AN INVESTIGATION OF IMPLICIT ATTITUDES AMONG CAUCASIAN COLLEGE STUDENTS TOWARDS NATIVE AMERICANS

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INTRODUCTION

Over the past 50 years there has been a significant decline in expressions of overt racism and prejudice in the United States. Well before the end of the 20th century, McConahay, Hardee, and Batts (1981) observed that public opinion polls demonstrated declines in racist responses. Part of this decline can be attributed to changes in societal norms, due to significant events such as, *Brown v. Board of Education,* the Civil Rights Act of 1964, the Equal Employment Opportunity Act of 1972, and other legislative interventions that have resulted in blatant acts of discrimination becoming both immoral and illegal. Despite marked declines in overt racism, other forms of prejudice and discrimination continue to exist and affect the lives of racial minority group members and women in significant ways. The way in which racism, prejudice and discrimination affect people's lives and society continues to be a concern for researchers (Dovidio & Gaertner, 1986).

Since the publication of *The Nature of Prejudice* (Allport, 1954), the research and literature on racism, prejudice and discrimination has markedly increased. Duckitt's (1992) analysis of historical trends in the study of prejudice from 1920 to 1990 led Dovidio (2001) to identify two general trends or waves of "scholarship that reflects different assumptions and paradigms in the social psychological study of racial prejudice" (Dovidio, 2001, p.830). The *first wave* of research can be identified from Duckitt's (1992) analysis of the years 1920 to 1950, which represents prejudice as psychopathology. Prejudice was not viewed simply as a disruption of normal processing

but as an extreme deviation from normal thought or thinking. During this period personality and attitude tests were often administrated in an attempt to identify individuals characterized by racially prejudiced beliefs. Research conducted along these lines focused on measuring, describing, and monitoring the problem. Once these three items were recorded researchers then sought to find the cause or source of the problem. Quite simply, it was believed that if *the problem* (prejudice) could be identified and removed or treated that it would no longer exist and there would be no negative implications for the rest of society (Dovidio, 2001).

The *second wave* of research, which was from the late 1950s to the mid 1990s, targeted the opposite end of the spectrum and considered prejudice as a normal rather than abnormal process. This shift in focus heralded the examination of *normal processes* associated with societal norms and socialization and how these processes converged to support and perpetuate prejudice. This shift also emphasized the importance of changing social norms in determining how prejudice was conceptualized. Specifically, this *second wave* of research began to draw a distinction between the different ways in which prejudice is expressed (e.g., from overt to more covert forms of prejudice). However, this approach to studying racism and prejudice was problematic in that it relied exclusively on self-report measures, which are susceptible to social desirability demands and minimization of overt racist attitudes. Changes in societal norms have made racism and racist acts more taboo over the years. As a result, some of the reported decline in prejudice observed from the 1950's to the 1990's may have been due to the questionable accuracy of how people reported their race-related feelings and attitudes on these measures (Gaertner & Dovidio, 1986).

Building on Duckitt's (1992) analysis, along with research conducted over the past decade, Dovidio (2001) identified a *third wave* of research characterized by the conceptualization and examination of more subtle and covert types of racial bias, such as symbolic, modern, and aversive racism. Beginning in the mid-1990s to the present this *third wave* has emphasized a multidimensional view of prejudice, that attempts to assess individual differences in implicit and explicit racial attitudes and to distinguish covert or modern racists from truly nonprejudiced people (Dovidio, 2001). Also, advances in methodology have allowed researchers to test previously untestable questions regarding subtle forms of prejudice that were hypothesized during the end of Dovidio's (2001) *second wave*. For example, whereas self-report measures could only estimate subtle or covert forms of racism, new technology and methodology were developed that provided for better understanding and measurement of implicit attitudes and beliefs (Dovidio, 2001). Computer tasks such as the implicit association test (IAT) that measure response latencies now allow researchers to measure automatic or implicit attitudes and beliefs.

The IAT is thought to measure implicit attitudes by examining automatic associations individuals make between certain stimulus objects (e.g., snakes) and evaluative attributes (e.g., dangerous) (Greenwald, McGhee, & Schwartz, 1998). In other words, the IAT measures how closely individuals associate certain objects or groups with an evaluative attribute and assumes that the more automatic the association, the stronger the implicitly held attitude (Karpinski & Hilton, 2001). The strength of these associations is measured by response latency times. Allport in 1954 wrote that negative experiences with prejudiced attitudes and behavior would have a lasting negative impact on African Americans. However, Allport was clearly referring to overt, blatant forms of racism. The

third wave began covering new ground by examining the effects of more covert, subtle forms of prejudiced attitudes and behaviors on particular target groups. This *third wave* of research has witnessed the dramatic emergence of literature examining implicit attitudes towards African Americans and other minority groups.

For example, in one of the first studies of its kind, Greenwald et al., (1998) used the IAT to examine associations between stereotypical Black names (e.g. Latonya, Tashika) and pleasant word pairings compared to White names (e.g. Betsy, Katie) and pleasant word pairings in self-described unprejudiced Caucasian participants. They found that response latencies for White names paired with pleasant words were much shorter than Black names paired with pleasant words, suggesting an implicit negative bias toward Blacks among persons who describe themselves as unprejudiced. Similar findings have been observed substituting Black and White faces as stimulus objects on the IAT. Dasgupta, McGhee, Greenwald, and Banaji (2000) presented undergraduate college students with pictures of Black faces and White faces and (similar to the original IAT), assessed response latencies for Black-pleasant and White-pleasant pairs. Again, participants showed stronger associations when pairing White faces with pleasant words than when pairing Black faces and pleasant words.

Research has also extended this paradigm to examine implicit racial biases toward other minority groups. For example, Ottaway, Hayden, and Oakes (2001) used the IAT to examine associations between stereotypical White names (e.g., Alfred, Peggy) and pleasant word pairings compared to Hispanic names (e.g., Pedro, Junita) and pleasant word pairings in self-described Caucasian participants. Consistent with previous studies

(e.g., Greenwald et. al, 1995), they found that response latencies for White names paired with pleasant words were much shorter than Hispanic names paired with pleasant words.

Despite the evidence demonstrating implicit racial bias toward a number of ethnic minority groups, there is an absence of literature examining this phenomenon as it pertains to Native Americans. Sue and Sue (1994) proposed that the reason for the general lack of literature on Native Americans may be the fact that Native Americans make up such a small percentage of the population in the United States, resulting in few Americans having personal contact, and an accompanying lack of awareness of issues facing Native Americans. More contemporary views suggest that the explanation goes well beyond this simplistic contact hypothesis. For example, Pewewardy (1998) has argued that the prevailing images of Native Americans are largely the creations of non-Native people. He further suggests that those images have become the accepted version of Native American culture and leads people to view Native Americans as relics of the past rather than their more contemporary roles in society. To genuinely comprehend this point, one must understand the history of prejudice and racism that Native Americans have encountered throughout history.

Unlike African Americans and other racial minorities in this country, Native Americans have a unique relationship and history with the United States federal government. From the time of first contact with European explorers and continuing throughout the mid 1800's Native Americans faced enslavement, genocide, forced removal, and land expropriation by the United States government. It is notable to point out that, shortly after the Civil War, amendments to the constitution recognized African Americans as human beings. Prior to this time, they were only considered three-fifths of a

person, according to the United States Census Bureau. During this same time Native Americans were presumed incapable of initiating action in a court of law, owning property, giving testimony in court, voting, or to possess the right to leave the reservation. In fact, except for veterans returning from World War I, Native Americans were not granted citizenship by the United States until the Indian Citizenship Act of 1924, and because the right to vote was governed by state law, many states barred Native Americans from voting until 1948 (Wolfley, 1990). In addition, a number of laws have been passed over the years that required Native Americans to conform to Caucasian institutions, including the forced attendance of Native American children in boarding schools given to the charge of different Christian denominations (Deloria, 1969). In short, Native Americans have had, and continue to have, contentious political and economic relationships with the United States government.

Native Americans also continue to be dehumanized and cartoonized through a variety of images including sports mascots. Professional sport teams, universities, and high schools across the country use Native American mascots, such as the Redskins, Braves, Chiefs, and Savages. Such mascots portray Native Americans in either an idealized light or portray them as savage, bellicose characters. Sports mascots are frequently characterized in highly stereotypical ways, wearing headdresses, loincloths, and fake buckskin. Most often there is also the use of accessories such as tomahawks and face paint, and even sacred articles such as feathers and pipes. Mocking behaviors like the tomahawk chop, war whooping, and drum beating are also disrespectful to Native American culture (Pewewardy, 2001).

The "Hollywood Indian" (Pewewardy, 2001, p. 257) is another image of Native Americans that has been around since before the 1940's when Native Americans were portrayed as befeathered savages in cartoons. This image continued to be refined in movies in which Native Americans are depicted as the Noble Savage. These media-created images have also helped to shape this country's values, attitudes, and behaviors towards Native Americans. They also create stereotypes that aid in the dehumanization and deculturalization of Native Americans (Pewewardy, 2001). Despite this history of prejudice and racism there is a limited amount of research that involves the examination of people's attitudes towards Native Americans.

Although the past ten years have seen a great deal of interest in examining implicit forms of racism, and a number of studies have been conducted that demonstrate implicit racial bias toward several ethnic minority groups (e.g., African Americans and Hispanics); no study to date has examined whether these same types of implicit racial biases apply to Native American as well. The purpose of the present paper is to examine the nature of implicit racism as it applies to Native Americans. The purpose of the current study is to examine whether the same results found on the IAT towards other minorities can be replicated using Native Americans as the stimulus groups.

CHAPTER II

REVIEW OF THE LITERATURE

Prejudice is commonly defined as an "unfair negative attitude toward a social group or a person perceived to be a member of that group" (Dovidio, 2001; p. 829). Although racism is related to the concept of prejudice and the terms are often used interchangeably, they really refer to two different processes. Whereas prejudice refers to negative attitudes and beliefs towards another group, racism refers to behaviors that result in denying full access or participation in society to members of particular racial groups. Historically, racism has been conceptualized as comprising three different categories: individual, institutional, and cultural (Jones, 1997).

Individual racism characterizes behaviors at an individual level toward racially different others and is based on the assumption that individuals believe in the superiority of their own race over that of another. Essentially, individual racism involves the behaviors in which people engage that will help maintain those superior and inferior positions. Institutional racism is an institutional extension of individual racism (Jones, 1997). Jones stated that institutional racism occurs when dominant civil institutions and formal organizations manipulate policies and procedures in ways that maintain advantage of particular racial groups over others. For example, establishing cut-off scores for standardized test as criteria for admission into college can be seen as a form of institutional racism, because minority students commonly have lower test scores and less

training and preparation for these standardized tests. The effect of institutional racism is to deny access, rights, choices, and mobility to members of racial minority groups within established institutions (Jones, 1997).

Cultural racism incorporates both individual and institutional racism. Jones (1972) defines cultural racism as "the individual and institutional expression of the superiority of one race's cultural heritage over that of another race" (p. 6). An example of cultural racism is the tendency to highlight the historical contributions of European Americans in this country to the exclusion of contributions made by members of racial minority groups (e.g., agricultural development, engineering expertise, constitutional forms of government).

The research and literature on racism and prejudice has markedly increased over the past 50 years and throughout the years many theories about racism have emerged in the literature. In 1992, Duckitt conducted a historical analysis that focused on different explanations of racial prejudice. Based on his historical analysis Duckitt concluded that different theoretical orientations on racism emerge as a result of historical and social circumstances. Building on Duckitt's analysis, Dovidio (2001) identified three different *waves* in which the literature defined and examined racism.

The *first wave* of research started in the 1920's and lasted through the 1950's. During this wave of research, prejudice was approached as psychopathology and was seen as an unjustified, irrational, and extreme deviation from normal thought. During the majority of the *first wave* it was believed that racial prejudice was an unconscious defense mechanism that was developed to relieve tensions and problems that emanated either from a person's personality or in response to environmental stressors (Duckitt,

1992). Starting in the 1930's to the mid 1990's much of social psychology viewed attitudes and stereotypes as operating in a person's conscious awareness (Greenwald & Banaji, 1995). Traditionally, attitudes were seen as being made up of three different components, cognitive, affective, and behavioral (Karpinski & Hilton, 2001). Because this model rested on the belief that individuals were consciously aware of their attitudes, this also meant that measurement relied on explicit self-report and documentation of these attitudes was vulnerable to social desirability pressures (Karpinski & Hilton, 2001).

The *second wave* of research, which was from the late 1950s to the mid 1990s, targeted the opposite end of the spectrum and considered prejudice as a normal rather than abnormal process. This shift led to the examination of *normal processes* associated with broad social and cultural norms and how these processes converged to support and perpetuate racial prejudice. The normative approach to racial prejudice acknowledged that changing social norms would play an important role in addressing prejudice among the population as a whole.

Throughout the *second wave* the United States saw changes in race relations as a result of legislation, such as, *Brown v. Board of Education,* the Civil Rights Act of 1964, and the Equal Employment Opportunity Act of 1972. Campbell (1971), Pettigrew (1975), and McConahay et al. (1981) observed that public opinion polls demonstrated declines in racism. Rossell (1978) questioned why, then, was the legislation designed to stop racial prejudice met with resistance, protests, and, in many cases, violence. These acts suggested that racial prejudice had not declined, but perhaps the attributions or explanations people gave for their racists actions had changed.

As a result, the *second wave* of research began to focus on the different ways in which prejudice may be expressed (e.g., from overt to more covert forms of prejudice). It became apparent, however, that racial prejudice could no longer be examined through the use of self-report measures, as had been done in the past, because self-report measures are susceptible to social desirability demands and minimization of overt racist attitudes. Indeed, because changes in societal norms made overt racist acts less socially acceptable, many theorists questioned whether reported declines in prejudice from the 1950's to the 1990's were legitimate or due in part to the degree to which people were willing to genuinely report their race-related feelings and attitudes on self-report measures (Gaertner & Dovidio, 1986). In response to these questions, theories of racial ambivalence and unintentional racism, such as symbolic/modern and aversive racism, emerged during the latter part of the *second wave* and continued into the *third wave.*

Sears and Kinder (1971), Sears and McConahay (1973), and McConahay and Hough (1976) invoked the theory of modern racism (referred to at the time as symbolic racism) to describe more contemporary forms of racial discrimination. Modern racism can be defined as "the expression in terms of abstract ideological symbols and symbolic behaviors of the feeling that blacks are violating cherished values and making illegitimate demands for changes in racial status quo (p. 38)" (McConahay & Hough, 1976). The main purpose of modern racism theory was to find practical solutions to measuring racist attitudes following major social change in the shadow of the Civil Rights Movement in the United States. As mentioned earlier, changes in societal norms had deemed overt racist attitudes and behaviors unacceptable, making results from self-report measures questionable.

Modern racism theory maintains that racism still widely exists in the United States, but that it is expressed in more subtle or indirect ways that do not outwardly violate societal norms. For example, in most instances the modern racist would not publicly support openly racist policies, such as segregation, but might oppose affirmative action mandates, claiming that such social policies violate principles of meritocracy. Modern racists may openly deny racist attitudes and avoid direct expressions of traditional or old fashioned racism, but may explain acts of discrimination in non-racial terms that are socially palatable, but result in similar racist institutional policies (Nail, Harton, & Decker, 2003).

McConahay and Hough (1976) proposed that modern racism occurs because affective elements of racial attitudes develop early in life and are more resistant to change than are cognitive components. Because affective components of attitudes are slower to change, they have yet to catch up on new ideas regarding race and race relations. As a result, McConahay and Hough (1976) argue that although society has changed, old negative feelings still prevail and remain the guiding force in beliefs and actions toward racially dissimilar others. In a similar view, Sears (1988) theorized that modern racism stems from a combination of anti-black affect and traditional individualism values (e.g., meritocracy, Protestant work ethic, individual mobility).

Aversive racism, like modern racism, recognizes that although overt expressions of racism have declined, contemporary forms of racial prejudice continue to affect the lives of racial minorities in subtle, yet significant ways (Dovidio, 2001). At the core of aversive racism is the notion that negative feelings and beliefs about other racial groups are rooted in normal and adaptive psychological processes involving both individual and

intergroup factors. Dovidio and Gaertner (1998) suggest that negative racial biases occur automatically, or outside of a person's conscious awareness, and are fueled by negative feelings toward other racial groups that are acquired through socialization. Dovidio (2001) asserted that because socially indoctrinated racial biases exist outside of awareness, aversive racists are able to simultaneously maintain genuine egalitarian self-perceptions and engage in racially discriminatory behaviors.

Building on Duckitt's (1992) analysis along with research over the past decade, Dovidio (2001) identified what is known as the *third wave* of research on racial prejudice. The *third wave* focused on the conflict between a person's denial of personal prejudice (e.g., explicit attitudes) and his/her underlying unconscious negative feelings and beliefs (e.g., implicit attitudes). Dovidio characterized research in the *third wave* as being more concerned with issues of conceptualization and measurement of more subtle and covert types racial of bias. The *third wave* also emphasized a multidimensional view of prejudice, which attempts to assess individual differences in implicit and explicit racial attitudes and to distinguish covert or modern racists from truly nonprejudiced people.

As the *third wave* gained momentum, social psychologists began making finer distinctions between explicit (i.e., deliberate) and implicit (i.e., automatic) cognitive processes (e.g., Greenwald & Banaji, 1995; Schacter, 1990). Greenwald and Banaji (1995) defined implicit attitudes as "introspectively unidentified traces of past experience that mediate favorable or unfavorable feeling, thought, or action toward social objects" (p. 8). They also hypothesized that these attitudes manifested themselves "as actions or judgments that are under the control of automatically activated evaluation, without the performer's awareness of that causation (p. 6)."

Advances in methodology have allowed researchers to test previously untestable questions regarding subtle forms of prejudice that were hypothesized by researchers (e.g., McConahay & Hough, 1976; Sears, 1988,) during the *second wave* of racism literature. For example, whereas self-report measures could only estimate subtle or covert forms of racism, new technology and methodology have been developed that provide for more precise measurement of implicit attitudes and beliefs (Dovidio, 2001). Computer tasks such as the implicit association test (IAT), that measures response latencies, now allow researchers to measure automatic or implicit attitudes.

Implicit Association Test

The IAT is thought to measure implicit attitudes by examining automatic associations individuals make between certain target concepts (e.g., Black versus White) and evaluative attributes (pleasant versus unpleasant) (Greenwald et al., 1998). In other words, the IAT measures how closely (i.e., quickly) individuals associate certain objects or groups with an evaluative attribute and assumes that the more automatic (i.e., faster) the association, the stronger the implicitly held attitude (Karpinski & Hilton, 2001). The strength of these associations is measured by response latency times. Specifically, it is believed that the stronger the association between two different stimuli the faster decisions will be made about them and response latencies will be shorter.

The IAT design consists of five steps (trial blocks). Blocks 1 and 2 introduce target concepts (Black and White) and the evaluative attributes (pleasant and unpleasant words). In the first trial block, participants will see one of two target concept categories on the right side of the computer screen and the other target concept category on the left side of the screen. For example, participants will see 'Black' on the left of the screen and

'White' on the other side of the computer screen. Target concept stimulus words (e.g., happy) appear in the middle of the screen and the participant is asked to sort the stimuli into either the category on the right or the left using one of the two designated keys on the keyboard. The second block is performed in the same manner as block one, but instead of sorting the target concept stimuli, participants must sort the evaluative attribute stimulus words (e.g., pleasant and unpleasant) into correct categories.

The third block combines target concepts and evaluative attributes into stereotype compatible (e.g., Black + unpleasant/White + pleasant) and stereotype incompatible (e.g., Black + pleasant/White + unpleasant) categories. In other words, instead of assigning stimuli to 'pleasant' or 'unpleasant' categories, participants now use the left or right designated keys to sort both target concept and attribute stimuli into combined categories that consist of both a target concept and an evaluative attribute (e.g., 'Black + pleasant' and 'White + unpleasant'). Block four consists of categorizing the target concept that was presented in trial block 1, but in reverse order. For example, if the participant were to be presented with the target concept of 'Black' on the right side of the screen and 'White' on the left side of the screen in block 1, the participant would see 'White' on the right side of the screen and 'Black' on the left side of the computer screen in block 4. Lastly, in block 5, the participant is presented with the reverse of the stereotype compatible and stereotype incompatible combined target concept and evaluative attribute categories that were presented in block 3 (Dasgupta et al., 2000).

The IAT effect is defined as the difference between the two combined category trial blocks (stereotype compatible and stereotype incompatible). Specifically, means are computed for latency response times of stereotype compatible trial blocks (White +

pleasant/Black + unpleasant) and stereotype incompatible trial blocks (Black + pleasant/ White + unpleasant). The difference is then computed by subtracting the mean latency for stereotype compatible trial blocks from the mean latency stereotype incompatible trial blocks. A positive IAT effect indicates shorter response latencies when particular target concepts (e.g., Black) are paired with negative attributes than when paired with pleasant attributes and, subsequently, provides evidence for an implicit bias toward these target concepts.

Empirical Demonstrations of the IAT

Greenwald et al. (1998; Experiment 1) administered two different IATs to 32 undergraduate students from introductory psychology courses at the University of Washington. Experiment 1 was designed to assess implicit attitudes toward two pairs of target concepts: flower names (e.g., rose, tulip, marigold) versus insect names (e.g., bee, wasp, horsefly) and musical instrument names (e.g., violin, flute, piano) versus weapon names (e.g., gun, knife, hatchet). Each of these target concepts were used in combination with pleasant (e.g., family, happy, peace) and unpleasant evaluative attributes (e.g., crash, rotten, ugly). It is also important to note that the target concepts were assumed to be universally positive (flowers, musical instruments) and negative (insects and weapons). Stereotype compatible combinations in the first experiment were flower + pleasant attributes and insect + unpleasant attributes; stereotype incompatible pairings were flower + unpleasant and insect + pleasant. In the second IAT, musical instruments + pleasant attributes and weapon + unpleasant attributes constituted the stereotype compatible pairings; musical instruments + unpleasant attributes and weapon + pleasant attributes comprised stereotype incompatible pairings.

The first IAT effect was computed by subtracting the mean latency of stereotype compatible blocks (flower + pleasant versus insect + unpleasant) from stereotype incompatible blocks (flower + unpleasant versus insect + pleasant). The second IAT effect was calculated by subtracting the mean latency of stereotype compatible trials (musical instrument + pleasant/weapon + unpleasant) from stereotype incompatible trials (musical instrument + unpleasant/weapon + pleasant). Greenwald et al. found significantly shorter response latencies when flower and musical instrument names were paired with pleasant words (stereotype compatible) than when insect and weapon names were paired with pleasant words (stereotype incompatible), suggesting an implicit negative bias toward insects and weapons.

In an attempt to demonstrate automatic expressions of race related stereotypes, Greenwald et al., (1998; Experiment 3) administered two IAT programs to 26 Caucasian undergraduate students from introductory psychology courses at the University of Washington. In the first of the two IAT programs, target concepts consisted of Black (e.g., Jamal, Leroy, Jerome) versus White (e.g., Adam, Harry, Brad) male names. Target concepts were used in combination with pleasant (e.g., family, happy, peace) and unpleasant evaluative attributes (e.g., crash, rotten, ugly). The same evaluative attributes from Experiment 1 were used. In this IAT, stereotype compatible combinations (White + pleasant/Black + unpleasant) were compared to stereotype incompatible pairings (Black + pleasant/White + unpleasant).

The second IAT task was identical except, instead of White and Black male names, participants were presented with White (e.g., Amanda, Courtney, Heather) and Black (e.g., Aiesha, Lakisha, Tawanda) female names. As in the first IAT the stereotype

compatible pairings consisted of White names + pleasant and Black names + unpleasant attributes and stereotype incompatible pairings consisted of Black names + pleasant and White names + unpleasant attributes.

For both male and female names the average response times were significantly shorter for stereotype compatible blocks (White + pleasant/Black + unpleasant) than stereotype incompatible blocks (Black + pleasant/White + unpleasant). These findings were taken as evidence that more positive associations were demonstrated towards Whites than towards Blacks.

Dasgupta et al. (2000) administered the IAT to 75 undergraduate students enrolled in introduction to psychology courses at the University of Washington. Each participant were administered two different IAT programs. One of the IAT programs used pictures of White and Black faces for the target concepts and pleasant and unpleasant (gentle, pleasure, paradise, joy, disaster, bomb, death, and poison) words for the evaluative attributes. The pictures used were acquired from the homepage of a public university; all people in the pictures were similar in dress, facial expression, and physical dimensions. In this paradigm the stereotype compatible blocks consisted of White faces + pleasant and Black faces + unpleasant attributes; stereotype incompatible blocks consisted of White faces + unpleasant and Black faces + pleasant attributes.

The second IAT program used by Dasgupta et al. (2000) was identical except that pictures of White and Black faces were replaced with common White and Black names (e.g., Josh, Andrew, Brandon, Justin, Lamar, Malik, Jamel, and Rasaan) for the target concepts. The same evaluation attributes were used in both IAT programs. Stereotype compatible trial blocks consisted of White names + pleasant/ Black names + unpleasant

attribute pairings and stereotype incompatible blocks consisted of White names + unpleasant/Black names + unpleasant attribute pairings.

As predicted, both IAT programs revealed significantly faster response latencies when White target concepts were associated with pleasant evaluative attributes and Black with unpleasant evaluative attributes (stereotype compatible) than when White target concepts were associated with unpleasant evaluative attributes and Black target concepts were associated with pleasant evaluative attributes (stereotype incompatible). These findings demonstrated the existence of a positive automatic preference for White target concepts when using both pictures and names as stimuli.

Ottaway, Hayden, and Oakes (2001; Experiment 2) conducted a two-part experiment that used the IAT to measure associations using popular Hispanic, Black, and White names as target concepts and pleasant and unpleasant words as evaluative attributes. Participants consisted of 32 self-identified Caucasian undergraduate students from Western Washington University. All participants were informed that the experiment could reveal attitudes that they held towards another race. Participants were randomly assigned to one of the two different IAT groups (White versus Black and White versus Hispanic).

Participants in the first group completed two different IAT tasks. In the first IAT scenario the target concepts consisted of Black (e.g., Jamaal, Leroy, Malcolm) and White (e.g., Alfred, Barry, Chip) male names. Target concepts were used in combination with pleasant (e.g., diamond, joy, glory) and unpleasant evaluative attributes (e.g., accident, bomb, disaster). The IAT effect was calculated by comparing stereotype compatible blocks (White + pleasant/Black + unpleasant) to stereotype incompatible blocks (Black +

pleasant versus White + unpleasant). The second IAT participants were presented with White (e.g., Crystal, Mallory, Peggy) and Black (e.g., Latoya, Tasha, Yolanda) female names instead of White and Black male names. Again, stereotype compatible combinations were White + pleasant and Black + unpleasant attribute pairings and stereotype incompatible combinations were Black + pleasant and White + unpleasant attribute pairings.

The second group of participants also completed two different IAT tasks. The IAT tasks were identical to those completed by the first group, except that instead of White and Black male names, participants were presented with White (e.g., Alfred, Barry, Chip) and Hispanic (e.g., Jorge, Luis, Miguel) male names. Stereotype compatible trials consisted of White names + pleasant and Hispanic names + unpleasant attributes; stereotype incompatible trials consisted of Hispanic names + pleasant and White names + unpleasant attribute pairings. In the second IAT, target concept stimuli consisted of White (e.g., Crystal, Mallory, Peggy) and Hispanic (e.g., Felipa, Josefina, Margarita) female names. Again, stereotype compatible blocks were White names + pleasant and Hispanic names + unpleasant and stereotype incompatible blocks were Hispanic names + pleasant and White names + unpleasant attribute pairings.

As predicted Ottaway et al. discovered that for both male and female names, average response times were significantly shorter for the stereotype compatible blocks (White + pleasant/Black + unpleasant and White + pleasant/Hispanic + unpleasant) than the stereotype incompatible blocks (Black + pleasant/White + unpleasant and Hispanic + pleasant/White + unpleasant). Consistent with previous studies (e.g. Greenwald et. al, 1998; Experiment 3), it was found that response latencies for White names paired with

pleasant evaluative attributes were much shorter than when Hispanic and Black names were paired with pleasant evaluative attributes.

Monteith, Voils, and Ashburn-Nardo (2001) administered two IAT programs to 79 participants recruited from introductory to psychology and upper-division psychology courses at University of Kentucky. The first IAT program consisted of categorizing Black and White male names for the target concepts and pleasant and unpleasant stimuli for the evaluative attributes. All evaluative attributes and names used in both IAT programs were taken from Greenwald et al. (1998, Experiment 3). The second IAT was the same as the first except that participants were presented with Black and White female names. In both IAT's, stereotype compatible trial blocks paired White names + pleasant and Black names + unpleasant attributes and the stereotype incompatible trial blocks paired White names + unpleasant and Black names + pleasant attributes.

IAT effects were calculated for the means of stereotype compatible pairings (White + pleasant/Black + unpleasant) and stereotype incompatible pairings (White + unpleasant/Black + pleasant) in both IATs. As predicted, for both male and female names participants responded significantly faster to stereotype compatible combined categories than stereotype incompatible combined categories, indicating a positive bias toward Whites.

McFarland and Crouch (2002, Experiment 1) administered an IAT similar to Greenwald et al. (1998, Experiment 3) to 81 undergraduate psychology students. Specifically, the target concepts consisted of White (e.g., Heather, Nancy, Mary) versus Black (e.g., Latonya, Shavonn, Tashika) female names and the evaluative attributes were moral (e.g., honest, helpful, kind) versus immoral (e.g., deceiving, selfish, cruel).

Combined categories were made up of stereotype compatible trials (White + moral and Black + immoral) and stereotype incompatible trials (Black + moral and White + immoral).

The IAT effect was calculated by finding the difference between mean latencies for stereotype compatible blocks (White + moral and Black + immoral) and stereotype incompatible blocks (Black + moral and White + immoral). Results revealed that when participants were presented with the stereotype compatible pairings response times were shorter (faster) than when they were presented with stereotype incompatible pairings. Again, this study demonstrated the presence of negative implicit attitudes toward Blacks, and conversely, positive implicit attitudes toward Whites.

Frantz, Cuddy, Burnett, Ray, and Hart (2004, Experiment 1) administered the IAT to 98 White undergraduates enrolled in introductory psychology courses at Princeton University. Target concepts consisted of Black and White pictures of undergraduates, and pleasant and unpleasant words were used for evaluative attributes. Frantz et al. (2004) used the same pleasant and unpleasant words that were used in Greenwald et al. (1998, Experiment 3). Stereotype compatible trial blocks consisted of Black names + unpleasant and White names + pleasant attribute combinations and stereotype incompatible combinations were White names + unpleasant and Black names + pleasant attribute combinations.

Unlike previous studies, this study divided participants into three different groups. Each group was administered the same IAT, but participants were given different explanations for the purpose of the experiment and what the IAT program measured. Participants in group 1 were informed that the IAT measured their attitudes toward two

different racial group and racial bias. These participants were also told that research has shown that Whites show an automatic preference for White people. Participants in group 2 were informed that the IAT was a program that measured their knowledge of cultural stereotypes. They were also told that research has shown that knowledge of cultural stereotypes is not related to personal beliefs or inter-racial attitudes and behaviors. The last group was given no extra information about the purpose of the IAT program. Participants in all groups were given the same set of instructions for completing the IAT program.

As predicted, stereotype compatible trial blocks (White + pleasant/Black + unpleasant) yielded significantly shorter response times in all three groups. Group 1 participants, who were explicitly informed that the IAT measured racial attitudes, produced a significantly larger IAT effect than the other two groups. These results indicated the presence of pro-White attitudes even when participants were informed of the purpose of the task. Indeed, pro-White attitudes were stronger when participants were informed that the IAT measured racial biases.

Cunningham et al. (2004) used the IAT in relation to neural components of implicit attitudes. A functional magnetic resonance imaging (fMRI), an IAT, and self-report measures (i.e., Modern Racism Scale, Motivation to Respond without Prejudice Scale) were administered to 13 White participants. During the fMRI, participants were asked to press one of two buttons to indicate whether a certain visual stimulus appeared to the left or the right of a fixation point. Participants were presented with abstract pictures, white squares, and emotionally neutral Black and White faces. The faces were

presented to participants for two different lengths of time, 30 ms and 525 ms. All faces were presented an equal number of times in both exposure conditions.

The IAT program consisted of White and Black faces for target concepts and good and bad words for evaluative attributes. This IAT program consisted of two different block trials. In the first block, participants were presented with stereotype compatible pairings (White + good and Black + bad). The second block of trials administered to participants were stereotype incompatible condition pairings (White + bad and Black + good). An IAT effect was computed by calculating the difference between mean latencies for the stereotype compatible and stereotype incompatible conditions. The IAT effect reveled that mean latency response times for stereotype compatible trials were significantly shorter than mean latency times for stereotype incompatible trials, indicating positive attitudes towards Whites relative to Blacks.

Neural responses to the different faces were assessed by contrasting the fMRI signal for Black and White faces for 30 ms and 525 ms. When faces were presented for 30 ms significantly more activity was observed in the right amygdala (area of the brain associated with emotion) when participants were presented with a Black face than when presented with a White face. In other words, amygdala activity increased when participants were presented with Black faces. These results indicate that more automatic emotional processing occurs for Black faces relative to White faces. Further analysis revealed that IAT effects were positively correlated with amygdala activity. In other words, greater pro-White responses on the IAT were associated with increased amygdala activity when participants were presented with Black faces.

Neural responses in the 525 ms condition were different from those observed in the 30 ms condition. No significant difference in amygdala activation was found in response to Black and White faces. In fact, amygdala activity was significantly lower in the 525 ms condition when compared to activity in the 30 ms condition. However, there was significantly more activity measured in the dorsolateral prefrontal cortex (PFC), an area of the brain associated with regulation and executive functioning. In this condition, IAT results correlated with amygdala activity after statistical analysis controlled for the discrepancies between indirect (IAT) and self-report measures of racial attitudes. In combination, these results indicate that brief exposure to racially dissimilar stimuli results in automatic emotional responses, but as time lapses, controlled processes come into play – perhaps in an attempt to moderate these automatic reactions.

The past ten years have seen a great deal of interest in examining implicit forms of racism. A number of studies have been conducted that demonstrate the ability of the IAT to detect implicit racial biases toward several ethnic minority groups (e.g., African Americans and Hispanics) (e.g., Greenwald et al., 1998, Experiment 3; Monteith et al., 2001; McFarland & Crouch, 2002, Experiment 1). The implicit nature of these biases is highlighted by the fact that negative implicit racial bias on the IAT can be observed even when individuals are made aware of the purpose of the task (e.g., Frantz et al., 2004, Experiment 1). Finally, there is evidence to suggest that implicit racial attitudes measured by the IAT are centrally mediated indicating that automatic processing of racially dissimilar stimuli involves activation of emotional areas of the brain (e.g., Cunningham et al., 2004). Despite the emergence of IAT research examining implicit bias toward racial minority groups, no published study to date has examined whether these same types of

implicit biases apply to Native Americans. The present study uses the IAT to explore if previous results can be replicated when using Native Americans and European Americans as the target stimulus.

CHAPTER III

THE PRESENT STUDY

Dovidio (2001) and McConahay, Hardee, and Batts (1981) have pointed out that reported rates of racism appear to be on the decline. However, these authors have also argued that this reported decline may not be due to actual decreases in racism, but to a transformation over the past 40 years from explicit overt racism to more implicit or covert forms of racism. Because the nature of racism has changed dramatically since the 1960s, assessment methodologies have also undergone radical modifications to keep pace with the new face of racial bias.

One of the newer methods of assessing implicit racial attitudes is the Implicit Association Test (IAT). The IAT has been used to examine implicit attitudes across a number of psychological constructs including self-esteem (e.g., Fan & Wang, 2005), smoking (e.g., Huijding, de Jong, Wiers, & Verkooijen, 2005), homosexuality (e.g., Banse, Seise, & Zerbes, 2001), and psychopathology (e.g., De Houwer, 2002). However, the Implicit Associations Test (IAT) is probably best known for its use as a measure of implicit bias related to race.

In 2003, Avendano et al. (2003) reported on preliminary IAT data that attempted to replicate existing findings using Native American and European American target concept stimuli. In this study the IAT was administered to 35 self-identified Caucasian undergraduate students recruited from introductory psychology courses. Target concepts

consisted of words describing people of Native American (e.g., Cherokee, Navajo, Sioux) and European American (e.g., French, Dutch, Scottish) descent; evaluative attributes were positive (e.g., nice, pretty, pleasant) and negative (e.g., ugly, cruel, lazy) words. Combined categories were made up of stereotype compatible pairings (European American + positive and Native American + negative) and the stereotype incompatible pairings (Native American + positive and European American + negative).

Results revealed that response times for stereotype compatible trials were significantly shorter than response times for stereotype incompatible trials. Consistent with studies demonstrating implicit racial bias toward African American and Latino populations (e.g., Greenwald et al., 1998, Experiment 3), these findings indicated a significant negative implicit bias on the part of Caucasian college students toward Native Americans.

Although these results were consistent with previous research, this experiment contained two important methodological confounds. One potential confound involved the stimuli words used as evaluative attributes. Specifically, some of the negative words used as evaluative attributes (e.g., lazy, ugly) were stereotypically negative words often used to characterize Native Americans in this country. The use of these words may have capitalized on these stereotypical associations and inadvertently strengthened the associations between negative attributes and target concept stimuli, resulting in faster response latencies for stereotypical compatible pairings. In addition, statistical analysis of the data did not correspond to the most recent recommended data analysis procedures proposed by Greenwald, Nosek, and Banaji (2003).

Similar to Avendano et al. (2003), the purpose of the present study was to examine whether the type of implicit attitudes demonstrated by Caucasian individuals toward African Americans and Hispanics are also seen when Native Americans represent the target comparison group. The present study employed a methodology similar to Avendano et al., in that identical target concepts (Native American and European American) and evaluative attribute categories (positive and negative) were used. In an attempt to eliminate the potential pull of stereotypical evaluative words, the present study used attribute stimuli that are more generic and less group specific. Also, data analysis followed the scoring algorithm proposed by Greenwald et al. (2003). It was predicted that Caucasian college students would demonstrate a significant implicit negative bias toward Native Americans and a concomitant positive implicit bias toward European Americans. Specifically, it was hypothesized that the average response latencies for stereotype compatible trials (European American + positive/Native American + negative) would be significantly shorter than response latencies for stereotype incompatible trials (Native American + positive/European American + negative).

METHOD

Participants and Procedures

Participants consisted of 62 undergraduate students at Oklahoma State University that were recruited from psychology classes. Data from 7 participants were excluded because they did not identify themselves as Caucasian. Thus the final sample size consisted of 55 undergraduate students, 22 males and 33 females ranging in ages from 18-24 years (M = 20.07), undergraduate students. This sample size surpasses the number of participants required to obtain statistical power of .80 and to reject the null hypothesis

with a two-tailed α= .05, r = .44 (Cohen, 1977 as cited in Greenwald et al., 2003). Participants received credit in their Psychology course in return for their participation. All participation was voluntary and participants were able to discontinue their participation at any time. The methodology for this study was approved by the University's Institutional Review Board (see Appendix D).

Participants were brought into the lab individually where they completed a consent form, a demographic information sheet, Social Dominance Orientation and Attitudes towards Affirmative Action measures, and the computerized IAT program. Half of the participants received the self-report measures before completing the computer task while the other half completed the self-report measures after they completed the IAT task. Sessions took approximately 20 minutes and were conducted by a graduate student. Participants were assigned a subject number upon completion of the consent form and this number was used throughout the remainder of the experiment.

Measures

Demographic Information Questionnaire. The demographic questionnaire (Appendix A) is self-report item that evaluated the participant's age, gender, race/ethnicity, home state or country, religion, size of their hometown, parent's occupation, and parent's education level.

Attitudes Survey. An Attitudes Survey (Appendix B) was created by combining both the Social Dominance Orientation (SDO) scale and the Attitudes towards Affirmative Action questionnaire (Jost & Thompson, 2000). The SDO scale is a 16 item self-report questionnaire that evaluated the participant's general attitudes about egalitarianism (opposition to equality-OE) and group-based dominance (GBD). The

higher the score on the SDO and the GBD subscale the more in favor a person is of group dominance. The higher the score on the OE subscale the more opposed one would be to equality. The Attitudes towards Affirmative Action scale is a 4-item measure that evaluated the degree to which the participants supported affirmative action. The higher one higher one scores on these four questions the more opposed to affirmative action they are. These measures were included in order to obtain more information about the participants beliefs held towards more socially significant ideologies.

Jost and Thompson (2000) conducted a series of studies designed to adopt a multidimensional approach to measure and conceptualize social dominance orientation. They hypothesized that social dominance orientation consisted of two different ideological factors, opposition to equality (OEQ) and group-based dominance (GBD) and that these two factors would relate differently to other variables (e.g., attitudes towards affirmative action) depending on the participants race (i.e., African American or European American). Jost and Thompson (2000; Experiment 4) administered the social dominance orientation scale, measures of self-esteem, ethnocentrism, neuroticism, political conservatism, and attitudes toward affirmative action to 486 students (122 African Americans and 364 European Americans) enrolled in an introduction to psychology course at the University of Maryland.

Correlation analysis revealed no significant relationship between group-based dominance and opposition to equality. However, the analysis did reveal that African Americans are significantly more supportive of affirmative action policies than European Americans. It was also found that opposition to equality was associated with rejection to affirmative action. Specifically, participants who were found to be the most opposed to

equality are more likely to reject affirmative action. One possible explanation for these results it that people are opposed to affirmative action not because they are opposed to unequal treatment (e.g., Hochschild, 1998), but because it reduces forms of inequality (Jost & Thompson, 2000).

Implicit Association Test (IAT). The IAT program in the present study followed the same methodology used in previous studies (e.g., Avendano et al., 2003; Greenwald et al., 1998; McFarland & Crouch, 2000; Ottaway et al., 2001). To begin the IAT computer task, participants were presented with instructions on the computer screen. Participants were instructed to correctly sort words into one of two categories over the course of seven different trial blocks. Participants were presented with the following instructions on the computer screen:

> Participation in the computer task requires that you can read English fluently, and that your vision is normal or corrected to normal. If you do not consider yourself fluent in English, OR IF YOU ARE HAVING DIFICULTY READING THIS DESCRIPTION, PLEASE ask the experimenter now whether or not you should continue (you will receive participation credit in any case).
>
> Our research investigates cognitive processes used in making decisions. We are seeking to develop and test theories of the cognitive processes that occur inside and outside of awareness. On this task, different stimuli will be presented to you on the computer screen, and you will enter your responses on the keyboard.
>
> INSTRUCTIONS FOR SORTING TASK: For each of several sorting tasks you will be shown words one at a time in the middle of the computer screen. Your task is to sort each item into its correct category as fast as you can by pressing EITHER the 'D' key or the 'K' key. The categories associated with the 'D' and 'K' keys will be shown at the top of each screen. Please pay close attention to these category labels – they change each sorting task!
>
> For one of the sorting tasks you will be classifying words that are either
> 'POSITIVE' or 'NEGATIVE'
> In the other sorting task you will be classifying names that are either
> 'NATIVE AMERICAN' or 'EUROPEAN AMERICAN'
> For each task, your job is to place the word into one of two categories.

Participants were given five practice sessions and two test sessions, each consisting of 36 trials (Appendix C). Participants were informed when they were taking a practice trial and when they were taking a test trial. Throughout the task participants were informed if their answer was incorrect by the appearance of a red 'X' in the middle of the computer screen. Participants needed to make the correct response before they were allowed to continue. After the completion of each block of trials participants were cued to "examine the next page carefully" and told which keys to use for the next set of trials. At the end of each test block participants were provided feedback on their accuracy and average response time in milliseconds.

Trial Block 1 introduced the target concepts, Native American (Cherokee, Navajo, Sioux, Apache, Comanche, Iroquois) and European American (French, German, Dutch, Irish, Scottish, English). Block 2 introduced the positive (love, beauty, pleasure, happy, relief, miracle) and negative (poison, grief, hatred, rotten, hurt, tragedy) evaluative attributes. In Block 1 participants saw one of the two target concepts (Native American or European American) on the right side of the computer screen and the other target concept on the left side of the screen. For example, participants saw 'European American' on the left side of the screen and 'Native American' on the right side of the computer screen. Target concept stimulus words appeared in the middle of the screen and participants were asked to sort the stimuli (Cherokee, Dutch, Scottish, Navajo, French, and Sioux) into either the category on the left (European American) or the right (Native American) using the designated key on the keyboard; the 'D' key was used to assign stimuli to the category on the left and the 'K' key was used to assign stimuli to the category on the right. The second block worked in the same manner as Block 1, but instead of sorting

target concepts participants categorized positive and negative evaluative attributes. 'Positive' appeared in the upper left side of the computer screen and 'negative' appeared in the upper right side of the screen. Evaluative attribute categories remained in the same position on the computer screen throughout the task; target concept categories changed from the right to the left side of the screen and vice versa. Participants were given this information in the instructions presented to them on the computer.

Block 3 (practice trial) combined target concepts and evaluative attributes so that they were mapped onto the same designated key. Instead of assigning stimuli into 'positive' or 'negative' target concept categories, participants used the 'D' or 'K' keys to sort stimuli into combined categories consisting of both a target concept and an evaluative attribute (e.g., European American or positive and Native American or negative). Trial Block 4 was the same as Block 3 except that participants were informed that it is a test trial.

Block 5 consisted of categorizing target concept stimuli presented in Block 1, but in reverse order. For example, if participants were presented with the 'Native American' target concept on the right side of the screen and 'European American' on the left side of the screen in Block 1, participants were then presented with 'Native American' on the left side of the screen and 'European American' on the right side of the computer screen in Block 5. This reversed order for target concept category labels was maintained throughout the remainder of the IAT task.

In Block 6 (practice trial) participants were presented with the reverse of the combined target concept and evaluative attribute categories presented in Blocks 3 and 4. For example, if participants were first presented with stereotype compatible combined

categories in Block 3 (European American or positive and Native American or negative) they were next presented with stereotype incompatible combined categories (Native American or positive and European American or negative) in Block 6. Block 7 was the same as Block 6, except that participants were informed that it is a test trial.

Presentation of target concept and evaluative stimuli words were randomized and were presented an equal number of times in each trial block. To control for order effects, even-numbered participants were presented with stereotype compatible categories first in Blocks 3 and 4; odd-numbered participants were presented the stereotype incompatible categories first in Blocks 3 and 4.

CHAPTER IV

RESULTS

Greenwald et al. (2003) conducted a variety of analyses to improve on previous IAT scoring algorithms (e.g., Greenwald et al., 1998). This new scoring algorithm was found to be superior to existing scoring algorithms in several ways. It was found to be more effective when measuring correlations with self-report measures given in conjunction with the IAT. Also, extreme response latencies (i.e., outliers) are corrected by eliminating response times that are too fast or slow. This new algorithm also controls for practice effects and participants' prior experience with the IAT by including response times from both practice and test trials. The new algorithm (Greenwald et al., 2003) was used in preparing the IAT response data for analyses.

Data preparation involved eliminating trials with latencies > 10,000 milliseconds (ms), and eliminating participant data with response times less than 300 ms in more than 10% of trials. Mean latencies for each trial block were computed. Next, two separate pooled standard deviations (SD's) were calculated, one for Blocks 3 (e.g., stereotype compatible practice trials) and 6 (e.g., stereotype incompatible practice trials) and another for Blocks 4 (e.g., stereotype compatible test trials) and 7 (e.g., stereotype incompatible test trials). Response latencies for trials in which errors occurred were replaced with the block mean + 600 ms. The resulting values were then averaged for each trial block and two difference scores were computed, one for Block 6 and Block 3 (e.g., stereotype

compatible practice trials minus stereotype incompatible practice trials) and one for Block 7 and Block 4 (e.g., stereotype compatible test trials minus stereotype incompatible test trials). These differences were then divided by their associated pooled SD's and averaged. The resulting value represents the average difference between latencies for stereotype incompatible trial blocks and stereotype compatible trial blocks. This value is referred to as the IAT effect and is reported as *D*. A positive *D* value indicates that response latencies for stereotype incompatible trials are longer than response latencies for stereotype compatible trials.

An univariate analysis of variance was conducted and revealed a significant IAT effect (D = .19; η^2 = .30), $F(1, 54) = 23.39$, $p = .001$. Specifically, the results show that mean response latencies for the stereotype compatible pairings (Native American + negative/European American + positive) were significantly shorter than mean latencies for stereotype incompatible pairings (Native American + positive/European Americans + negative); 854.10 ms and 971.14 ms. respectively. These results support the hypothesis that Caucasian college students possess a negative implicit bias towards Native Americans when compared to European Americans.

Pearson's correlation analyses were conducted to test for significant correlations between *D* and the self-report measures administered to the participants. The correlation analyses revealed a significant correlation between *D* and the Attitudes toward Affirmative Action Scale, $r(54) = .28$, $p = .04$. Specifically, as *D* increases (as negative bias towards Native Americans increases) the more opposed to affirmative action the participants rated themselves on the Attitudes toward Affirmative Action survey. No

other significant correlations were found among the other self-report measures administered and *D* (Appendix C).

CHAPTER V

DISCUSSION

The present study was designed to investigate whether or not Caucasian college students held a negative implicit bias towards Native Americans utilizing the Implicit Associations Test (IAT) developed by Greenwald et al, 1998. Previous research studies have been conducted that demonstrated the ability of the IAT to detect implicit biases toward other ethnic minority groups, such as, African Americans and Hispanics (e.g., Greenwald et al., 1998, Experiment 3; Monteith et al., 2001; McFarland & Crouch, 2002, Experiment 1). The present study also administered two self-report measures to see if the IAT correlated with people's reported attitudes towards social dominance and affirmative action.

The present study hypothesized that the findings would be consistent with results of previous research (i.e., Greenwald et al. 1998; Dasgupta et al., 2000). The present study replicated the IAT methodology used by Greenwald et al. 1998, but replaced Black and White names with European and Native American tribes or countries of origins for the target concepts. The results of the present study were consistent with that of previous research and the current hypothesis. Specifically, response times for stereotype compatible pairings (European American + pleasant/Native American + negative) were significantly shorter than the stereotype incompatible pairing (European American + negative/Native American + positive). These results indicate the presence of a negative

implicit bias towards Native Americans among Caucasian college students. It was hypothesized that IAT scores would correlate with both the Social Dominance Orientation Scale and the Attitudes towards Affirmative Action Survey. Results showed that IAT scores only correlated with the Attitudes towards Affirmative Action survey. Specifically it was found that as negative bias towards Native Americans increased so did the participants opposition to affirmative action.

McConahay, Hardee, and Batts (1981) observed that public opinion polls demonstrated a decline in racist responses and while to some this could be attributed to a decline in racism in the United States others have argued that racism has not declined, but that it has simply changed from overt to more covert or implicit forms (e.g. Greenwald et al. 1998; Dovidio and Gaertner, 1989). In order to test this theory Greenwald et al., (1998) developed the IAT to measure a person's reflexive, non-conscious responses and using mean latencies to measure implicit bias, thus eliminating the confounds that occur through the use of self-report measures. The present study supports previous research findings and expands the literature to include Native Americans as another minority group that the IAT has been used to demonstrate a negative implicit bias towards.

Criticisms of the IAT include potential confounds associated with the participant's familiarity with the stimuli, differences between participants cognitive ability, and whether the IAT is demonstrating a negative implicit bias against a group or demonstrating a positive bias towards one's own group. Several studies have examined the effects of stimulus familiarity on the participant's response rate on the IAT. These studies have found that no significant differences exist in response latency between participants who were highly familiar with the stimuli and those who were less familiar

with the stimuli used in the IAT (Rudmen, Greenwald, Mellot, & Schwartz, 1999; Dasgupta, McGhee, Greenwald, & Banajii, 2000; Ottaway, Hayden, & Oakes, 2001; Brendl, Markman, Messner, 2001; Dasgupta, Greenwald, & Banajii, 2003). However, significant latency differences were found when completely unfamiliar stimuli, such as nonsense strings, were used as stimuli on the IAT (Brendl, Markham, & Messner, 2001; Greenwald & Nosek, 2001). The results of these studies led researchers to determine that differences were the result of implicit bias rather than familiarity to the stimulus.

Another major criticism of the IAT is the effects of cognitive skill or fluency on latency response times. In other words, are response times for the stereotype incompatible pairings (e.g., Native American + Positive/European American + Negative) longer due to the participant's cognitive inability to stifle incongruence or due to the participant's negative bias toward the target concept? McFarland and Crouch (2002) examined the effects of cognitive fluency on IAT latency response times and found a general slowing in response times did occur. However the new scoring algorithm designed by Greenwald, Nosek and Banajii (2003) substantially moderates the effects of cognitive fluency on IAT latency times. The new scoring algorithm that was used for the present study reduces the correlation of IAT effects with the average latency of responding to a smaller value.

Lastly, Brendl, Markman and Messner (2001) posed the possibility that IAT effect may not reflect negative bias towards an outgroup (e.g., Native Americans), but rather a positive bias for the participant's ingroup. Specifically the results of the present study could be interpreted not as a negative bias towards Native Americans, but as a neutral attitude of Native Americans and a more positive evaluation of European Americans. Another possible interpretation of the results posed by Brendl, Markman and

Messner (2001) is that participants evaluated both target stimuli (Native Ameircans, European Americans) as positive, but evaluated European Americans more favorably. The reverse of this scenario could be that participants evaluated both target stimuli as negative, but viewed Native Americans as more negative than European Americans.

These alternative explanation warrant attention and to address this potential confound the present study included a self-report measure of Attitudes toward Affirmative Action. Self-report results indicate that as negative bias towards Native Americans increase so does the participant's opposition to affirmative action. Therefore, if the evaluations of the target stimuli are neutral for Native Americans and positive for European American, positive or negative towards both target stimuli, they are still related to a socially relevant topic. It should be noted that a strong opposition to affirmative action does not necessarily imply biased ideals against a particular group. Jost and Thompson (2000) reported that opposition to affirmative action may not be motivated by racism or a desire to dominate a minority group, but rather "to an ideological opposition to egalitarianism that serves to justify the current social system" (Jost and Thompson, 2001, p. 20).

In conclusion the present study indicates a negative bias toward Native Americans, when compared to European Americans and as this bias increases so does one's opposition toward affirmative action. The findings of this study expands on the literature regarding race and the IAT to include Native Americans as another racial group that the IAT has successfully demonstrated a negative implicit attitudinal bias. Further research regarding the IAT and Native Americans could be expanded to examine whether Native Americans are associated with less than human or primitive traits. The results of

this experiment could provide empirical data to support of refute the argument that the use of Native Americans in the media results in Native Americans being viewed as primitive or less than human.

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Appendix A

DEMOGRAPHIC INFORMATION

1. Age: _ 2. Gender: _____ 3. Race/Ethnicity: _____

4. What is your home state or country? _____

5. Religion: _____

6. Which category best describes your hometown or place where you spent the majority of your upbringing (circle one)?

1) Large city (e.g. New York, Dallas, Chicago)
2) Midsize city of suburb (e.g. Oklahoma City, Little Rock, Wichita)
3) Small city (e.g. Stillwater)
4) Large town (less than 20,000 people)
5) Small town or rural (less than 1500 people)

For items 7 and 8, refer to the parents/guardians with whom you spent the majority of your upbringing.

7. What are/were your parents/guardians' education level (circle one for each)?

Father

1) Middle School
2) High School
3) Some college (specify # of years: _____)
4) College degree
5) Post-graduate degree

Mother

1) Middle School
2) High School
3) Some college (specify # of years: _____)
4) College degree
6) Post-graduate degree

8. What are you parents/guardian's occupations?

Father: _____ Mother: _____

Appendix B

ATTITUDES SURVEY

Using the scale below, please indicate the extent to which you agree or disagree with the following statements by circling the number associated with your answer.

Strongly Disagree Disagree Don't Agree or Disagree Agree Strongly Agree

1 2 3 4 5

1. Some groups of people are just more worthy than others.

1 2 3 4 5

2. It would be a good idea if all groups could be equal.

1 2 3 4 5

3. In getting what your group wants, it is sometimes necessary to use force against other groups.

1 2 3 4 5

4. Group equality should be our ideal.

1 2 3 4 5

5. Affirmative action for minorities in education is unfair to Whites.

1 2 3 4 5

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

1 2 3 4 5

7. Superior groups should dominate inferior groups.

1 2 3 4 5

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

1 2 3 4 5

9. Affirmative action in education gives opportunity to qualified minorities who might not have had a chance without it.

1 2 3 4 5

10. To get ahead in life, it is sometimes necessary to step on other groups.

1 **2** **3** **4**
5

11. If certain groups of people stayed in their place, we would have fewer problems.

1 **2** **3** **4**
5

12. Increased social equality would be a good thing.

1 **2** **3** **4**
5

PLEASE CONTINUE ON THE NEXT PAGE!

Strongly Disagree **Disagree** **Don't Agree or Disagree** **Agree** **Strongly Agree**

1 **2** **3** **4**
5

13. Affirmative action forces colleges and universities to admit unqualified students.

1 **2** **3** **4**
5

14. It's probably a good thing that certain groups are at the top and other groups are at the bottom.

1 **2** **3** **4**
5

15. We would have fewer problems if we treated different groups more equally.

1 **2** **3** **4**
5

16. Inferior groups should stay in their place.

1 **2** **3** **4**
5

17. We should strive to make incomes more equal.

1 **2** **3** **4**
5

18. No one group should dominate in society.

1 **2** **3** **4**
5

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

1 **2** **3** **4**
5

20. Affirmative action helps make sure that the American education system remains competitive.

1 **2** **3** **4**
5

THANK YOU!

Appendix C

Sequence of Trial Blocks

Blocks	No. of trials	Function	Items assigned to left-key response	Items assigned to right-key response
1	36	Practice	European American	Native American
2	36	Practice	Positive words	Negative words
3	36	Practice	Positive words + European American	Negative words + Native American
4	36	Test	Positive words + European American	Negative words + Native American
5	36	Practice	Native American	European American
6	36	Practice	Positive words + Native American	Negative words + European American
7	36	Test	Positive words + Native American	Negative words + European American

Note. In order to control for order effect, the positions of Blocks 1, 3, and 4 are switched with Blocks 5, 6, and 7, for half of the participants

Appendix D
Correlation Table

		Group Based Dominance	Opposition to Equality	Social Dominance	Opposition to Affirmative Action	D
Group Based Dominance	Pearson Correlation	1	.527(**)	.921(**)	.196	.187
	Sig. (2-tailed)		.000	.000	.152	.171
	Sum of Squares and Cross-products	2078.436	739.600	2818.036	198.109	18.487
	Covariance	38.490	13.696	52.186	3.669	.342
	N	55	55	55	55	55
Opposition to Equality	Pearson Correlation	.527(**)	1	.817(**)	.431(**)	.177
	Sig. (2-tailed)	.000		.000	.001	.197
	Sum of Squares and Cross-products	739.600	947.200	1686.800	294.400	11.776
	Covariance	13.696	17.541	31.237	5.452	.218
	N	55	55	55	55	55
Social Dominance	Pearson Correlation	.921(**)	.817(**)	1	.330(*)	.208
	Sig. (2-tailed)	.000	.000		.014	.127
	Sum of Squares and Cross-products	2818.036	1686.800	4504.836	492.509	30.263
	Covariance	52.186	31.237	83.423	9.121	.560
	N	55	55	55	55	55
Opposition to Affirmative Action	Pearson Correlation	.196	.431(**)	.330(*)	1	.279(*)
	Sig. (2-tailed)	.152	.001	.014		.039
	Sum of Squares and Cross-products	198.109	294.400	492.509	493.527	13.432
	Covariance	3.669	5.452	9.121	9.139	.249
	N	55	55	55	55	55
D	Pearson Correlation	.187	.177	.208	.279(*)	1
	Sig. (2-tailed)	.171	.197	.127	.039	
	Sum of Squares and Cross-products	18.487	11.776	30.263	13.432	4.686
	Covariance	.342	.218	.560	.249	.087
	N	55	55	55	55	55

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Appendix E

IRB Approval Letter

Participant # _____

Thank you for participating in out study. Before you fill out the survey and complete the computer task, please read the following consent for and sign below.

Consent Form

I hereby authorize John M. Chaney, Ph.D. or his research assistant to examine and record my responses on the computer task that will follow this consent form. I understand the following:

- John M. Chaney, Professor of Psychology at Oklahoma State University and his research team, is conducting this study.
- I must be at lease 18 years of age to participate in this study.
- I should be able to complete this task in less that one hour
- There are no risks posed to me by completing this task
- If course credit is being offered for my participation, I understand that my instructor has made alternative means of attaining this credit available. See instructor for other research credit options.
- I understand that this task will be measuring my response times to a word association task on the computer. The purpose of this experiment is to see how quickly people associate certain words into different categories. This is done by pressing two designated keys on the keyboard to place a word into one of two categories.
- My responses will be anonymous, entered into the computer under a numerical code and kept separate from this consent form.
- If I have any questions regarding this survey, I may contact Kathalena K. Avendano or John M. Chaney through the Department or Psychology in room 215 North Murray Hall (phone number 405-744-6027).
- My participation is voluntary and I will not be penalized if I choose not to participate. I am free to withdraw my consent and end my participation at any time without penalty if I notify the investigators listed above.
- If I have questions regarding my rights as a research participant, I may contact Dr. Sue C. Jacobs, IRB Chair in room 415 of Whitehurst (phone number 405-744-1676).

I have read and fully understand this consent form. I sign freely and voluntarily. A copy has been given to me.

Date: _____ Time: _____ (a.m./p.m.)

Name: _____
(Printed) (Signature)

Address: _____

Telephone: _____ Email: _____

Witness: _____

Please note that two copies of this form are attached to the survey. Sign and date each and make sure to the person administering the survey signs as a witness and gives you a copy. Please be sure to include your contact information, as we may wish to consider you for participation in later studies conducted in out laboratory. Thanks again for taking time to complete our computer task.

VITA

Kathalena K. Avendano

Candidate for the Degree of

Master of Science

Thesis: AN INVESTIGATION OF IMPLICIT BIAS AMONG CAUCASIAN COLLEGE STUDENTS TOWARDS NATIVE AMERICANS

Major Field: Clinical Psychology

Biographical:

Personal Data: Born in Hemet, California on February 15, 1979 to Gonzalo and Betty Avendano

Education: Graduated from Stilwell High School, Stilwell, Oklahoma, in May 1997; received a Bachelor of Science in Psychology from Oklahoma State University, Stillwater, Oklahoma, in May 2002. Completed the requirements for the Mater of Science degree with a major in Clinical Psychology at Oklahoma State University, Stillwater, Oklahoma, in May 2007.

Experience: Undergraduate research assistant in 2000-2002; employed by American Indians Into Psychology, 2000-2003; Teaching Assistant for one semester, spring 2005; Graduate instructor for two years, 2003-2004 and 2006-2007; Clinical practicum at the Psychological Services Center, Cherokee Nation Behavioral Health Services and Oklahoma State University Center for Health Sciences. 2002-2007; Graduate Research Assistant, 2002-present.

Professional Memberships: American Psychological Association, Society of Indian Psychologists, American Indians Into Psychology, Southwestern Psychological Association, American Indians in Science and Engineering Society, Native American Student Association.

Name: Kathalena K. Avendano Date of Degree: May 2007

Institution: Oklahoma State University Location: Stillwater, Oklahoma

Title of Study: AN INVESTIGATION OF IMPLICIT BIAS AMONG CAUCASIAN COLLEGE STUDENTS TOWARDS NATIVE AMERICANS

Pages in Study: 54

Major Field: Clinical Psychology

Scope and Method of the Study: The purpose of this study was to examine implicit biases towards Native Americans. Participants were 55 Caucasian students enrolled in introductory psychology courses at Oklahoma State University. Each participant individually completed a demographic questionnaire, an attitudes survey and the Implicit Association Test (IAT). A univariate analysis of variance on the IAT effect was conducted to determine if negative implicit bias was demonstrated toward Native Americans compared to European Americans. A Pearson's correlation was conducted to test for correlations between the IAT effect and the results of the attitudes survey.

Findings and Conclusions: Results indicated that Caucasian participants elicited negative implicit bias toward Native Americans when compared to European Americans. Pearson's analysis revealed that there was a positive correlation between the IAT effect and the subscale attitudes towards affirmative action of the attitudes survey. Further studies are needed to examine the extent to which these negative biases may be associated with the expression of racial prejudice and discrimination.

Advisor's Approval: Thad Leffingwell, Ph.D.