Whites' physiological and psychological reactions toward affirmative action programs

Victor Soto-Marquez

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WHITES' PHYSIOLOGICAL AND PSYCHOLOGICAL REACTIONS TOWARD AFFIRMATIVE ACTION PROGRAMS

A Thesis
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Science
in
Psychology:
Industrial/Organizational

by
Victor Soto-Marquez
June 2007
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ABSTRACT

Discrimination may have negative health effects regardless of the reasons for the discrimination. Thus, there is the need for further exploration on discrimination processes and its importance on the relation to physiological and psychological outcomes (blood pressure, fairness perceptions, and self-esteem). Recent findings have demonstrated physiological reactions to discrimination in minority groups. There is a lack of research, however, on non-minority group members’ physiological reactions (e.g., blood pressure) in a context where they may perceive they are unfairly treated. This study examined Whites’ perceptions of discrimination and their physiological and psychological reactions toward affirmative action (AA) in conjunction with social identity. Results provide preliminary support to Whites’ physiological reactivity when faced with context-specific events that are perceived to be unfair or discriminatory, specifically, affirmative action programs. Furthermore, it was found that as AA prescriptiveness increased, fairness perceptions decreased. Contrary to expectations, Whites’ social identity did not moderate the relationship between AA prescriptiveness and blood pressure. These findings provide additional information in the area of
discrimination by examining both physiological and psychological discrimination outcomes among individuals of a majority ethnic group.
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CHAPTER ONE

INTRODUCTION

Discrimination has always been a societal problem, one which has lead to extensive research on the factors behind it and its outcomes. On a societal level corrective measures such as Affirmative Action programs (AAPs) have been taken in order to eliminate discrimination. Despite these corrective measures, many individuals still experience different forms of discrimination, which lead to aversive outcomes. Discrimination outcomes can be psychological (e.g., self-esteem) and physiological (e.g., high blood pressure) in nature, and these outcomes are frequently interrelated. Although some minority groups are more frequent targets than others, all groups regardless of their status are possible targets of discrimination. Thus, it is important to distinguish the propensity or actual experience with discrimination and discrimination as a process of exclusion, which degrades and unjustly favors one group of people over another (Jackson, Kendrick, & Daria, 1998). Another distinction has to be made between discrimination and perceived discrimination. Perceived discrimination is when an individual believes he/she has been the subject of a discrimination act, which
has psychological and physiological consequences. Discrimination is an act or instance of biased and unfair treatment based on a given category. As such, discrimination is not defined by the propensity of biased or unfair treatment experienced by some group. Instead, it should be clearly defined as a universal phenomenon, which in and of itself does not exclude any group or individual. It is simply an act committed against an individual or group of individuals based on some category or characteristic, although some groups are more likely to be the targets of discrimination. As stated by Neto (2006) "thus it is important to distinguish discrimination as objectively measurable events from perceived discrimination, which is when an individual interprets events as discriminatory" (p. 90). As such, perceived discrimination is the belief that one has been or someone else has been the subject of a discriminatory act. A given act may or may not constitute discrimination. However, this may not reduce the formation of the belief that the act is an act of discrimination. Consequently, perceived discrimination is an important factor to consider when studying discriminatory psychological and physiological outcomes.
Although discrimination is not exclusive to one individual or group of people, it has been argued to be the result of race/ethnic based differences, and ingroup/outgroup bias (Allen & Wilder, 1975; Stolley, LaViest, & Krieger, 2004; Turner, 1980) and biological predispositions toward some groups of individuals that possess similar characteristics that are not visible or present in other groups. Some of these characteristics may be artificially created through categorization of individuals who are or were part of a similar common group before a categorical division was drawn. For example, in recent times this was seen in Rwanda where ethnic differences were heightened by artificially distinguishing ethnic groups, which culminated in the complete alienation of the country’s two major ethnic groups (Hutu and Tutsi). This alienation resulted in the deaths of thousands of civilians during a civil rebellion in the early 1990s. A similar example was seen in the early 1990s in Kosovo (Stolley, LaViest, & Krieger, 2004). Even self-created categories make everyone a potential target and a potential perpetrator. Discrimination has many effects on the individual being discriminated against regardless of the reasons for the discrimination. Thus, there is a need to further explore discrimination processes and their
importance on physiological and psychological outcomes (Carlson & Chamberlain, 2004). More specifically, this paper will explore perceptions of discrimination as a target group based on status and social identity. This represents a comprehensive and holistic consideration of discrimination by examining both physiological and psychological discrimination outcomes and by considering both majority and minority group members as potential targets.

Health Research and Discrimination

Discrimination is a persistent and dominant subject in today’s society that concerns and has consequences for everyone. Brown, Wallace, and Williams (2001) found that young adults in the USA perceive that White/Black relations have been deteriorating. Beliefs about the deterioration of relations between Whites and African Americans is related to diminished levels of life satisfaction and happiness amongst these young adults. Thus, the ever-present possibility of experiencing or perceiving discrimination itself constitutes a stressor (Contrada, Ashmore, Gary, Coups, Egeth, Sewell, Ewell, Goyal, & Chasse, 2001). Ethnic-related stress stems from perceived discrimination. Many minority-group members
react to stress actively and purposefully by addressing or facing a threat instead of passively accepting a threat, which is subsequently linked to low self-esteem (Contrada, Ashmore, Gary, Coups, Egeth, Sewell, Ewell, Goyal, & Chasse, 2000). Hence ethnic-related stress and its relationship to psychological and physical well-being has proven to be more complex than originally thought. Many factors, such as perceived discrimination, nature of stressors, personality characteristics, population and most important, context still need to be further studied in order to have a comprehensive understanding in this area of research.

According to Contrada et al. (2000) psychological stressors are conceptualized as perceived threats to physical or psychological well-being. Recently this area of research has studied discrimination as a psychological stressor, which has been linked as a risk factor for physical health. For the purpose of this paper, stress refers to a stimulus, the response to a stimulus, or the physical consequences of that response (Kemeny, 2003) as well as affective reactions (Contrada et al., 2000). Contrada et al. (2001) identified five main forms of ethnic discrimination that are seen as possible stressors: (1) verbal rejection, (2) avoidance, (3) devaluation,
(4) threat-aggression, and (5) inequality-exclusion such as denial of equal treatment or access. Other researchers have identified similar or overlapping forms of racism-related stressors at the individual, institutional, and cultural level (Lewis-Coles & Constantine, 2006). Stress has also been studied in sexual minorities (e.g., lesbians, gay men, and bisexuals) where stressors have been conceptualized as major life events. Furthermore, social and personality factors have been studied as possible buffers of negative effects of these stressors on health outcomes (DiPlacido, 1998). In line with these recent stress studies using perceived discrimination, Consedine, Magáí, Kudadjie-Gyamfi, Longfellow, Ungar, and King (2006) suggest that psychological and physiological outcomes linked to health or well-being must be considered within cultural and ethnic contexts to be fully understood.

Findings in health research support the idea that discrimination can be a potent factor of psychological and physiological health. Thus, it is important to take a holistic approach in order to better understand how discrimination affects individuals both psychologically and physiologically. According to Williams and Williams-Morris (2000) there are three predominant ways in
which racism can affect mental health: (1) differential access to desirable resources (e.g., education),
(2) institutions or poor living conditions that affect mental health, and (3) the negative self-evaluations of the stigmatized individual which in consequence may have negative effects on psychological well-being. Even after accounting for socio economic status (SES) some health differences persist among ethnic minorities, which are directly related to discrimination and the stigma of inferiority (Williams, 1999). Experiences of discrimination may provoke psychological, and physiological reactions that lead to adverse effects in mental health and stress (Williams & Williams-Morris, 2000).

In the last decade, researchers have focused their attention on perceptions of discrimination and its physiological reactions as well as the intricate relationship between psychological effects of discrimination (self-esteem, anger, etc.) on physiological outcomes such as high blood pressure (Krieger, 1999; Williams & Williams-Morris, 2000). Health research has found that discrimination is associated with stress and smoking habits (Guthrie, Young, Williams, Boyd, & Kintner, 2002). Feeling discriminated against may leads to feelings
of impotence and inferiority (Williams & Williams-Morris, 2000), and anger and stress (Williams, Neighbors, & Jackson, 2003; Guthrie et al.; 2002) all of which may have physiological consequences that, over time, may adversely affect health (Williams & Williams-Morris, 2000).

Research on discrimination and its effects on physical health have revealed some differences between Whites and African Americans and other minorities. Mustillo, Krieger, Gunderson, Sidney, McCreath, and Kiefe (2004) found differences in preterm and low-birth weight deliveries between African American and Whites. In their study, 50% of preterm and 61% of low-birth weight deliveries of African American reported having experienced at least three discrimination events but only 5% of preterm White mothers reported discrimination events. Krieger (1990) found gender discrimination among Whites was not associated with hypertension, whereas African Americans who experienced discrimination incidents and did not react to the unfair treatment were 4.4 times more likely to report having problems with high blood pressure than those who reacted to unfair treatment by taking action or talking to others about it.

In a study conducted by Sexton and Soto (2005), participants who identified themselves as non-white and
were exposed to a subtle guided imagery discrimination scenario had higher rates of systolic blood pressure compared to Whites who were exposed to the same subtle discrimination scenario. Krieger and Sidney (1996) found that working-class African Americans who experienced racist events but did not challenge the unfair treatment showed higher systolic blood pressure than other working-class African Americans who challenged the unfair treatment. Notably, when taking into account racist events and reactions to unfair treatment, there were no differences in blood pressure between African Americans and Whites. Perceptions and reactions to discrimination seem to be factors behind differences on blood pressure among different racial/ethnic groups. Blood pressure has also been associated with racial discrimination in the workplace (James, LaCroix, Kleinbaum, & Strogatz, 1984; Dressler, 1990). In a lab setting, blood pressure was also related to racial discrimination using exposure to movie scenes depicting anger and racist confrontation (Armstead, Lawler, Gorden, Cross, & Gibbons, 1989). This line of research supports the idea that if an individual perceives to be discriminated against, he/she may experience hypertension.
Although most of the health research on discrimination has found support for physical reactions as outcomes of discrimination, there are some discrepancies in the findings. One study conducted by Williams, Spencer, and Jackson (1999) found no relationship between acute discrimination and health. Despite this example, most studies have found a relationship between physiological reactions or health factors and discrimination.

Recent findings in health research have shown that perceived discrimination affects health (Lepore, Revenson, Weinberger, Weston, Frisina, Robertson, Portillo, & Cross, 2006; Lepore, Miles, & Levy, 1997) but the lack of research on majority member’s discrimination perceptions and lack of studies looking at long-term health outcomes with other factors represent a gap in this area of research (Williams et al., 2003). Some of these contributing factors are the result of research design, which have mostly used existing data limiting conclusions to correlational statements of the long-term relationship between discrimination and health. As mentioned above, one that has never been directly addressed is the legitimate reaction of Whites to programs or instances where they perceive they are being discriminated against or unfairly treated based on their ethnic/racial identity. Our review
revealed only two studies that have tried to assess ethnic/racial cardiovascular reactivity group differences. Sexton and Soto (2005) examined the cardiovascular reactivity (e.g., blood pressure) using a subtle scenario where participants were being followed while shopping at a store. In the control condition participants were approached and asked if they needed help. These researchers found that African American had higher levels of blood pressure compared to Whites in the subtle accusation shoplifting condition. In a similar study Lepore et al. (2006) found that African American women had higher levels of blood pressure compared to White women being accused, in a hypothetical scenario, of shoplifting (racial stressor). Although these two studies found significant differences between African Americans and Whites’ levels of blood pressure after being subjected to a racially-based stressful scenario, these scenarios may not be perceived by Whites as being a racially-based stressor. One scenario that may heighten Whites ethnic identity is a scenario based on AA where they feel denied equal access or unfairly treated. This is a main premise of the current study.

Although there are research studies indicating differences in mental health between Whites and other
minorities, there are limitations that need to be explored. One issue is that identity measures are not entirely consistent with demographic trends of multi-racial groups. For example, individuals' pigmentation level has been used as indices of identity categorization. Thus, some individuals of mixed ethnicity within the same family may classify themselves as being of different ethnic/racial groups. Added to this complexity of multiculturalism and its measurement limitations is that immigrants within the same country of origin may have entirely different cultural beliefs and traditions that are not considered when developing measures. This is important to consider when an individual is asked to self-categorize him/herself into a group that does not clearly identifies his/her ethnicity (e.g., Hispanic of White/European origin or Hispanic of Asian or Black origin. This limits the ability to study if there are health differences between some groups due to their small size or the inability to make strong statements when different groups are clustered into one, which are insufficient by themselves to draw strong conclusions on racial/ethnic disparities in health. In order to expand on racial/ethnic disparities in health and to address some of these concerns a social identity
approach can be useful in providing additional information on racial/ethnic health disparities (Krieger & Sidney, 1996).

Although discrimination is associated with poor health among African American (Williams, Yu, Jackson, & Anderson 1997) as well as other stigmatized groups such as gay and lesbians (DiPlacido, 1998), there is no research that has directly measured whether Whites' perceptions of discrimination on their own group has negative physiological and psychological outcomes such as high blood pressure and fairness perceptions. This is necessary for a comprehensive and inclusive study on discrimination and health outcomes related to discrimination. This is especially important in AAPs that may be perceived by non-beneficiaries, mostly White individuals, as discriminatory, preferential, or as constituting unfair treatment. (Harrison, Kravitz, Mayer, Leslie, & Lev-Arey, 2006). As such, it is important to note that discrimination is not exclusive to any group in particular, especially when perception of discrimination is as realistic as real discrimination, that is, 'if I think and feel this is discrimination then it is perceived discrimination.'
Whites' perceptions of discrimination are important for the understanding of physiological and psychological reactions that have an effect in the support of AAPs. Kluegel and Smith (1982) found in a sample of 1309, Whites perceived themselves to be the subject of widespread reverse discrimination. In the study, Whites perceived their own opportunities to diminish as Blacks’ opportunities increased which creates Whites’ perceptions of opportunity deprivation leading them to assume reverse discrimination was taking place. A survey in *Newsweek* by Gates and Cose (1993, p. 48) found that White males believe they have been unfairly treated in the workplace. Furthermore, Golden, Hinkle, and Crosby (2001) found that 48 percent of a random group of Chicago citizens thought AA was a quota system.

Most of the health research on discrimination has found support for the relationship between perceived discrimination and physiological outcomes such as high blood pressure, anger, stress, smoking habits, preterm births and other psychological outcomes such as self-esteem that are interrelated with health outcomes. Despite the growing literature on discrimination and health outcomes, there is a need to study how non-minority groups, when faced with events that trigger or influence
their perceived discrimination such as preferential treatment, react physiologically and affectively both of which are linked to health outcomes.

Affirmative Action

Since its conception in the mid 1960s, Affirmative Action programs (AAPs) have been controversial. Arguments against AAPs vary based on the outcomes, the targeted group, and also as being discriminatory toward non-beneficiaries (typically White-males). Thus, it is important to assess the different types of AAPs and their respective reactions (both opposing or supporting such programs). According to Harrison et al. (2006) there are four general types of AAPs (a) opportunity enhancement that offers some type of assistance to AAPs beneficiaries before any selection decision is made; this type of assistance is in the form of focused recruitment or training which are only designed to increase the pool of qualified applicants and in which AA beneficiaries are not given any weight in the final selection decision, (b) equal opportunity which is based on leveling the playfield for both majority and minority groups during the selection process, (c) tiebreak (weak preferential treatment) which gives AA beneficiaries preference over
other applicants or candidates if and only if beneficiaries' qualifications are equivalent or comparable to other candidates; this is likely to be the case where under-representation of protected classes is present, (d) strong preferential treatment which is considered to be a "quota" type of approach intended to unfairly favor minorities groups over the majority group.

Individual characteristics have often been studied as factors that are likely to influence reactions toward AAPs. Most of these individual characteristics are based on beneficiary status such as ethnicity and gender characteristics (Kravitz & Klineberg 2000). These characteristics in turn determine whether or not individuals could benefit from AAPs and influenced individuals perceptions of discrimination. Researchers have found that White's attitudes toward AAPs vary as a function of their fairness beliefs about AA. Fairness beliefs vary as the prescriptive nature of AAPs varies (e.g., Kravitz & Klineberg, 2000; Kluegel & Smith, 1983; Golden et al., 2001; Harrison et al., 2006).

According to this structure of AAPs, as the prescriptiveness of AAPs increases or is more visible, from opportunity enhancement to strongly preferential based programs, so will the opposition increase. Thus,
prescriptiveness progressively influences relevant decisions (e.g., selection, promotions) in conjunction with demographic variables (race/ethnicity, gender, etc.) and as such, decisions are differentially perceived from fair to less fair depending on individuals' status (targeted group or non-targeted group). Golden et al. (2001) found that even after controlling for demographic characteristics, the meaning ascribed to AA significantly predicted attitudes toward AA policies. This is an important consideration when developing and implementing AAPs. Although strong preferential treatment (quotas) is illegal, they are nevertheless erroneously perceived to be the true nature of AAPs by many members of society (Aberson & Haag, 2003; Kravitz, Klineberg, Avery, Nguyen, Lund, & Fu, 2000; Spann, 2000).

Another line of research on AAPs has focused on the negative effects such as lower self-perceptions that these programs may create in beneficiaries. Although an important factor on the opposition to AAPs is the negative components attributed to strong preferential treatment, there is another line of research that has based its opposition to AAPs by way of stipulating that AAPs produce detrimental effects on self-esteem (Kobrynowicz &
Contrary to original expectations, research findings on the detrimental effects of preferential treatment on beneficiaries have found that self-esteem is not affected. For example, Jackson (1998) found that African Americans who were selected for a leader position based on merit or a combination of merit and race felt that they deserved the position compared to African Americans who were only selected on the basis of race alone. Furthermore, African Americans who were selected solely on race did not show lower self-esteem when compared to African Americans selected on the merit and the combination of both merit and race. It was also found that African Americans who were selected solely on the basis of race for the leader position, perceived the selection procedures as more fair than race only decision, or a combination of both merit and race.

Self-interest is also a major factor affecting the opposition/lack of support or support toward affirmative action (Harrison et al., 2006; Kluegel & Smith, 1983). If one’s ethnic group is likely to be negatively affected by AAPs based on this or other demographic variables (e.g., sex, disability), it is likely that individuals who are
not direct beneficiaries of AAPs will perceive that AAPs are not only against their self-interest but also against their group in general. On the other hand, direct or possible beneficiaries of AAPs find it in their personal interest as well as in the interest of the group in general to support AAPs. This an important principle that may provide a more objective view of why just as some group of individuals (beneficiaries) are likely to support affirmative action, it is also possible that other groups (non-beneficiaries) may oppose or provide limited support to AAPs because they are not perceived to be in their self-interest or based on a belief of reverse discrimination. Contrary to most research findings, Williams (1999) found that Whites who adhere to 'American values' such as equal opportunity or similar values tend to oppose affirmative action plans. And as Williams (1999) suggests, considerations for beliefs in basic American values such as equal opportunity are needed when making assumptions about AA attitudes.

Although Whites' attitudes toward AAPs vary depending on the type of AAPs and the rationale behind them (Kluegel & Smith, 1983), generally Whites tend to oppose or show less support because of the assumption that AAPs are based on preferential treatment (Aberson & Haag, 2003; Kravitz
et al., 2000; Spann, 2000). African Americans, on the other hand, are typically more supportive toward AAPs or have positive attitudes to such programs even when AAPs are based on preferential treatment (Bobo & Smith, 1994; Kravitz & Klineberg, 2000).

One of the few studies that directly examined Hispanic's attitudes toward AAPs was conducted by Elizondo and Crosby (2004); they found that Latino American students typically had positive attitudes towards affirmative action although these attitudes were more moderate compared to African Americans (Kravitz & Klineberg, 2000). Thus, Hispanics tend to have more moderate attitudes toward AAPs compared to African American but are not more likely to oppose them compared to Whites. These positive attitudes were found to be a function of ethnic identity. In summary, Kravitz and Klineberg (2000) found a positive relationship between affirmative action attitudes and ethnic identity; that is, the higher an individual's racial/ethnic identity is, the more positive attitudes an individual has towards affirmative action. Another study using African American students found that more positive attitudes towards affirmative action were related to a higher level of
ethnic identity as well (Schmerund, Sellers, Mueller, & Crosby, 2001).

Fairness Perceptions

Researchers have widely studied the relationship of the different forms of fairness with affective, psychological, and performance outcomes. Fairness perceptions influence reactions to decisions (e.g., selection, promotion) that have both economical and socioemotional consequences (Cropanzano & Schminke, 2001), for which individuals affected by decision(s) judge whether or not such decision(s) was (were) in line with the question “Was that fair?” (Colquitt, 2001, p. 1).

Although fairness/justice perceptions research has mainly focused on two broad forms of organizational justice: (a) procedural and (b) distributive justice (Cropanzano, Byrne, Bobocel, & Rupp, 2001), others have argued for the further distinction. A third form of organizational justice that has emerged in recent years, interpersonal justice, is concerned with interpersonal respect and simple politeness (Lind & Earley, 1992). There is disagreement as to whether this form of organizational justice is just another derivative of procedural justice or is conceptually unique. Furthermore, a four-factor
model of organizational justice has been proposed by Greenberg (1993) although there has only been one study assessing a four-model of organizational justice (Colquitt, 2001). Findings in this study support a four-factor model of organizational justice, which produced a better fit than a 2 or 3 factor model. Despite these findings most researchers still use only a two-model and to a lesser extent the three-model of organizational justice (Colquitt, 2001) leaving limited application for the four-model of organizational justice.

Within distributive justice, different principles or rules concerned with outcome have been studied. According to Platow, O'Connell, and Shave (1995) these rules and principles have different emphasis or values that are context dependent such as equity rule that stipulates that people should receive outcomes comparable to their personal input, or a rule where people receive outcomes proportional to their needs dependent on their abilities, that is, as long as people contribute within their abilities. Within procedural justice two forms of fairness have been studied: (1) process control, which is concern with the ability of relevant members in the distribution to have input on the distribution process (Thibaut & Walker, 1975); (2) decision control, which is highly
interrelated with the input provided on the distribution of outcomes by all relevant members but differs on the final step of the decision process, that is, who makes the decision (e.g., all party members in joint consensus or a third party). As relevant members have input in the best forms of AAPs on the distribution process (e.g., methods of selection) and who is chosen with legitimacy to make those type of decision may build support for AAPs.

Reactions or attitudes to AAPs have been studied from an organizational justice framework. In this framework, fairness perceptions of AAPs are studied from the different types of organizational justice: (1) procedural justice which is concerned with how the rules and procedures are implemented, that is, how procedures for an AAP are implemented, (2) distributive justice which is concerned with the outcome(s) of a given program such as who gets selected based on the AAP, (3) interactional justice which is concerned with the interaction between individuals, that is, how an applicant perceives to be treated by the organization’s representative, for example, during an interview. For theoretical and parsimonious factors, as interactional justice has been suggested to be a subcomponent of procedural justice (Cropanzano & Greenberg, 1997), thus, only a two-model of organizational
justice would be reviewed as it relates to reactions or attitudes toward affirmative action. Many more issues have been examined for their impact on fairness including Diversity management (Day, Cross, Ringseis, & Williams, 1999), sexual harassment (Adams-Roy & Barling, 1998), and discrimination claims (Goldman, 1999). Building on this line of research, Weiss, Suckow, and Cropanzano (1999) found that anger was increased from the combination of both negative outcomes and procedures that unfavorably treat individuals. Thus, individuals who perceived fairness or justice principles to have been violated report more negative attitudes, some of which are linked to physiological symptoms and behaviors that affect the implementation of AAPs.

In a recent meta-analysis, Harrison et al. (2006) found moderate support for the importance of perceived fairness of procedures on AAPs. Programs that were seen as fair were positively related with supportive reactions to AAPs. In this case African Americans tend to perceive AAPs from a procedural justice framework as more fair compared to Whites. A smaller but similar pattern was seen between females and males where females perceived the procedures of the AAPs as more fair compared to males. This indicates that fairness perceptions are moderated by demographic
variables that tend to be highly related with self-interest such as gender and race/ethnicity. Using predictions drawn from organizational justice, Summers (1995) found that people held different attributions toward different forms of AAPs. That is, low prescriptiveness programs (e.g., training) were seen as more fair compared to high levels of prescriptiveness of programs (e.g. preferential selection treatment), which were seen as less fair.

Parker, Baltes, and Christiansen (1997) found, contrary to what they hypothesized, that White men did not associate AAPs with a loss of career development opportunities, organizational injustice, or negative work attitudes. Although these findings indicate that Whites did not oppose to AAPs, there was no evidence to conclude Whites showed positive support toward AAPs. However, African Americans and Hispanics had more positive reactions to such programs compared to other groups. Nevertheless, some research findings support the idea that some of the reasons why non-beneficiaries oppose or show less support toward AAPs are based on the violation of justice and fairness principles (Bobocel, Son Hing, Davey, Stanley, & Zanna, 1998; Fine, 1992).
Opposition to AAPs may increase as the prescriptiveness increases (Harrison et al., 2006). In a series of four studies conducted by Bobocel, Davey, Son Hing, and Zanna (2001), researchers found support for the idea that prejudiced people opposed AAPs based on their negative attitudes; however, some forms of opposition are also drawn from the violation of fairness or justice principles. More specifically, these recent findings partially support the view that justice can be a source of genuine concern to the opposition of AAPs. Despite the consistent view that prejudiced individuals hide their attitudes behind the rationale that AAP violate justice principles, researchers have also found that prejudiced people can oppose AAPs that are not violating justice principles (Bobocel et al., 2001). These authors also concluded that individuals are more likely to see that as the prescriptiveness in AAPs increases, critical justice principles are violated. These findings support the idea that not all opposition toward AAPs comes from prejudiced attitudes but instead may also come from genuine concerns to violations of justice principles or fairness perceptions.

Reverse discrimination has also received recent public attention such as in the case where the Center for
Individuals’ Rights filed two lawsuits against the University of Michigan on behalf of two White student applicants who were denied admission on the grounds of reverse discrimination or racial preference (Green, 2004). Claims of reverse discrimination (formal and informal), given the current lack of understanding of AA, are not surprising given that application of AAPs often reflect a lack of understanding of AA as a policy, many people have a different ascribed meaning to AA as a policy, and in general believe that is a quota system reflecting the reverse discrimination perceptions (Crosby & Konrad, 2002).

Controversy with AA programs in college admissions has led some schools to shift to less-racially/ethnically-based AA program, to policies based on socioeconomic needs. The premise of this approach is the replacement of ethnic preferential treatment to a more fair and effective college admissions program that mainly considers need-related criteria, which still in many cases more likely benefit minorities. Malos (2000) conducted a study to test participant’s perceptions about fairness and effectiveness of college admission based on socioeconomic needs instead of the typical AA programs. He found that academic admission based on socioeconomic need is
perceived as more fair and effective for trying to achieve diversity on campus and improve situational quality than race-related and gender-based criteria such as a typical AA plan.

In summary, fairness perceptions are affected by the type or prescriptiveness level of AAPs in which different groups have a differential but strong attitudes toward AAPs based on the fairness of the program and the outcome favorability. In this case, some groups have more positive attitudes than others based on final and favorable outcome of an AAP. Consequently, groups that are non-beneficiaries or see in an AAP a non-favorable outcome have less positive attitudes than beneficiaries. Furthermore, fairness perceptions may lead to physiological and affective reactions, whereas individuals who identified within a given social group seem to create fairness boundaries, which are limiting in scope on justice as it protects their ethnic group (Opotow, 1996). Thus, fairness perceptions on AAPs’ procedures, outcomes, and interaction within and between different people are affected by their own sense of ethnic identity.
Social Identity

Individuals belong to social groups with which they share common characteristics, values, and beliefs. In social groups individuals derive a sense of identity. Social identity is defined as "that part of the individuals' self-concept which derives from their knowledge of their membership of a social group (or groups) together with values and emotional significance of that membership" (Tajfel, 1982, p. 24). This implies both positive and negative values and emotional significance to the conception of one's social group. Social groups derive these values and emotional significance through comparison with other groups and also by distinguishing themselves from other social groups using salient characteristics. Social identity theory suggests that individuals tend to classify themselves as members of a social/ethnic groups in terms of salient characteristics; furthermore, some of these characteristics are more salient in some contexts than in others as such classification varies and is dependent on the social context, which makes distinguishing characteristics more salient (Tajfel, 1982).

Members of the same social group tend to engage in ingroup favoritism, which also may create intergroup
discrimination, as people tend to enhance one's social group by defining ingroup characteristics or values that set it apart from other social groups (Turner, 1980). Allen and Wilder (1975) found support for ingroup favoritism using a "minimal categorization procedure, which used initially overlooked and irrelevant characteristics to form groups based on those characteristics. This is an important consideration when studying reactions to AAPs, as one of the assumptions in social identity is that individuals have multiple social identities in different contexts. Thus, in a context of AA, some ethnic/racial groups may engage in ingroup favoritism or intergroup discrimination as these groups engage social/ethnic group definition based on the things that set them apart from other groups.

Social identity saliency has primarily been enhanced or manipulated by the mere presence of another group, but also by manipulating the number of different social groups present. It is also the case that social identity saliency is enhanced by self-identification (Turner, 1981; Turner, 1985). That is, individuals who identify themselves as being members of a social group are guided to direct conditions that highlight social identity saliency. In instances where an individual identifies him/herself as
being a member of an ethnic group or in the case of imposed or forced identification such as perceived discrimination, ethnic saliency emerges to form a different perception of the reality on the context where everything initiated. This is important when members of a social group perceive discrimination. In this case, ethnic saliency is important as it influences the perceptions that individuals have in a given context.

Ethnic/racial identity has been studied as a moderator of perceived discrimination with the assumption that high levels of ethnic identity help individuals to engage in coping strategies in order to buffer discrimination effects. But recently, Yoo, and Lee (2005) found that this was not always the case. In their study, ethnic identity was only partly supported as a moderator when racial discrimination led to different effects on the engagement of coping strategies intended to protect well-being. Thus, the stronger the perceptions of racial discrimination the more likely an individual will engage in coping strategies to protect his/her well-being, and when moderate or low perceptions of racial discriminations exist, individuals will be less likely to engage in well-being coping strategies.
Social context is widely believed to play a central role in ethic/racial identity and according to Verkuyten (2004) the study of ethnic/racial identity development and saliency should be framed in a context with negative social circumstances such as discrimination in order to produce a better understanding in this area of research. AAPs provide a context where majority members may heighten their identity, as they perceive these programs as unfair or discriminatory. Health research on discrimination has been based on biomedical models, which may neglect the context and surrounding factors that affect reactions to discrimination. Thus, social identity theory has been implemented to eliminate this limitation of biomedical models (Carlson & Chamberlain, 2004). Phinney and Rotheram (1987) also suggested that the value given to ethnic/racial identity varies according to specific contexts. One example provided by Verkuyton (2004) is the case where a White child in a classroom with 20 African American students is more likely to be aware of his/her ethnic/racial identity compared to being in a predominantly White classroom. Dumas-Brown (1999) found support for the increase of saliency of a group membership through group composition manipulation. Hence, the context is important to ethnic/racial saliency especially where
the context contains elements that directly or indirectly distinguish between ethnic/racial groups.

It is also true that identity and emotions have been linked to stressors of biological responses (Kubzansky & Kawachi, 2002). Other researchers have also provided some support for the idea that anger and frustration resulting from ethnic/racial discrimination, contribute to the health differences of some groups, especially Blacks (Wilkinson, 2000; Dovidio, Gaertner, Kawakami, & Hodson, 2002). This is not surprising as this type of discrimination has a direct effect on the affective component of African Americans' ethnic identity. Nevertheless, limited research has looked at the possible effects of emotions and perceptions drawn from a social identity framework on discrimination health outcomes. As discrimination heightens individuals' social identity it seems quite relevant to study how individuals react physiologically and psychologically, especially in a context-specific events.

According to Sidanius, Devereux, and Pratto (1992) there is some support for why even diversity programs may threaten group identity for Whites, as Whites' historical position of power is challenged by these programs. Thus, in the several decades, White identity seems to be under
social pressures seriously affecting White’s advantageous status. Therefore, making individuals more consciously aware of their social identity when it is perceived that one’s own group is threatened by the redistribution of power or opportunities have been more noticeable recently. For example, Whites and males believe they have been unfairly treated in the workplace because they are White or male (Gates & Cose, 1993). Consequently, White identity is likely to have a similarly important influence on reactions to AAPs as the one found in minority group members’ responses to discrimination.

Present Study Section

The present study is intended to address physiological and psychological reactions towards affirmative action as a function of the prescriptive nature of AAPs on Whites and their level of social identity. In this study, three forms of AAPs based on prescriptiveness will be presented as: merit based, diversity based, and strong preferential treatment.

Social identity is also predicted to moderate the relationship between AA prescriptiveness and physiological and psychological outcomes (blood pressure, self-esteem, and fairness perceptions). That is, high levels of social
identity among Whites will have higher blood pressure as the prescriptiveness of AAPs increases and the same pattern is predicted for self-esteem. However, a different pattern is predicted for fairness perceptions, where high levels of social identity among Whites will have lower AA fairness perceptions. Hence, social identity is seen as a lens that helps interpret one's surroundings or specific context; where some individuals in one context may have a low social identity or a high social identity, this helps them interpret a given event according to the specific identity and identity level they present in that context. Thus, some identities are heightened in some contexts more than others. Specifically, some contextual characteristics such as perceptions of discrimination, unfair treatment, and/or being a member of a different ethnicity in a group of mostly other ethnic groups make an identity more salient.

In this study blood pressure is an outcome variable, which has been found to be related to stressful situations such as discrimination perceptions and also have been linked to health problems. Thus, blood pressure is predicted to increase as a function of perceived discrimination based on the type of AAP, that is, as the prescriptiveness of AAP increases from merit to strong
preferential treatment so will blood pressure for some social groups. This relationship is predicted to be moderated by social identity. See Figure 1 in Appendix C.

Another outcome variable self-esteem, has also been found to be related to discrimination perceptions. It is predicted to increase as a function of perceived discrimination based on the type of AAP, that is, as the prescriptiveness of AAP increases from merit to strong preferential treatment, self-esteem will increase. This relationship is predicted to be moderated by social identity. See Figure 2 in Appendix C.

A third outcome variable is fairness perceptions, which are predicted to decrease as a function of prescriptiveness of AAP (i.e., increases from merit to strong preferential treatment) fairness perceptions will decrease for some social groups (White). This relationship is predicted to be moderated by social identity. See Figure 3 in Appendix C.

Thus, it is hypothesized that:

H1a: There will be significant mean differences in BP as a function of AA prescriptiveness, specifically as AA prescriptiveness increases blood pressure will increase.
H1b: There will be significant mean differences in fairness perceptions as a function of AA prescriptiveness, specifically as AA prescriptiveness increases fairness perceptions will decrease.

H1c: There will be significant mean differences in self-esteem as a function of AA prescriptiveness, specifically as AA prescriptiveness increases self-esteem increases.

H2a: As social identity increases blood pressure will increase.

H2b: As social identity increases fairness perceptions will decrease.

H2c: As social identity increases self-esteem will increase.

H3a: The relationship between AA prescriptiveness and blood pressure will be moderated by the level of social identity. That is, the impact of AA prescriptiveness on BP will be stronger for individuals who have high levels of social identity and lower for individuals with low levels of social identity.
H3b: The relationship between AA prescriptiveness and fairness perceptions will be moderated by the level of social identity. That is, the impact of AA prescriptiveness on fairness perceptions will be stronger for individuals who have high levels of social identity and lower for individuals with low levels of social identity.

H3c: The relationship between AA prescriptiveness and self-esteem will be moderated by the level of social identity. That is, the impact of AA prescriptiveness on self-esteem will be stronger for individuals with high levels of social identity and lower for individuals with low levels of social identity.
CHAPTER TWO

METHODS

Participants

Data were collected from 109 White/European American students at a Western university with a diversified population. The overall sample consisted of 69 females (63.3 %) and 40 males (36.7 %) and the mean age of the total sample was 26 years old. Most of the participants considered themselves to be of middle class (52.3 %) followed by upper middle class (25.7 %), lower middle class (15.6 %) and working class (6.4 %). Based on a power analysis (Cohen, 1992) using $\alpha = .05$ and power $= .80$ the experiment required a total of 97 participants in order to detect a medium effect size. Participants were recruited from psychology, humanities and sociology classes and a sign-in sheet was posted with stipulated time slots. Participants received extra credit for their participation. A monetary incentive was also offered as an option in the form of ten dollars.

Design and Procedures

There were two independent variables: affirmative action prescriptiveness which ranged from low to high in the form of (merit, diversity, and strong preferential
treatment) respectively and social identity level ranging from low to high. Dependent variables were blood pressure, self-esteem and fairness perceptions. For this study Regression analyses and analyses of variance (ANOVA) were performed. Participants came to the lab (SB 457C) at a designated time. Once arriving at the lab, participants were greeted by the researcher and asked to take a seat, and then were provided with an informed consent to be signed by participants who voluntarily decide to participate. Using an automatic Omron (HEM-780) blood pressure machine, participants’ blood pressure was measured right after they completed reading and volunteering to participate in the study by signing the inform consent. The Social Identity scale (SIP) was completed before the blood pressure was measured for a second time. Blood pressure was taken a second time after participants had reflected and written their thoughts and feelings about the guided imagery scenario they had just read. Blood pressure was taken a third time after participants completed the entire questionnaire with all the scales.

After taking the first blood pressure rating participants were given a packet of questionnaires to complete. The packet included a measure of health
behaviors, demographic items, experiences with discrimination, ethnic identity, AA scenario condition (guided imagery scenario), an attitude scale on affirmative action, a measure of perceived stress, and a self-esteem scale (respectively). The study took approximate 30-40 minutes to be completed.

After being randomly assigned into one of the three AA conditions (merit, diversity, and preferential treatment based selection) participants in each condition read a passage relevant to one of the randomly assigned scenarios in which the participants were asked to imagine that he or she is experiencing that event. For the merit condition, the passage was a guided imagery piece describing the non-acceptance to a law school based on the lack of good qualifications. In this scenario participants were notified that based on rigorous selection criteria they were not accepted to the school, whereas more qualified applicants were accepted. In the diversity condition, the passage describes the non-acceptance based on diversity policies. In this condition, participants were notified that based on the school’s commitment to diversity, other equally qualified applicants were selected instead. And for the strong-preferential condition, the passage described the non-acceptance based
on preferential treatment policies (e.g., quotas). In this scenario participants were notified that based on the school’s affirmative action plan, other minority applicants were selected instead. Then participants in all conditions were asked to reflect and write their thoughts and feelings about the scenario. This guided imagery technique scenario was developed based on the work done by Sexton and Soto (2005). By putting one’s self in the scenario and then instructed to reflect on ones’ thoughts and feelings is intended to enhance the emotional experience and the fidelity of the experience.

Immediately after reading and reflecting by writing about the scenario, blood pressure was taken for the second time by the experimenter. After the blood pressure was taken for the second time participants are further instructed to complete the rest of the questionnaire consisting of a stress scale, self-esteem scale, and fairness perception scale. At the end of the completion of all the scales, blood pressure was taken for the third and last time by the researcher. Participants received a debriefing form after the blood pressure was taken for the third time.
Measures

Demographic items: the survey included demographics items such as income, gender, ethnicity, and educational level.

Behavioral Questionnaire

This questionnaire contained items asking about alcohol consumption, cigarettes, aspirins, non-prescribed drugs, prescribed drugs, cup of coffee participants had consumed in the last week. It also contained items asking "how many days has your activity been restricted due to illness? and "When you get sick, where do you usually go for medical care? In this questionnaire five major conditions (heart disease, high blood pressure/hypertension, asthma, cancer, and diabetes) are asked to see if participants have been medically diagnosed with any of these conditions. This questionnaire is used to exclude participants in the final analysis who have been diagnosed with hypertension and heart problems that may bias the results.

Perceived Personal Discrimination

Two items adapted from Kobrynowicz and Branscombe’s (1997) study on perceptions of discrimination due to gender were used to assess perceived racial discrimination. Each item was rewarded substituting the
word gender with race/ethnicity and assessed the amount of racial discrimination perceived to affect the participant personally. This measure was included as a manipulation check. The two items are: “I feel like I am personally a victim of society because of my race,” and “I consider myself a person who has been deprived of the opportunities that are available to others because of my race/ethnicity.” responses were recorded on a 7-point Likert-type scale (1 = strongly disagree, 7 = strongly agree). Higher scores indicate greater perceptions of personal discrimination. Alpha reliability for the two items in this scale was .86.

**Perceived Group Discrimination**

Two items adapted from the study by Kobrynowicz and Branscombe (1997) assessed the amount of perceived discrimination as it relates to one’s ethnic group in general: “My group has been victimized by society,” and “Members of my group have been systematically prevented from attaining their full potential.” responses were recorded on a 7-point Likert-type scale (1 = strongly disagree, 7 = strongly agree). Higher scores indicate greater perceptions of personal discrimination. The alpha reliability for the two items in this scale is .92.
Affirmative Action Scenarios

Three scenarios were developed based on the work by Harrison et al. (2006) on affirmative action and the different forms of affirmative action and structured according to prior work on guided imagery scenarios of discrimination by Sexton and Soto (2005). (See Appendix A for all the measures).

The Social Identity Profile

The Social Identity Profile (SIP) is a 20-item scale that was developed to measure how socially stigmatized group think and feel about their group membership (Sexton, 2001). Four subcomponents from this scale are:

(1) centrality, (2) Internal regard, (3) External regard, (4) Sense of belonging. Test-retest reliability for the subscales were, centrality, $\alpha = .76$, internal regard, $\alpha = .77$, external regard, $\alpha = .76$, sense of belonging, $\alpha = .76$.

These results show the good psychometric properties of this scale. Some of the items are: “I often think about being____?,” Being ______ is not a significant part of me.” Although this scale was developed specifically for stigmatized groups this scale is also likely to tap into the ethnic identity of other groups that are not highly
stigmatized as it measures self-perceptions of one's own group and self-perceptions of who others perceived one's own group.

**Attitude Scale**

*Attributions Toward the Policy of Affirmative Action in Education (AS)*. This scale was developed by Swim and Stangor (1998). This is a 7-item scale that assesses the endorsement of AAP in education based on fairness perceptions. The responses range from 7-point Likert scale with (1 = strongly disagree, 7 = strongly agree). All 7 items were modified by substituting “As policy” and adding instead “In this scenario”. Some of the items are: “In this scenario, affirmative action is a form of reverse discrimination in education,” and “As a policy, affirmative action continues to be needed to help women and minorities overcome discrimination in education. In the current study AS has an alpha reliability of .81.

**Perceived Stress Scale**

Although there are not specific hypotheses based about perceived stress this scale is included as perceptions of unfair or discrimination are very likely to be considered a stressful situation. Thus, it is included in this study to serve as a manipulation check. This scale is a 10-item global measure of perceived stress designed
to measure the degree to which situations in one’s life are appraised as stressful (Cohen, Kamarck, & Mermelstein, 1983). These authors reported an alpha reliability of .85 and test-retest reliability of \((r = .85)\). In the current study Perceived Stress Scale (PSS) has an alpha reliability of .82. The responses range from 0 to 4 (0 = never, 4 = very often). Sample items include: In the last month, how often have you felt nervous and “stressed”? and “In the last month, how often have you felt that you were on top of things”?

**The Self-Esteem Scale**

The Self-Esteem Scale (SES) (Rosenberg, 1965) is a 10-item scale that measures global trait self-esteem. The responses range from a 7-point Likert-type scale (1 = Strong disagree, 7 = Strongly agree). The SES is the most popular measure of global self-esteem and has demonstrated a high degree of utility. Blascovich and Tomaka (1991) reported that it has high internal consistency and good test-retest reliability \((r = .85)\) over a 2-week period. Sullivan (1979) also reported good psychometric properties and provided evidence for construct validity. In the current study SES has an alpha reliability of .84. Some of the items are: “I feel I am a
person of worth, at least on an equal plane with others,"
and "At times I think I am no good at all."
CHAPTER THREE

RESULTS

In order to test study hypothesis, a series of hierarchical multiple regression analyses were performed with blood pressure, self-esteem, and fairness perceptions as the dependent variables and social identity and AA prescriptiveness as independent variables. ANOVA analyses were also performed in this study comparing AA prescriptiveness group differences on the dependent variables. Analyses were performed using SPSS REGRESSION, SPSS ANOVA and SPSS FREQUENCIES for evaluation of assumptions.

Prior to conducting the primary analyses, study variables were examined for outliers, missing values, out-of-range values, and violations of univariate and multivariate normality, using criteria identified by Tabachnick and Fidell (2001). Variables included social identity, AA prescriptiveness, blood pressure, self-esteem, and fairness perceptions. There were no missing values. Using a critical z score of 3.3 to test for outliers, one univariate outlier on the self-esteem variable was detected. This outlier was a 21-year-old female in the diversity condition with a very low
self-esteem score. After deleting this outlier there were no multivariate outliers and data transformation for self-esteem was not required after deleting this outlier. Thus after deleting this univariate outlier data was normality distributed.

Multicollinearity and singularity were tested for all predictors and none of the variables were found to be correlated greater than $r = .9$. Each variable had satisfactory tolerance scores, thus multicollinearity was not present. Normality, linearity and homoscedasticity of residuals were examined using the residual scatter plots and no concern was indicated by the residual scatterplots. The linearity assumption was tested among all the continuous variables (social identity and AA prescriptiveness) by looking at the bivariate scatter plots. All the bivariate scatter plots seem to represent a linear relationship. The final sample for the primary analyses consisted of $(N = 109)$.

See Table 1 for demographic information (See Appendix B for all the tables). ANOVA was conducted to answer hypotheses H1a, H1b, H1c. For the first hypothesis: there will be significant mean differences in BP as a function of AA prescriptiveness, specifically as AA prescriptiveness increases blood pressure will increase.
As hypothesized there were significant mean differences in diastolic BP as a function of AA prescriptiveness, \( F(2, 106) = 4.55, p < .05 \), (merit mean = -2.71 mmHg, diversity mean = .71 mmHg, and preferential treatment mean = -.05 mmHg). Post hoc analysis showed that there were significant mean differences in diastolic BP between the merit condition and the diversity condition \( F(1, 106) = 7.95, p < .05 \). Thus, people in the diversity condition (mean = .71 mmHg) had higher diastolic BP than people in the merit condition (mean = -2.71 mmHg).

However, people in the strong preferential treatment condition did not have significantly higher diastolic BP than people in the diversity condition. (See Table 2 for effect of conditions on both diastolic and systolic BP, AA fairness perceptions, and self-esteem). Furthermore, there were no significant mean differences in systolic BP as a function of AA prescriptiveness, \( F(2, 106) = 1.88, p > .05 \). See Table 3 for difference scores on both diastolic and systolic BP and measures of both types of BP at different times. Hypothesis 1a was only partly supported. That is, participants in the diversity condition had significantly higher levels of diastolic BP, whereas participants in the strong preferential treatment condition had almost no change on their diastolic BP.
level. Contrary to expectations, there was no significant relationship between systolic BP and AA prescriptiveness.

For the second hypothesis H1b: there will be significant mean differences in fairness perceptions as a function of AA prescriptiveness, specifically as AA prescriptiveness increases fairness perceptions will decrease. There were significant mean differences in fairness perceptions as a function of AA prescriptiveness, $F(2, 106) = 23.75, p < .05$, (mean merit = 3.67, mean diversity = 3.49, and mean strong preferential treatment = 2.23). Post hoc comparisons showed that people in the strong preferential treatment had significantly lower levels of AA fairness perceptions than people in the merit condition, $F(1, 106) = 39.20, p < .05$. Also people in the strong preferential treatment condition had significantly lower levels of AA fairness perceptions than people in the diversity condition, $F(1, 106) = 30.16, p < .05$. However, people in the diversity and merit condition were not significantly different on their AA fairness perceptions. Thus, Hypothesis H1b was also partially supported.

For the third hypothesis H1c: there will be significant mean differences in self-esteem as a function of AA prescriptiveness, specifically as AA
prescriptiveness increases self-esteem increases. There were not significant mean differences on self-esteem as a function of AA prescriptiveness, \( F (2, 106) = .19, p > .05 \). Thus, contrary to expectations research question H1c was not supported. That is, AA prescriptiveness was not related to self-esteem. (See Table 4 for means and SDs for IVs and DVs).

Regression analyses were conducted to answer hypotheses H2a, H2b, and H2c. Contrary to expectations hypothesis H2a: as social identity increases blood pressure will increase, this relationship was found to be nonsignificant for both diastolic BP \( \beta = -.10, p > .05 \) and systolic BP \( \beta = .14, p > .05 \). That is, as social identity increased BP did not increase. A similar result was found for hypothesis H2b: as social identity increases fairness perceptions will decrease. Where, contrary to expectations, social identity was not related to AA fairness perceptions \( \beta = -.04, p > .05 \). However research question H2c: as social identity increases self-esteem will increase, as expected, was supported by the data. That is, as social identity increased self-esteem also increased \( \beta = .21, p < .05 \).

In order to test hypothesis H3a (systolic): The relationship between AA prescriptiveness and blood
pressure will be moderated by the level of social identity, that is, the impact of AA prescriptiveness on BP will be stronger for individuals who have high levels of social identity and lower for individuals with low levels of social identity, a regression analysis was conducted. Table 5 displays the unstandardized regression coefficient (β), F change (ΔF), the standardized regression coefficient (β), and R², and adjusted R² for systolic BP. After step 3, with all the IVs in the equation, R² = .22, F (3, 105) = 1.86, p > .05.

After step 1, with AA prescriptiveness in the equation, R² = .02, F inc. (1, 105) = 2.99, p > .05. After step 2, with social identity in the equation, R² = .04, F inc. (1, 105) = 2.14, p > .05. After step 3, with the interaction between AA prescriptiveness and social identity in the equation, R² = .05, F inc. (1, 105) = .45, p > .05.

In order to test H3a (diastolic): the relationship between AA prescriptiveness and blood pressure will be moderated by the level of social identity, that is, the impact of AA prescriptiveness on BP will be stronger for individuals who have high levels of social identity and lower for individuals with low levels of social identity,
a regression analysis was conducted. Table 6 displays the unstandardized regression coefficient (B), F change (ΔF), the standardized regression coefficient (β), and R², and adjusted R² for diastolic BP. After step 3, with all the IVs in the equation, R = .24, F (3, 105) = 2.15, p > .05.

After step 1, with AA prescriptiveness in the equation model 1 was significant, R² = .04, F inc. (1, 105) = 5.16, p < .05. After step 2, with social identity in the equation model 2 was no longer significant, R² = .05, F inc. (1, 105) = 1.11, p > .05. After step 3, with the interaction between AA prescriptiveness and social identity in the equation model 3 was also no longer significant, R² = .05, F inc. (1, 105) = .24, p > .05. Thus, hypothesis H3a is not supported by the data for either systolic or diastolic BP.

In order to test hypothesis H3b: the relationship between AA prescriptiveness and fairness perceptions will be moderated by the level of social identity, that is, the impact of AA prescriptiveness on fairness perceptions will be stronger for individuals who have high levels of social identity and lower for individuals with low levels of social identity, a regression analysis was conducted.
Table 7 displays the unstandardized regression coefficient (B), F change (ΔF), the standardized regression coefficient (β), and R², and adjusted R² for AA fairness perceptions. After step 3, with all the IVs in the equation, \( R = .51, F(3, 105) = 12.72, p < .05 \).

After step 1, with AA prescriptiveness in the equation model 1 was significantly, \( R^2 = .26 \), \( F \text{ inc.}(1, 105) = 38.23, p < .05 \). After step 2, with social identity in the equation model 2 was no longer significant, \( R^2 = .00, F \text{ inc.}(1, 105) = .29, p > .05 \). After step 3, with the interaction between AA prescriptiveness and social identity in the equation model 3 was also no longer significant, \( R^2 = .00, F \text{ inc.}(1, 105) = .19, p > .05 \). Hypothesis H3b is not supported by the data.

In order to test hypothesis H3c: the relationship between AA prescriptiveness and self-esteem will be moderated by the level of social identity, that is, the impact of AA prescriptiveness on self-esteem will be stronger for individuals with high levels of social identity and lower for individuals with low levels of social identity, a regression analysis was conducted. Table 8 displays the unstandardized regression coefficient
(B), F change (ΔF), the standardized regression coefficient (β), and R², and adjusted R² for self-esteem. After step 3, with all the IVs in the equation, \( R = .24, F (3, 105) = 2.26, p > .05. \)

After step 1, with AA prescriptiveness in the equation model 1 was not significant, \( R^2 = .00, F \text{ inc.} (1, 105) = .35, p > .05. \) After step 2, with social identity in the equation model 2 was significant, \( R^2 = .04, F \text{ inc.} (1, 105) = 4.81, p < .05. \) After step 3, with the interaction between AA prescriptiveness and social identity in the equation model 3 was no longer significant, \( R^2 = .06, F \text{ inc.} (1, 105) = 1.57, p > .05. \) Thus, hypothesis H3c is not supported by the data.
CHAPTER FOUR

DISCUSSION

Overall, this study provides empirical support for physiological reactivity to perceived unfair treatment in an Affirmative Action (AA) context-related event with a sample of majority member (i.e., Whites) participants. This study’s findings also contribute to existing research indicating that Whites show less support toward AAPs as these programs increase their prescriptiveness (Harrison et al., 2006). It was also found that Whites’ social identity did not moderate the relationship between AA prescriptiveness and blood pressure. This finding is contrary to other studies where minority groups’ ethnic identity has been identified as a moderator between perceived discrimination and blood pressure (BP) (Sexton & Soto, 2005). Nevertheless, these study’s findings support the idea that perceived discrimination by itself is a major factor affecting Whites’ physiologically and psychological reactions.

The majority of research on BP and other physiological and psychological outcomes related to unfair treatment or discrimination had been conducted in contexts that are typically unfair to minority ethnic groups.
(Krieger & Sidney, 1996; Krieger, Sidney, & Coakley, 1998; Williams & Williams-Morris, 2000; Mustillo et al., 2004). In addition, Whites are less likely report instances of unfair treatment, as they are also less likely to perceive a given event to be unfair compared to minority groups (Pettigrew & Meertens, 1995). Thus, this line of research lacks a basic consideration of context related factors (as discussed) affecting fairness perceptions on a majority group population. Specifically, there has been no consideration or studies of Whites’ reactions to unfair treatment in a framework where minorities are the primary targets of discrimination or unfair treatment. Few studies, if any, have directly studied the physiological reactivity, more specifically BP, on perceived discrimination in a typically majority ethnic/racial group using context-specific events based on AA.

The intent of this study was to provide a more holistic and objective analysis of the factors related to ethnic groups’ perceptions (e.g., fairness) and physiological and psychological outcomes. In the current study, diastolic blood pressure was positively related with AA prescriptiveness. This finding emphasizes the physiological reactivity of individuals who perceive themselves to be unfairly treated or even discriminated
against. Specifically, White/European Americans who were exposed to higher levels of AA prescriptiveness had higher diastolic BP.

There were significant mean differences in diastolic BP as a function of AA prescriptiveness. However, people in the diversity condition produced higher levels of diastolic BP than the preferential treatment. This seems to indicate that the diversity may in part be construed as a stronger stressor than preferential treatment. This may be the case because people have more difficulty assimilating an unfavorable decision on diversity grounds based on the perceived nature of diversity in the present time, which may be seen as more inclusive. Diversity programs are ambiguous in nature because they are inclusive. As indicated by Thomas, Nelesen, Malcarne, Ziegier, and Dimsdale (2006), subtle forms of discrimination may be more stressful because of their ambiguous nature. Thus, diversity may be more difficult to challenge legally and socially than strong preferential treatment. Consequently, diversity programs may provide a less effective buffering mechanism to cope with the psychological and physiological stress associated with unfair treatment/discrimination, simply because subtle forms of discrimination provide few clear parts for
challenging unfair treatment/discrimination. As a consequence, the psychological and physiological effects of the perceived unfair treatment/discrimination are more likely to have a negative impact. In support of this concern, Krieger (1990) found that African Americans who accepted and did not take action about the unfair treatment were 4.4 times more likely to report hypertension compared to those African American who took action. Finally, Krieger and Sidney (1996) found that working-class African Americans who experienced racist events but did not challenge the unfair treatment showed higher systolic blood pressure than other working-class African Americans that challenged the unfair treatment.

It is important to note that in the present study BP remained relatively stable for participants in preferential treatment, but individuals in the diversity condition reported higher diastolic BP. On the other hand, people in the merit condition had lower BP. These findings indicate a difference in the way people viewed and reacted to different levels of AA prescriptiveness, especially between diversity based programs and perceived strong preferential treatment programs.

Conceptualizing these patterns of results using models of stress and coping (Lazarus & Folkman, 1984;
Leventhal, Diefenbach, & Leventhal, 1992) indicates that the creation of a clear mental representation of a stressor allows the activation of coping mechanisms and consequentially facilitates stress reduction. In the case of subtle forms of unfair treatment/discrimination individuals may be hard pressed to clearly identify the source and basis of their distress even though they may be confident that they are the subjects of unfair treatment/discrimination. In the current study, diversity may have been perceived as more ambiguous in nature than strong preferential treatment. Thus, the coping process in a diversity context-related event by itself may be more stressful than a strong preferential treatment context-related event. For example, an active response to a diversity program may produce feelings of victimization and anger. Conversely, an assertive response may produce interpersonal difficulties with other individuals who believe diversity is inclusive by nature and has little or no grounds to be challenged as a form of unfair treatment. Also suggested by Thomas et al. (2006), strong preferential treatment would not be perceived as an unambiguous stressor and is, therefore, more likely to facilitate a coping mechanism. Individuals who perceive themselves to be unfairly treated or discriminated against
on grounds of strong preferential treatment would be more likely to find a stronger social support and would not be faulted by others for acting in an assertive manner. It is possible that the above mentioned pattern of results could be explained by the perception that diversity based programs are simply subtle forms of unfair treatment/discrimination and as a consequence this sense of ambiguity limits the facilitation or activation of stress coping mechanisms, resulting in higher levels of BP.

With respect to AA fairness perceptions, the present study’s findings are consistent with others that have found that participants’ fairness perceptions decline as a function of the AAP prescriptiveness (Harrison et al., 2006). In this study, participants in the preferential treatment condition had significantly lower fairness perceptions than people in the diversity and merit conditions. These findings diverged somewhat from findings on diastolic BP mentioned above based on the highest levels of prescriptiveness (strong preferential treatment and diversity), which lends support to differential reaction in physiological and psychological outcomes at the highest levels of AA prescriptiveness. Recent findings have noted that the relationship between psychological and
physiological is not as strong as once thought; especially in the area of racism and physiological and psychological outcomes (e.g., Krieger, 1990; Krieger & Sidney, 1996; Peters, 2004) which may explain why individuals reacted differently physiologically and psychologically at the highest levels of AA prescriptiveness. Nevertheless, both patterns of results (psychological and physiological) are in line with the stated hypothesis.

With respect to self-esteem, contrary to what was hypothesized, self-esteem was not related to AA prescriptiveness. This finding differs from other studies that have found that minorities, especially African Americans (with high levels of social identity), when faced with unfair treatment situations or racism report higher levels of self-esteem (Crocker, Major, & Steele, 1998; Harps, 2005). Romero and Roberts (2003) found similar results on Mexican Americans that had high levels of social identity were also likely to have higher levels of self-esteem. This study’s findings suggest the lack of relevance of social identity for Whites as it relates to self-esteem.

In the current study, social identity did not moderate the relationship between AA prescriptiveness and self-esteem. Thus, this finding provides preliminary
support for the lack of relevance social identity has on Whites when faced with unfair treatment. Also in this study, social identity did not moderate the relationship between AAPs prescriptiveness and BP; other studies have found that social identity plays a significant role on minorities that perceived to be unfairly treated (Sexton & Soto, 2005; Yoo & Lee, 2005) and on the support of AAPs (Kravitz et al., 2001). Obviously, social identity may simply be less important among the majority population. These patterns of results may be partially explained by the “White privilege” that has been historically being the norm in the United States. That is, the lack of relevance of social identity in the White participants may be, in part, the result all the privileges Whites have experienced in the United States. “White privilege” has reduced the frequent experimentation of discriminatory events (that added together through out time) influences the creation of a sense ethnic/social identity in the individuals being discriminated against.

Another major finding in this study was that social identity did not moderate any of the relationships between AA prescriptiveness and our three outcome variables (BP, fairness perceptions, and self-esteem). It is important to note that although self-esteem was related to social
identity, the relationship between AA prescriptiveness and self-esteem was not moderated by social identity. In addition, neither diastolic, nor systolic BP, nor AA fairness perceptions were related to social identity. Finally, the relationship between AA prescriptiveness and BP and fairness perceptions were not moderated by social identity. Clearly the impact of social identity is not important in Whites as they are faced with unfair treatment/discrimination.

With respect to self-esteem, in the current study, the relationship between social identity and self-esteem was similar to other studies that have reported a positive relationship between social identity and self-esteem (Romero & Roberts, 2003). However, Whites’ social identity seem to differ from minorities’ social identity, as social identity has been found to be a moderator between perceived discrimination and social self-esteem among stigmatized or minority groups (Kim-Bae, 2000), but in the present study these type of findings were not found. This type of contrast suggests that even though social identity is positively related with self-esteem, this relationship is not moderated among Whites.

In the present study, social identity, contrary to expectations, did not moderate the relationship between
perceived discrimination and blood pressure (either diastolic or systolic). That is, Whites' social identity does not moderate the relationship between AA prescriptiveness and blood pressure. For Whites, AA prescriptiveness by itself was sufficient enough to increase diastolic blood pressure. In other words, a context that is perceived as unfair or discriminatory, regardless of the level social identity, is a risk factor that triggers a physiological reaction increasing diastolic blood pressure. This provides support to the idea that Whites as being part of the majority group limit the internalization of their ethnic or sense of social identity. Adding to this idea is the lack of positive results on the moderating role of social identity on AA fairness perceptions. Furthermore, even when social identity was significantly related to self-esteem, there was no evidence for the role of social identity as a moderator. Consequentially, these findings suggest that among Whites, social identity is unrelated to perceived unfair treatment/discrimination and health factors such as BP and self-esteem.

Overall, Whites react physiologically and psychologically when faced with context-specific events that trigger perceptions of unfair
treatment/discrimination such as AAPs. This supports the idea that Whites genuinely react to perceived unfair treatment similarly to any other minority groups. Although contrary to minorities, Whites’ social identity may be much less important.

Implications

According to Williams and Williams-Morries (2000) our current understanding of unfair treatment and/or racism’s outcomes is very limited. Expanding our knowledge on these social issues may provide tools or resources needed to reduce or prevent the negative outcomes associated with unfair treatment of all ethnic groups. Also, by studying how ethnic majority groups react to special contexts such as AA programs, we may provide a more holistic understanding for this area of research, which has the potential to be an additional resource to be used in the minimization of negative outcomes related to discrimination.

This study’s findings may also have implications for the development and application of AAPs and for diversity implications in general. The current study’s findings suggest that the current selection criteria in AAPs are perceived as unfair and opposition toward these types of
programs increases as the prescriptiveness of these programs increases. The development and implementation of AAPs based on socioeconomic-need instead of other controversial or perceived unfair criteria may produce less aversive reactions both physiologically and psychologically. Specially, these types of programs may have less opposition and consequently will draw more support, as they are perceived as more fair (Malos, 2000). As academic admission programs or initiatives are designed to help minority members gain greater access to schools in order to remedy their significant underrepresentation at higher level educational institutions, some of these programs or initiatives may generate resentment and perceptions of unfair treatment on the part of those that believe they have been excluded based on criteria that is divisive. Consequently by using a more inclusive and less divisive selection criteria such as socioeconomic-need instead of race/ethnicity or gender may be better perceived and embraced by individuals who do not fit in within this criteria and also by those the currently fit this criteria as they are also similarly likely to fall with in this new economic need criteria. By using this form of selection criteria, diversity principles may still be addressed, as a great number of minorities members will
still qualify, and majority members that may be
disadvantaged on socioeconomic grounds would also be
included (Malos, 2000). Thus, negative perceptions toward
AAPs may become more supportive.

Another implication of the current findings is in the
field of health and research on health disparities. This
study’s findings add to the current research on health
outcomes related to perceived unfair
treatment/discrimination by indicating that perceived
unfair treatment/discrimination may differ as a factor of
the prescriptiveness of AA. Also that factors related to
perceived unfair treatment/discrimination and health
outcomes in minorities, especially social identity, does
not have the same relation among majority members. This
suggests that when considering or implementing AAPs, the
context should be carefully considered for both the
minority and majority members. However, those responsible
for the implementation of AAPs should be aware of the
importance of social identity among minority members.
Nevertheless, consideration for the context in which the
implementation of AAPs is taking place is important in
order to minimize physiological reactions that may affect
health overtime (e.g., Consedine et al., 2006; Guthrie et
al., 2002).
As it relates to the health disparities between minorities and majority members, it is important to consider that although minorities are more likely to perceive unfair treatment/discrimination, there are some instances or events that may trigger Whites’ physiological and psychological reactions. These reactions may also be detrimental to Whites’ well-being just as minority members’ reactions to perceived unfair treatment/discrimination are detrimental. By considering all groups, the development and creation of less aversive selection criteria could be explored and implemented such as the socioeconomic need criteria.

Limitations and Recommendations

Although there were many methodological advantages to measuring BP multiple times and comparing a composite with a baseline, there is also a disadvantage to taking the base-rate at the beginning of the study, when it is possible that participants BP rate is not completely stable. Although participants had several minutes to read the informed consent before their base-rate was taken, this may have not been enough time. Future studies should address these concerns by: (a) taking the base-rate after some normally lengthy and irrelevant questionnaires are
completed which may allow a more stable based rate, and/or
(b) creating a composite base-rate by measuring BP an
additional time after the first BP base-rating is taking
at the beginning but before the perceive
discrimination/unfair treatment condition. By addressing
these concerns in future research studies a more stable BP
base rate may be taken. In this current study this
limitation may have reduced the actual effect of the
physiological reactivity.

In addition, although based on a power analysis the
sample size was met, it is tempting to infer that the
effect size is smaller than initially thought based on the
small effect size that was seen in the data. A smaller
effect size than the originally predicted would have
required a bigger sample size in order to detect an
effect, if the effect really existed. Thus, future studies
should consider having a bigger sample size.

Furthermore, future research studies should be
designed to compare majority vs. minority in an AA
context-related event or condition in order to see how
these two groups react physiologically and psychologically
on this type of context. This comparison between the
majority vs. minority members in a context-related event
that is more likely to be perceived as unfair or
Discriminatory toward majority members may provide additional information on Whites' physiological reactions. This type of research design is similar to other studies that have looked at differences between the majority group compared to minority groups except that the context-related event would be perceived as unfair or discriminatory toward Whites (e.g. Sexton & Soto, 2005). Another recommendation is to use a collective measure of self-esteem related to social/ethnic identity such as the Collective Self-esteem scale (CSE) by Luhtanen and Crocker (1992) instead of a more individually based measure of self-esteem such as the global measure of self-esteem by Rosenberg (1965).

Conclusion

Discrimination has many effects on the individual/group being discriminated against regardless of the reasons for the discrimination. Thus, the need for further exploration on discrimination processes and their relationships to physiological and psychological outcomes (e.g., blood pressure, fairness perceptions, and self-esteem), both of which, over time, may become problematic and affect the health and well-being of individuals (e.g., Williams & Williams-Morris, 2000).
Findings in this current study provide preliminary support for Whites' physiological reactivity when faced with context-specific events that are perceived to be unfair or discriminatory such as affirmative action programs. Thus, these findings provide additional information in the area of discrimination by examining both physiological and psychological discrimination outcomes on a majority ethnic group.

Overall Whites react physiologically and psychologically when faced with context-specific events that trigger perceptions of unfair treatment/discrimination such as AAPs. This supports the idea that Whites genuinely react to perceived unfair treatment similarly as in any other minority groups. One major difference between the majority group and minority groups, however, it is the role played by social identity. Contrary to minorities, Whites' social identity has no effect on their BP and Fairness perceptions. These findings contribute to the growing body of research on health and discrimination. Furthermore, our study's findings may have important implications in the reduction of negative health outcomes associated with discrimination by developing and implementing new selection criteria such as AAPS based on socioeconomic-need criteria.
APPENDIX A

INSTRUMENTS
Informed Consent

Purpose and Duration
You are invited to participate in this experiment that is being conducted by Victor Soto-Marquez, a psychology graduate student at CSUSB. This study is an investigation of the relationship among several personality variables as well as some health indices. You will be asked to answer some questions about yourself, and your blood pressure will also be measured. Completion of this study should take about 40 minutes.

Confidentiality/Anonymity
You will remain anonymous. At no time will you be asked for identifying information as part of the data collection for this project. Please do not put your name on the questionnaire packet. Furthermore, all completed packets will be stored in a secure location.

Participants’ Right to Withdraw
Participation in this study is completely voluntary, and you have the right to withdraw at any time without penalty. You may also remove your data from the study at any time without penalty, or omit any items you prefer not to answer.

Risks and Benefits
The risks associated with participation are that some questions are of a personal nature, and may make you feel uncomfortable. Please remember that you are free to not answer any question you wish. Benefits include a contribution to the scientific literature on identity, attitudes, and health.

Contact Information
If you have any questions or comments about this study, or if you would like to get results of this study (available after April, 2007), please contact Victor Soto-Marquez at vsoto@csusb.edu or Dr. Agars at magars@csusb.edu.

Approval
This research has been reviewed and approved by the Institutional Review Board through the Department of Psychology Human Subjects Review Board. A stamp indicating the approval should be present somewhere on this form.

I agree to participate, and certify that I am at least 18 years of age.

Date: ______________

Place an X here

Anonymous ID Code (So we can link your survey data to your other responses): Please make up a five digit an write it below:

Code:_________      BP:_____________

76
Behavior Questionnaire

Please answer the following questions with actual numbers.

Within the last week, how many times have done each of the following?

1. _____ alcohol beverages.
2. _____ cigarettes.
3. _____ aspirin or other pain reliever.
4. _____ doses of non-prescribed drugs (including pain relievers).
5. _____ doses of prescribed drugs.
6. _____ cups of coffee

In the last month
7. _____ how many days has your activity been restricted due to illness?
8. When you get sick, where do you usually go for medical care (please check one)?
    _____ Student Health Center on campus.
    _____ Private Physician/Private Clinic.
    _____ Community Clinic (which one? ___________________).
    _____ Other (Please specify: _____________________).

9. Since the quarter began, how many times have you visited a doctor’s office due to illness?

Please indicate with a check mark whether you have been diagnosed with any of the following conditions:

10. _____ heart disease
11. _____ high blood pressure.
12. _____ asthma.
13. _____ cancer.
14. _____ diabetes.
Demographics

How old are you?_____

Please circle one: Male Female

What is your predominant ethnic background? (You can check more than one):
____ African American/Black
____ Asian American/Pacific Islander/Indian
____ Latino/Hispanic
____ White/European American
____ Native American
____ Middle Eastern
____ Multiracial/Other please specify: ______________________

What do you consider your social class to be?
____ poor/working class
____ lower middle class
____ middle class
____ upper middle class
____ upper class
Perceived Personal Discrimination

**Instructions:** respond to these questions as they relate to your own ethnic/racial group.

1. I feel like I am personally a victim of society because of my race.

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<tr>
<td></td>
<td>Strongly disagree</td>
<td>Disagree</td>
<td>Disagree somewhat</td>
<td>Neither agree nor disagree</td>
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2. I consider myself a person who has been deprived of the opportunities that are available to others because of my race/ethnic.

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Perceived Group Discrimination

1. My group has been victimized by society.

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2. Members of my group have been systematically prevented from attaining their full potential.

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<td>Agree</td>
<td>Strongly agree</td>
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</table>
Identity Questionnaire

PLEASE READ THIS INSTRUCTIONS CAREFULLY. This questionnaire begins by asking whether you are a member of one of the several groups. Please indicate below whether any of the group memberships applied to you. If more than one group applies, check all that apply to you, but then CHOOSE ONE for use in the remainder of the survey. Write this target identity below. Then complete the rest of questions with this identity/group membership in mind for each item.

African American/Black
White/European American
Native American
Multiracial/Other ethnic background (Please indicate: __________________________)

If you checked more than one box above, please choose one identity and write it below:

Target Identity from above: ___________________________________________

Remember: complete each item with the target identity in mind.

1. _____ I often think being _____.
2. _____ I am glad to be _____.
3. _____ I don’t have much to contribute to the _____ community.
4. _____ Being _____ has little to do with how I feel about myself.
5. _____ I am proud that I am _____.
6. _____ I don’t fit well with other _____.
7. _____ Being _____ is central to my sense of who I am.
8. _____ I feel bad about being _____.

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80
9. ____ Other ____ usually accept me.

10. ____ My ____ identity is tied to nearly every aspect of myself.

11. ____ Being ____ makes me feel positively about myself.

12. ____ I am a valuable member of the ____ community.

13. ____ Being ____ is not a significant part of me.

14. ____ I wish I were not ____.

15. ____ I usually feel good when I’m around other ____.

16. ____ Others tend to feel positive about _____.

17. ____ There is very little discrimination against _____.

18. ____ I frequently notice instances of discrimination against _____.

19. ____ In general, people have poor regard for _____.

20. ____ Others tend to treat ____ fairly.

21. Last semester (whether you were in college or high school), approximately what percentage of your time was spent with people who were also members of this group? ____.

22. How long have you been a member of this group? (Entire life, or number of years) ____

23. How visible is your membership in this group to others?

  1  2  3  4  5  6  7
not at all visible extremely visible
AA Scenarios

Please read the following scenario, and put yourself in the situation as much as possible. Do your best to imagine how you would think and feel as you are reading the passage.

Non-acceptance (merit)
A1) You have applied to a well-known law school and have submitted all the required paper work. Based on your school records (e.g., GPA) and personal profile you believe you are a good and qualified candidate. After two months of submitting all your forms you received a letter from the Law School that states, 
(After a careful review of your application, we regret to inform you that we cannot offer you admission to our program. Although you were a strong candidate, there were a number of more qualified candidates, and all the vacancies for the current year have been filled.”

Non-acceptance (diversity)
A2) You have applied to a well-known law school that is also known for its diversity. You have submitted all the required paper work. Based on your school records (e.g., GPA) and personal profile you believe you are a good and qualified candidate. After two months of submitting all your forms you received a letter from the Law School that states, “After a careful review of your application, we regret to inform you that we cannot offer you admission to our program. Although you were a strong candidate, there were a number of equally qualified candidates, who also contribute to the University’s goal of increasing diversity. All vacancies for the current year have been filled.”

Non-acceptance (AA Strong preferential treatment)
A3) You have applied to a well-known law school that is also known for its commitment to its affirmative action program developed to help minorities. You have submitted all the required paper work. Based on your school records (e.g., GPA) and personal profile you believe you are a good and qualified candidate. After two months of submitting all your forms you received a letter from the School that states, “After a careful review of your application, we regret to inform you that we cannot offer you admission to our program. Although you were a strong candidate, there were a number who, although they did not have as strong an academic record as yourself, were members of a demographic group that enables us to increase campus diversity. All vacancies for the current year have been filled.”

Pause for a moment (1-2 minutes) and reflect on it as if it had just happened to you. How do you feel? What would you do?

Now please take a moment to write down your thoughts and feelings about this scenario. Please go into as much detail as possible. 

BP: ___
FP Scale

Use this scale in answering the questions below as they relate to the scenario you just read:

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<td>Agree</td>
<td>Strongly agree</td>
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</table>

1. ____ In this scenario, affirmative action is a form of reverse discrimination in education.

2. ____ In this scenario, affirmative action unfairly stigmatized minorities in education.

3. ____ In this scenario, affirmative action enhances the opportunity for people to succeed based on their own merits in education.

4. ____ In this scenario, affirmative action eliminates preferential treatment and unfair advantages in education.

5. ____ In this scenario, affirmative action does not give opportunities to less qualified rather than more qualified people in education.

6. ____ In this scenario, affirmative action overemphasizes membership in a group rather than individual merit in education.

7. ____ In this scenario, affirmative action continues to be needed to help women and minorities overcome discrimination in education.
PSS

**Directions:** The questions in this scale task ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate **how often** you felt or thought a certain way.

1. In the last month, how often have you been upset because of something that happened unexpectedly?
   
   ____ 0=never   ____ 1=almost never   ____ 2=sometimes   ____ 3=fairly often   ____ 4=very often

2. In the last month, how often have you felt that you were unable to control the important things in your life.
   
   ____ 0=never   ____ 1=almost never   ____ 2=sometimes   ____ 3=fairly often   ____ 4=very often

3. In the last month, how often have you felt nervous and “stressed”?
   
   ____ 0=never   ____ 1=almost never   ____ 2=sometimes   ____ 3=fairly often   ____ 4=very often

4. In the last month, how often have you felt confident in your ability to handle your personal problems?
   
   ____ 0=never   ____ 1=almost never   ____ 2=sometimes   ____ 3=fairly often   ____ 4=very often

5. In the last month, how often have you felt that things were going your way?
   
   ____ 0=never   ____ 1=almost never   ____ 2=sometimes   ____ 3=fairly often   ____ 4=very often

6. In the last month, how often have you found that you could not cope with things you had to do?
   
   ____ 0=never   ____ 1=almost never   ____ 2=sometimes   ____ 3=fairly often   ____ 4=very often

7. In the last month, how often have you been able to control irritations in your life?
   
   ____ 0=never   ____ 1=almost never   ____ 2=sometimes   ____ 3=fairly often   ____ 4=very often

8. In the last month, how often have you been angered because of things that were outside of your control?
   
   ____ 0=never   ____ 1=almost never   ____ 2=sometimes   ____ 3=fairly often   ____ 4=very often

9. In the last month, how often have you been angered because of things that were outside of your control?
   
   ____ 0=never   ____ 1=almost never   ____ 2=sometimes   ____ 3=fairly often   ____ 4=very often

10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?
    
    ____ 0=never   ____ 1=almost never   ____ 2=sometimes   ____ 3=fairly often   ____ 4=very often
RSE

Use this scale in answering the questions below:

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<td>Neither agree nor disagree</td>
<td>Agree somewhat</td>
<td>Agree</td>
<td>Strongly agree</td>
</tr>
</tbody>
</table>

1. ___ I feel that I have a number of good qualities.
2. ___ I wish I could have more respect for myself.
3. ___ I feel that I am a person of worth, at least on an equal plane with others.
4. ___ I feel I do not have much to be proud of.
5. ___ I take a positive attitude about myself.
6. ___ I certainly feel useless at times.
7. ___ All in all, I am inclined to feel that I am a failure.
8. ___ I am able to do things as well as most other people.
9. ___ At times I think I am not good at all.
10. ___ On the whole, I am satisfied with myself.

BP: _____
Debriefing

Thank you for participating in this study. As indicated on the informed consent form, the purpose of this study is to examine the relationship between social identity, affirmative action (AA) and health. Because social identity and attitudes toward AA have an important influence over human behavior and physiological reactions linked to health social scientists seek to better understand the circumstances under, which individuals' social identity and attitudes affect their health. It is hoped that the results of this study will help us gain increased understanding of how these variables are interrelated. We hope that you have not experienced any discomfort as a result of your participation. If you do feel some discomfort, please let the experimenter know. You may also wish to talk to someone at the CSUSB Psychological Counseling Center (phone: (909) 537-5040). We ask that you do not reveal the nature of this study to others who may participate in the future.

The results of this study will be available after April 30, 2007. If you have any questions about this research or would like to find out the results, please contact Victor Soto-Marquez at vsoto@csusb.edu or Dr. Agars (909) 537-5433.

Thank you.
APPENDIX B

TABLES
Table 1

Demographic Characteristics of Participants (N = 109)

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<thead>
<tr>
<th>Characteristics</th>
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<td>58-above</td>
<td>2</td>
<td>1.8</td>
</tr>
<tr>
<td>Gender</td>
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</tr>
<tr>
<td>Males</td>
<td>40</td>
<td>36.7</td>
</tr>
<tr>
<td>Females</td>
<td>69</td>
<td>63.3</td>
</tr>
<tr>
<td>Socioeconomic status</td>
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<tr>
<td>Poor/working class</td>
<td>7</td>
<td>6.4</td>
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<tr>
<td>Lower middle class</td>
<td>17</td>
<td>15.6</td>
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<tr>
<td>Middle class</td>
<td>57</td>
<td>52.3</td>
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<td>Upper middle class</td>
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<td>25.7</td>
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<tr>
<td>Heart disease</td>
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<tr>
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<tr>
<td>More than 1</td>
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<td>0</td>
</tr>
<tr>
<td>High blood pressure</td>
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<tr>
<td>None</td>
<td>109</td>
<td>100</td>
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<td>More than 1</td>
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<td>0</td>
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<tr>
<td>Asthma</td>
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<tr>
<td>None</td>
<td>91</td>
<td>83.5</td>
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<tr>
<td>More than 1</td>
<td>18</td>
<td>16.5</td>
</tr>
<tr>
<td>Cancer</td>
<td></td>
<td></td>
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<tr>
<td>None</td>
<td>107</td>
<td>98.2</td>
</tr>
<tr>
<td>More than 1</td>
<td>2</td>
<td>1.8</td>
</tr>
<tr>
<td>Diabetes</td>
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<td></td>
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<tr>
<td>None</td>
<td>107</td>
<td>98.2</td>
</tr>
<tr>
<td>More than 1</td>
<td>2</td>
<td>1.8</td>
</tr>
<tr>
<td>Doctor visits (during current quarter)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>95</td>
<td>87.2</td>
</tr>
<tr>
<td>More than 1</td>
<td>14</td>
<td>12.8</td>
</tr>
</tbody>
</table>

Note. Participants with high blood pressure or heart problems were not included in the study.
### Table 2

One-Way Analyses of Variance for effect of AA Conditions on Four Dependent Variables

<table>
<thead>
<tr>
<th>Variable and Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diastolic BP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>2</td>
<td>241.71</td>
<td>120.85</td>
<td>4.55*</td>
</tr>
<tr>
<td>Within groups</td>
<td>106</td>
<td>2815.34</td>
<td>26.55</td>
<td></td>
</tr>
<tr>
<td>Systolic BP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>2</td>
<td>174.51</td>
<td>87.85</td>
<td>.157</td>
</tr>
<tr>
<td>Within groups</td>
<td>106</td>
<td>4907.06</td>
<td>46.29</td>
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</tr>
<tr>
<td>AA fairness Perceptions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>2</td>
<td>44.96</td>
<td>22.48</td>
<td>23.75***</td>
</tr>
<tr>
<td>Within groups</td>
<td>106</td>
<td>100.30</td>
<td>.94</td>
<td></td>
</tr>
<tr>
<td>Self-esteem</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>2</td>
<td>.22</td>
<td>.11</td>
<td>.82</td>
</tr>
<tr>
<td>Within groups</td>
<td>106</td>
<td>60.88</td>
<td>.57</td>
<td></td>
</tr>
</tbody>
</table>

*p<.05. **p<.01. ***p<.001.
Table 3

Difference Scores and Three Testing Time for Blood Pressure (N = 109)

<table>
<thead>
<tr>
<th>Testing times</th>
<th>Diastolic</th>
<th>Systolic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time 1 (base rate)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M (Merit)</td>
<td>75.30 SD (8.61)</td>
<td>117.27 SD (14.34)</td>
</tr>
<tr>
<td>M (Diversity)</td>
<td>72.88 SD (5.89)</td>
<td>112.73 SD (12.92)</td>
</tr>
<tr>
<td>M (Strong Pref.)</td>
<td>72.72 SD (7.86)</td>
<td>111.50 SD (12.79)</td>
</tr>
<tr>
<td><strong>Time 2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M (Merit)</td>
<td>73.40 SD (7.54)</td>
<td>113.76 SD (13.31)</td>
</tr>
<tr>
<td>M (Diversity)</td>
<td>74.21 SD (7.44)</td>
<td>112.12 SD (12.54)</td>
</tr>
<tr>
<td>M (Strong Pref.)</td>
<td>73.55 SD (9.40)</td>
<td>109.61 SD (14.66)</td>
</tr>
<tr>
<td><strong>Time 3</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M (Merit)</td>
<td>71.77 SD (8.03)</td>
<td>109.80 SD (12.71)</td>
</tr>
<tr>
<td>M (Diversity)</td>
<td>71.97 SD (7.16)</td>
<td>107.42 SD (12.59)</td>
</tr>
<tr>
<td>M (Strong Pref.)</td>
<td>71.78 SD (8.25)</td>
<td>107.63 SD (13.74)</td>
</tr>
<tr>
<td><strong>Combined BP</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M (Merit)</td>
<td>72.59 SD (7.26)</td>
<td>111.74 SD (12.60)</td>
</tr>
<tr>
<td>M (Diversity)</td>
<td>73.59 SD (6.89)</td>
<td>109.77 SD (12.13)</td>
</tr>
<tr>
<td>M (Strong Pref.)</td>
<td>72.67 SD (8.50)</td>
<td>108.62 SD (13.80)</td>
</tr>
<tr>
<td><strong>Difference scores</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M (Merit)</td>
<td>-5.54 SD (7.32)</td>
<td>-2.71 SD (4.76)</td>
</tr>
<tr>
<td>M (Diversity)</td>
<td>-2.95 SD (7.27)</td>
<td>.71 SD (5.00)</td>
</tr>
<tr>
<td>M (Strong Pref.)</td>
<td>-2.87 SD (5.67)</td>
<td>-.05 SD (5.68)</td>
</tr>
</tbody>
</table>

Note. Time 1 was used as the base rate and time 2 and time 3 were combined as a final rating and difference scores were subtracted from the base rate and the combined BP.
Table 4

Means and Standard Deviations for IVs and DVs (N = 109)

<table>
<thead>
<tr>
<th>Variables</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA prescriptive ness</td>
<td>1.96</td>
<td>.83</td>
</tr>
<tr>
<td>Social Identity</td>
<td>4.28</td>
<td>.25</td>
</tr>
<tr>
<td>AA fairness perceptions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Merit</td>
<td>3.67</td>
<td>1.03</td>
</tr>
<tr>
<td>Diversity</td>
<td>3.49</td>
<td>.93</td>
</tr>
<tr>
<td>Strong Pref.</td>
<td>2.23</td>
<td>.93</td>
</tr>
<tr>
<td>Self-esteem</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Merit</td>
<td>5.69</td>
<td>.63</td>
</tr>
<tr>
<td>Diversity</td>
<td>5.71</td>
<td>.78</td>
</tr>
<tr>
<td>Strong Pref.</td>
<td>5.79</td>
<td>.85</td>
</tr>
</tbody>
</table>

Note. Low scores on AA fairness perceptions indicate low or negative support for AA programs and low scores on self-esteem indicate high self-esteem.
Table 5

Hierarchical Regression Analysis Predicting Systolic Blood Pressure with AA prescriptiveness and Social Identity (N = 109)

<table>
<thead>
<tr>
<th>Steps and predictor variables</th>
<th>B</th>
<th>( \beta )</th>
<th>( R^2 )</th>
<th>( \Delta R^2 )</th>
<th>( \Delta F )</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
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<td></td>
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<td></td>
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<tr>
<td>AA prescriptiveness</td>
<td>1.35</td>
<td>.16</td>
<td>.02</td>
<td>2.99</td>
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<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
<td>.04</td>
<td>.01</td>
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<tr>
<td>AA prescriptiveness</td>
<td>1.50</td>
<td>.18</td>
<td>.04</td>
<td>1.50</td>
<td>.01</td>
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<tr>
<td>Social identity</td>
<td>3.70</td>
<td>.14</td>
<td>2.14</td>
<td>.04</td>
<td>.01</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td></td>
<td></td>
<td></td>
<td>.05</td>
<td>.00</td>
</tr>
<tr>
<td>AA prescriptiveness</td>
<td>1.57</td>
<td>.19</td>
<td>.05</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Social identity</td>
<td>3.65</td>
<td>.14</td>
<td>.05</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>AA pres. x social identity</td>
<td>-1.98</td>
<td>-.06</td>
<td>.45</td>
<td>.45</td>
<td>.45</td>
</tr>
</tbody>
</table>

*p < .05.
Table 6

Hierarchical Regression Analysis Predicting Diastolic Blood Pressure with AA prescriptive ness and Social Identity (N = 109)

<table>
<thead>
<tr>
<th>Steps and predictor variables</th>
<th>$B$</th>
<th>$\beta$</th>
<th>$R^2$</th>
<th>$\Delta R^2$</th>
<th>$\Delta F$</th>
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</thead>
<tbody>
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<td><strong>Step 1</strong></td>
<td></td>
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<tr>
<td>AA prescriptiveness</td>
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<td>215*</td>
<td>.04</td>
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<td>5.16*</td>
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<td><strong>Step 2</strong></td>
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<tr>
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<td>.20</td>
<td>.05</td>
<td>.01</td>
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<tr>
<td>Social identity</td>
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<td>1.11</td>
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</tr>
<tr>
<td><strong>Step 3</strong></td>
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<td></td>
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<td>AA prescriptiveness</td>
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<td>.05</td>
<td>.00</td>
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<td>Social identity</td>
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<td>AA pres. x social identity</td>
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</table>

*p < .05.
Table 7

Hierarchical Regression Analysis Predicting AA Fairness Perception with AA prescriptiveness and Social Identity (N = 109)

<table>
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<tr>
<th>Steps and predictor variables</th>
<th>B</th>
<th>β</th>
<th>R²</th>
<th>ΔR²</th>
<th>ΔF</th>
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<tbody>
<tr>
<td><strong>Step 1</strong></td>
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<td>-.51</td>
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<td></td>
<td>38.23*</td>
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<tr>
<td>AA prescriptiveness</td>
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<td>-.52</td>
<td>.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social identity</td>
<td>-.20</td>
<td>-.04</td>
<td>.00</td>
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</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td>2.14</td>
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<tr>
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<td></td>
</tr>
<tr>
<td>AA prescriptiveness</td>
<td>-.72</td>
<td>-.52</td>
<td>.25</td>
<td></td>
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<tr>
<td>Social identity</td>
<td>-.20</td>
<td>-.04</td>
<td>.00</td>
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<tr>
<td>AA pres. x social identity</td>
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<td>-.03</td>
<td>.45</td>
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</tbody>
</table>

*p < .05.
Table 8

Hierarchical Regression Analysis Predicting Self-esteem with AA prescriptiveness and Social Identity (N = 109)

<table>
<thead>
<tr>
<th>Steps and predictor variables</th>
<th>B</th>
<th>β</th>
<th>R²</th>
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<th>ΔF</th>
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</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
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<td>.05</td>
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<td>.06</td>
<td>.01</td>
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<td>.12</td>
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</tr>
</tbody>
</table>

*p < .05.
APPENDIX C

FIGURES
Figure 1.
Interaction between AA prescriptiveness and social identity on blood pressure.
Figure 2.
Interaction between AA prescriptiveness and social identity on self-esteem.
Figure 3.
Interaction between AA prescriptiveness and social identity on fairness perceptions.
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