorities (Doherty, 2013). And, across multiple domains of society, White people believe discrimination has less of an influence on the lives of Black people and other minorities than people in those groups believe (Patten, 2013) or than the accumulation of discrimination research suggests (Bertrand & Mullainathan, 2003; Riach & Rich, 2002). Why does this occur?

One explanation is that White people are motivated to minimize their perceptions of prejudice, discrimination, and institutional racism in order to protect the image of their group. In this view, people deny institutional racism because it threatens White racial identity by undermining the American values of fairness and egalitarianism. Furthermore, institutional racism implies that White people benefit from unfair social advantages (*merit threat*) and that as a group White people perpetuate inequality (*group-image threat*) (Knowles, Lowery, Chow, & Unzueta, 2014). Support for these arguments comes from studies demonstrating that White people perceive more racism and institutional discrimination after a self-affirmation than when not affirmed (Adams, Thomas, & O'Brien, 2006; Unzueta & Lowery, 2008). Presumably, self-affirmations facilitate people's perception of racism because they reduce the threat of acknowledging White privilege (Unzueta & Lowery, 2008). And, indeed, White people perceive more discrimination when it is framed as anti-Black discrimination than White privilege (Lowery, Knowles, & Unzueta, 2007).

Beyond merely perceiving discrimination, the motivation to protect a group image also influences White people's perceptions of diversity and support for policies that benefit people in minority groups. For example, White people perceive diversity in organizations and institutions broadly (i.e., as numerical representation, hierarchical representation, or both) because a broad conception of diversity bolsters the perception that diversity exists in many contexts (Unzueta & Binning, 2012). In addition, a liberal definition of diversity allows Whites to conclude that initiatives for increasing the representation of people from minority groups are not necessary. In this way, concern for the ingroup translates into policy positions such as support for affirmative action. In a

clear demonstration of how ingroup concern affects support for a policy, White people randomly assigned to think about how affirmative action affects other Whites supported the policy less than people assigned to think about how the policy helps Black Americans (Lowery, Unzueta, Knowles, & Goff, 2006). Clearly then, the motivation to protect a group image has consequences for White people's beliefs, attitudes, and behavior toward members of minority groups.

In many situations, however, people are more concerned with their self-image than their group image (Gaertner, Sedikides, & Graetz, 1999). Indeed, it would be exceedingly odd for a person who has made racist remarks to be more worried about how their group looks than how they personally look. Given that the individual self is often primary in people's thoughts and behavior, there are several reasons why White people are motivated to minimize their prejudice. First, minimizing one's prejudice helps people appear egalitarian to both themselves and others. Second, the category of 'racist' is among the most negative in American society (Crandall, Eshleman, & O'Brien, 2002) and just as social norms proscribe prejudice from groups so too do they proscribe prejudice for individual people. Finally, for some people egalitarianism is an important internal value, meaning that they try to act without prejudice because it is personally important (Plant & Devine, 1998). As with other personally important standards of behavior, when people fail to uphold their unprejudiced standards, they feel guilty (Monteith, 1993). Thus, people are motivated to minimize their prejudice in order to avoid social sanction and personal feelings of guilt. But what behaviors actually make people feel less prejudiced?

Managing the self-image. Perhaps the most effective way for people to appear unprejudiced is to act unprejudiced. In this regard, token gestures—relatively unimportant behaviors that favor Black people over White people in relatively unimportant domains—are invaluable. Specifically, token gestures accomplish three feats: (a) they restore a threatened self-image, (b) they ward off threats to the self-image, and (c) they license future prejudiced behavior without tarnishing the self-image.

Restoring the self-image. Is donating a quarter to a Black man evidence that someone is not racist? Although most people would probably say ‘no,’ research on “reverse discrimination”—behavior that is more favorable toward a Black person than a White one—suggests that people think it is when they want to assure themselves they are not prejudiced. In one study (Dutton & Lake, 1973), students low in prejudice were randomly assigned to receive information suggesting that they did or did not have automatic prejudice toward interracial couples. After they left the lab, either a White or a Black panhandler approached the students and asked for money. Consistent with the idea that people seek to restore their self-image, students who were threatened donated more money to the Black panhandler than the White one. In addition, because the donation occurred outside of the laboratory and away from the experimenter, it suggests people were trying to convince themselves of their lack of prejudice by donating to the Black panhandler.

Surprisingly, other results suggest that just one favorable behavior toward a Black person is enough to restore people’s unprejudiced self-image. Using the same procedure as described above, Dutton and Lennox (1974) provided students with the opportunity to volunteer for a minority group the day after participating in the laboratory portion of the

study. Although none of the groups volunteered for the organization at a very high rate, students threatened with information about their prejudice and approached by the White panhandler were more likely to volunteer than students threatened and approached by the Black panhandler. This difference suggests that students approached by the Black panhandler were no longer worried about restoring their self-image because their donation on the day before had been sufficient. Thus, when people feel threatened about their prejudice, they may interpret a small, token gesture as evidence that they are not prejudiced.

Warding off threats to the self-image. People are generally anxious about intergroup interactions (Stephan, 2014), but some situations create more anxiety than others do. For example, consider a White academic advisor who must inform a Black student that his course load for an upcoming semester may be too ambitious. Because negative stereotypes about Black students in academia exist, the advisor may worry that providing critical feedback or suggesting that the student take easier courses may make him appear prejudiced. So, how can the advisor manage the situation and the threat to his self-image? At least one study suggests people handle situations like this by remaining silent (Crosby & Monin, 2007). Not providing criticism feels kind, but more importantly it allows people to avoid appearing racist.

Other studies have documented a similar tendency of people to use this form of token gesture, not providing criticism or negative treatment, to avoid appearing prejudiced. For example, White students evaluating a poorly written essay by a Black student are more hesitant to be critical than if they believe the essay was written by another White student (Harber, 1998). In addition, when evaluating a poorly written

essay by a Black student, people have a tendency to give overly flattering feedback, especially when the situational circumstances do not encourage accountability for the feedback (Ruscher, Wallace, Walker, & Bell, 2010). But, perhaps the strongest evidence for this effect comes from a field study by Dutton (1971) demonstrating that restaurateurs are less likely to refuse service to a Black couple than a White one when both couples fail to follow the restaurants' dress code. Thus, when people believe their behavior may make them appear racist, they use token gestures to avoid the threat.

Licensing future prejudice. Self-licensing occurs when people derive a feeling of morality from their prior behavior (i.e., their track record) which makes them more likely to later act immorally (Merritt, Effron, & Monin, 2010). In the domain of prejudice, self-licensing helps people rationalize prejudiced decisions without tarnishing their self-image. In one study, for example, students completed a job recruitment task where they were asked to choose the best-qualified applicant from a pool where the "best qualified applicant" was clearly either White or Black (Monin & Miller, 2001, studies 2 & 3). Then, students completed a second job recruitment task, this time choosing between equally qualified White and Black applicants for a stereotypically White job. Compared to students who chose the White candidate in the first task, students who established their credentials as an unprejudiced person by choosing the better-qualified Black applicant were more likely to choose the White applicant on the second task. In another study, merely thinking about voting for Barak Obama before the 2008 election licensed people to later discriminate against a Black job applicant and a Black organization (Effron, Cameron, & Monin, 2009). In both studies, one positive behavior toward a Black person licensed later prejudiced behavior.

Other research demonstrates that people do not passively use moral credentials, but they actively seek them out. When people anticipate that their future behavior may make them appear prejudiced, they strategically seek an opportunity to establish credentials beforehand. For example, Merritt and colleagues (2012, study 3) provided students with a summary of the Implicit Associations Test (IAT) and told them they would take the test later in the experiment. The framing of the test varied, with some students learning that the test is a valid and reliable measure of racial prejudice and others learning the test is a controversial and unproven measure. Before taking the IAT, students ranked eight applicants for a job at a consulting firm and importantly one of the applicants was Black. Students led to believe the IAT is a valid and reliable test ranked the Black applicant higher than students led to believe the test is unreliable. Thus, a final way people use token gestures is to license future prejudiced behavior.

Although these results collectively demonstrate that people use token gestures to minimize and manage their prejudice, they also beg the question: what makes token gestures so valuable for protecting one's self-image? After all, most people would not say that donating change to a Black panhandler or selecting a clearly qualified Black job applicant are strong evidence that someone is not racist, especially after the person has done something prejudiced beforehand. So, why do token gestures work so well? One answer seems to be because people want them to. Consistent with motivational accounts of reasoning and classic research on confirmation bias (Nickerson, 1998) people's tendency to over-weight the evidence provided by token gestures suggests that they are motivated to believe they are not prejudiced.

Motivated Reasoning and Self-Deception

Psychologists know that humans do not always reason rationally or logically. In everyday tasks, motivation affects how people make judgments, form impressions, evaluate information, and reach conclusions (Kunda, 1990). Psychologists also know that one of the strongest sources of motivation is the self and people's desire to see themselves positively (Fiske, 2010; Leary, 2007). What remains more mysterious, however, is how people are able to engage in motivated reasoning without realizing they have done so. Below, I briefly review motivated reasoning and self-deception before discussing how they can help people manage threats to their self-image.

Motivated reasoning. The evidence of motivation's influence on human cognitive processes is ubiquitous. At a low level of cognition, motivation influences perception, leading people to see what they want or expect in ambiguous objects (Balcetis & Dunning, 2006). In addition, motivation can cause people to perceive desirable objects as physically closer than they actually are (Balcetis & Dunning, 2009). At a higher level of cognition, motivation influences the type of information people seek when making judgements and how valid they think arguments for or against a position are (Ditto & Lopez, 1992). A well-documented phenomenon in judgment and decision making research is that people seek information that confirms their beliefs rather than opposes them, an effect generally referred to as the confirmation bias (Nickerson, 1998). Similarly, people are more skeptical and critical of information that violates their preferred conclusions than information that agrees with their beliefs and desires (Ditto & Lopez, 1992).

Although people make errors in reasoning on all kinds of problems and in multiple situations, many biases are exacerbated when the self is involved. For example, people consistently believe they are better than average on a variety of traits, skills, and behaviors, define personality traits in a way that makes them look good compared to others, selectively take credit for their successes and deny fault for their failures, intentionally compare themselves with other people who are worse off than they are, and deny that they hold such self-serving biases, all in an attempt to maintain and enhance self-esteem (Leary, 2007). In fact, the array of self-serving biases has led to the proposition that people possess a psychological immune system responsible for protecting them from the emotional consequences of negative events (Gilbert, Pinel, Wilson, Blumberg, & Wheatley, 1998).

Importantly for the purposes of this paper, at least two of these biases have been documented in the domain of prejudice. First, people define racism egocentrically, tending to omit the traits and behaviors they are likely to exhibit themselves (Sommers & Norton, 2006). In this way, people construct lay theories of racism that allow them to maintain a safe distance from any appearance of personal prejudice. Second, people make downward social comparisons when threatened by the possibility that they actually are prejudiced (O'Brien et al., 2010). By choosing to compare their own attitudes and behaviors with people who are more racist, people can avoid thinking of themselves as prejudiced. But, if these examples describe self-relevant motivated reasoning, they provide little insight into *how* such biased reasoning works and how people remain unaware its influence.

Self-deception. As an explanation for how motivated reasoning works, Kunda (1990) argued that when people are motivated to reach a desired conclusion, they rely on biased strategies for accessing, constructing, and evaluating beliefs. So, as an example, consider a person who reads an article arguing that lifestyle factors (e.g., diet, exercise, drinking alcohol) are related to the risk of developing cancer. A person who wants to believe they are not at risk for developing cancer may think about their daily behavior and begin to recall more memories consistent with a low risk of cancer (e.g., I eat pretty healthy; I get to the gym four or five days a week; I only drink socially) than a high risk. Even though this process is biased, it holds an illusion of objectivity to the perceiver. Specifically, the perceiver fails to realize their reasoning is shaped by a goal or that they have a broader set of relevant knowledge (e.g., memories of eating unhealthy, knowledge of an expired gym membership, and a calendar full of social events where drinking occurred) that they may activate if a different goal were salient.

Although a number of cognitive processes accomplish motivated reasoning, researchers agree that the illusion of objectivity is critical for motivated reasoning to work (Gilbert et al., 1998; Balcetis, 2008). Once people are forced to realize the irrationality of their mental processing, motivated reasoning may cease to function at all (Gilbert et al., 1998). Thus, successful motivated reasoning requires self-deception—“the process of ignoring, rationalizing, or manipulating some thought or behavior to create consistency between that thought or behavior and one’s sense of self” (Balcetis, 2008). Successful self-deception and motivated reasoning help people deal with several threats to their self-image including the threat of prejudice.

Managing Threats to the Self-Image

Perhaps the greatest threat to the self is death because it is the end of the physical self (Greenberg & Arndt, 2012). So, how do people react when they must confront this great threat to self? Famous research conducted by Kübler-Ross (1969) identified denial as the first response of people diagnosed with a terminal illness. In other words, when people must confront the objectionable news of their own death, they immediately search for other explanations. Such reasoning is surely motivated and representative of how people handle several other threats to the self.

Indeed, people are adept at dismissing information that threatens how they wish to see themselves. In the domain of health, for example, people often respond defensively to information suggesting they are at risk for illness or other negative health outcomes, which, ironically, means that despite the most well-crafted messages of public health campaigns, it is often the people most at-risk for disease or illness who are the most resistant to the information. In an illustrative study by Sherman, Nelson, and Steele (2000) women who regularly consume a lot of caffeine were more likely than women who consume only a little to reject the information in a scientific article connecting caffeine consumption to the risk of breast cancer. By ignoring the information or searching for a reason to reject it, people can manage their anxiety and avoid making the time-consuming changes to be a healthier person.

Other studies demonstrate that when people cannot belittle or reject threatening information, they avoid it (Sweeny, Melnyk, Miller, & Shepperd, 2010). Although information is typically thought of as the key to reducing uncertainty and anxiety, at times, people gladly remain in a state of uncertainty. For example, information avoidance

has been documented in people's responses to testing for serious diseases like HIV and AIDS, diabetes, and cardiovascular disease (Howell & Shepperd, 2012) and in response to less serious problems like implicit prejudice (Howell et al., 2013). Similar to people's motivated dismissal of threatening information, reviewed above, information avoidance is reduced after a self-affirmation (Howell & Shepperd, 2012), highlighting its motivated nature.

The stakes, however, do not always have to be as high as death and disease for people to engage in motivated self-defense. Kunda and Sanitioso (1989) reported evidence that self-motives affect how people describe themselves at a given moment. In their study, graduate students read an article connecting either introversion or extraversion to academic and career success—highly desirable goals for graduate students. Given the desirability of seeing oneself as successful, Kunda and Sanitioso argued that people would engage in motivated reasoning by recruiting aspects of their self-concept consistent with the information they read about. And indeed, after the manipulation, people reported possessing relatively higher levels of the personal attributes related to success (e.g., people who thought introversion facilitates success reported higher levels of introversion when compared to people who read that extraversion facilitates success). But, the exact reason for why they did so is not clear.

Although Kunda and Sanitioso (1989) suggested that people shift their self-concept by engaging in a biased search of memory nothing in their study directly tests this argument. Therefore, it is possible people simply shift their self-concept in a deliberate and conscious effort to maintain cognitive consistency with a desired self-view, in this case being successful. In fact, in discussing their results, the authors admit

that a cognitive explanation for their observed effect may be possible, although perhaps less plausible. Similarly and perhaps more importantly, if motivated reasoning drives changes in the self-concept, then manipulating people's motivation should affect the amount of change they report. When people feel especially threatened (and presumably especially motivated) they should work harder to find evidence that refutes the threat and as a result should show greater changes in the self-concept than people who are less threatened. Based on this rationale, the current study had two goals: (a) to test whether people maintain an unprejudiced self-image by making motivated shifts in their self-concept, and (b) to test whether the motivation causing people to shift their self-concept can be manipulated.

Study Overview

For most White people in the U.S., being labeled as prejudiced constitutes a significant threat (Winslow, 2004). Significant enough, in fact, that simple interracial interactions cause people to feel cognitively and emotionally drained (Richeson & Shelton, 2007; Trawalter & Richeson, 2006) and taking a test that measures implicit racial bias constitutes an experience of stereotype-threat (Frantz, et al., 2004). To understand how people manage this threat, I conducted one experiment investigating whether people make motivated shifts in their self-concept.

In the experiment, I manipulated people's motivation to see themselves as unprejudiced by randomly assigning half of the students to complete a Black-White IAT and the other half to complete a Bugs-Flower IAT. To increase the threat of taking the Black-White IAT, I adapted the instructions from Frantz et al., (2004) which tend to induce a stereotype threat experience for White people. Furthermore, instead of providing

students with false feedback, I relied on the palpable, pro-White bias that most people exhibit on the Black-White IAT and the consequent feelings of guilt people have after performing poorly on the test (Monteith, Voils, & Ashburn-Nardo, 2001). Thus, the threat manipulation consisted of assigning students to take the Black-White IAT, manipulating the instructions to create an experience of stereotype threat, and relying on them to feel guilty after performing poorly.

After students completed the IAT, they read a bogus article connecting either introversion or extraversion to racial prejudice. After reading the article, students briefly wrote an essay explaining why the relationship described in the article might be true—a procedure that previous research indicates causes people to have more faith in the relationships they have explained (Anderson, Lepper, & Ross, 1980). Finally, students answered a list of questions measuring how introverted and extraverted they are.

Predictions

Because people's self-concept is subject to change based on the situation and their motivation (Kunda & Sanitioso, 1989), I reasoned that the manipulation of threat and the articles connecting introversion or extraversion to prejudice would cause people to change how introverted or extraverted they believe they are. Specifically, I hypothesized that students who read that introversion is related to racial prejudice would report that they are lower in introversion (and higher in extroversion) than students who read that extroversion is related to racial prejudice. Similarly, I hypothesized the exact opposite for students in the extraversion condition. I expected them to report that they are lower in extraversion (and higher in introversion) than students who read that introversion is

related to racial prejudice. Finally, I hypothesized that when students were motivated to see themselves as unprejudiced (threat condition) they would show greater changes in the self-concept than students in the control condition.

Method

Pilot Study

Before conducting the main experiment, I ran a pilot study to ensure that both of the articles connecting introversion and extraversion to prejudice were equally credible, convincing, and legitimate. In the pilot study, students were randomly assigned to read one of the two articles. The bogus articles summarized “new research” conducted by fake, yet prominent personality psychologists (i.e., the research was conducted at Stanford) and were supposedly published in *Psychology Today*. The experiment described in the articles reported solid support for the conclusion that either introversion or extraversion makes racial prejudice more likely. After students read the article, they answered a number of questions measuring their beliefs about the information within article.

A secondary goal of the pilot study was to establish measures of introversion and extraversion to use in the main experiment. Thus, at the end of the pilot study, students answered how well a list of traits and behaviors represent introversion and extraversion and their ratings were used to construct measures for the main experiment.

Participants and design. Ninety-seven students from Tulane University (53 men, 44 women, $M_{age} = 18.97$, $SD = 1.01$ years) completed an online study, which served as a pilot for the manipulations connecting introversion or extraversion to racial prejudice.

The study had two conditions. Students randomly assigned to the introversion condition read an article connecting introversion to racial prejudice, while students assigned to the extraversion condition read an article connecting extraversion to racial prejudice. After reading the article, students answered a number of questions assessing their judgments of the research reported in the article. At the end of the study, students indicated how well various traits and behaviors represent introversion and extraversion. All students received partial course credit for their participation.

Measures

Judgments of the article. Of the questions students answered measuring their thoughts about the article, four were of primary interest. Those questions measured how credible, how convincing, how legitimate, and how surprising the research study and its results were. All questions were answered on a 7-point Likert-type scale, ranging from 0 (*not at all*) to 6 (*very much*).

Trait adjectives. Students responded to a list of 48 trait adjectives (e.g., smart, reflective, outgoing), indicating how well each one represented either introversion or extraversion; they provided their responses on a 7-point Likert-type scale ranging from -3 (*Extraversion*) to +3 (*Introversion*). The traits in the list broadly represented introversion and extraversion while also containing both desirable and less desirable traits for both constructs in an attempt to generate a representative list. Because extraversion tends to be more socially valued than introversion (Wilt & Revelle, 2009), this effort to balance the valence of both constructs was important.

Behaviors. Similar to the list of trait adjectives, students responded to a list of behaviors by indicating how well each one represented either introversion or extraversion. I created the behavior items and like the trait adjectives, the behaviors were intended to broadly represent both introversion and extraversion. Once again, students' responses were provided on a 7-point Likert-type scale ranging from -3 (*Extraversion*) to +3 (*Introversion*).

Results and Discussion

To ensure that students in both conditions perceived the research similarly, I conducted four independent samples *t*-tests. There were no significant differences for the questions measuring how credible ($M_{Overall} = 3.18, SD = 1.23$), convincing ($M_{Overall} = 3.01, SD = 1.37$), and legitimate ($M_{Overall} = 3.03, SD = 1.25$) the study was (all p 's > .28). But for the question measuring how surprising the results were, there was a marginally significant effect, $t(92) = 1.82, p = .07$. Students in the extraversion condition ($M = 3.35, SD = 1.25$) were more surprised than students in the introversion condition ($M = 2.88, SD = 1.27$). Although this marginal effect was undesirable, the results of the pilot study largely suggested that students perceived the research they read about similarly, regardless of condition. Thus, I used the articles as manipulations in the main experiment.

To determine which traits and behaviors students perceived as most representative of introversion and extraversion, I conducted one-sample *t*-tests on each trait and each behavior to find which items had means significantly different from the scale midpoint. Then, I selected the 10 traits and 10 behaviors with the largest means representing introversion and the 10 traits and 10 behaviors with the largest means representing

extraversion. These 40 items were included in the main experiment as measures of introversion and extraversion.

Main Experiment

Participants and Design

A separate sample of 167 students from Tulane University completed the study in the laboratory in exchange for partial course credit. Twenty-nine students who identified with an ethnicity other than White were dropped from the sample. Three other students were excluded because they expressed suspicion about the study procedures, and one student was excluded because he was impaired during the study. The final sample of 134 students included 78 women and 56 men, ranging from 18 to 29 years of age ($M = 18.90$, $SD = 1.30$ years).

When students arrived at the laboratory, an experimenter randomly assigned them to condition in a 2(Threat of Racism: Threat vs. Control) \times 2(Traits Related to Prejudice: Introversion vs. Extraversion) \times 2(Trait Endorsement: Introversion vs. Extraversion) mixed-model design. In the design, the threat of racism and traits related to prejudice were between subjects independent variables while trait endorsement was a within subjects dependent variable.

Procedure

When students arrived at the laboratory, a female experimenter told them they would complete two separate studies in the experimental session and obtained their consent. All experimenters were White and blind to experimental condition as well as the

study's hypotheses. As part of the cover story, the experimenter described the first study as an investigation of "cognitive performance and evaluation processes," and the second study as an undergraduate student's honors thesis project investigating how people use traits and behaviors to describe themselves. The cover story and the two-study ruse were used to disguise the dependent measures from the experimental manipulations.

The experimenter described the "first study" to students by telling them that the researchers were interested in whether there is any relationship between split second decision-making and the slower, more controlled reasoning people engage in when evaluating information. As a measure of split second decision making, the experimenter told students they would take a reaction time test on the computer (the IAT). Half of the students took the race-IAT (see Appendix A) and half of the students took the Bugs-Flower IAT (see Appendix B). To measure controlled reasoning, the experimenter informed students they would read a summary of scientific research then write a brief essay evaluating the research. Half of the students read the article connecting introversion to prejudice (see Appendix C) and half read the article connecting extraversion to prejudice (see Appendix D). During the essay portion of the study, students were given three minutes to write, and they were instructed to explain why the research they read might be true. After students finished the essay, all experimental manipulations were complete and the experimenter informed them they were finished with the first study.

At this point, the experimenter asked students to move to another computer, which was across the lab in order to complete the "second study." Then, to further increase the authenticity of the second study, the experimenter gave students a study information sheet. The sheet was an open letter, written and signed by the bogus

undergraduate honors student, inviting participants to take part in the study and explaining the study's purpose. The information on the sheet was similar to the information on an informed consent document. As students read the information sheet, the experimenter opened the computer files. Once the program began, the experimenter left the room and allowed students to answer the study's dependent measures. The order of dependent measures was the same for all students and determined by random selection before the study began (see Appendix E for a complete list).

When students finished completing the dependent measures, the experimenter entered the room and explained that she “forgot” a questionnaire related to the article evaluation exercise. Then, the experimenter handed the student a brief questionnaire with a manipulation check question embedded among filler items (see Appendix F). After students completed the questionnaire, the experimenter thanked them and debriefed them.

Measures

Trait adjectives. Students answered how well 54 different trait adjectives described themselves on a 7-point Likert-type scale ranging from 1 (*definitely describes me*) to 7 (*definitely does not describe me*). Based on the results of the pilot study, 10 traits were included to measure introversion (hesitant, guarded, shy, introverted, unassertive, reflective, reserved, quiet, cautious, and thoughtful), 10 traits to measure extraversion (energetic, talkative, daring, full of energy, extraverted, assertive, outgoing, sociable, impulsive, and bold) and 34 traits served as filler items (e.g., romantic, athletic, organized, responsible).

Before creating a composite scale of the introversion and extraversion traits, I reverse coded students' responses so that higher numbers indicate more agreement with the traits. Then, I conducted two separate factor analyses—one for introversion traits and one for extraversion traits—using maximum likelihood estimates and extracting just one factor. For the introversion traits, the scree plot suggested a one-factor solution was appropriate. The Eigen value for the first factor was 4.21 and it accounted for 42% of the variance. Four traits (cautious, reflective, guarded, and thoughtful) had factor loadings below .50, so they were dropped, and the remaining six items were averaged to create a reliable scale ($\alpha = .89$). (See Table 1 for a summary of means, standard deviations, and correlations among all dependent measures).

For the extraversion traits, the scree plot again suggested a one-factor solution was appropriate. The Eigen value for the first factor was 4.58 and it accounted for 46% of the variance. Three traits (impulsive, daring, and assertive) had factor loadings below .50 and were dropped from the scale. The remaining seven items were averaged to create a reliable scale ($\alpha = .88$).

Table 1. Summary of Inter-correlations, Means, and Standard Deviations among Dependent Variables

Measure	1	2	3	4	<i>M</i>	<i>SD</i>
1. Introversion Traits	—				3.61	1.29
2. Extraversion Traits	-.74*	—			4.93	1.20
3. Introversion Behaviors	.15 [†]	.20*	—		2.96	1.09
4. Extraversion Behaviors	-.65*	.54*	-.04	—	4.29	1.22

Note: [†] $p = .08$ * $p < .001$

Behaviors. After responding to the trait adjectives, students indicated how often they engage in 25 different behaviors, using a 7-point Likert-type scale ranging from 1 (*almost never*) to 7 (*almost always*). Ten behaviors measured introverted tendencies (e.g., I perform best when working alone; I enjoy time alone) and 10 behaviors measured extraverted tendencies (e.g., I speak up in large classes; I'm likely to initiate conversation with other people at a party). Five items served as filler.

Similar to the procedure I used to construct the scales measuring introverted and extraverted traits, I conducted separate factor analyses for the items measuring introverted and extraverted behaviors. For the introverted behaviors, the scree-plot suggested a one-factor solution was appropriate. The Eigen value for the first factor was 2.48 and it accounted for 25% of the variance. Only three behaviors had factor loadings above .50, so they were retained and averaged to create a scale with acceptable reliability ($\alpha = .63$).

For the extraversion behaviors, the scree-plot suggested a one-factor solution was appropriate. The Eigen value for the first factor was 2.59 and it accounted for 26% of the variance. Only three behaviors had factor loadings above .50, so they were retained and averaged to create a scale with acceptable reliability ($\alpha = .66$).

Manipulation checks. As a manipulation check, one item asked students to what extent they believe introversion or extraversion is related to prejudice on a 7-point Likert-type scale. The scale ranged from 0 (*Introversion*) to 6 (*Extraversion*) and the midpoint of the scale indicated no relationship between the personality factors and prejudice. A second manipulation check, which I used in the pilot study and again here, asked students

about the credibility of the research they read about. Students provided their answers on a 7-point Likert-type scale ranging from 0 (*not at all credible*) to 6 (*very credible*).

Results

Preliminary Analyses

To test whether the information in the article influenced students' beliefs about the relationship between introversion or extraversion and prejudice, I conducted an independent samples *t*-test on the manipulation check item. The test revealed that the two groups were significantly different, $t(130) = 11.79, p < .001$. Students who read the extraversion article ($M = 3.91, SD = 1.11$) rated extraversion as more related to prejudice than students who read the introversion article ($M = 1.68, SD = 1.06$). Because the scale midpoint of three indicated no relationship between either personality factor and prejudice, I wanted to test whether both article conditions were significantly different from the scale midpoint. So, I conducted separate, one-samples *t*-tests. Students' ratings in both the introversion article condition, $t(62) = -9.87, p < .001$, and extraversion article condition, $t(68) = 6.85, p < .001$, were significantly different from the midpoint, suggesting that the article manipulation was successful; both groups believed there was a relationship between the personality factor they read about and racial prejudice.

A separate *t*-test on students' ratings of the article's credibility revealed that neither group believed the research was more credible than the other, $t(130) = -.59, p = .55$. Thus, although students believed in a relationship between introversion or extraversion and prejudice after reading the article, students in both groups found the

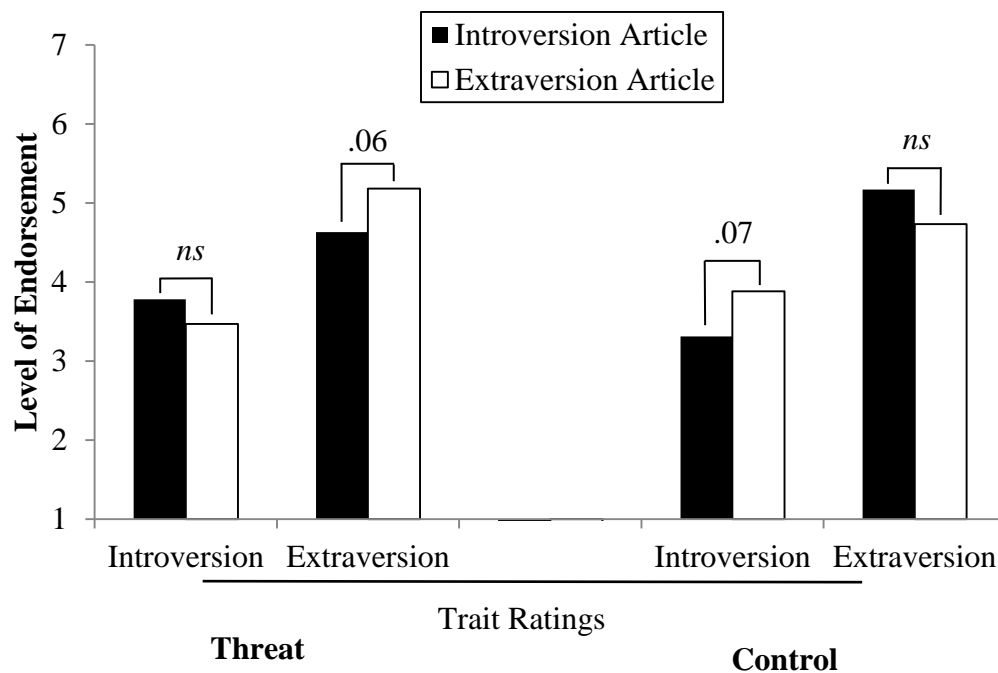
research equally credible overall ($M_{Introversion} = 3.25, SD = 1.39; M_{Extraversion} = 3.12, SD = 1.28$), furthering supporting the efficacy of the manipulation.

Primary Analyses

Did people shift their ratings of how introverted and extraverted they are when facing the possibility they might have racial bias? To find out, I conducted a 2(Threat of Racism: Threat vs. Control) \times 2(Traits Related to Prejudice: Introversion vs. Extraversion) \times 2(Trait Endorsement: Introversion vs. Extraversion) repeated measures multivariate analysis of variance (MANOVA), with students' ratings of introversion and extraversion as the repeated measures dependent variable. The MANOVA revealed a significant main effect across students' trait ratings. Consistent with past research, students reported that they were more extraverted ($M = 4.93, SD = 1.20$) than introverted ($M = 3.61, SD = 1.29$), Wilks' $\Lambda = .75, F(1, 130) = 43.83, p < .001$.

More importantly, the primary test of my hypothesis—that people would shift their endorsement of both introversion and extraversion traits depending on threat and article condition—was a three-way interaction, which the analysis revealed was significant, Wilks' $\Lambda = .96, F(1, 130) = 5.50, p = .02$ (see Figure 1). Thus, despite their tendency to see themselves as more extraverted than introverted overall, students did shift their ratings based on condition. None of the two-way interactions was significant (p 's $> .80$).

Figure 1. Mean level endorsement of introversion and extraversion traits as a function of threat condition and article condition.



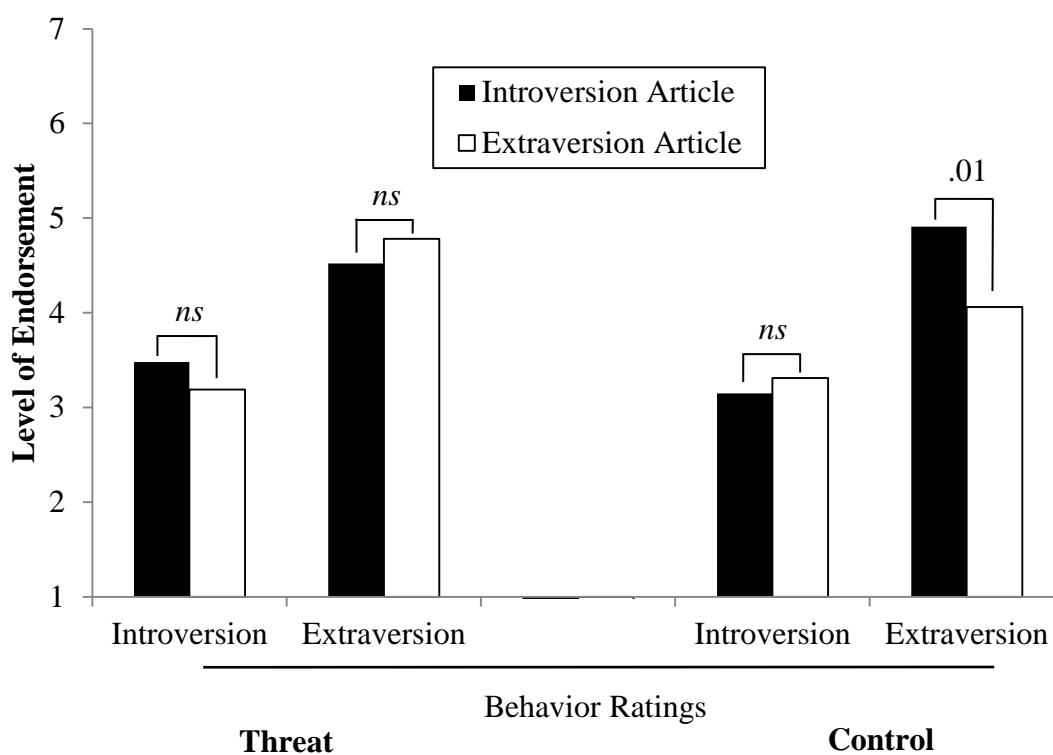
I conducted simple effects tests by looking at the simple main effect of article across threat condition and trait ratings. As a reminder of my predictions, I expected students in the control condition (Bugs-Flower IAT) to shift their ratings of introversion and extraversion based on the article they read. When students read that introversion is related to prejudice, I expected them to report that they are low in introversion, but high in extraversion. And, when students read that extraversion is related to prejudice I expected the opposite (low in extraversion, but high in introversion). Finally, I expected both of these effects to be stronger when students were in the threat condition (Race IAT) than in the control condition.

The simple effects tests revealed that students in the control condition reported that they were more introverted after reading that extraversion is related to prejudice ($M = 3.88$, $SD = 1.26$) than after reading that introversion is related to prejudice ($M = 3.31$, $SD = 1.22$), but the effect was only marginally significant, $F(1,130) = 3.27$, $p = .07$. The simple effect of article on students' self-reported extraversion was not significant, $F(1,130) = 2.37$, $p = .13$, but the means were in the expected direction: students reported that they were more extraverted after reading that introversion is related to prejudice ($M = 5.17$, $SD = 1.01$) than after reading that extraversion is related to prejudice ($M = 4.73$, $SD = 1.18$). For students in the threat condition, the simple effect of article was not significant for ratings of introversion ($p > .30$). But for ratings of extraversion there was a marginally significant effect, $F(1,130) = 3.63$, $p = .06$. Contrary to hypotheses and the pattern of results in the control condition, students reported that they were *more* extraverted ($M = 5.18$, $SD = 1.18$) after reading that extraversion is related to prejudice than after reading that introversion is related to prejudice ($M = 4.63$, $SD = 1.46$). This finding was unexpected and I discuss it in detail in the general discussion. Thus, although students in the control condition shifted their ratings of introversion and extraversion as expected, students in the threat condition did not.

Were students only willing to shift the traits they use to describe themselves or did they also shift their perception of how often they engage in various behaviors? To find out, I conducted another $2 \times 2 \times 2$ repeated measures MANOVA, with students' ratings of how often they engage in introverted and extraverted behaviors as the repeated measures dependent variable. The MANOVA revealed a significant main effect across students' behavioral ratings. Consistent with students' report that they are more

extraverted than introverted, they also reported engaging in more extraverted behaviors ($M = 4.56, SD = 1.24$) than introverted behaviors ($M = 3.28, SD = 1.27$), Wilks' $\Lambda = .68$, $F(1, 130) = 60.90, p < .001$. More importantly, however, a significant three-way interaction emerged, Wilks' $\Lambda = .96, F(1, 130) = 5.64, p = .02$ (see Figure 2). To examine the interaction, I again conducted simple effects tests examining the simple main effect of article condition across threat condition and behavioral ratings.

Figure 2. Mean level endorsement of introversion and extraversion behaviors as a function of threat condition and article condition.



The simple effects tests revealed that students in the control condition reported a similar level of engagement in introverted behaviors, regardless of whether they read that introversion ($M = 3.15$) or extraversion ($M = 3.31$) is related to prejudice ($p > .60$). For students' reported engagement in extraversion behaviors, however, there was a significant simple effect. Students reported more engagement in extraversion behaviors after reading that introversion is related to prejudice ($M = 4.91$, $SD = 1.13$) than after reading that extraversion is related to prejudice ($M = 4.06$, $SD = 1.22$), $F(1, 130) = 8.42$, $p < .01$. This effect was consistent with my hypothesis and with students' trait ratings of extraversion. None of the simple effects in the race condition were significant (p 's $> .35$).

Thus, to recap, students reported that they are more extraverted than introverted overall, and this happened for both trait adjectives and behaviors, but neither of these ratings were stable. Instead, students shifted their self-reported introversion and extraversion across conditions. For trait ratings, students in the control condition tended to change their ratings of introversion based on the article they read. When the article reported a relationship between extraversion and prejudice, students claimed to be more introverted than when the article reported that introversion is related to prejudice. Although students did not change their ratings to the same degree when reporting how extraverted they are, the pattern of means was in the expected direction. In addition, when students reported how often they engage in various behaviors, they were much more likely to report engaging in extraverted behaviors after reading that introversion is related to prejudice than when reading that extraversion is. These effects demonstrate a self-serving response.

For students who took a race IAT before reading the articles connecting introversion or extraversion to prejudice, the pattern of shifting looked much different. After reading that extraversion is related to prejudice, students reported that they are *more* extraverted than when they read that introversion is related to prejudice. Once again, although students did not change their ratings as much when reporting how introverted they are, the pattern of means was in the same direction, suggesting anything but a defensive response.

Discussion

Few White Americans openly acknowledge holding racial prejudice. Even with the distance of a telephone and the anonymity created in a public opinion poll, only a small percentage of people admit to holding any racial bias at all (Shabazz, 2007). Meanwhile a wealth of psychological research shows that people are biased (Axt, Ebersole, & Nosek, 2014). So how do they maintain the perception that they are not?

In this experiment, I tested whether people engage in motivated reasoning to maintain an unprejudiced self-image, and the results suggested two very different answers. First, for students who did not take the race IAT, the results suggested general support for my hypothesis that people shift their self-concept to manage the threat of prejudice; students reported that they are more introverted after reading that extraversion is related to prejudice. But students who read that introversion is related to prejudice reported the opposite pattern of results (i.e., that they are more extraverted), suggesting that people engage in some self-serving process of perception in response to information about prejudice.

However, the second answer suggested by the data is that people do not shift their self-concept in a defensive manner. For students in the threat condition, taking the race IAT and learning that introversion or extraversion is related to prejudice *increased* their perceptions of whether they were introverted or extraverted. Specifically, students reported that they were more extraverted, after reading that extraversion is related to prejudice. This is not consistent with a defensive response and prompts the simple question: what happened when students took the race IAT? Although the answer is speculative, it appears that they became more willing to acknowledge their racial bias.

In the space below, I first review how the results of this study contradict the theory of motivated reasoning. Then, I describe how student's endorsement of extraversion in the threat condition contributes to an emerging body of research demonstrating that people sometimes show awareness of their prejudice. Finally, I discuss a few limitations and future directions.

The Motivation in Motivated Reasoning

This study failed to provide a clear and simple answer to the question of how people maintain the belief that they are not prejudiced. Yet, the results do offer some answers by not supporting the idea of motivated reasoning. Although people reported self-serving perceptions of their introversion and extraversion in the control condition, the pattern of results for people in the threat condition are completely inconsistent with what motivated reasoning would predict. Why did the threat manipulation fail to induce motivated reasoning, and how can the two patterns of results be reconciled to make sense?

First, to understand why the threat manipulation failed to work as expected, it is necessary to consider what the threat manipulation was and what it was intended to do. The threat manipulation consisted of assigning some students to take the Black-White IAT after informing them that the majority of White people show a pro-White bias. Then, as people took the test, I expected them “feel” their bias in favor of White people and to infer what that meant (Monteith, Voils, & Ashburn-Nardo, 2001). Afterward, I expected people to look for an opportunity to convince themselves they are not prejudiced, which they could have done by shifting their ratings of introversion and extraversion in response to the article they read. But the manipulation actually caused people to see themselves as possessing more of the traits that were connected to prejudice.

One reason this may have occurred is that people are not highly concerned about convincing themselves they lack prejudice. Although some studies suggest that people act in ways to convince themselves they are not prejudiced (Dutton, 1971; Crosby & Monin, 2007), these study designs leave open the possibility that people are really acting to convince others. Which suggests that the manipulation in this study might have worked if there was an element of social evaluation involved. For example, if students were working with a partner who was going to see their ratings of introversion and extraversion, perhaps they would have been motivated to shift their ratings as hypothesized. Such an effect would be consistent with the effort people make to follow social norms and not appear prejudiced to others (Crandall, Eshleman, & O’Brien, 2002).

Another reason the threat manipulation may have failed to produce the hypothesized results is that instead of becoming defensive after the IAT, people may have accepted the test as evidence that they do hold bias against Black people. Given that

students only needed to admit this possibility to themselves, this explanation seems plausible and it can help make sense of the contradictory pattern of results across the threat and control conditions. Specifically, in the control condition, students may have reported self-serving perceptions of their own introversion and extraversion because they honestly believed they were not prejudiced. Thus, after reading that introversion or extraversion is related to prejudice, people may have naturally perceived themselves as higher in the traits that are not linked to prejudice, in a process similar to self-perception (Bem, 1972). But, people who took the race IAT were not only reminded of the possibility that they have racial bias, but presumably, they also felt their poor performance on the test and may have accepted the manipulation as evidence that they are biased. Thus, after reading that introversion or extraversion is related to prejudice, they may have arrived at the conclusion that they are indeed introverted or extraverted based on the same process of self-perception that people in the control condition used. If so, this explanation contradicts the theory of motivated reasoning.

Do People Acknowledge Prejudice?

As discussed briefly above, not taking the race IAT may have left students in the control condition free to maintain the belief that they are not prejudiced. However, taking the race IAT may have confined students in the threat condition to thinking about their prejudice. If that is true, then students' increased perceptions of themselves as introverted and extraverted in the threat condition may be better explained by cognitive factors than motivational ones. While I have already described how self-perception may explain the results, it is also possible that while writing about the relationship in the article they read, students made inferences about how much the IAT reflects their true attitudes. Recent

research has demonstrated that people are more aware of their implicit attitudes than originally thought (Hahn, Judd, Hirsh, Blair, 2014). In addition, although people usually report lower levels of prejudice on self-report measures than on implicit measures, the discrepancy between implicit and explicit attitudes is reduced when people feel that their implicit attitudes reflect something important about themselves (Cooley, Payne, Loersch, & Lei, 2015). That is, when people think that their implicit attitudes are their own attitudes and not just societal stereotypes, they report a level of explicit prejudice that is more in-line with their implicit prejudice (Cooley, Payne, Loersch, & Lei, 2015). Thus, after taking the IAT and reading about personality traits related to prejudice, students may have reported greater levels of introversion and extraversion because they felt their IAT performance reflected something important about their attitudes.

Another explanation for why students who took the race IAT reported that they possess more of the traits related to prejudice is that the test may have operated like a bogus pipeline (Jones & Sigall, 1971). The instructions for the IAT described the test as a valid and reliable measure of implicit attitudes and told students that most people prefer White over Black. Thus, after taking and performing poorly on such a reliable test, students may have been afraid that not truly reporting their perception of their own introversion and extraversion would somehow be discovered or that they would appear to be lying. Whatever the reason for students' willingness to accept that they possess traits linked to prejudice, it is important to recognize that there are some situations where people may not be defensive about acknowledging prejudice. And, this points to an important future direction: understanding when people are and are not defensive about acknowledging their prejudice.

Limitations and Future Directions

One limitation of the present research is that the articles connecting introversion and extraversion to prejudice were not very persuasive. In both the pilot study and the lab study, students reported that the research was moderately credible, convincing, and legitimate—not totally rejecting the information but not necessarily accepting it either. Although students in the control condition of the lab study were still influenced by the articles, perhaps information that is more convincing would have led students to make greater shifts in their reported personality traits for both introversion and extraversion.

Another limitation is that students primarily shifted their ratings of extraversion, not introversion. Although the changes across conditions are interesting, the lack of significant changes in introversion suggests two things. First, because students perceived themselves as more extraverted overall, perhaps shifting their ratings of introversion is more difficult. The results obtained in this study are largely consistent with the results in Kunda and Sanitioso (1989), where students reported being more extraverted than introverted and tended to make shifts in their self-reported extraversion, but not introversion. The second thing suggested by the lack of changes in introversion is that perhaps a different measure of personality or a measure unconnected to personality would allow students to make greater shifts in their self-concept. Thus, other measures may provide people with more flexibility to engage in self-serving perception or motivated reasoning.

Despite some of the study's limitations, there is also at least one clear direction for future research. Specifically, although I entered this study trying to understand

people's defensive responses to information about their prejudice, an interesting question is, when do people acknowledge or accept information about their prejudice? People do not always automatically reject information about their prejudice (Hahn, Judd, Hirsh, Blair, 2014; Moss & O'Brien, 2015) so understanding why and with what consequences warrants future investigation.

Conclusion

People generally maintain the perception that they are without prejudice despite situations and circumstances that seem to suggest otherwise. This research tried to document one process that may help people maintain the belief that they are unprejudiced: motivated reasoning. Nevertheless, a cognitive explanation based on self-perception offers a parsimonious explanation of the results. Still, the theoretical basis of self-enhancement and motivated cognition seem relevant for explaining people's responses to situations where they face the threat of appearing racist, so perhaps future research will be able to clarify whether people maintain an unprejudiced self-image using cognitive or motivational processes. Either way, I am interested in understanding the mental machinery that allows people to sincerely say, "No, I am not racist," after making what appears to everyone else as clearly racist comments.

Appendix A

Race Implicit Association Task

Task Description: You are about to take an Implicit Associations Test (IAT). The IAT is a test of cognitive performance that measures your attitude toward two different groups. This particular IAT measures your unconscious racial attitudes toward Blacks and Whites. Research shows that a high proportion of Whites show a preference for White people. This is a challenging task, so please try hard.

Instructions: In this next task, you will be presented with a set of words and pictures to classify into groups. This task requires that you classify items as quickly as you can while making as few mistakes as possible. Going too slowly or making too many mistakes will result in an uninterpretable score. This part of the study will take about 5-10 minutes. The next screen may take a few seconds to load, please be patient.

During the first trial of the IAT, each word appeared individually on the laptop screen and participants were instructed to categorize each word as GOOD or BAD.

Good

Bad

Joy
Agony
Love
Terrible
Peace
Horrible
Wonderful
Nasty
Pleasure
Evil
Glorious
Awful
Laughter

Failure
Hurt
Happy

During the second trial of the IAT, pictures of Black and White faces appeared individually on the laptop screen and participants were instructed to categorize each picture as either European American or African American.

European American

African American





During the third trial of the task, a word or picture appeared individually on the laptop screen and participants were instructed to categorize each word as describing good/bad or European American/African American (congruent trial). Words and pictures included all words and pictures listed above.

<u>Good</u>	<u>Bad</u>
or	or
<u>European American</u>	<u>African American</u>

During the fourth trial of the task, a word or picture appeared individually on the laptop screen and participants were instructed to categorize each word as describing good/bad or African American/ European American (incongruent trial). Words and pictures included all words and pictures listed above.

<u>Good</u>	<u>Bad</u>
or	or
<u>African American</u>	<u>European American</u>

Appendix B

Bugs-Flower Implicit Association Test

Task Description: You are about to take an Implicit Association Test (IAT). The IAT is a cognitive performance test that measures your attitude toward two different groups. This particular IAT will measure your knowledge of cultural stereotypes for Bugs or Flowers. Research shows that a high proportion of people prefer Flowers over Bugs. This is a challenging task, so please try hard.

Instructions: In this next task, you will be presented with a set of words to classify into groups. This task requires that you classify items as quickly as you can while making as few mistakes as possible. Going too slowly or making too many mistakes will result in an uninterpretable score. This part of the study will take about 5-10 minutes. The next screen may take a few seconds to load, please be patient.

During the first trial of the IAT, each word appeared individually on the laptop screen and participants were instructed to categorize each word as GOOD or BAD.

GoodBad

Joy
Agony
Love
Terrible
Peace
Horrible
Wonderful
Nasty
Pleasure
Evil
Glorious
Awful
Laughter
Failure
Hurt
Happy

During the second trial of the IAT, words representing bugs and flowers appeared individually on the laptop screen and participants were instructed to categorize each as either a bug or a flower.

BugsFlowers

Flea
 Poppy
 Spider
 Marigold
 Maggot
 Daffodil
 Fly
 Rose
 Roach
 Iris
 Beetle
 Daisy
 Termite
 Lilly

During the third trial of the task, words representing good or bad and flowers or bugs appeared individually on the laptop screen and participants were instructed to categorize each word as describing good/bad or flowers/bugs (congruent trial). All words from the list above appeared.

<u>Good</u>	<u>Bad</u>
or	or
<u>Flowers</u>	<u>Bugs</u>

During the fourth trial of the task, words appeared individually on the laptop screen and participants were instructed to categorize each word as describing good/bad or bugs/flowers (incongruent trial). All words from the list above appeared.

<u>Good</u>	<u>Bad</u>
or	or
<u>Bugs</u>	<u>Flowers</u>

Appendix C

Psychology Today

FEATURED REPORT ON RESEARCH

What's behind prejudice?

Specific personality traits predict racial prejudice and discrimination toward other groups, according to social psychology research.

Where do racial prejudice and discrimination come from? While past research has found a link between intolerance and specific personality traits like low agreeableness, low openness, and high neuroticism, new research by Stanford University psychologists offers another answer: introversion. “Introversion is linked to racism, although perhaps not in the way you might expect,” says an author of the new study, Dr. Larry Goodman.

In the study, published this month in the *Journal of Personality and Social Psychology*, Dr. Goodman and Dr. Irene Glass, describe their research linking the personality trait of introversion to racial prejudice and discrimination. In an elaborate experiment conducted at Stanford, Goodman and Glass identified a group of 400 participants from the undergraduate student population at the beginning of the semester. Then, using the most valid and reliable tests, they measured the introversion and extraversion of each participant in their sample. Later in the semester, participants reported to the lab for a series of tests measuring the strength of their racial stereotypes and an interaction in which they had to choose a White or Black student to work with on a challenging math test. What the study found was revealing.

Introverted participants held stronger stereotypes about African Americans on a variety of measures, and they were more likely than extraverts to act on the stereotype that Blacks don't do well in school. Introverts chose to work with a White student 78% of the time while extraverts chose the White student 55% of the time. “We found that introverts held much stronger stereotypes about Black Americans,” Dr. Goodman said. “And, because they lacked personal knowledge about Black people, introverts were more likely to act on stereotypes when choosing a partner to work with.”

According to Goodman and Glass, the reason introverts use stereotypes and are more prone to discriminate against people from minority groups is complicated. “We think there are really two factors in play,” Glass said. “First, introverts hold stronger stereotypes than extraverts because they experience limited contact with people from other groups. While it appears that extraverts experience more contact with members of minority groups than introverts, the important thing is really that extraverts are more likely to develop a personal relationship which allows them to discount stereotypes about the group. The second thing occurring is how introverts use stereotypes. Everyone

believes introverts are less sociable and that's somewhat true, but introversion is really more than that. Introversion is a way of interacting with the world and it is characterized by being quiet, laid-back, and reserved. Because introverted people are laid-back and reserved they are less likely to critically question stereotypes in the moment of an interaction and thus are more likely to rely on group stereotypes when interacting with other people."

Goodman and Glass are quick to point out that the conclusions of their research extend further than saying introverts are prejudiced and extraverts aren't. "If you asked the people in our study, both introverts and extraverts, they would all say they are not racist," said Dr. Glass. "What our study reveals is that because introverts have less personal knowledge about people from minority groups they use stereotypes as a way of processing information and interacting in the world. Relying on these stereotypes in the moment of an interaction can lead to discrimination like we saw in participants' choice of partner. The real conclusion is that we are all susceptible to this sort of racial bias, it just seems introverts depend on this information more than other people."

The researchers are attempting to replicate their findings in another study, but their paper is already changing the way researchers think about personality and prejudice. Dr. Susan Brewer, a leading personality researcher at Princeton University, commented on the study this week and said, "This is huge. The study is already changing the way we think about some of these personality traits and how they are linked to racial prejudice and discrimination."

Appendix D

Psychology Today

FEATURED REPORT ON RESEARCH

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Where do racial prejudice and discrimination come from? While past research has found a link between intolerance and specific personality traits like low agreeableness, low openness, and high neuroticism, new research by Stanford University psychologists offers another answer: extraversion. “Extraversion is linked to racism, although perhaps not in the way you might expect,” says an author of the new study, Dr. Larry Goodman.

In the study, published this month in the *Journal of Personality and Social Psychology*, Dr. Goodman and Dr. Irene Glass, describe their research linking the personality trait of extraversion to racial prejudice and discrimination. In an elaborate experiment conducted at Stanford, Goodman and Glass identified a group of 400 participants from the undergraduate student population at the beginning of the semester. Then, using the most valid and reliable tests, they measured the introversion and extraversion of each participant in their sample. Later in the semester, participants reported to the lab for a series of tests measuring the strength of their racial stereotypes and an interaction in which they had to choose a White or Black student to work with on a challenging math test. What the study found was revealing.

Extraverted participants held stronger stereotypes about African Americans on a variety of measures, and they were more likely than introverts to act on the stereotype that Blacks don't do well in school. Extraverts chose to work with a White student 78% of the time while introverts chose the White student 55% of the time. “We found that extraverts held much stronger stereotypes about Black Americans,” Dr. Goodman said. “And, because they lacked personal knowledge about Black people, extraverts were more likely to act on stereotypes when choosing a partner to work with.”

According to Goodman and Glass, the reason extraverts use stereotypes and are more prone to discriminate against people from minority groups is complicated. “We think there are really two factors in play,” Glass said. “First, extraverts hold stronger stereotypes than introverts because they experience superficial contact with people from other groups. While it appears that introverts experience less contact with members of minority groups than extraverts, the important thing is really that introverts are more likely to develop a personal relationship which allows them to discount stereotypes about the group. The second thing occurring is how extraverts use stereotypes. Everyone

believes extraverts are very sociable and that's somewhat true, but extraversion is really more than that. Extraversion is a way of interacting with the world and it is characterized by being energetic, bold, and assertive. Because extraverted people are outgoing and driven to act they are less likely to critically question social stereotypes in the moment of an interaction and thus are more likely to rely on group stereotypes when interacting with other people.”

Goodman and Glass are quick to point out that the conclusions of their research extend further than saying extraverts are prejudiced and introverts aren't. “If you asked the people in our study, both introverts and extraverts, they would all say they are not racist,” said Dr. Glass. “What our study reveals is that because extraverts have less personal knowledge about people from minority groups they use stereotypes as a way of processing information and interacting in the world. Relying on these stereotypes in the moment of an interaction can lead to discrimination like we saw in participants' choice of partner. The real conclusion is that we are all susceptible to this sort of racial bias, it just seems extraverts depend on this information more than other people.”

The researchers are attempting to replicate their findings in another study, but their paper is already changing the way researchers think about personality and prejudice. Dr. Susan Brewer, a leading personality researcher at Princeton University, commented on the study this week and said, “This is huge. The study is already changing the way we think about some of these personality traits and how they are linked to racial prejudice and discrimination.”

Appendix E

Instructions: Welcome to the Characteristics, Traits, and Behavior Inventory study!

On the following pages, you will be presented with a single characteristic, trait, or behavior, and you will be asked to indicate whether or not the item describes you. For the characteristics and traits, please provide your responses on the scale provided, where 1 = "Definitely describes me" and 7 = "Definitely does not describe me."

- | | | |
|------------------|----------------------|------------------|
| 1. Cautious* | 21. Irresponsible | 41. Foolish |
| 2. Suspicious | 22. Spontaneous | 42. Assertive |
| 3. Impulsive | 23. Coordinated | 43. Original |
| 4. Extraverted** | 24. Stable | 44. Hesitant* |
| 5. Arrogant | 25. Casual | 45. Reserved* |
| 6. Romantic | 26. Bold** | 46. Masculine |
| 7. Moody | 27. Creative | 47. Lazy |
| 8. Energetic** | 28. Full of energy** | 48. Realistic |
| 9. Humble | 29. Athletic | 49. Safe |
| 10. Imaginative | 30. Unromantic | 50. Responsible |
| 11. Naïve | 31. Unorganized | 51. Hasty |
| 12. Clumsy | 32. Shy* | 52. Serious |
| 13. Playful | 33. Unassertive* | 53. Organized |
| 14. Reflective | 34. Shrewd | 54. Introverted* |
| 15. Sympathetic | 35. Gullible | |
| 16. Talkative** | 36. Daring | |
| 17. Guarded | 37. Orderly | |
| 18. Thoughtful | 38. Formal | |
| 19. Sociable** | 39. Outgoing** | |
| 20. Feminine | 40. Quiet | |

Note. Items with * formed the final introversion traits scale, and items with ** formed the final extraversion traits scale.

Instructions: You have completed the Characteristics and Traits portion of the study. Now, you will be presented with a list of behaviors. Please indicate how often or unoften you engage in each behavior. That is, you should consider how you typically behave and

respond by indicating how well the statement describes your behavior. Please respond using the scale provided, where 1 = "Almost Never" and 7 = "Almost Always."

1. I have a tendency to speak before thinking about an issue
2. I like to spend Friday nights at home, perhaps watching a movie
3. I exhibit poise and social skills around others
4. I perform best when working alone
5. I speak up in large classes
6. I like to develop a plan before acting
7. I like to spend Saturdays alone, perhaps reading a book*
8. I'm likely to initiate conversation with other people at a party**
9. I tell jokes to make others laugh
10. I'm likely to organize a dinner party
11. I find time alone boring
12. I take the lead in groups**
13. I'm content maintaining a small, close-knit group of friends
14. I easily get lost in my work
15. I perform best when working in a group
16. I'm likely to go out on a Friday night
17. I enjoy playing the "listener" role in a conversation
18. I go out on dates with other people regularly
19. I like jumping into action without planning
20. I'm likely to go to a museum or attraction alone*
21. I enjoy time alone*
22. I have a tendency to dominate conversations among friends**
23. I have a tendency to take bold risks
24. I'm likely to go to the movies alone
25. I consider all possible angles of a problem before acting

Note. Items with an * formed the final introversion behavior scale, and items with ** formed the final extraversion behavior scale.

Appendix F

Article Evaluation Form

Instructions: Please answer each of the questions below based on the article you read.

1. In your opinion, what is the relationship between Introversion/Extraversion and prejudice?

Introversion
makes
prejudice
more likely

No
relationship
to prejudice

Extraversion
makes
prejudice
more likely

• • • • • • •

2. How credible was the research study you read about?

0	1	2	3	4	5	6
Not at all credible						Very credible

3. What was the quality of the research you read about?

0	1	2	3	4	5	6
Very good quality						Very poor quality

4. In the research study you read, which personality factor was related to prejudice?
A. Introversion B. Extraversion

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Biography

I am a doctoral student in the Department of Psychology at Tulane University, working with Dr. Laurie T. O'Brien. I received a B.S. in Psychology from Indiana University–Purdue University Indianapolis (IUPUI) in 2011, and I began studying at Tulane in the Fall of 2013. As a student in the Social Psychology area of the Psychological Science program at Tulane, my main research interest is understanding how people think about their own racial prejudice. Specifically, I am interested in when people accept and when they reject information about their prejudice. I am also interested in understanding how people define and recognize discrimination, and how moral concepts like intent and harm influence people's perceptions of discrimination. I expect to graduate with my Ph.D. in May 2018.