RACE AND INFORMATION PROCESSING: MESSAGE SCRUTINY AS A FUNCTION OF AUTOMATIC-DELIBERATIVE DISCREPANCIES IN RACIAL ATTITUDES

Dissertation

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ABSTRACT

Past research has shown that individuals low in prejudice think more carefully when information is from or about stigmatized individuals than non stigmatized individuals. One explanation for this effect is that the heightened scrutiny stems from a motivation to guard against potential prejudice towards stigmatized others (i.e. “watchdog motivation”). The present research tested a variation of the watchdog hypothesis based on the idea of implicit ambivalence. Specifically, we argue that among individuals low in explicit (i.e., deliberative) prejudice, it is those who are also high in implicit (i.e., automatic) prejudice who will do the most processing. The implicit ambivalence framework also makes a novel prediction that individuals who are relatively high in explicit prejudice but low in implicit prejudice would also engage in enhanced information processing. We tested these hypotheses in three studies. As predicted, we found that people with automatic-deliberative discrepancies in racial attitudes engaged in greater processing when the message was about a Black job candidate (study 1), presented by a Black source (Study 2), or even if the African American concept was primed subliminally (study 3), regardless the direction of one’s discrepancy. Together, these studies extend previous work examining implicit ambivalence to the domain of racial attitudes, and further clarify the nature of the ‘watchdog hypothesis’.
Dedicated to my daughters, Anjanée Monique & Lyric Symone Johnson
You have always been Mommy’s Inspiration & Motivation! Love you Beautiful 1 and 2
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CHAPTER 1: INTRODUCTION

The social status of a person can influence how much attention he or she receives from other people. In particular, research suggests that individuals from stigmatized groups can receive greater scrutiny from non-stigmatized individuals both when they are the sources of information (e.g., Petty, Fleming, & White, 1999) and when they are the targets (e.g., Fleming, Petty, & White, 2005). In one of the first studies on this topic, White and Harkins (1994) presented White participants with a persuasive message from a White or a Black source on the topic of senior comprehensive exams. The message contained either strong or weak arguments. Across several replications, they consistently found that the impact of argument quality on attitudes was greater when the source was Black rather than White. Thus, stigmatized sources were associated with increased scrutiny of the content of their messages as revealed by the enhanced impact of the relevant information presented when the source was Black rather than White. The size of an argument quality effect on attitudes has long been used as an indicator of the extent of message scrutiny (Petty, Wells, & Brock, 1976). Enhanced attention to message quality with a stigmatized source means that when the arguments are strong, having a source from a stigmatized group increases persuasion over a non-stigmatized source but when the arguments are weak, having a stigmatized source reduces persuasion. Subsequent
research has attempted to understand why enhanced scrutiny of information from or about stigmatized individuals occurs.

In series of follow-up studies, Petty and colleagues (1999) suggested that the enhanced scrutiny of stigmatized individuals might stem from a “watchdog motivation.” That is, Whites might be processing messages from or about Blacks more than Whites in order to guard against possible prejudice either from the self or from others. Petty et al. reasoned that if this were true, it should only be Whites who were low in prejudice who would show the enhanced scrutiny effect since these individuals would be most concerned with possibly showing prejudice themselves or in guarding against prejudice from others. To examine this, prejudice was assessed with several explicit measures (Katz & Hass, 1988; McConahay, Hardee, & Batts, 1981), and reactions to persuasive messages from Black and White sources were evaluated. In several studies it was found that only Whites who were low in explicit prejudice processed messages more for Black than White sources. This enhanced scrutiny effect by low prejudiced individuals was replicated when the message was about a Black versus a White target individual rather than from a Black versus a White source (Fleming et al., 2005). In accord with the elaboration likelihood model of persuasion (Petty & Cacioppo, 1986), additional research showed that these effects were most likely to occur when thinking was not already constrained to be very low or high. In the latter cases, the race of the source can operate
in other ways such as serving as a simple cue or biasing thinking, respectively (e.g., Livingston & Sinclair, 2008; for a review, see, Fleming & Petty, 2002).

In sum, a number of studies have shown that when thinking is not constrained by other variables to be very high or low, White individuals who are low in explicit prejudice toward Blacks tend to scrutinize a message either from a Black source or about a Black target more carefully than the same message from or about a White person. If, the motivation that low prejudiced individuals have in engaging in enhanced scrutiny is to look out for their own prejudice, then perhaps only those individuals who have some reason to suspect possible prejudice on their part would engage in this scrutiny. That is, people who do not want to be prejudiced or who see themselves as unprejudiced (low explicit prejudice) but who harbor automatic negative reactions toward Blacks (high implicit prejudice) would experience conflict and be the most vigilant in guarding against prejudice (Devine, Monteith, Zuwerink, & Elliot, 1991; Monteith, 1993; Monteith et al., 1993). One strategy to guard against prejudice is to engage in careful processing of messages from or about the group toward which you do not want to be prejudiced.

One way to identify individuals who have some prejudice or negativity about which they could be concerned is to use a measure of automatic bias. Over the past decade, several techniques for assessing automatic prejudice have been developed including the evaluative priming measure (e.g., Fazio, Jackson, Dunton, & Williams, 1995) and the implicit association test (e.g., Greenwald, McGhee, & Schwartz, 1998).
The goal of each is to assess an evaluation that automatically comes to mind when an attitude object is encountered. If watchdog motivation stems from a desire to watch out for one’s own possible prejudice and we are able to assess both deliberative (explicit) and automatic (implicit) prejudice, then it should be the case that among those low in explicit prejudice, it is individuals who are relatively high in implicit prejudice who are the most likely to engage in enhanced scrutiny of stigmatized others. Individuals who are low in explicit prejudice and also low in implicit prejudice should have nothing to fear with respect to their own prejudice (i.e., have nothing to watch out for), and thus should be less likely to engage in enhanced scrutiny. We test this implication of the watchdog hypothesis across three studies. On the other hand, if watchdog motivation stems primarily from a desire to watch out for the prejudice of others rather than one’s own prejudice, then the person’s level of implicit prejudice should be irrelevant to the extent of scrutiny.

In addition to examining a unique implication of the watchdog hypothesis (i.e., that information processing would be increased when relatively low explicit prejudice combines with high implicit prejudice), the current research also examines the implications of recent work on implicit ambivalence for the enhanced scrutiny effect (see Petty & Briñol, 2009; Petty, Briñol, & Johnson, 2012). Implicit ambivalence refers to conflict that does not stem from endorsed positivity and negativity (i.e., explicit ambivalence; see Priester & Petty, 1996; Thompson, Zanna, & Griffin, 1995), but rather
from a situation in which an endorsed evaluative reaction is contrary to an automatic evaluative reaction that is not endorsed (rejected) or is denied as relevant, but nonetheless occurs when the attitude object is activated. Put simply, if a person recognizes (and endorses) both positive and negative evaluations of Blacks, that person is explicitly ambivalent. However, if a person endorses largely positive reactions to Blacks (low explicit prejudice) but has negative reactions automatically spring to mind whenever the minority group is mentioned (high implicit prejudice), and this negativity is not endorsed or recognized as relevant (but not misattributed to some other attitude object), implicit rather than explicit ambivalence exists (see Petty et al., 2006). Thus, people who are low in explicit prejudice toward Blacks but high in implicit prejudice would have racial implicit ambivalence.

Implicit ambivalence can be indexed by the discrepancy between one’s deliberative and one’s automatic reactions (Petty, Briñol, & DeMarree, 2007). This is because when such evaluative discrepancies exist, it suggests that one’s endorsed evaluation differs from one’s automatic evaluation (i.e., the latter is not endorsed). Prior research has shown that people who have discrepancies between their implicit and explicit evaluations are more likely to process information relevant to the attitude object than are people for whom implicit and explicit evaluations are more similar. In one study (Briñol, Petty, & Wheeler, 2006), for example, as implicit-explicit discrepancies in self-esteem increased, regardless the direction of one’s discrepancy, so too did processing of a
message framed as relevant to the self. In other words, regardless of whether one’s implicit self-esteem was higher than their explicit self-esteem, or vice versa, as discrepancy increased, processing of the message framed as relevant also increased. Thus, implicit ambivalence has a similar impact on information processing as does explicit ambivalence (e.g., Maio, Bell, & Esses, 1996). That is, just as people high in explicit ambivalence choose to process information (or not) in an attempt to reduce their discrepancy (Clark, Wegener, & Fabrigar, 2008), so too would individuals high in implicit ambivalence process information in an effort to reduce the discomfort associated with their discrepancy (Ryddell, McConnell, & Mackie, 2008). As a result, the implicit ambivalence hypothesis predicts the same information processing outcome as the watchdog hypothesis. Among people low in explicit racial prejudice, it should be individuals high in implicit racial prejudice who are the most likely to scrutinize information from or about African Americans.

However, the implicit ambivalence perspective leads to a hypothesis that was not anticipated by the original watchdog view. That is, not only should people low in explicit prejudice but high in implicit prejudice engage in enhanced scrutiny of information relevant to African Americans, but so too should individuals high in explicit prejudice but low in implicit prejudice. This idea has not been considered previously, but follows directly from the implicit ambivalence notion because any discrepancy between automatic and deliberative evaluations should produce implicit ambivalence regardless of
the direction of the discrepancy. In watchdog terminology, one could argue that just as individuals who are favorable towards African Americans on deliberative measures want to be sure that they remain unbiased (and thus watch out for any automatic or gut negative reactions), so too do individuals who are high in explicit prejudice want to be sure that they remain negative (and thus watch out for any automatic or gut positive reactions they might have). In the implicit ambivalence terminology, the enhanced processing stems from the discomfort associated with being ambivalent at an implicit rather than explicit level. That is, people process information relevant to the stigmatized group more when they have some evaluative conflict about the group that needs to be resolved. Importantly, a consideration of implicit ambivalence suggests that it is not just individuals low in explicit but high in implicit prejudice that process information relevant to African Americans more, but rather it is individuals who have high discrepancies in their explicit and implicit evaluations of African Americans who would engage in greater scrutiny than individuals who have low discrepancies.

Overview of the Present Research

Prior research has shown that people low in explicit racial prejudice are more likely to process information relevant to Blacks than people who are high in explicit prejudice. The current research investigates whether among those people who are low in explicit prejudice, it is primarily those who are high in implicit prejudice who are the most likely to engage in enhanced processing of information relevant to Blacks.
Furthermore, we test the novel hypothesis that among those who are high in explicit racial prejudice, the tendency to process information from or about Blacks increases as implicit prejudice decreases. To the extent that information processing increases when implicit racial attitudes diverge from explicit racial attitudes, it would support the idea that implicit ambivalence is behind the enhanced processing of minority groups identified in prior research. That is, people are watching out to resolve their own racial ambivalence, regardless of direction. This ambivalence is not the classic explicit ambivalence which stems from a discrepancy between endorsed positivity and negativity but instead is an implicit ambivalence which stems from a discrepancy between an endorsed evaluation and a conflicting and unendorsed evaluation of the opposite valence.

The paradigm we used to test the implicit ambivalence hypothesis was similar across studies. Specifically, in each study we assessed White students’ attitudes toward African-Americans using both automatic (implicit) and deliberative (explicit) measures. The automatic measure was an implicit association test (IAT; Greenwald et al., 1998). The explicit measure consisted of anti-Black statements, to which participants were to rate their extent of agreement (see Katz & Hass, 1988). Following previous research on implicit-explicit discrepancies (Briñol et al, 2006), an index of implicit-explicit discrepancy was formed as the absolute value of the difference between the standardized explicit and implicit measures of racial attitudes. We also coded for the direction of
discrepancy (i.e., implicit score more prejudiced than explicit or vice versa) to see if this mattered.

In addition to completing the implicit and explicit measures of racial attitudes, all of the students were exposed to a persuasive message composed of strong or weak arguments. As in past research, the strong arguments were designed to elicit favorable thoughts if people thought about them, whereas the weak arguments were designed to elicit mostly unfavorable thoughts (see Petty & Cacioppo, 1986). The degree to which participants scrutinized the message information was assessed by examining the extent to which the quality of the arguments affected post-message attitudes toward the advocacy (Petty, Wells, & Brock, 1976). When people are thinking carefully about information, they should be affected by the quality of the arguments a message contains (see Petty & Cacioppo, 1986).

How the information in the persuasive message connected to the object of discrepancy (i.e. African Americans) differed in each study. In the first study, participants evaluated a strong or weak version of the vita of an African American job candidate and thus the message was relevant to the racial discrepancy. In our second study, participants were given a message on the race-irrelevant topic of supporting the use of phosphate-based laundry detergents, but the message was presented either by a Black or a White communicator. Inclusion of the White communicator condition allows a test of whether the increased processing effects of implicit-explicit racial attitude discrepancies occurs
for all messages or only those that are linked to race in some way so that the discrepancy is activated. In a final study, we also examined if it was necessary for the African American concept – the discrepancy-relevant concept – to be activated explicitly and blatantly within the persuasive message or the source of the message. In Study 3, the African American concept was activated outside of the persuasion context by subliminally priming the African American concept prior to presenting a persuasive message unrelated to race. Consistent with the idea that people with implicit-explicit racial attitude discrepancies would act as if they were ambivalent, discrepancy was predicted to interact with argument quality to predict attitudes toward the proposal in each study as long as the racial discrepancy was activated in some way. Notably, consistent with the implicit ambivalence approach, we did not expect the direction of the discrepancy to further qualify the results.
In past research examining the ‘watchdog hypothesis’ participants either evaluated a message from an African American source (Petty et al., 1999) or read a message about an African American target (Fleming et al., 2005; see Petty, Briñol, & Johnson, 2012, for a review). Similarly in our first study, individuals evaluated an African American job candidate.

An important reason to explore the role of implicit ambivalence in evaluating individual African-Americans is a practical one. That is, people spend time interacting with individuals of different races, they do not interact with racial categories. Although it is potentially important to understand how implicit and explicit racial attitudes affect processing of information about race-linked issues or categories (e.g., affirmative action), it may be even more important to understand how implicit and explicit racial attitudes affect scrutiny of particular individuals. Thus, in our first study, participants’ reviewed the curriculum vitae of one African American job candidate for a position in their own University’s psychology department. Participants’ were randomly assigned to read either a vita containing strong credentials or weak credentials. Participants’ attitudes toward the job candidate were then assessed. Finally, participants’ racial attitudes were measured using both implicit (automatic) and explicit (deliberative) measures. We predicted that
implicit-explicit discrepancies in racial attitudes would interact with vita quality to predict attitudes toward the job candidate. In other words, the greater the discrepancy between participants’ automatic and deliberative racial attitudes, the greater the observed impact of vita quality on attitudes should be suggesting that Whites with conflicting implicit and explicit attitudes were giving the CVs greater scrutiny than those with more consistent implicit and racial explicit attitudes.

Method

Participants and Design

Fifty-nine psychology students at the Ohio State University participated in exchange for partial fulfillment of a course requirement. Participants’ were randomly assigned to receive either a vita containing strong or weak credentials. Additionally, implicit and explicit measures of racial attitudes were assessed for all participants so that an index of implicit-explicit discrepancy could be formed. The independent variables thereby constituted a Vita Quality (strong vs. weak) x Implicit-Explicit Discrepancy (continuously scored) x Direction of Discrepancy (higher on explicit or implicit measure) design.

Procedure

Upon arrival, participants were escorted to an individual computer station, and seated. All materials were presented on the computer using MediaLab software (Jarvis, 2000). Participants were instructed that today’s study involved their evaluation of a
prospective job candidate for the department of psychology. Participants’ were informed that prior to hiring faculty, Ohio State liked to learn students’ opinions towards potential candidates. In addition, participants’ were informed that Ohio state was committed to hiring the ‘best and the brightest’ and that the best predictors of a job candidate’s future excellence ‘is the amount and quality of previous research and teaching experience in the field of Psychology’ and that ‘candidates are expected to have excellent training and education, and are also expected to excel in both teaching and publications in major journals.’ Participants’ were then told that they had been randomly selected to evaluate a job candidate named ‘Tyrone Edwards’ and they would view his vita shortly. All participants viewed the vitae of a job candidate, presumably African American, named Tyrone Edwards. The name Tyrone was strongly associated with an African American individual in previous research (e.g., Wheeler, Jarvis, & Petty, 2001). Depending on participants’ randomly assigned condition, some viewed a vita containing strong arguments while others viewed a vita containing weak arguments. Participants then reported their attitudes towards Tyrone as a potential faculty member. After reporting their attitudes, participants’ were told it was necessary for them to complete a ‘personality questionnaire’ to help organize their responses, which included the racial Implicit Association Test (IAT; Greenwald et al., 1998) and the Anti-Black scale (Katz & Hass, 1988).

Independent Variables
Vita Quality: All students viewed a vita for a job candidate named Tyrone Edwards. Half of participants viewed a vita which contained strong information implying that Tyrone would be well qualified for the position in Psychology, whereas the remaining half reviewed a vita containing weak information suggesting that Tyrone would be poorly qualified to fill the position. The two vitae were pre-tested, such that the strong version produced mostly favorable thoughts about the job candidate and the weak version of the vita induced mostly counterarguments (adapted from Petty, Tormala, Briñol, & Jarvis, 2006). The vita containing strong arguments indicated that the job candidate had earned his Ph.D. from Stanford University and had been the recipient of several national awards for both his research and teaching ability. In addition the vita indicated that ‘Tyrone received 9.8 points out of 10 on the Quality Research Score Index’ and ‘The quality of Tyrone's teaching in Psychology is noteworthy: 4.75 points (on a 1 to 5 scale)’. In essence, the vita containing strong information clearly indicated that Tyrone was well qualified for the position within the department of psychology. In contrast, the weak vita indicated that Tyrone had yet to defend his dissertation and to date ‘had only published two articles in journals of medium quality.’ Furthermore, the weak vita contained such information as ‘Tyrone received 5.1 points out of 10 on the Quality Research Score Index’ and ‘the quality of Tyrone's teaching in Educational Psychology is average: 3.2 points (scale from 1 to 5 points).’ Thus, the weak vita plainly indicated that Tyrone was not well-suited as a job candidate for the faculty position.
Explicit measure of prejudice: Participants completed the Anti-Black scale (Katz & Hass, 1988). On the Anti-Black Scale, participants rated 10 items on 6-point scales ranging from strongly disagree (0) to strongly agree (5). An example of an Anti-Black item is “On the whole, Black people don’t stress education and training.” Ratings of items were highly inter-correlated (α = .84), so they were averaged to form one overall attitude index. In addition, the presentation of the differing visuals did not impact participants’ responses on the measure, F (1, 58) = 2.30, p = .13.

Implicit measure of prejudice: The racial Implicit Association Test (IAT; Greenwald et al., 1998) was used to assess participant’s level of implicit prejudice. Photos of ten Black and ten White faces were paired with evaluative stimuli (see Appendix A). This evaluative stimuli consisted of ten positive (i.e. freedom, health, family, peace, cheer, friend, heaven, loyal, pleasure, gentle) and ten negative (i.e. abuse, crash, filth, stink, assault, disaster, pollute, divorce, jail, ugly) words. Both the photos of the Black or White faces and the evaluative words appeared in the center of a black screen. Reminder labels were positioned at the bottom of the screen on the left and right side. These reminders read “Black” and “White” for single target-classification blocks, “positive” and “negative” for single attribute-classification blocks. Mixed target + attribute blocks were also accompanied by appropriate labels (e.g., “positive or White” and “negative or Black”). Incorrect classifications were followed by error feedback (i.e., a red “X” would appear in the middle of the screen). Data-collection tasks consisting of
combined target + attribute classifications were administered in four blocks. Within each block, stimuli were randomly selected without replacement and no more than two consecutively presented stimuli belonged to the same category. The measure of relative automatic preference for White over Black was calculated using the response latencies for: (Black + pleasant and White + unpleasant) minus (Black + unpleasant and White + pleasant) (i.e., the IAT effect). Also, as common in research utilizing reaction times (Fazio, 1990), to correct for anticipatory responses and momentary inattention, latencies less than 300 ms and greater than 3000 ms were recorded as 300 and 3000 ms respectively. Latencies were log transformed to normalize the distribution.

Finally, the presentation of the vita manipulation did not impact participants’ scores, \( F(1, 57) = .264, p = .609 \).

*Implicit-explicit discrepancy.* Consistent with previous research, the measures of explicit and implicit racial attitudes were unrelated to one another (\( r = .11, p = .40 \)). This is a common finding in the literature on racial prejudice (e.g., Correll, Park, Judd & Wittenbrink, 2002; Dovidio et al., 1997; Fazio, Jackson, Dunton & Williams, 1995; Payne, 2001). Following Briñol et al. (2006), an index of implicit-explicit discrepancy was formed as the absolute value of the difference between the standardized explicit and implicit measures of racial attitudes. The discrepancy index considers where people fall within the distribution of participants in the study on the implicit versus explicit measures. A zero on the index indicates that the person’s place in the distribution is
exactly the same on the implicit and explicit measures (e.g., high in the distribution on both, low in the distribution on both, middling on both, and so forth). Discrepancies can be in either direction. That is, people can be higher in the sample distribution on the explicit measure than the implicit measure (a positive discrepancy) or they can be lower in the distribution on the explicit measure than the implicit measure (a negative discrepancy). As our key index of implicit-explicit discrepancy we calculated the absolute value of the difference between the two standardized measures (see also, Kehr, 2004). We also coded for the direction of discrepancy (i.e., implicit score more prejudiced than explicit or vice versa) to see if this mattered.

**Dependent Variable**

Attitudes towards the job candidate: Participants’ attitudes toward the job candidate were assessed using six 9-point (1 – 9) semantic differential scales (i.e., bad-good, against-in favor, harmful-beneficial, foolish-wise, negative-positive, unfavorable-favorable) on which they rated the quality of Tyrone as a potential faculty member. Ratings on these items were highly inter-correlated ($\alpha = .94$), so they were averaged to form one overall attitude index for each participant.

**Results and Discussion**
Attitudes toward the job candidate were submitted to a hierarchical regression analysis, with 1) magnitude of the implicit-explicit discrepancy (centered continuous variable), 2) direction of the discrepancy (effects coded; -1 = implicit prejudice > explicit prejudice vs. 1 = explicit prejudice > implicit prejudice), and 3) argument quality (effects coded; -1 = weak vs. 1 = strong). Again, main effects were interpreted in the first step, two-way interactions in the second step, and the three-way interaction in the third step (see Cohen & Cohen, 1983). Results revealed a main effect of argument quality, such that strong arguments produced more positive attitudes than weak arguments, B = 1.050, t (55) = 5.85, p = .001.

Critically, the predicted two-way interaction between the magnitude of participants’ implicit-explicit discrepancies and argument quality emerged, B = .979, t (52) = 2.68, p = .01. In order to examine effects within high discrepancy and low discrepancy individuals, simple slope analyses were conducted. First, discrepancy scores were centered one standard deviation above the mean and one standard deviation below the mean, respectively. Then, participants’ re-centered discrepancy scores, the direction of discrepancy, argument quality, and all interaction terms were entered as predictors (see Aiken & West, 1991). The simple slope analyses confirmed that the interaction was due to greater argument quality effects among high than low discrepancy individuals. That is, among participants with high implicit-explicit discrepancies, attitudes were highly impacted by argument quality such that more positive attitudes followed the strong rather
than weak vita, $B = 1.660$, $t (53) = 5.825$, $p = .000$. Thus, high discrepancy participants were scrutinizing the information contained in the job candidate’s vita carefully. In contrast, the impact of argument quality on attitudes among participants with low implicit-explicit discrepancies was smaller, $B = .563$, $t (53) = 2.224$, $p = .031$, thus suggesting that low discrepancy participants were not processing the information to the same extent as high discrepancy participants (see Figure 1).

No main effects or interactions of direction of discrepancy emerged, thus suggesting that regardless of the nature of the divergence between implicit and explicit racial attitudes, as discrepancy increased, participants’ engaged in greater information processing. This study revealed that the enhanced scrutiny that results from implicit-explicit discrepancy occurs when the information to be evaluated is about a specific African American individual.

One important issue to address in our next experiment is to manipulate whether the persuasive message relates to the object of discrepancy or not. In our first study, participants read about a particular African-American job candidate; however, a condition in which the target of evaluation was not relevant to race (for example, a White job candidate) was lacking. Because of this, a skeptic might argue that people with discrepancies in their implicit-explicit attitudes might generally be prone to engage in information processing even if the discrepancy was not activated in some way. Thus even if we gave participants material that was not linked to their racial attitudes in any
way, they would still process it more intently. In contrast, our argument is that the mere existence of a discrepancy does not result in the indiscriminate processing of any information present in the situation if the discrepancy is not activated. Enhanced thinking is expected only if the situation is relevant to the dimension on which the discrepancy exists because such situations would activate the discrepancy.

To address this issue, our next study included a manipulation of the race of the source of a persuasive message. If having a racial implicit-explicit discrepancy enhances information processing in general, then high discrepancy individuals should be equally likely to process messages delivered by a relevant (Black source) or irrelevant (White source). However, if the information processing is in service of addressing the discomfort resulting from implicit ambivalence regarding Blacks, then enhanced information processing as a result of the implicit-explicit discrepancy should only occur when the message source is Black and not when the message source is White. By varying the race of the message source, our next study also returns to the procedure that first uncovered the enhanced scrutiny effect in which participants processed a message more carefully from a Black than a White source (White & Harkins, 1994). Our perspective suggests that this should be mostly true among people who are discrepant in their implicit and explicit racial attitudes and should not be true among individuals who are consistent in their implicit and explicit racial attitudes.
CHAPTER 3: Message Delivered by a Black Source

Study 1 provided initial evidence supporting the notion that divergence between explicit and implicit racial attitudes can influence the extent of information processing of ostensibly discrepancy-related information. Experiment 2 was conducted to replicate and extend the findings from these studies. To this end, several changes were introduced. First, we moved to a paradigm more closely attuned to the research initially uncovering the enhanced scrutiny effect. In that research (White & Harkins, 1994; Petty et al., 1999) participants received a message on a race-irrelevant topic from either a White or a Black source. Thus, in study 2, instead of presenting a message about a Black individual, participants received a message about phosphate detergents, a race-irrelevant advocacy. However, half of the participants read a message that came from a Black source making it relevant to the discrepancy and thereby invoking the implicit ambivalence. This condition was compared to a situation in which participants read a message that came from a White source.

Thus, in Experiment 2, participants who varied in their implicit-explicit racial attitude discrepancies were exposed to a persuasive message on a race-irrelevant topic containing either strong or weak arguments that were said to come from either a Black or a White source. After reading the message, participants were asked to report their
attitudes toward the proposal in the message. We expected participants with a large implicit-explicit discrepancy to think more about the persuasive message than those with a small discrepancy, but only when the message came from a Black source, which would activate the discrepancy. As in previous studies, this enhanced thinking would be evidenced by greater attitudinal responsiveness to the manipulation of argument quality for the message presented by the relevant source.

Method

Participants and Design

Seventy-five undergraduate psychology students at The Ohio State University participated in exchange for partial fulfillment of a course requirement. Participants were randomly assigned to receive a message from either a Black or a White Source, containing either strong or weak arguments. Consistent with study 1, implicit and explicit measures of racial attitudes were assessed for all participants in order to form an index of implicit-explicit discrepancy. Consequently, the independent variables constituted a Source Race (Black vs. White) Argument Quality (strong vs. weak) x Implicit-Explicit Discrepancy (continuously scored) x Direction of Discrepancy (higher on explicit or implicit measure) design.

Procedure

Participants were seated at individual cubicle stations and were presented with all materials on their computer screens. MediaLab (Jarvis, 2000) was again utilized to
administer all elements of the experiment. Participants were presented with a brief introduction stating they were going to be learning about phosphate-based laundry detergents. Participants viewed a message advocating the use of phosphate-based laundry detergents, containing either strong or weak arguments, depending on their randomly assigned condition. In addition, the message was either presented from a Black or White source. After viewing the persuasive message, participants rated their attitudes towards phosphate detergents. Finally, participants completed the racial IAT and the Anti-Black scale (Katz & Hass, 1988).

**Independent Variables**

*Source Race:* All participants read a brief introduction stating they were going to be learning about phosphate-based laundry detergents today, an issue that has received recent media attention. Accompanying this introduction was a photo of either an African American or White man. The content of the introduction was worded to clearly indicate that the man pictured in the accompanying photo was the source of the message concerning phosphate-based laundry detergents. Depending on participants’ randomly assigned condition, they either viewed a message from a Black or White source. Participants’ viewed one photo of the source, accompanying a message introducing the topic of phosphate-based detergents. Additionally, the photos were pilot tested in a separate study to ensure they were matched on age, attractiveness and perceived intelligence.
Argument Quality: In addition to being randomly assigned to read a message from either a Black or a White source, participants also either received strong or weak arguments regarding phosphate-based laundry detergents. Strong arguments for the use of phosphate-based detergents contained statements such as ‘they were cheaper and more effective’ and also ‘significantly less harmful to the environment’ than current laundry detergents on the market. In contrast, weak arguments for the use of phosphate-based laundry detergents stated that ‘their use could translate into an annual savings of 1.4%’ and that the packaging was more brightly colored and thus the detergent container ‘could be left out, as if a piece of art.’ The arguments selected were pre-tested in previous research and were shown to produce the appropriate pattern of cognitive responding (Briñol, Petty, & Tormala, 2004; Tormala, Briñol & Petty, 2006). That is, the strong arguments elicited mostly favorable thoughts and the weak arguments elicited mostly unfavorable thoughts when people were instructed to think carefully about them.

Explicit measure of prejudice: Consistent with study 1, participants completed the Anti-Black scale (Katz & Hass, 1988). Scoring of participants’ responses were identical to that of study 1, and again ratings of items were highly inter-correlated (α = .77). The manipulations of source race and argument quality had no significant impact on participants’ scores, $F (1, 74) = .55, p = .46$; $F (1, 74) = .11, p = .73$, respectively.

Implicit measure of prejudice: The racial Implicit Association test (IAT; Greenwald et al., 1998) was again used to assess participant’s level of implicit prejudice.
Scoring was identical to that of Study 1 as well. The manipulations of source race, $F(1, 71) = 1.684, p = .199$, nor the argument quality manipulation, $F(1,71) = .001, p = .970$, significantly affected this measure, and there was no significant interaction either, $F(1,71) = 1.86, p = .177$.

Implicit-explicit Discrepancy: Measures of explicit and implicit racial attitudes were unrelated to one another ($r = -.05, p = .64$). An index of implicit-explicit discrepancy was formed using the same procedure as that of study 1. We again coded for direction of discrepancy (i.e., implicit score more prejudiced than explicit or vice versa) to see if the direction of the discrepancy impacted information processing.

Dependent Variable

Consistent with study 1, participants’ attitudes towards phosphate-based laundry detergents were assessed using six 9-point (1 – 9) semantic differential scales (i.e., bad-good, against-in favor, harmful-beneficial, foolish-wise, negative-positive, unfavorable-favorable). Ratings on these items were highly inter-correlated ($\alpha = .94$), so they were averaged to form one overall attitude index for each participant.

Results and Discussion

Analyses were conducted consistent with that of study 1. Specifically, attitudes toward the detergent were submitted to a hierarchical regression analysis, with 1) magnitude of implicit-explicit discrepancy (centered continuous variable), 2) direction of the discrepancy (effects coded; -1 = implicit prejudice > explicit prejudice vs. 1 = explicit
prejudice > implicit prejudice), 3) argument quality (effects coded; -1 = weak vs. 1 = strong), and 4) source race (effects coded: -1 = white vs. 1 = black). Main effects were interpreted in the first step, two-way interactions in the second step, three-way interactions in the third step, and the four-way interaction in the final step (see Cohen & Cohen, 1983).

Results revealed a main effect of argument quality, such that strong arguments produced more positive attitudes than weak arguments, $B = .596, t(70) = 3.30, p = .002$. Additionally, there was a significant main effect of source race, such that the white source produced more positive attitudes than the black source, $B = -.501, t(70) = -2.786, p = .007$. There was also a significant tendency for larger discrepancies to predict less favorable attitudes toward the proposal, $B = .426, t(70) = 2.12, p = .038$.

Of most importance, the predicted three-way interaction between the magnitude of participants’ discrepancy, argument quality, and source race emerged $B = .465, t(60) = 2.18, p = .038$. We decomposed the three-way interaction as a function of source race, and found that the two-way interaction between the magnitude of participants’ discrepancy and argument quality was significant for the Black source, $B = .762, t(68) = 2.55, p = .01$ (see top panel of Figure 2), replicating study 1 which used a Black target, but there was no hint of an interaction of argument quality and discrepancy for the White source, $B = -.030, t(68) = -.119, p = .906$ (see bottom panel of Figure 2). Interestingly, for the White source, we do not even find a significant main effect of argument quality, $B
=.268, t (29) = 1.067, p = .295, suggesting that participants generally had little motivation to process the message.  

Simple slope analyses were conducted to examine effects in high and low discrepancy individuals, among those participants who read the message from the Black Source. Discrepancy scores were centered one standard deviation above the mean and one standard deviation below the mean, respectively. Then, participants’ re-centered discrepancy scores, the direction of discrepancy, argument quality, and all interaction terms were entered as predictors (see Aiken & West, 1991). Analyses revealed that among participants who saw the Black source with high implicit-explicit discrepancies, attitudes were impacted by argument quality such that more positive attitudes followed the strong rather than weak message, B = 1.363, t (68) = 4.15, p = .00. Thus, high discrepancy participants were processing information regarding phosphate-based laundry detergents. In contrast, attitudes among participants who viewed the message from the Black Source and had low implicit-explicit discrepancies were not influenced by argument quality, B = -.014, t (68) = -.035, p = .97, thus suggesting that low discrepancy

\[ \text{However, for the White source, the presence of a Direction \times Argument Quality interaction (B = -.638, t (26) = -2.52, p = .018) that was absent for the Black source resulted in a significant 3-way interaction of Source Race, Argument Quality and Direction of discrepancy (B = .513, t (60) = 2.82, p = .006. The unexpected interaction of discrepancy and argument quality for the White source revealed that the impact of argument quality on attitudes was greater when people’s implicit prejudice was greater than their explicit prejudice compared to when their explicit prejudice exceeded their implicit prejudice.} \]
participants were not processing the information carefully. Consistent with study 1, no main effects or interactions of Direction of discrepancy emerged for the Black source.

These results suggest that individuals who are implicitly ambivalent with respect to their racial attitudes—high in implicit prejudice, low in explicit prejudice or the reverse—engage in greater scrutiny of information presented by a Black source as evidenced by a greater impact of argument quality on message evaluation compared to those who were less discrepant in their implicit and explicit racial attitudes. When the source was White, however, the magnitude of discrepancy had no impact on information processing.

In sum, Experiment 2 conceptually replicated our previous findings by showing that people who have a large discrepancy between their implicit and explicit racial attitudes are more likely to scrutinize a message from a Black source than are people who have a small discrepancy between their implicit and explicit racial attitudes. As in study 1, this conclusion was supported by the finding that the attitudes of relatively discrepant individuals were more reflective of the quality of the information they received than were the attitudes of less discrepant individuals. The fact that the enhanced information processing only occurred for individuals with large discrepancies when the message was related to the basis of the discrepancy (e.g., Black source) rather than unrelated to the discrepancy (i.e., White source), is consistent with the idea that the processing was related to the discrepancy.
CHAPTER 4: Processing a Persuasive Message When Race Is Primed

The present work thus far provides evidence that as discrepancies between one’s implicit and explicit racial attitudes increase, this leads to greater processing of a message made relevant to race in some manner. In studies 1 and 2, the discrepancy-relevant concept was made salient via some feature of the persuasive communication. In other words, the concept of race, and thus the racial discrepancy, was activated within the persuasive communication. Based on the implications of the implicit ambivalence framework, however, it should be the case that even if the concept of race is made salient outside the persuasive communication, the activation of the concept should lead to more processing of a persuasive message for those discrepant in their racial attitudes. That is, as long as the discrepancy is activated, people should feel uncomfortable and may therefore process whatever information is before them in an attempt to address or understand this discomfort. In this sense, people need not be purposefully thinking in order to address a discrepancy of which they are aware. Indeed, the entire notion of implicit ambivalence hinges on the notion that people may not be clear about the source of their discomfort. It is for this reason that the presumed discomfort from implicit ambivalence can be misattributed to something else (Durso, Karpen, Jia & Rydell, in prep). If the discomfort is not explained by the presence of a salient misattribution cue,
however, then it can lead people to more carefully attend to and process whatever information is available in the immediate context, even if that information is not relevant to race. This notion is tested in Experiment 3.

Thus, in Experiment 3, participants who varied in their implicit-explicit racial attitude discrepancies were exposed to a persuasive message on the race irrelevant-topic of senior comprehensive exams. Prior to reading the message, participants were subliminally primed with the African American or Buddhist Monk concept. Participants were asked to report their attitudes toward the proposal in the message. We expected participants with large implicit-explicit discrepancies to more carefully process the persuasive message than those with smaller discrepancies, but only for those who had been first primed with the African American concept, which should activate the discrepancy. As in previous studies, this enhanced thinking would be evidenced by a greater impact of the argument quality manipulation on attitudes for those subliminally primed with the African American concept. Thus Study 3 extends previous work on implicit ambivalence as it is the first study to examine the impact of activating the discrepancy-related dimension outside of the persuasive message and to see if mere activation of the discrepancy is sufficient to enhance information processing activity. Finally, a secondary goal of the current study was to test whether priming the African-American concept would activate more discomfort as implicit ambivalence increased. In
the absence of the African-American prime, the extent of implicit-explicit racial discrepancies was not expected to produce discomfort.

Method

Participants and Design

One hundred and thirty one undergraduate psychology students at The Ohio State University participated in exchange for partial fulfillment of a course requirement. Participants first completed a task in which they were subliminally primed with either the African American concept or the Buddhist monk concept. Participants were then randomly assigned to read a persuasive message unrelated to race, containing either strong or weak arguments. Consistent with the previous studies, implicit and explicit measures of racial attitudes were assessed for all participants in order to form an index of implicit-explicit discrepancy. Consequently, the independent variables constituted a Prime (African American concept vs. Buddhist Monk) Argument Quality (strong vs. weak) x Implicit-Explicit Discrepancy (continuously scored) x Direction of Discrepancy (higher on explicit or implicit measure) design.

Procedure

Participants were seated at individual cubicle stations and were presented with all materials on their computer screens. MediaLab (Jarvis, 2000) was again used to administer all elements of the experiment. Participants were presented with a brief introduction stating they were going to be completing two unrelated experiments today.
that had been packaged together for the convenience of time. The first experiment, sponsored by the “Cognitive Sciences Department” was a word recognition task. The word recognition task served as our means of subliminally priming either the African American or Buddhist Monk concept. Participants then moved on to the second experiment concerning a proposal Ohio State was said to be interested in adopting. Specifically, participants viewed a message in favor of implementing senior comprehensive exams, containing either strong or weak arguments, depending on their randomly assigned condition. After viewing the persuasive message, participants rated their attitudes towards the proposal. Finally, participants completed the racial IAT (Greenwald et al., 1998) and the Anti-Black scale (Katz & Hass, 1988).

Independent Variables

Subliminal Priming: Participants were subliminally primed using a lexical decision task from previous research in which it was employed to activate the African-American concept (see DeMarree & Loersch, 2009). Specifically, participants were instructed that their job was to indicate whether the presented letter string was a word (e.g. walnut, book) or a non-word (e.g. nuwalt, koob). Participants were to hit the “Z” key if the presented letter string was a non-word and the “?” key if the letter string was a word. Prior to each letter string presentation, the primed concept was first presented for 12 milliseconds, followed by a mask (XXXXX) for 225 milliseconds. For those participants randomly assigned to the Buddhist Monk conditions, the word “Buddhist” or
“Monk” was presented subliminally before each letter-string combination. For those participants randomly assigned to the African American conditions, the word “Black” or “African American” was presented subliminally before each letter-string condition. Participants completed a total of 30 trials.

*Argument Quality:* In addition to being randomly assigned to receive the African American or Buddhist monk prime, participants also either received strong or weak arguments regarding a message in favor of implementing senior comprehensive exams (see Petty & Cacioppo, 1986). Strong arguments in favor of the proposal contained arguments such as Ivy League schools and several Big Ten universities have adopted senior comprehensive exams to maintain their record of excellence and a study at the University of Virginia found that the average starting salary of graduates increased by $4000 annually after implementing senior comprehensive exams. In contrast, weak arguments in favor of senior comprehensive exams included arguments such as one student whose school had implemented the exams was quoted as saying “The history of exams of this type can be traced to the ancient Greeks. Even if there were no other benefits, it should be worth it just to follow tradition.” Like the arguments used in Study 2, the arguments selected were pre-tested in previous research and the strong arguments elicited mostly favorable thoughts and the weak arguments elicited mostly unfavorable thoughts when people were instructed to think carefully about them.
Explicit measure of prejudice: Consistent with studies 1 and 2, participants completed the Anti-Black scale (Katz & Hass, 1988). Scoring of participants’ responses were identical to that of the previous studies, and again ratings of items were highly inter-correlated ($\alpha = .80$). Unlike the previous 2 studies, there was an unexpected significant impact of prime on Anti-Black scores, $F (1,127) = 8.08, p = .05$, such that those subliminally primed with the African American concept had higher Anti-Black scores ($M = 3.59, SD = .89$) relative to those primed with the Buddhist Monk concept ($M = 3.24, SD = .75$). In addition, the argument quality manipulation had a marginally significant impact on Anti-Black scores, $F (1, 127) = 3.55, p = .062$, such that those in the weak conditions reported higher anti-black scores than those in the strong arguments conditions ($M = 3.51, SD = .93$ vs. $M = 3.31, SD = .74$, respectively). The interaction of the two variables was non-significant, $F (1,127) = .396, p = .531$.

Implicit measure of prejudice: The racial Implicit Association test (IAT; Greenwald et al., 1998) was again used to assess participant’s level of implicit prejudice. Scoring was identical to that of the previous two studies. Neither the prime, $F (1, 127) = .608, p = .437$, nor the argument quality manipulation, $F (1,127) = 1.35, p = .24$, affected this measure, and there was no interaction either, $F (1,127) = .238, p = .627$.

Implicit-explicit Discrepancy: Measures of explicit and implicit racial attitudes were once again unrelated to one another ($r = .016, p = .85$). An index of implicit-explicit discrepancy was formed using the same procedure as that of studies 1 and 2. We again
coded for direction of discrepancy (i.e., implicit score more prejudiced than explicit or vice versa) to see if the direction of the discrepancy impacted information processing.

Dependent Variables

Attitudes towards senior comprehensive exams: Consistent with Studies 1 and 2, participants’ attitudes towards phosphate-based laundry detergents were assessed using six 9-point (1 – 9) semantic differential scales (i.e., bad-good, against-in favor, harmful-beneficial, foolish-wise, negative-positive, unfavorable-favorable). Ratings on these items were highly inter-correlated (α = .89), so they were averaged to form one overall attitude index for each participant.

Discomfort: As a check on the assumption that when racial discrepancies are activated, people feel discomfort, we also assessed this state. Specifically, we had participants answer two questions: 1) to what extent were they currently feeling discomfort, and 2) to what extent were they currently feeling uncomfortable. To enhance face validity, these questions were asked among a series of other questions assessing emotional states (e.g., happiness) and participants answered on a 9-point scale (1=Not at all, 9 = very much so). Ratings on these items were highly inter-correlated (α = .87), so they were averaged into a single index. Participants completed the discomfort questions after reporting their message attitudes but before completing any racial attitudes measures.
Results and Discussion

*Attitudes.* We first examined our core hypothesis for the attitudes measure. We conducted a hierarchical regression analyses to examine the magnitude of implicit-explicit discrepancy (centered continuous variable), 2) direction of the discrepancy (effects coded; -1 = implicit prejudice > explicit prejudice vs. 1 = explicit prejudice > implicit prejudice), 3) argument quality (effects coded; -1 = weak vs. 1 = strong), and 4) subliminal prime (effects coded: -1 = Buddhist Monk vs. 1 = African American) on evaluations of senior comprehensive exams. Again, main effects were interpreted in the first step, two-way interactions in the second step, three-way interactions in the third step, and the four-way interaction in the final step (see Cohen & Cohen, 1983).

Results revealed a main effect of argument quality, such that strong arguments produced more positive attitudes than weak arguments, $B = .771$, $t (125) = 5.82$, $p = .000$. Of most importance, the predicted three-way interaction between the magnitude of participants’ discrepancy, argument quality, and Prime emerged $B = .403$, $t (115) = 2.15$, $p = .03$. We decomposed the three-way interaction as a function of prime, and found that the two-way interaction between the magnitude of participants’ discrepancy and argument quality was significant for those subliminally primed with the African American concept, $B = .584$, $t (51) = 2.52$, $p = .015$ (see top panel of Figure 3), replicating studies 1 and 2, but there was no hint of an interaction of argument quality and discrepancy for the Buddhist monk prime, $\beta = -.007$, $t (65) = -.02$, $p = .97$ (see bottom
The only effect to emerge for the Buddhist monk prime participants was a main effect of argument quality, $B = .555$, $t (68) = 3.01$, $p = .004$.

Simple slope analyses were conducted to examine effects in high and low discrepancy individuals, among those participants who read the message after receiving the African American prime. Discrepancy scores were centered one standard deviation above the mean and one standard deviation below the mean, respectively. Then, participants’ re-centered discrepancy scores, the direction of discrepancy, argument quality, and all interaction terms were entered as predictors (see Aiken & West, 1991). Analyses revealed that among participants who were first primed with the African American concept and who also had high implicit-explicit discrepancies, attitudes were impacted by argument quality such that more positive attitudes followed the strong rather than weak message, $B = 1.602$, $t (54) = 5.76$, $p = .000$. Thus, high discrepancy participants were processing information regarding the proposal. The attitudes of participants who were first subliminally primed with the African American concept and had low implicit-explicit discrepancies were also influenced by argument quality, $B = .687$, $t (51) = 2.78$, $p = .007$, but not to the same extent as those with high discrepancies, thus suggesting that low discrepancy participants were not as carefully processing the information. Consistent with Studies 1 and 2, no main effects or interactions of Direction of discrepancy emerged for those primed with the African American concept.
These results suggest that individuals who are implicitly ambivalent with respect to their racial attitudes—high in implicit prejudice, low in explicit or the reverse—engage in greater scrutiny of information when race is salient as evidenced by a greater impact of argument quality on attitudes. When race is not salient, however, the magnitude of discrepancy had no impact on information processing.

**Discomfort.** Next, we examined whether implicit racial ambivalence led to more discomfort when race was subliminally primed. Results on the discomfort measure revealed a main effect of discrepancy, such that overall more discrepant individuals reported higher levels of discomfort, $B = 1.129$, $t (125) = 5.53$, $p = .000$. Of greater importance, this main effect was qualified by a two-way interaction between the magnitude of participants’ discrepancy and Prime, $B = 1.329$, $t (115) = 7.48$, $p = .000$. We decomposed the two-way interaction as a function of prime, and found that for those individuals subliminally primed with the African American concept, discrepancy significantly predicted discomfort, $B = 2.58$, $t (57) = 10.22$, $p = .000$, but for those primed with the Buddhist monk concept, discrepancy did not predict reported discomfort, $B = -.127$, $t (70) = -.555$, $p = .586$. These results suggest that for implicitly ambivalent individuals, when the discrepancy-relevant concept of race is activated, this produces feelings of discomfort.

**Summary.** In sum, Experiment 3, conceptually replicated our previous findings by showing that people who have a large discrepancy between their implicit and explicit
racial attitudes are more likely to scrutinize a message when race is salient than are people who have a small discrepancy between their implicit and explicit racial attitudes. However, the present study extends past work by illustrating that even when race is activated outside of the persuasive message, those who are discrepant in their racial implicit and explicit attitudes engage in greater processing. As in studies 1 and 2, this conclusion was supported by the finding that the attitudes of relatively discrepant individuals were more reflective of the quality of the information they received than were the attitudes of less discrepant individuals. The fact that the enhanced information processing only occurred for individuals with large discrepancies after the African American concept was activated and thus relevant to the basis of the discrepancy rather than unrelated to the discrepancy (i.e., Buddhist monk concept), is consistent with the idea that the purpose of the processing was to resolve the discrepancy. Furthermore, this study also showed that priming the African American subliminally was sufficient to lead to feelings of discomfort on the part of those with discrepant implicit and explicit racial attitudes. The extent of discrepancies in implicit and explicit attitudes was not associated with discomfort if race was not activated.
As noted in introducing our research, investigators initially uncovered a phenomenon in which White individuals tended to engage in greater scrutiny of information when it was presented by a Black rather than a White source (see White & Harkins, 1994). Subsequent research showed that this enhanced processing of Black over White sources extended to targets (Fleming et al., 2005) and was most likely to occur among individuals who were low in their explicit prejudice. This was presumed to be because these individuals would be most likely to want to watch out for their own or others prejudice (the watchdog hypothesis; Petty et al., 1999). Contemporary research suggests that many White individuals who score low in explicit prejudice might indeed harbor automatic negative reactions to Blacks and that they might wish to overcome these reactions to act in an unprejudiced way (Plant & Devine, 1998; Monteith, 1993). These automatic negative reactions are captured in contemporary implicit measures of racial attitudes such as the IAT (Greenwald et al., 1998).

The goal of the current research was to provide the first empirical test of whether the enhanced scrutiny of Black sources and targets by Whites stemmed from a motivation to watch out for their own prejudice. Consistent with this reasoning, we found that among
individuals who were low in explicit prejudice, it was those who were also relatively high rather than low in implicit prejudice who were more likely to process messages from or about Blacks. This finding is consistent with the notion that people low in explicit prejudice may indeed be processing messages from and about Blacks in an attempt to guard against their own implicit racial prejudice. However, our studies also uncovered a result that was not anticipated by the original watchdog hypothesis. That is, the direction of implicit-explicit discrepancy did not matter. Any discrepancy, regardless of direction, was sufficient to increase information processing.

In the present work, we examined how the magnitude of one’s implicit-explicit discrepancy impacted information processing. Use of a discrepancy index was chosen to fit with prior research and because the discrepancy measure taps into the psychological variable of interest. However, an alternative way to conceptualize our hypothesis is as a statistical interaction between the implicit and explicit measures of attitudes in predicting information processing. Consequently, we conducted an Explicit measure x Implicit measure x Argument Quality regression analysis for the entire set of experiments, controlling for study as a factor. As expected, we found a significant 3-way interaction

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2 This analysis was conducted using combined data from Study 1 and the discrepancy-relevant conditions only from studies 2 and 3 (i.e. Black source and African American prime, respectively). We also completed a hierarchical regression analysis with manipulated Argument Quality and Discrepancy-Relevant (effects coded) with the implicit and explicit measures (continuous) as independent variables, for data from studies 2 and 3, with study as an additional factor. Notably, the results of this analysis mirrored the above.
of Explicit measure, Implicit measure, and Argument Quality, $\beta = -.53$, $t(157) = -3.230$, $p = .002$, with no main effects or interactions with the study variable. This alternative analysis demonstrates that, it was not just individuals who were higher in their implicit prejudice than their explicit prejudice who processed more, but also individuals who were higher in their explicit than their implicit prejudice who also processed more than people who did not have discrepancies. This suggests a more general phenomenon of people who are implicitly ambivalent processing more than those who are not ambivalent. To the extent that explicit attitudes indicate the attitude that a person consciously endorses, any indication that this was not the reaction they were automatically having (e.g., experiencing automatic negativity toward Blacks when positivity is endorsed or vice-versa), would lead to discomfort. This discomfort, like the discomfort that comes from explicit ambivalence, would lead people to process relevant information more in an attempt to resolve the ambivalence (see also Rydell, et al., 2008).

Is the Enhanced Processing Objective or Biased?

Although the current research clearly documented enhanced thinking resulted from implicit-explicit discrepancies, it is plausible that the enhanced processing could be relatively objective or biased. For example, it could be that people just want to resolve the conflict and do not care whether it is resolved in favor of the explicit attitude or the implicit attitude (e.g., see Maio et al., 1996). On the other hand, people might prefer to resolve the conflict in favor of one attitude over another. In cases of explicit
ambivalence, the side with the strongest evaluation is considered the dominant side whereas the other side is called the conflicting side (Priester & Petty, 1996). Some researchers have argued that in cases of explicit ambivalence, processing is biased in favor of the dominant side. Specifically, Clark et al. (2008) found that as explicit ambivalence increased, people became more likely to process a proattitudinal message (i.e., in support of their dominant side), but less likely to process a counterattitudinal message (i.e., in support of their conflicting side). Of course, in the current research, unlike Clark et al. (2008), the message to process was not clearly taking a position that was consistent with or inconsistent with either the explicit or implicit racial attitude. In Study 1, participants were given the CV of an African-American candidate, but no one was advocating for this candidate. In studies 2 and 3, the message they were asked to process was not relevant to race. Thus, the biased processing hypothesis was not clearly tested in this research and would require a race relevant advocacy.

Would objective or biased processing be expected if a race-relevant advocacy (e.g., supporting affirmative action) was used? The watchdog version of the enhanced processing hypothesis has not previously addressed this. One possibility is that watchdogs process objectively to find the truth as that is the best way to be unprejudiced. Or, it could be that watchdogs low in explicit prejudice wish to avoid being negative and thus process in a positively biased fashion whereas watchdogs who are high in explicit prejudice process in a negatively biased fashion. Stated differently, if among discrepant
individuals, the explicit measure taps the attitude people want to have (endorse) and the implicit measure taps a conflicting automatic reaction that people do not want, one could imagine that they would process in a way that fosters the explicit attitude. If so, people who have more favorable explicit than implicit attitudes would presumably engage in favorably biased processing of information relevant to race and people who have more negative explicit than implicit attitudes toward Blacks would engage in unfavorably biased processing. Although proposing that the enhanced processing is biased rather than objective is a plausible notion, the current research was not suited to test it. In any case, from the current research we can say with confidence that the magnitude of implicit-explicit discrepancies in racial attitudes affects the extent of information processing activity.

Benefits of Using Strong and Weak Messages

Relevant to this point, an interesting question regarding the present work is what the use of clear and unambiguous materials tells us about the nature of implicit-explicit discrepancies. In other words, what does the use of strong and weak arguments reveal to us about the nature of racial automatic and deliberative discrepancies? Interestingly, in studies 1 and 3, the discrepancy by argument quality interaction seems to be driven largely by those participants’ in the weak arguments conditions. However, in study 2, we see a polarization of attitudes in both the strong and weak arguments conditions. Including both strong and weak arguments is critical for assessing the extent of
processing because examining the responses only to one kind of message can be misleading. For example, in study 2, if we had only used strong arguments, it would have seemed as if greater discrepancies are associated with more persuasion or with more positive evaluations of the information when the discrepancy was activated. On the other hand, if we only used weak arguments it would have seemed as if discrepancies produced negativity in evaluating relevant information. Stated simply, if only strong or weak arguments had been included, it could have suggested the conclusion that discrepant individuals are engaging in biased processing – overly positive or negative. By using both types of arguments, we can make a more complete and precise conclusion about scrutiny of the merits of what is presented.

*Absolute versus Relative Discrepancies*

Although our research showed that direction of discrepancy did not moderate the results, it is important to note that direction of discrepancy was calculated on a relative rather than an absolute basis. That is, in the present research, by standardizing both explicit and implicit attitude measures and then using the absolute value of the difference between them, we created a relative index for each participant. In other words, increasing discrepancies in favor of the explicit measure means that people were progressively higher in the prejudice distribution in the sample tested on the explicit than the implicit measure; in contrast, increasing discrepancies in favor of the implicit measure means that people were progressively higher in the prejudice distribution in the sample tested on the
implicit than the explicit measure. Because of this procedure, we had comparable numbers of individuals on each side of this discrepancy (implicit > explicit and explicit > implicit), and we were able to show that direction of discrepancy did not moderate the effects of amount of discrepancy on information processing.

To examine the data using an absolute discrepancy measure (i.e., no standardization or absolute values taken) we tried an alternative, but conceptually similar analysis in which we used the raw discrepancy scores and tested for curvilinear argument quality effects across levels of raw discrepancy. According to our conceptualization, in this alternative analysis, both high positive and high negative discrepancy individuals should process the race-relevant message more than people who have little discrepancy. That is, since the direction of discrepancy does not matter, both high positive and high negative discrepancies should look the same. When analyzed in this manner, the results from our experiments look exactly as predicted. Figure 4 shows the significant interaction between discrepancy (quadratic term) and argument quality collapsing across studies, $\beta = .138, t (155) = 3.836, p = .000$, and controlling for study as a factor.$^3$

Another point to consider is that although our discrepancy index does a good job of capturing people’s relative standing in the distribution (as in most prior research), our index can only deal with the range of scores observed in the sample. Thus, by an absolute

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$^3$ For this analysis, only the Black source and Black prime conditions were included for Studies 2 and 3, respectively. Argument Quality was effects coded (-1 = weak arguments vs. 1 = strong arguments).
criterion, it could be the case that all of the participants are relatively high in both explicit and implicit prejudice, high in explicit prejudice and low in implicit prejudice, and so forth. If this were true, it would still be the case that some people were higher than others on each measure and that the relative discrepancies our index captures is successful in predicting the extent of information processing. Nevertheless, to explore this issue further, we created an “absolute” discrepancy index in each study by using the middle point of the explicit scale (e.g., 3.5 on a 0 to 5 point scale) and the zero point in the IAT to approximate absolute differences between participants high and low on both of the racial attitude dimensions. This categorization using an absolute criterion revealed that across all 3 studies, a majority of our participants showed prejudice on the implicit measure while the explicit measure suggested non-prejudice, and very few demonstrated the opposite pattern (i.e. implicit measure suggests non-prejudice but explicit measure suggests prejudice). Thus, future research should aim to recruit individuals with a wider variation in prejudice level.

At the conceptual level, however, our hypothesis is that the magnitude of the discrepancy matters more than the direction of the discrepancy. For example, an individual with a slightly positive attitude towards Blacks on an explicit measure and slightly negative association with Blacks on an implicit measure would be categorized as discrepant in absolute terms, whereas an individual with a slightly negative attitude towards Blacks on an explicit measure and an extremely negative association with Blacks
on an implicit measure would not, even though the difference between implicit and explicit scores of the latter individual would be much larger and more consequential in our view. Nevertheless, future research would benefit from exploring implicit and explicit discrepancies in other domains (i.e. sexual orientation, mentally ill, elderly, etc.) so that the issue of absolute versus relative discrepancies can be examined more systematically.

*Can Impression Management Account for the Enhanced Scrutiny Effect?*

Implicit measures are sometimes touted for getting around social desirability concerns (see Olson & Fazio, 2003). For example, in the current research, it could be that people who score high in prejudice on an implicit measure, but low on an explicit measure truly are prejudiced, but they are responding in an unprejudiced way on the explicit measure simply to make themselves look good to the experimenter (e.g., see, Olson, Fazio, & Hermann, 2007). Perhaps people with this discrepancy are thinking more about the message not because of their own genuine automatic negativity conflicting with their genuine explicit positivity, but because they do not want to reveal themselves as prejudiced to the experimenter. To account for all of the data, however, this line of reasoning would then also have to contend that among the people in this sample who scored relatively low in prejudice on the implicit measure but relatively high on the explicit measure were really not prejudiced, but took a prejudiced stand on the explicit measure because that is the image they wanted to create. Given social norms, this
direction seems implausible from a social desirability view. Thus, we find it more parsimonious to argue that social desirability is not fully accounting for our results, but rather, people can genuinely hold automatic reactions that differ from their deliberative ones, and that this can be a source of conflict that they aim to resolve with enhanced information processing.

One implication from this research is that it is important to use both explicit and implicit measures of attitudes since both kinds of measures are informative when combined. Our explicit and implicit measures did not correlate, yet both were meaningful in that both were necessary to predict information processing. Thus, because implicit and explicit measures of attitudes have been shown to be useful in predicting behavior separately (e.g., Greenwald, Poehlman, Uhlmann, & Banaji, 2009) and in combination (as shown in this research), it is useful to consider both of them even when they do not correlate. Some might have thought that if the measures were uncorrelated, one of them was noise, or it might have been that discrepancies merely indexed people who were not being careful or paying much attention in the experiment (i.e., if they respond randomly, the measures would be discrepant). If this was the case, they should also be paying less attention to the information presented. The fact that the most discrepant people were the most attentive to the materials argues against an interpretation that discrepancies index carelessness.
Implicit Ambivalence and Motivation to Control Prejudice

In accord with the meta-cognitive model of attitudes (MCM; see Petty, Briñol, & DeMarree, 2007), the present research offers a unique perspective on various conceptualizations postulating that people are often motivated to correct for their internalized prejudice. According to several formulations (e.g., Dovidio & Gaertner, 2004, Dunton & Fazio, 1997), some White individuals have automatic negative reactions to Blacks, but have egalitarian values or desires not to be prejudiced that cause them to discount their activated negativity and report positivity on explicit measures. This analysis assumes that the causal sequence is that people have pre-existing attitudes that are negative, some pre-existing motive to control these reactions, and these interact to determine a constructed deliberative positive attitude. Although this is perfectly plausible and certainly can occur, our studies suggest another possibility – that motives can follow from pre-existing positive and negative associations, with one of them negated. That is, some people will recognize that they have both existing positive and negative associations, with the latter being unwanted or at least not endorsed. Because they find the latter to be inappropriate or wrong, they develop a motive to control these negative reactions. Conversely, some individuals may have an automatic positive association, and reject that in an attempt to form a more accurate or correct impression, and thus endorse a relatively more negative association. Thus, rather than a positive
constructed attitude following from the interaction of negative automatic attitudes and a motive to control them, it could be that a motive to control negative reactions follows from the presence of both positive and negative associations to a minority group with one of the two being rejected, and the oppositely valenced association endorsed.

**Future Directions**

The current research showed that people with implicit-explicit racial discrepancies were more likely to process information in a message about a Black individual, from a Black source or even if the concept of “Black” had been primed prior to reading a persuasive message. Future research could test whether other aspects of the persuasion context could also enhance information processing among people with discrepancies in their implicit and explicit racial attitudes. For example, if participants’ attitudes towards persuasive message were collected by an African American researcher or a photo of African American was simply present in the laboratory, would implicit-explicit discrepancies in prejudice still impact processing even if the message topic and source was unrelated to race? In addition, it would also be informative to examine whether the present findings could be replicated for discrepancies in prejudice toward other stigmatized groups such as homosexual individuals, welfare recipients, HIV/AIDS patients, etc. For instance, if the results from the current research were replicated using homosexual individuals as the attitude object, it could provide further evidence that
direction of discrepancy does not moderate the impact of the magnitude of discrepancy on processing.

Another important direction for future research is to examine the nature of the discrepancy. The implicit ambivalence framework argues that the discrepancy index reflects a conflict between a rejected or unrecognized automatic association and an endorsed evaluation. However, one alternative interpretation of implicit ambivalence is that our discrepancy index is tapping into an affective vs. cognitive discrepancy. Given that our implicit measure, the IAT, uses evaluative words to assess bias, and the Anti-Black scale assesses the extent to which one endorses various beliefs about African Americans, it's plausible that the IAT is more affective in nature, while the Anti-Black scale is more cognitive. Consequently, one could argue that the discrepancy is not due to an automatic association being rejected and a contrary evaluation endorsed, but instead one measure is capturing a more cognitive (vs. affective) response relative to the other. In order to address this concern, future research would benefit from the use of explicit measures that are more affective in nature (e.g., see Crites, Fabrigar, & Petty, 1994). For instance, utilizing a feeling thermometer (Haddock, Zanna, & Esses, 1993) or a closeness scale (Jackman and Crane, 1986; Tropp & Pettigrew, 2005) would help address this concern.

Related to this future avenue of research, a second, alternative to this framework is that the discrepancy index actually captures conflict due to how people are reporting
their racial attitudes as a function of an automatic vs. deliberative measure. For instance, it is possible that on our implicit measure, the racial implicit association test (IAT; Greenwald et al., 1998), participants are expressing society’s evaluation of African Americans, but on the explicit measure, the Anti-Black scale, they are expressing their own personal beliefs. One way to address this concern is to modify the implicit association test such that the evaluative labels reflect either personal or normative evaluations. Specifically, future research could utilize the personalized version of the IAT (Olson & Fazio, 2004; Han, Czellar, Olson & Fazio, 2010) to create an implicit measure that taps into personal associations and the normative version (see Yoshida, Peach, Zanna, & Spencer, 2011) to create an implicit measure that reflects societal evaluations. Utilizing both of these versions of the IAT could rule out the possibility that participants’ responses on the traditional IAT are simply a responding phenomenon in which they are entirely expressing personal beliefs or societal evaluations. While examining to what extent automatic racial associations are influenced by personal vs. societal evaluations would be informative, we believe that the origin of an automatic association is not important. Critically, regardless of where an automatic association may stem – be it a personal belief, societal evaluation or elsewhere – if an association exists, is rejected, and contrary to an endorsed evaluation, than a person will experience implicit ambivalence.

An additional avenue for future research regards the issue of mechanism. We argue that like other inconsistencies (Carver & Scheier, 1990; Higgins, 1987; Hodson,
Maio & Esses, 2001; Rydell et al. 2008), the experience of implicit ambivalence is uncomfortable and this negative feeling of discomfort motivates individuals to resolve the discrepancy through discrepancy-relevant information processing. To empirically illustrate this is the case, future work would benefit from more definitively illustrating that this negative feeling of discomfort truly motivates processing. In the present work, although we measured reported discomfort, we did so after participants’ had engaged in information processing and reported their attitudes toward the message (see Study 3). Previous work suggests that it is best to assess levels of discomfort prior to participants engaging in information processing (Durso et al., in prep) in order to capture the impact discomfort has on information processing. Future work should incorporate this notion. Another means of capturing the mechanism is to manipulate the mediator instead of measuring it. In this regard, a misattribution of arousal manipulation – similar to that used in classic cognitive dissonance work (Zanna & Cooper, 1974) – would illustrate that given a plausible reason to misattribute their discomfort, discrepant individuals would no longer engage in greater processing of discrepancy-relevant communications. Taking this moderator approach would better clarify the nature of the mechanism underlying processing in implicit-explicit discrepancies.

Conclusions

In a series of studies, this dissertation has examined the nature of the watchdog hypothesis, illustrating that individuals low in explicit prejudice, but high in implicit
prejudice are operating as if they are implicitly ambivalent as evidenced by engaging in
greater processing in any situation in which race is made salient either explicitly (Studies 1 and 2) or implicitly (Study 3). Critically, this dissertation has also illustrated that those
who are relatively higher in explicit than implicit prejudice also process more carefully in situations where race is salient as discrepancy increases, a prediction not made by the original watchdog hypotheses. Consistent with the implicit ambivalence framework, these studies have demonstrated that discrepancies between automatic and deliberative measures of racial attitudes can lead to greater processing of a persuasive message when race is made salient, regardless the direction of one’s discrepancy. Building on existing literature in the domain of implicit-explicit discrepancies and information processing, the present work helps us to better understand the nature of how judgments are made when race is a factor. Our incredibly diverse social world demands inter-racial interactions, and this research illustrates that the attitudes we hold towards racial groups, including both automatic and deliberative evaluations, can greatly influence how we process information when race is made salient. Although we believe the factors that influence race and information processing can be quite complex, we believe the interplay of individuals’ racial automatic and deliberative attitudes plays a critical role.
LIST OF REFERENCES


APPENDIX A

FIGURES AND STIMULI
Figure 1. Attitudes as a function of argument quality and racial automatic-deliberative discrepancies (one standard deviation below and above the mean) (study 1).
Figure 2. Attitudes as a function of source race, argument quality and racial automatic-deliberative discrepancies (one standard deviation below and above the mean) (Study 2).
Figure 3. Attitudes as a function of prime, argument quality and racial automatic-deliberative discrepancies (one standard deviation below and above the mean) (Study 3).
Figure 4. Attitudes (standardized scores) as a function of argument quality and raw discrepancy scores across studies (only Black source/prime conditions are included for Study 2 and 3, respectively). Actual discrepancy scores in the studies range from -3.34 to 3.85.
STIMULI

Pictures of Black faces used on racial Implicit Association Test (studies 1-3)
Pictures of White faces used on racial Implicit Association Test (studies 1-3)