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## **Social Beliefs, Agonistic Goals, Anger, and Biased Perceptions of Outgroups: A Social Action Theory of Covert Racial Prejudice**

Mariam Parekh  
*Syracuse University*

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## Abstract

Racial prejudice and discrimination are an important societal and public health problem. Approaches to understanding the origins of prejudice and discrimination have focused on attitudes, both overt (explicit) and covert (implicit). But attitudes correlate only modestly with implicit biases and explicit discriminatory behavior. Drawing on Social Action Theory, this study tested the hypothesis that the relationship between racial attitudes and implicit biases / overt discrimination is moderated by socially-induced personal regulatory struggles that take the form of *agonistic striving*, or persistently seeking to influence or control other people. The research tested the hypotheses that agonistic striving fosters implicit racial biases and discrimination by (a) inducing states of hyper-alert vigilance to social threats; and (b) fostering reactive anger when personal strivings are threatened. These reactions magnify the connection between disparaging social beliefs about subordinate groups and the perception that individuals from this group are dangerous. Participants were 150 college students (mean age = 18.8  $\pm$ 1.4 years); 57% female; Caucasian) enrolled in an introductory psychology course. Social beliefs were assessed with the Modern Racism Scale and the Social Dominance Orientation scale; agonistic strivings with the Social Competence Interview; covert racial biases with the Race Implicit Association Test; and explicit racial discrimination behavior with a job qualifications rating task. The social action theory taxonomy of regulatory strivings was replicated in this sample. Tests of study hypothesis indicated that implicit racial biases were associated with social dominance beliefs but not with modern racism, agonistic vigilance, or reactive anger. Overt racial discrimination was associated with agonistic reactive anger but not with agonistic vigilance or social beliefs. Findings suggest ways to improve research on racial discrimination,

and point to social-structural and psychoeducational interventions to curb discrimination and enhance public health.

*Keywords:* Social Action Theory, Racial Discrimination, Motives, Attitudes, Beliefs, Perception

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**Social Beliefs, Agonistic Goals, Anger, and Biased Perceptions of Outgroups: A Social  
Action Theory of Covert Racial Prejudice**

Doctoral Dissertation

Submitted to the Graduate Faculty of Syracuse University in fulfillment of the requirements for  
the degree of Doctor in Philosophy in Clinical Psychology

In

The Psychology Department

Syracuse University

July, 2016

By

Mariam Parekh

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Social Beliefs, Agonistic Goals, Anger, and Biased Perceptions of Outgroups: A Social Action  
Theory of Covert Racial Prejudice

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Doctor of Philosophy in Clinical Psychology

Mariam Parekh

Syracuse University

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Craig Ewart, Ph.D. \_\_\_\_\_  
(Primary Advisor & Committee Member)

## **Anti-Outgroup Beliefs, Implicit Agonistic Goals, and Negative Perceptions of Outgroup**

### **Members: A Social Action Theory Analysis of Covert Racial Prejudice**

One often hears today that we live in a “post-racial” era, in which prejudice against oppressed outgroups is an evil of the past. Yet much evidence suggests that ethnic and racial minorities in the United States suffer various forms of *institutionalized* discrimination which result in educational, economic, and political disadvantage. Instead, prejudice today is more covert, and often harms outgroups more indirectly by permitting or even enabling various forms of institutionalized discrimination. The discrepancy between the triumphant affirmation of a postracial society and disturbing evidence of continuing outgroup disadvantage indicates that we need to investigate the nature and origins of modern prejudice and discrimination (Jackson, Hodge, Gerard, Ingram, Ervin & Sheppard, 1996; Lin, Kwan, Cheung & Fiske, 2005; Meertens & Pettigrew, 1997; Moskowitz, Gollwitzer & Wasel, 1999; Saucier, 2000; Sniderman & Tetlok, 1986).

A large body of evidence indicates that group subordination in the form of racism and discrimination continues to threaten the health of modern liberal democracies, including the United States. In the United States, for example, racial discrimination has been shown to damage the health and shorten the lives of those who are discriminated against (Bobocel, Son Hing, Davey, Stanley & Zanna, 1998; Bodenhausen, 1998; Lin et al, 2005; Meertens & Pettigrew, 1997; Moskowitz et al, 1999; Saucier, 2000; Sniderman & Tetlok, 1986). But prejudice driven by negative perceptions of outgroups also may damage the health of those who are prejudiced. Anti-outgroup prejudices often include the perception that members of oppressed groups threaten the security or safety of the dominant ingroup. In a society that is growing

increasingly diverse, prejudices leading to the perception that outgroup members pose a personal threat may increase levels of everyday stress. The perception that other people may threaten one's health, comfort, or safety has the potential to induce and prolong stress responses that adversely affect cardiovascular and immune systems, and thus undermine health (Brondolo, Libby, Denton, Thompson, Beatty & Schwartz, 2008; Clark, 2000; Ewart, C.K., Elder, G.J. & Smyth, J.M, 2012; Fang & Myers 2001; Tull, Sheu, Butler & Cornelius, 2005). Anti-outgroup prejudice may represent a multifaceted societal and public health problem.

Progress has been made in banning discriminatory practices. This has resulted in greater racial integration of workplaces, schools, and in some cases, neighborhoods. Yet covert discrimination against members of subordinated outgroups—often shaped by negative perceptions of those groups—continues to be a problem (Jackson et al, 1996; Lin et al 2005; Meertens & Pettigrew, 1997; Moskowitz et al, 1999; Saucier, 2000; Sniderman & Tetlok, 1986). Why do these negative perceptions persist? What causes members of dominant majorities to form negative (prejudiced) impressions of persons categorized as belonging to an oppressed out-group?

### **The Problem of Anti-Outgroup Bias**

Attempts to explain individual differences in anti-outgroup prejudice have focused on overtly expressed (explicit) social beliefs, and also on unacknowledged (implicit) anti-outgroup biases that people are unwilling or unable to report when questioned. The explicit social beliefs that have been investigated usually have involved the beliefs that outgroups threaten in-group resources (competition) or social status (insubordination).

### **Explicit Anti-Outgroup Beliefs and Attitudes**

Explicit attitudes are defined as deliberative, self-reported evaluations and beliefs. Measures of explicit beliefs have been used to identify two types of beliefs that influence attitudes toward out-groups. These are: (a) the belief that outgroups threaten the ingroup by competing for valuable resources, and (b) the belief that an outgroup threatens the ingroup's dominant status (Brief, Dietz, Cohen, Pugh & Vaslow, 2000; Dovidio & Gaertner, 1998; Dovidio & Gaertner, 2000; Duriez & Van Hiel, 2002; McConahay, 1983; McConahay, 1986; Pfeifer & Ogloff, 1991; vanHiel, Pandelaere & Duriez, 2004; Whitley, 1999). The first group of influential beliefs holds that discrimination against outgroups does not exist, and that members of the outgroup place unwarranted demands on the dominant ingroup's resources. These demands are believed to threaten the existing societal structure by undermining the values of the dominant group. Such beliefs are understood to exemplify *modern racism*. The primary measure used to assess these explicit beliefs is the *Modern Racism Scale* (Brief et al, 2000; Dovidio & Gaertner, 1998; Dovidio & Gaertner, 2000; Duriez & Van Hiel, 2002).

The other major group of explicit beliefs holds that people feel free to voice openly involves a belief that the dominant ingroup may be in danger of losing its dominant status (Sidanius, 1993; Sidanius, Haley, Molina & Pratto, 2007; Sidanius, Levin, Federico & Pratto, 2001a; Sidanius, Levin, van Laar & Sears, 2006a; Sidanius & Pratto, 1999; Wilson & Lui, 2003). Some individuals endorse the explicit belief that society functions best when outgroups occupy a subordinate status vis-à-vis the dominant ingroup majority. Individuals who endorse the notion that society should be hierarchically ordered, with the ingroup on the top and outgroups below them, may readily perceive out-groups as threats, especially when a particular out-group challenges the in-group's social status. Research investigating the relationship between social

dominance beliefs and negative perceptions of outgroup members indicates that social dominance orientation is related to anti-outgroup prejudice (Sidanius et al, 2007; Sidanius et al, 2001a; Sidanius & Pratto, 1999). Individuals with a strong social dominance orientation endorse the idea that members of dominant groups should work to keep subordinate groups in their place as way to maintain social justice and order. These social beliefs are primarily assessed by the *Social Dominance Orientation* scale (Sidanius, 1993; Sidanius & Pratto, 1999; Sidanius et al, 2007).

### **Implicit Negative Perceptions of Outgroup Members**

The other approach to uncovering hidden prejudice has involved the development of methods to detect nonconscious or *implicit* negative perceptions of outgroup members that may be difficult or impossible for a perceiver to conceal. Progress has been made in developing an assessment technique that can detect negative perceptions of outgroup faces that perceivers are unable or unwilling to acknowledge due to self-presentation concerns (Jackson et al, 1996; Lin et al, 2005; Meertens & Pettigrew, 1997; Moskowitz et al, 1999; Saucier, 2000; Sniderman & Tetlock, 1986). For example, efforts to circumvent this self-reporting difficulty have included the *Implicit Associations Test (IAT)*; described below), a procedure that uses word association tasks to assess negative biases in perceptions of outgroups (Cunningham et al, 2001; Fazio & Olson, 2003; Greenwald et al, 1998; Greenwald, Nosek & Banaji, 2003; Rudman et al, 1999). Evidence suggests that IAT responses reveal negative perceptions of outgroups that explicit reports of outgroup attitudes may not disclose (Fazio & Olson, 2003; Greenwald et al, 2003; Rudman et al, 1999). However, despite the widespread use of the IAT, other studies suggest the IAT measure may not reliably identify individuals who will act positively, negatively or neutrally toward members of any specific in-group or outgroup ((Oswald, Mitchell, Blanton, Jacard & Tetlock,



2013; Oswald, Mitchell, Blanton, Jacard & Tetlock, 2015)). These mixed findings regarding the IAT suggest that this measure has limitations. The present study may shed light on this question.

### **The Changing Nature of Modern Prejudice**

Outward discriminatory behaviors are influenced by personal attitudes. An attitude is an expression of favor or disfavor toward a person, place, thing, or [event](#) (i.e., the attitude object) (Cunningham, Nezlek & Banaji, 2004; Devine, 1989; Dion & Kawakami, 1996). Research investigating attitudes suggests that there are two classes of attitudes, *implicit* and *explicit*. Each class influences behavior differently. Explicit attitudes are defined as deliberative, self-reported evaluations, whereas implicit attitudes are thought to be outside one's awareness and affect behavior on a more spontaneous, automatic level (Cunningham et al, 2004; Devine, 1989; Dion & Kawakami, 1996). This suggests that people often are unwilling or unable to report their true anti-outgroup attitudes or biases (Devine, Plant, Amodio, Harmon-Jones & Vance, 2002; Dunton & Fazio, 1997; Fazio, 1990; Plant & Devine, 1998; Ziegert & Hanges, 2005). Inaccurate reporting lowers the observed correlation between explicit outgroup beliefs and prejudiced (biased) perceptions of outgroup members. Research indicates that the relationship between measures of implicit attitudes and explicit attitudes is weak to moderate at best, indicating that explicit and implicit measures of prejudice may tap different facets of prejudice—anti-outgroup beliefs versus covert biases (Greenwald, Banaji, Rudman, Farnham, Nosek & Mellot, 2002; Hofmann, Gawronski, Gschwendner & Schmitt, 2005; McConnell & Leibold, 2001; SonHing, Chung-Yan, Grunfeld, Robichaud & Zanna, 2005).

Thus, one way to explain the apparent disappearance of outgroup prejudice is to assume that much of it has gone underground. Members of the dominant group continue to hold anti-outgroup beliefs and attitudes but they now try to hide their prejudices—even from

themselves. Modern civil rights laws and workplace policies certainly discourage open affirmations of old-fashioned racial and ethnic stereotypes (Jackson et al, 1996; Lin et al, 2005; Meertens & Pettigrew, 1997; Moskowitz et al, 1999; Saucier, 2000; Sniderman & Tetlok, 1986). This explanation has led researchers to pursue two different approaches to uncovering hidden anti-outgroup attitudes. One approach focuses on *modern* negative beliefs and openly expressed attitudes about outgroups that do not directly evoke the old racial or ethnic stereotypes. Examples of these modern beliefs include negative attitudes toward social policies that are designed to correct longstanding discriminatory practices or remedy outgroup disadvantages (e.g., affirmative action). These attitudes can be measured directly because they are openly expressed, or *explicit*. The other approach focuses on developing methods to detect *implicit* negative perceptions of outgroup members that perceivers may wish to hide but are unable to conceal (Greenwald et al, 2003; Rudman, Greenwald, Mellot & Schwartz, 1999; Fazio & Olson, 2003; Cunningham, Preacher & Banaji, 2001). Both approaches have contributed to our understanding of modern prejudice.

### **The Problem of Personal Threat**

Both the focus on modern anti-outgroup beliefs and the assessment of implicit hostile perceptions of outgroup members share in common the assumption that prejudice today takes the form of unacceptable attitudes that perceivers seek to hide. These unacceptable attitudes must be indexed indirectly in either of two ways. One approach measures overtly acknowledged beliefs that, although not explicitly hostile to outgroups, may be indirectly linked to disparaging outgroup perceptions and evaluations. The other approach uses an implicit attitude assessment method such as the IAT. Yet, although these approaches represent important advances in our understanding of covert prejudice and discrimination, they may not capture other factors that

affect the connection between explicitly acknowledged social beliefs and unacknowledged implicit anti-outgroup biases. One such factor is the perception that one is personally threatened by members of an outgroup. Prejudice against outgroups in the United States formerly was shaped by ethnic or racial stereotypes that were supported by exclusionary laws and social policies. These stereotypes, laws, and policies depicted outgroup members as untrustworthy and potentially dangerous individuals who must be “kept in their place.” (Brief et al, 2000; Dovidio & Gaertner, 1998; Dovidio & Gaertner, 2000; Duriez & Van Hiel, 2002; McConahay, 1983; McConahay, 1986; Pfeifer & Ogloff, 1991; vanHiel et al, 2004; Whitley, 1999). Today, the old exclusionary laws are gone, and old fashioned stereotypes no longer are widely and openly endorsed. Open claims that outgroup members pose dangerous threats have been curbed by civil rights laws, and by the greater visibility of many outgroup individuals whose exemplary lives and contributions to society contradict the traditional stereotypes.

Yet, *modern* prejudice—like the old-time racism—may continue to be shaped by the perception that one is personally threatened by members of an oppressed outgroup. Modern prejudice may be formed by social beliefs that are not overtly racist, yet can support anti-outgroup perceptions in individuals who associate the outgroup with a personal threat. For example, one set of social beliefs proclaims that ethnic or racial subordinate groups “demand more than their fair share” of societal resources, thereby “increasing the burden on everyone” (Modern Racism). Another set of beliefs alleges that outgroups press for political and economic changes that could undermine the values, social norms, cultural practices, and relative standing of the dominant group (Social Dominance Orientation). Unlike the old-time racist stereotypes, these negative beliefs about oppressed minorities consist mainly of beliefs about social *groups*.

Although these modern negative beliefs occasionally may be justified with direct references to individual examples (e.g., “welfare queens,” “gangsta thugs in hoodies”), they do not automatically evoke the idea that all individual members of the subordinate outgroup are necessarily untrustworthy or dangerous, or that all outgroup individuals must be carefully watched, supervised, and kept in their place, or that any outgroup member, if given the chance, might threaten a member of the dominant group. Modern negative beliefs about subordinated outgroups do not directly evoke perceptions of personal threat that might lead to acts of covert discrimination. The lack of a direct connection between a social belief and a perception of personal threat may help explain why individuals who hold beliefs that reflect negatively on outgroups can honestly disavow having hostile personal feelings or *racist* attitudes toward outgroup members. Thus, although today’s negative beliefs about outgroups may correlate modestly with covert prejudice and discriminatory actions, the source of much of the variance remains concealed and unexplained (Greenwald et al, 2002; Hofmann et al, 2005; McConnell & Leibold, 2001; SonHing et al, 2005).

### **A Social Action Theory Approach to Prejudice**

It is possible that the modest association between modern negative outgroup beliefs and covert prejudice may reflect the influence of moderating factors. Research within the framework of the social action theory of chronic stress suggests that the association between explicit social beliefs about outgroups and implicit anti-outgroup attitudes may be magnified (moderated) by implicit social regulatory motives and the emotions they arouse (Ewart, 2011; Ewart, 2016). In this view, negative perceptions of outgroup individuals are shaped by the perceiver’s implicit regulatory goals and related emotions. Regulatory strivings combine with beliefs to foster negative perceptions of outgroup individuals (Dovidio & Gaertner, 2005; Gaertner & Dovidio,

1986; Lambert, Payne, Ramsey & Shaffer, 2005; Wilson, Lindsey & Schooler, 2000). Modern negative beliefs facilitate modern covert prejudice (threat perceptions), but do so mainly when activated by a persistent striving to exert social control. Thus, social control motives may evoke perceptions of personal threat and induce anti-outgroup biases in individuals who hold the social beliefs identified in theories of modern racism and social dominance (e.g., Sidanius & Pratto, 2007). This hypothesis derives from social action theory's social-ecological conception of self-regulation as an expression of environmental niche construction.

### **Niche Construction**

Social action theory is a social-ecological theory of self-regulation derived from the biological understanding that to survive and flourish, a living organism must act upon the environment to obtain resources while modulating the environment's internal impact (Ewart, 2016; Ewart, Elder, Jorgensen, & Fitzgerald, 2016). Organisms meet this challenge in an uncertain and changing world by creating an *environmental niche* comprised of materials and behavior patterns that afford food, shelter, and mates (Lewontin, 2000). Niche construction in humans is social, and involves building interpersonal networks, regular routines, and shared activities that yield a host of vital resources for oneself and others. Being part of a human social network involves cooperating and sharing within the context of dyads, groups, and hierarchies (Ewart, 2016). Coordinating one's activities within a network requires that one monitor oneself and others, while maintaining predictable behavioral routines that work to benefit all. This means that one must regulate one's actions and emotions.

### **Self-Regulation**

Niche construction requires self-regulation, which in social action theory is comprised of two distinct components: *self-direction* and *response modulation*. Self-direction involves

cognitive problem solving activities that generate goals, defined as cognitive representations of desired events (Ewart, 2004; Ewart, Elder & Smyth, 2012). Response modulation is supported by cognitive-affective processes of attention and appraisal that facilitate the regulation of emotions (Gross, 2013). By repeatedly engaging in self-directive problem-solving and response modulation activities in everyday situations, people form social networks, habitual routines, and shared activities that create and safeguard one's protective environmental niche.

Social action theory proposes that the self-directive problem solving activities that enable self-regulation operate at different levels of consciousness. Hence, the goals that serve self-direction in ecological niche-building often are *implicit* or nonconscious (Bargh, Gollwitzer, Lee-Chai, Barndollar, & Trötschel, 2001; Custers & Aarts, 2010). This implies that the goals that foster chronic stress and often impair social relationships can be difficult to identify and measure via self-report (Ewart, Elder & Smyth, 2012). Social action theory proposes that implicit stress-inducing goals can be observed and reliably measured by activating social problem-solving processes in an experimental setting using a structured interview protocol known as the Social Competence Interview (SCI; Ewart, Ditmar, Suchday & Sonnega, 2007). The SCI protocol involves re-living an ongoing personal stressor, imagining it is happening to another person like oneself, and then inventing a desirable yet realistic resolution to the problem, as well as a problem-solving or coping strategy that could lead to the desired outcome. Trained observers code audio recordings of the participant's verbal responses to the SCI to identify the person's implicit self-directive goals and emotions.

### **Regulatory Strivings**

Conditions or events that endanger one's social niche by damaging vital relationships, networks, or routines foster personal regulatory struggles (Ewart, 2016). When persistent, such

threats can induce continuing psychological states of uncertainty, generate physiological stress responses, and impair social behavior. Over time, ongoing regulatory struggles gradually form self-organizing, goal-directed strivings that either involve persistently seeking to control or alter the self, or seeking to influence or control other people in one's social milieu. Either form of regulatory striving is characterized by a high level of goal immersion, or emotional investment, in achieving personal or social control. The combination of goal focus and degree of goal immersion yields a natural taxonomy of self-organizing regulatory strivings in which an individual may be: (a) immersed in trying to change other people but not the self; (b) immersed in trying to change the self but not other people; or (c) not immersed in either goal (e.g., unhappy but unable to imagine a desired outcome and problem-solving strategy). These patterns or *motive profiles* are known, respectively, as *agonistic striving*, *transcendence striving*, and *dissipated striving* (Ewart, Elder, Laird, Shelby, & Walker, 2014; Ewart, Elder, Smyth, Sliwinski, & Jorgensen, 2011; Ewart & Jorgensen, 2004). The profiles have been replicated in five large community studies of adolescents and adults. Each motive profile was found to characterize from 26% to 40% of the participants in each sample; the profile groups did not differ with respect to gender, race, or age (Ewart & Jorgensen, 2004; Ewart et al., 2011; Ewart et al., 2014).

### **Agonistic Striving**

Social action theory predicts that agonistic striving, compared to transcendence striving and dissipated striving, is the motive profile most likely to induce large psychological and physiologic stress responses (Ewart, 2016; Ewart et al., 2011). This prediction derives from evidence that people experience greater stress when they are unable to anticipate and control important events (Sapolsky, 2004). Considering that the actions of other people are inherently less predictable than are one's own, agonistic striving involves investing in a goal that is more

likely to induce psychological uncertainty and stress than is the self-change focus of transcendence striving. Further, attempts to control other people readily evoke hostile reactions and generate ongoing power struggles that are a source of continuing unpredictability and psychological stress. As a consequence, given its focus on controlling or changing other people, agonistic striving is more likely to induce sustained, hypervigilant states of alert attention toward others in one's social environment. An agonistic goal focus requires one to be alert, vigilant, and on guard in social situations. This pattern of hyper-alert social vigilance is associated with increased systemic vasoconstriction reflected in elevated total peripheral vascular resistance and diastolic blood pressure, which happens to be the hemodynamic response profile elicited by the SCI (Ewart, Jorgensen, Schroder, Suchday, & Sherwood, 2004). This response pattern is thought to contribute to sustained hypertension by promoting vascular remodeling (Folkow, 1990), which is regarded as one mechanism by which toxic interpersonal environments may increase cardiovascular risk (Ewart et al., 2011).

In addition to fostering defensive vigilance, agonistic striving also may foster angry emotional responses in situations where one's social control or capacity for influence are threatened. Research with the SCI indicates that persons who exhibit the agonistic striving profile do not appear unusually anger-prone in general. However, they do become visibly and intensely angry when their strivings for social control are blocked (Ewart et al., 2011). For example, studies comparing people who exhibit the transcendence striving or dissipated striving profiles with those who exhibit the agonistic striving profile reveal that the agonistically focused individuals do not score higher on measures of *trait* anger (Ewart, Elder, Laird, Shelby, & Walker, 2014; Maisto, Ewart, Witkiewitz, Connors, Elder, Krennek, & Ditmar, 2016). But they do become angrier when their ability to exercise social control is threatened (Ewart et al., 2011;



Ewart & Jorgensen, 2004). Compared to individuals with the transcendence striving or dissipated striving profiles, those with the agonistic striving profile exhibit significantly greater *reactive* anger during the SCI, and also display more intense anger during a laboratory anger-recall task administered on a separate occasion (Ewart et al., 2011; Ewart & Jorgensen, 2004). The evidence suggests that their reactive anger is situationally specific, and serves social dominance goals in circumstances where social control is threatened or uncertain (Wright, Lindgren, & Zakriski, 2001). Thus it is not anger's overall frequency, but rather its situational trigger and social control function that characterizes persons with the agonistic profile. Situational *reactive anger* reflects and expresses a strong negative evaluation of those who are perceived to thwart agonistic strivings for social control.

Defensive vigilance and reactive anger may partly account for evidence that agonistic striving mediates the connection between exposure to neighborhood disorder and elevated blood pressure in low-income urban adolescents, thereby raising hypertension risk (Ewart, Elder, & Smyth, 2014). Daily exposure to threats in one's proximal environment fosters states of alert vigilance to potential dangers, as well as greater readiness to respond aggressively with anger, thereby increasing blood pressure (Ewart & Jorgenson, 2004; Ewart et al, 2011). The relationships between agonistic motives and health outcomes that were detected in these studies were not explained by individual differences in personality. The three motive profile groups did not differ in their average everyday levels of *trait* neuroticism, anger expression, anxiety, depression, or self-esteem.

### **Agonistic Striving and Racial Prejudice**

Research on stress within the social action theory framework may have implications for understanding the origins of racial prejudice and discrimination. This work suggests that anti-

outgroup attitudes may be shaped by nonconscious (implicit) motives and emotional reactions, as well as by explicit beliefs. Hyper-alert agonistic states of vigilant attention to the social environment support action readiness, enhance the detection of interpersonal challenges, and facilitate quick defensive responding (Ewart, Elder & Smyth, 2011). Agonistic struggles spawned by strained relationships in home, neighborhood, or work settings, may prime people to detect social power threats and quickly respond (Ewart, Elder & Smyth, 2011). These defensive mental states may affect the development of anti-outgroup attitudes.

Evidence suggests that agonistic striving may influence social perceptions and anti-outgroup behaviors in at least two ways. One causal mechanism is suggested by the evidence that agonistic striving increases defensive *vigilant attention* to social-environmental cues that signal threats to social control. Alert attention to unfamiliar members of social outgroups in circumstances that foster defensive vigilance may cause a perceiver to readily associate the outgroup individual with negative stereotypes or other information about the outgroup. This hyper-alert vigilance causes the agonistically-focused individual to intently scrutinize members of disparaged outgroups that are believed to threaten the social order (e.g., through resource competition or insubordination). By repeatedly associating members of a disparaged outgroup with challenges that society must control, the agonistically-focused individual builds an implicit negative attitude toward outgroup members. This process causes explicit social beliefs and implicit intergroup biases to be more closely aligned in people with the agonistic striving profile than in people with the transcendence striving or dissipated striving motive profiles.

A second causal mechanism is suggested by the finding that agonistic striving increases *reactive anger* when social control motives are threatened. Evidence indicates that persons who exhibit the agonistic profile readily become angry when their attempts to exert influence,

interpersonal control, or dominance are resisted (Ewart et al, 2011; Ewart & Jorgensen, 2004). Angry affect may cause a perceiver to readily associate an outgroup individual with negative stereotypes or other information about the outgroup. This seems especially likely in perceivers who believe that the outgroup in question threatens social order or control. Persons with the agonistic striving profile readily become angry when interacting with threatening individuals whom they seek to control. This emotional response tendency causes them to feel angry when encountering members of disparaged outgroups that are believed to threaten the social order (e.g., through resource competition or insubordination). By repeatedly associating members of a disparaged outgroup with angry emotional responses, the agonistically-focused individual builds an implicit negative attitude toward outgroup members. This process causes explicit social beliefs and implicit intergroup biases to be more closely aligned in people with the agonistic striving profile than in other people.

By magnifying the association between anti-outgroup beliefs and implicit biases, agonistic striving may have harmful long-term consequences for outgroup members and socially biased perceivers alike. Agonistic striving may lead members of dominant social groups to engage in behaviors that directly or indirectly harm disparaged outgroups. Agonistic striving also may damage the psychological and physical health of the perceiver. Negative cognitive-affective responses to outgroup members may increase defensive vigilance and amplify physiologic stress responses when encountering members of a denigrated outgroup, both during symbolic as well as in vivo encounters. Considering evidence that a significant proportion of the participants in the community-based studies cited above exhibit agonistic striving, the societal and public health consequences could be substantial.

### Study Hypotheses

This analysis suggests two possible explanations for individual differences in the congruence of explicit and implicit intergroup attitudes toward disparaged outgroups. Individuals who exhibit chronic regulatory struggles marked by agonistic striving are likely to exhibit higher levels of congruence between social beliefs and biases than individuals who do not chronically seek to assert social control. The congruence arises because the agonistic social-control focus increases the probability that outgroup members will be perceived as threats to the social order who need to be regulated, and also because agonistic reactive anger builds an association between outgroup members and negative emotional-evaluative responses. These two explanations were tested in the present research.

### Primary Hypotheses

The research tested two *primary* hypotheses. The first primary hypothesis was that *agonistic striving* for social control magnifies (moderates) the association between explicit social beliefs about disparaged outgroups and *implicit negative biases* against outgroup members. Thus, individuals who endorse social dominance beliefs (indexed by the Social Dominance Orientation scale) or beliefs representing modern forms of racism (indexed by the Modern Racism Scale) will be more likely to exhibit implicit anti-outgroup biases (IAT Implicit Bias scores) if they also exhibit the agonistic striving profile. Data supporting this hypothesis may suggest that an individual with a motive profile characterized by persistent striving to control other people, together with a readiness to endorse negative beliefs about out-groups, is more likely to form prejudiced perceptions of out-group members than an individual who exhibits the transcendence striving or the dissipated striving motive profiles. Support for this hypothesis would imply that a person may hold negative beliefs about out-groups but, unless strongly motivated to control

others, might not perceive individual out-group members as a threat. Despite believing that one's own ingroup deserves to occupy a superior social status, or that outgroups often demand more than their fair share of societal resources, individuals who are not strongly motivated to control other people may not exhibit implicit negative perceptions of outgroup members.

The second primary hypothesis was that *agonistic reactive anger* magnifies (moderates) the association between explicit social beliefs about disparaged outgroups and *implicit* negative *biases* against outgroup members. This hypothesis is consistent with theories of affect and cognition that propose that people's emotional states predispose them to be more or less systematic in their use of information-processing strategies (Cottrell & Neuberg, 2005; DeSteno, Dasgupta, Bartlett & Cajdric, 2004; Lerner & Tiedens, 2006). Specifically, anger arousal has been associated with a greater tendency to act impulsively, leading to ill-considered judgments and actions. Anger typically is evoked in situations that demand a quick response. It is not possible to carefully contemplate alternative courses of action. Impulsive responding when angered has been found to magnify prejudiced perceptions of out-group members (Cottrell & Neuberg, 2005; DeSteno, Dasgupta, Bartlett & Cajdric, 2004; Lerner & Tiedens, 2006). Thus, a person may hold negative beliefs about out-groups but, if not angered, might be able to process social information more systematically instead of reacting impulsively and less deliberately.

### **Exploratory Hypotheses**

Although implicit negative biases against outgroup members (implicit prejudice) were the primary dependent variable in the present research, the study also afforded an opportunity to address important questions about overt racial discrimination by testing a related set of exploratory hypotheses. These hypotheses involved examining the potential influence of agonistic social control motives and agonistic reactive anger on *explicit* anti-outgroup

*discriminatory behavior*. Previous research on racial discrimination has failed to find compelling evidence that overtly expressed beliefs about outgroups and explicit acts of anti-outgroup discrimination behavior are closely aligned (Greenwald, Banaji, Rudman, Farnham, Nosek & Mellot, 2002; Hofmann, Gawronski, Gschwendner & Schmitt, 2005; McConnell & Leibold, 2001; SonHing, Chung-Yan, Grunfeld, Robichaud & Zanna, 2005). The present study made it possible to examine the possibility that agonistic striving or agonistic reactive anger moderates the association between explicit social beliefs and explicit anti-outgroup discrimination, which was indexed by White participants' ratings of Black and White "job applicants'" qualifications for employment on a hiring preferences task.

The first exploratory analysis examined the hypotheses that agonistic striving for social control magnifies (moderates) the association between White participants' explicit social beliefs about Blacks as a group, and anti-Black discriminatory hiring preferences indicated on the employment evaluation task. This hypothesis derives from the conjecture that beliefs about potential outgroup competition and the need to uphold social hierarchies are more likely to activate personal threat perceptions in persons who strive to control others. Social beliefs cause agonistically focused individuals to evaluate White job applicants more favorably than Black applicants.

The second exploratory hypothesis was that agonistic *reactive* anger magnifies (moderates) the association between explicit social beliefs about disparaged outgroups and *explicit* anti-Black discrimination on the hiring preferences task. This hypothesis derives from the conjecture that beliefs about potential outgroup competition and the need to uphold social hierarchies are more likely to activate personal threat perceptions in persons who become

intensely angry when a regulatory striving is threatened. Social beliefs cause angry individuals to evaluate White job applicants more favorably than Black applicants.

All study hypotheses concerned anti-outgroup beliefs and biases on the part of members of a socially dominant group toward a subordinated group. Thus the research was conducted with a sample of Caucasian (White) university students. The social beliefs and implicit biases studied involved perceptions of African Americans (Blacks). The latter target group was selected because Blacks often are targets of bias and discrimination in a range of settings, including employment, education and interpersonal settings (Amodio, 2006 & Nosek, 2007; Cottrell & Neuberg, 2005; Kunda, Davies, Adams & Spencer, 2002). Negative attitudes toward Black individuals are observed both explicitly and implicitly and there are also a range of negative stereotypes commonly attributed to this group, such as being lazy, untrustworthy, unreliable and unprofessional. Furthermore, research indicates that Blacks' lower social status relative to Whites is associated with attributions of incompetence. Given the pervasiveness of negative biases and behavior toward members of this outgroup, it is important to understand the processes underlying these negative attitudes and stereotypes (Amodio, 2006 & Nosek, 2007; Cottrell & Neuberg, 2005; Kunda, Davies, Adams & Spencer, 2002).

## Method

### Participants

Syracuse University introductory psychology students were invited to participate in the study for partial course credit. The participants were Caucasian because the study is concerned with prejudice in dominant group members. A total of 150 participants were recruited, considering that an analysis of statistical power to test the primary study hypotheses (described below) indicated that a sample of this size was needed to yield the desired power of 0.80.

Participants were invited to register to participate via an online Psychology Research Participation System (SONA). This system is an online system available to students who register for an Introductory Psychology Course. Students in this class are required to complete 5 credits worth of participation in studies that are available to them via the SONA system. Once the student has registered to participate online, they are provided with instructions on steps they need to take in order to complete the study and be awarded the assigned credit. The system issues credits via a direct experimenter interface. It functions in accordance with contemporary privacy laws and is in compliance with Syracuse University's institutional review board (IRB).

### Measures

**Social Competence Interview (SCI).** The SCI, a standardized laboratory stress interview (Ewart, Jorgensen, Suchday, Chen & Matthews, 2002), was used to elicit stress in our participants. The SCI is divided into two phases. During the first phase, the experimenter explains the purpose of the SCI and asks the participant to identify a particular area in his or her life in which they recently experienced stress (e.g., stress with peers, school, family, money, work, or neighborhood). The participant is then guided through a semi-structured interview in which he or she re-experiences a recent stressful situation that exemplifies a recurring problem,



and describes the associated emotions and thoughts that accompanied the situation (e.g., how did that make you feel? What thoughts were going through your mind?) After this “hot” phase, the experimenter then shifts focus to the second “cool” phase by asking the participant to imagine that he or she is a filmmaker making a movie about a person like the participant who is going through a similar experience. Then, the participant is asked to describe a desirable but realistic ending for the film character, and to describe the steps that they could take to make that ideal ending happen. The interviewer then encourages the participant to relate the film ending to the participant’s own recurring problem. For example, the interviewer asks, “If this problem happens to you again, will you try to make the situation end like the film you described?” “Will you try to make it end differently?” “How would you want your own problem story to end if it happens again, and what could you do to make that ending happen?” These questions assess the likelihood that the participant will seek to implement a chosen goal in everyday life. To conclude the interview, the participant is asked a series of questions about the plausibility of that ending occurring in real life and how confident they feel that they could bring about that ideal ending (Ewart, Jorgensen, Suchday, Chen & Matthews, 2002).

*Coding procedure.* Scores on SCI scales measuring emotional expressiveness, agonistic goals, and transcendence goals were derived from ratings made from interview audio-recordings by trained coders. Coders were 4 undergraduate students who were trained and supervised using detailed instructions from a coding manual and audio recordings of previous interviews. Correlations between interviewer ratings and coder’s ratings in previous studies have yielded Pearson  $r > 0.66$ . This standard was maintained in the present study and the inter-rater reliability yielded a Pearson  $r = 0.73$ .

**Agonistic Goals.** A reliable and valid coding system (Ewart et al, 2007) was used to measure goal-directed strivings and emotional expressiveness from two sources: (a) Interviewer ratings completed immediately after the SCI; and (b) interview audio-recordings coded by trained observers. Interviewer ratings provided a direct observational assessment, unaffected by problems with recording procedures that sometimes occur in field settings, or by loss of data due to a participant's desire to not have an audio recording made. The ratings by independent coders were used to validate the interviewer rating data, and to permit comparisons with previous studies that used the same audio coding protocol. Interviewer ratings were made on 7-point Likert-type scales. The internal consistencies of the scales, assessed on interviewer ratings by Cronbach's alpha in a previous study (Ewart et al., 2002;  $N = 264$ ) were: *Expressiveness*, .93; *Agonistic Striving* (Self-Defense, .78; Acceptance-Affiliation, .87); *Transcendence Striving* (Approval-Seeking, .89; Self-Improvement, .93). The previous study also found these scales to have adequate temporal stability over a 3-month period,  $r > 0.40$  (Ewart, 2004).

**Reactive Anger.** Participants were asked to rate their emotions before and during the Social Competence Interview using the Emotion Rating Scale. This measure asked participants to indicate the extent to which they felt *Happy*, *Angry*, *Nervous*, *Proud*, *Interested*, and *Sad* on a 7 point Likert scale ranging from 1 = *Not at all* to 7 = *Extremely*. Before the SCI, the rating instructions asked participants to indicate "how you are feeling now." Immediately following the SCI, participants were asked to indicate "how you felt when describing the stressful problem during the interview." Reactive Anger scores were calculated by subtracting the participant's pre-SCI Anger rating from the Post-SCI Anger rating of problem-focused affect obtained immediately after the interview. This difference score was used to represent SCI Reactive Anger in the tests of the study hypotheses.

### **Explicit Social Beliefs**

**Modern racism.** The Modern Racism Scale (McConahay, 1986) was used to assess participants' endorsement of social beliefs that, although not overtly racist, can be associated with disparaging views of Blacks. The Modern Racism Scale was designed to be relatively nonreactive by not inquiring directly about racial attitudes. For example, the following reverse-scored item is one of seven comprising the scale: "It is easy to understand the anger of Black people in America." Another item reads "Discrimination against Blacks is no longer a problem in the United States." Participants were asked to indicate their agreement with each of the seven items on a 5-point Likert scale, ranging from 1 = *Strongly disagree*, to 5 = *Strongly agree*. Higher scores indicate stronger endorsement of modern racist attitudes. In previous college student samples, coefficient alphas for the Modern Racism Scale ranged from .86 to .91 (McConahay, 1983).

**Social dominance orientation.** The Social Dominance Orientation Scale was used to measure social dominance orientation, defined as a general inclination to endorse a perceived need for inter-group hierarchy in society ((Pratto, Sidanius, Stallworth, & Malle, 1994)). High Social Dominance Orientation scores indicate a tendency to favor hierarchy-enhancing ideologies and policies. Participants were asked to indicate the degree to which they had positive or negative feelings about each of sixteen statements on a Likert-type scale ranging from 1 = *Very negative*, to 7 = *Very positive*. Studies using the Social Dominance Orientation scale have found acceptable levels of internal reliability across different cultures as estimated by a high Cronbach's alpha (0.82) in four different nations (USA, Canada, Taiwan, and Mexico) (Sidanius & Pratto, 1999). The predictive validity of the Social Dominance Orientation scale is supported by evidence that scores predict increased sexism and ethnic prejudice against several different

subordinant groups in different cultures and countries including the United States, Canada, Mexico, Israel, Taiwan, the People's Republic of China, and New Zealand (Sidanius & Pratto, 1999).

**Trait Anger.** The Buss-Perry Aggression Questionnaire (Buss and Perry, 1992), a 29-item inventory measuring four different dimensions of aggression, was used to measure trait anger-proneness in ancillary analyses described below. In addition to investigating the effects of *trait anger*, further sub-analyses also considered the effects of Buss-Perry indices of *trait hostility*, *verbal aggression*, and *physical aggression*. Each Buss-Perry scale is scored on a 7-point Likert scale ranging from 1 = *Extremely uncharacteristic of me* to 7 = *Extremely characteristic of me*. The scales have been shown to have excellent psychometric properties (Buss and Perry, 1992; Williams, Boyd, Cascardi & Poythress, 1996). Internal consistency for the four subscales and total score range from .72 (Verbal Aggression) to .89 (Total Aggression score). Test-retest reliability for the Buss-Perry Aggression Questionnaire over nine weeks is also satisfactory (correlations ranged from .72 for Anger to .80 for Physical Aggression and for the total score (Buss & Perry, 1992).

**Implicit Anti-Black Bias.** Implicit anti-Black bias was assessed with the Race Implicit Association Test, or Race IAT (Greenwald et al, 1998), a method widely used to assess implicit attitudes that an individual may be unwilling or unable to report due to self-presentation concerns or lack of self-awareness. Participants were asked to assign words or pictures to a category. If the two concepts being paired are strongly associated, the response time required to link them as a pair will be less than if the concepts are not as strongly associated. The Race IAT used in the present study is constructed using a picture-IAT script in the Inquisit software package and a race faces stimulus set (Inquisit 4.0.5, 2014). Results were analyzed using the most recent

scoring algorithm (D transformation; Greenwald et al, 2003). IAT Implicit Bias score values typically range from -2 to +2. An absolute value  $\geq 0.65$  suggests a strong association, values  $\geq 0.35$  indicate a moderate association; values  $\geq 0.15$  suggest a slight association; and values between 0-0.15 indicate no association. In this study, positive IAT Implicit Bias scores reflected a relatively stronger anti-Black bias and a relatively stronger positive White bias. The Race IAT has a median test–retest reliability of  $r = .56$ . The average validity coefficient is  $r = .24$  (Greenwald, Poehlman, Uhlmann, & Banaji, 2009).

### **Explicit Anti- Black Discrimination Behavior**

**Hiring Preferences Task.** Exploratory hypotheses concerning the associations between anti-outgroup beliefs, agonistic goals (motive profile), agonistic reactive anger, and *explicit* anti-Black discrimination behavior were assessed with a job applicant qualification rating procedure, the Hiring Preferences Task. In this procedure, participants are shown pictures of Black and White faces of hypothetical “job applicants” and are asked to rate each applicant’s suitability for employment. Participants were asked to endorse evaluative statements about each face (Appendix G). The evaluative statements indicated the degree to which participant judged each applicant to be “hireable” based on their facial expression. Participants indicated the extent to which they agreed with each statement using a 7-point Likert-type rating scale where 1 = *Disagree strongly*, and 7 = *Agree strongly*. This task used the same facial stimuli as the faces presented in the IAT Implicit Bias test. The facial stimuli were presented in the following way. All six black facial stimuli were depicted on one sheet of paper; the images were labelled from A- F (Form 1). A second page depicted all 6 white facial stimuli, also labelled from A-F (Form 2). The first 75 participants were presented Form 1 and asked to complete 6 “hireability” scale measures for each corresponding picture on this form. Then they were shown Form 2 and

asked to complete a second set of 6 “hireability” scale measures for white faces. This order was reversed for the latter 75 participants. Explicit anti-Black discrimination was indexed by calculating a Hiring Preference score: The sum of the participant’s ratings of all 6 black faces was subtracted from the sum of the participant’s ratings of all 6 White faces. A positive score value indicated a preference for hiring applicants with White faces over applicants with Black faces. This difference score was used to index anti-Black discrimination in all analyses testing the exploratory hypotheses.

### **Study Procedures**

After the participants signed up for the study they were provided with directions to attend a 90-minute session at the Project Heart laboratory. Assessments and experimental tasks were completed in the following sequence (outlined in Table 1). First, participants completed a survey packet containing a questionnaire measuring demographic variables (Appendix A), the Social Dominance Scale (Appendix B), Modern Racism Scale (Appendix C), and the Buss-Perry Aggression Scales (Appendix D). After they had completed the questionnaire battery, participants were escorted to another room where they were introduced to the SCI interviewer. They completed the Emotion Rating Scale (Appendix E, including the Anger rating). The interviewer introduced the SCI and conducted the interview, immediately after the interview ended the participant completed the Emotion Rating Scale (Appendix F, including the Anger rating) a second time. They then were escorted to the laboratory room in which the IAT Implicit Bias test and the Hiring Preferences Task (Appendix G) were administered. Altogether, the entire study protocol lasted 60-90 minutes. The time interval between the completion of the SCI and the initiation of the IAT/Hiring Preferences tasks was approximately 10-15 minutes. The first task order was followed for the first 75 participants and then the order was reversed for the

remaining 75 participants (i.e., the latter group completed the Hireability Preferences Task before completing the Implicit Association Test.)

### **Statistical Power**

The required sample size was determined by estimating the sample needed to yield statistical power = 0.80, with alpha = .05, given the anticipated effect size. The analyses were performed using GPower 3.0 software. The anticipated effect size was determined by reviewing research relating explicit anti-outgroup beliefs to IAT scores, in which the effect size indexed by Pearson coefficients typically ranges from  $r = .27$  to  $.36$ , as well as research relating agonistic striving to self-perceived somatic symptoms, which has reported an effect size indexed by beta coefficient of  $B = 2.82$  (Ewart, Elder, Laird, Shelby, & Walker, 2014). First, the Pearson value for the effect size was specified to determine a sample size needed to obtain power=0.80. For an effect size of 0.36, it was estimated that a sample size of  $N = 45$  would be required. For an effect size of 0.274, it was estimated that a sample size of  $N = 40$  would be sufficient (Cunningham & McCrum-Gardner, 2007).

Then the effect size of agonistic striving was considered. The sample size required to obtain a power= 0.80 at alpha = 0.01 was estimated using SAS 9.4 software. A beta value of 2.82 generated an expected R-square value for a model that included the covariates, the independent variable, the moderator variable, and the interaction term. Using Cohen's  $d$  formula, it was estimated that the sample size needed to obtain power=0.80 at alpha =0.01, in a multiple regression model testing the effect of one independent variable and one interaction effect would result in a sample size of  $N = 150$ . Given the differences in sample size, it was proposed that sample size of  $N = 150$  would be sufficient to test the study hypotheses.

### **Analytic Approach**

Before testing the study hypotheses, frequency distributions of the primary study variables and scatterplots of their interrelationships were examined to identify sample characteristics and the ranges of reported values, missing data, and outliers. Then, descriptive data (mean, median, range, standard deviation, and skew) were obtained. Outliers were determined by using a reference of z-scores  $>3.29$  and decisions were made to exclude or retain these cases based on the type of error that resulted in extreme values. All main variables included in the regression model were centered for improved interpretability.

**Replicating the Motive Profiles.** Cluster Analysis was used to test the presence of the predicted motive profiles. This was accomplished by performing hierarchical and *k*-means cluster analyses that used the participants' scores on the Expressiveness, Agonistic Goals, and Transcendence Goals scales of the SCI (Ewart et al., 2011). This analysis was expected to yield a three-cluster solution in which the score patterns of the cluster matched the predicted motive profiles, which correspond to the profiles observed in six earlier samples (Ewart et al., 2011).

**Tests of primary study hypotheses.** Preliminary analyses included a regression analysis testing the predicted interaction of explicit anti-outgroup beliefs and implicit motive profile in a model that included sex and its interactions with the belief and motive profile variables. This analysis indicated if it may be advisable to control for the effect of participants sex or perhaps test the study hypotheses separately in males and in females. In these and subsequent regression analyses, the moderator variable, Motive Profile, was defined as a dichotomous variable with two levels that represent, respectively, (1) the Agonistic profile group and (0) the Transcendent profile group and the Dissipated profile group combined. Interaction terms were computed by



multiplying the moderator variable (Motive Profile) and the independent variable (Modern Racism score or Social Dominance Orientation score).

Regression analyses testing the primary study hypotheses evaluated the amount of variance in a dependent variable (IAT Implicit Bias) that is uniquely associated with explicit anti-outgroup social beliefs (Modern Racism or Social Dominance Orientation), agonistic goals or reactive anger, and the interaction of these variables. In each regression model, one of the social belief independent variables, and one of the agonistic goal or reactive-anger moderator variables, were entered at Step 1. The independent variable by agonistic moderator variable interaction term was entered at Step 2 (Aiken and West, 1991). For all analyses, statistical significance was indicated at the .05 confidence level. If the interaction term was found to be statistically significant, the dependent variable was regressed on the independent variable (Social Dominance Orientation or Modern Racism) separately within the Agonistic Profile group and the Other Profile group to evaluate the moderating effect of *agonistic goals*. Study hypotheses predicted that the Agonistic Profile group would exhibit a positive regression slope that: (a) differs from zero, and (b) differs significantly from the regression slope of the Other Profile group. The same procedure was used to assess the second regression model, except that instead of entering the Social Dominance Orientation score as the index of explicit outgroup beliefs, the Modern Racism Scale score was entered. These analyses used a general linear model with type-III sums of squares solutions (SAS Institute, Cary, NC) to test predicted profile group differences. If these initial models demonstrated a significant main or interactive effect of profile group, further exploratory analyses comparing the agonistic profile group to the other profile groups were conducted by performing post hoc tests with a Scheffe' adjustment. In these

analyses, scores on the explicit attitude scales (Social Dominance Orientation scale or Modern Racism scale) were standardized to improve the interpretation of main and interactive effects.

A second set of regression analyses tested the prediction that explicit anti-outgroup beliefs interact with SCI agonistic anger to predict IAT Implicit Bias scores. Two hierarchical regression analyses were used to estimate the amount of variance in a dependent variable (IAT Implicit Bias score) that is uniquely associated with explicit anti-outgroup beliefs (Social Dominance Orientation or Modern Racism), agonistic Reactive Anger score, and the interaction of these variables. In these models the independent variable, explicit social beliefs, and the moderator variable, reactive anger, were entered in Step 1. The interaction term was entered at Step 2 (Aiken and West, 1991).

**Tests of Exploratory Hypotheses.** These exploratory analyses examined the potential influences of agonistic social control motives and agonistic reactive anger on explicit anti-Black discrimination behaviors. The exploratory hypotheses focused on explicit racial discrimination indexed by the Hiring Preference (i.e, greater preference for hiring Whites rather than Blacks) outcome variable. The hiring preference variable was created by subtracting the sum of the ratings a participant accorded to Black-looking applicant faces from the sum of the ratings that the participant accorded to White-looking applicant faces. For the first set of regression models the dependent variable (Hiring preferences), outgroup beliefs (Social Dominance Orientation or Modern Racism Scale) and the moderator variable, motive profile or reactive anger, were entered in Step 1. The interaction term, motive profile or reactive anger by outgroup beliefs, was entered at Step 2 (Aiken and West, 1991). This model was examined in independent regressions for each of the two explicit outgroup beliefs by each of the two agonistic moderators. The same procedure

was used to assess the second set of regression models, except that instead of entering the motive profile as the moderator, agonistic reactive anger was entered.

**Sub-Analyses.** Ancillary sub-analyses were performed to clarify findings generated by the tests of the exploratory hypotheses. These sub-analyses examined potential influences of *trait anger* on anti-Black discrimination behavior indexed by the Hiring Preferences Task. They were designed to clarify the relationship between state/trait anger and other dimensions of aggression in predicting explicit anti-Black discrimination. These analyses used the same regression modeling approach that was used in the tests of the primary and exploratory hypotheses. Trait anger proneness, one of the four Buss-Perry aggression dimensions, was used as an index of *trait anger*. In each regression, the independent variable, explicit anti-Black beliefs (Social Dominance Orientation or Modern Racism Scale) and the moderator variable, trait anger proneness, were entered in Step 1. The interaction term, explicit anti-Black beliefs by trait anger, was entered at Step 2 (Aiken and West, 1991).

The same analytic approach was used to evaluate the potential moderating effects of three other dimensions of trait aggressiveness indexed by the other three Buss-Perry aggression scales: Hostility, Verbal Aggression, and Physical Aggression. Each model substituted one of the three sub-scales as the moderator variable in separate regressions.

## Results

### Descriptive Statistics

Initial analyses examined the distributions of the main study variables to determine if they satisfied the assumption of normality, and if the levels of the variables were significantly related to participant demographic characteristics that might be correlated with outgroup biases. All scales were found to be normally distributed. Little demographic variation was evident among the 88 females and 61 males who comprised the study sample; all were Caucasian, 67% were first-year students, and the sample had a mean age of 18.8 years ( $SD = 1.42$  years). The one salient demographic variable that might be associated with differences in social perception and outgroup bias was gender, which was indexed by self-reported sex (Sabin, J. A., Nosek, B. A., Greenwald, A. G., & Rivara, F. P., 2009). Preliminary group comparisons detected no significant sex differences in Social Dominance Orientation,  $t(148) = 0.68, p = 0.54$ , Modern Racism beliefs  $t(148) = 0.27, p = 0.78$  or IAT Implicit Bias;  $t(148) = 0.97, p = 0.33$ . Preliminary comparisons of Reactive Anger scores in females and males detected no statistically significant sex differences in Pre-SCI Anger, SCI Anger Experience, or SCI Reactive Anger (change scores), which were respectively:  $t(148) = 1.37, p = 0.17$ ;  $t(148) = -0.55, p = 0.58$ ; and  $t(148) = -1.52, p = 0.13$ . Thus sex was not included as a covariate in the tests of the study's primary hypotheses.

### Relationships among Racial Biases, Beliefs, Reactive Anger, and Discrimination

Table 2 shows the bivariate correlations among scores on the study measures. The correlations indicate that responses to the Social Dominance Orientation scale were positively correlated with responses to the IAT Implicit Bias test and the Modern Racism scale. Modern Racism Scale scores were not significantly correlated with responses to the IAT Implicit Bias

test. Table 2 also shows that SCI Reactive Anger was positively associated with overt anti-Black discrimination in that increases in Reactive Anger were positively correlated with a preference for hiring Whites indexed by Hiring Preference scores. The pattern of correlations indicated that greater endorsement of the need for a social group dominance hierarchy predicted more negative implicit associations with Black faces, and greater reactive anger when focusing on a threatened personal striving during the SCI predicted a greater preference for hiring White rather than Black job applicants.

### **Motive Profiles**

The prediction that the agonistic, transcendence, and dissipated motive profiles would be replicated in a university student sample was tested by performing a combination of hierarchical and *k*-means cluster analytic procedures to identify the number of motive profile subgroups in the sample and to define the distinctive profiles of the SCI goals and expressive behaviors that characterized them (Aldenderfer & Blashfield, 1984; Wishart, 2006). These analyses followed procedures used by Ewart and Jorgensen (Ewart & Jorgensen, 2004; Ewart et al., 2011). Figure 1 shows the resulting cluster profiles represented as *T* scores on the SCI Expressiveness, Agonistic Goals, and Transcendence Goals scales. Figure 2 shows the corresponding motive profiles obtained earlier in community studies conducted in Syracuse (Ewart et al., 2011) and Baltimore (Ewart & Jorgensen, 2004). The present motive profiles clearly fit the predicted agonistic, transcendence, and dissipated patterns, and they closely approximated the corresponding motive profiles obtained in previous studies. The means and standard deviations of the SCI expressiveness and goal scale scores for each motive profile are shown in Table 3.

Motive profile group comparisons indicated that the numbers of females and males in each group did not differ significantly ( $\chi^2 = 0.05, p = 0.81$ ). Table 4 shows the means and

standard deviations of the levels of the primary outcome and moderator variables for each motive profile group and for the total sample. Group comparisons detected no statistically significant motive profile differences in Social Dominance Orientation,  $F(2, 147)=0.23, p=0.79$ , Modern Racism beliefs  $F(2,147)=0.66, p=0.51$ , IAT Implicit Biases,  $F(2,147)=0.52, p=0.5$ , SCI Baseline Anger  $F(2, 147)= 0.31, p=0.73$  or Trait Anger  $F(2, 147)= 2.89, p=0.06$ . Statistically significant differences in reactive anger were found between profile groups,  $F(2, 147)= 5.65, p=0.0043$ , such that persons with the agonistic striving profile demonstrated significantly greater increases in reactive anger as compared to transcendent and dissipated striving profiles. These results replicate the findings of previous research with the SCI (e.g., Ewart et al., 2011).

### **Tests of the Primary Hypotheses**

Having replicated the three predicted profiles in this sample, it now was possible to test the predicted moderating effects of agonistic striving and reactive anger following the analysis plan described above. As noted previously, in all regression models, the explicit attitude score (either Social Dominance Orientation or Modern Racism scale) was entered at step 1, the motive profile group or agonistic reactive anger at step 2, and the motive profile/ agonistic reactive anger by explicit attitude interaction at step 3. Motive Profile, was defined as a dichotomous variable with two levels that represent, respectively, (1) the Agonistic profile group and (0) the Transcendent profile group and the Dissipated profile group combined.

#### **Primary Hypothesis 1 (H1): Does SCI Agonistic Striving magnify the association between explicit social beliefs and IAT Implicit Biases?**

**H1.1: Agonistic Striving, Social Dominance Orientation, and Implicit Biases.** The first regression model evaluated the interaction of Social Dominance Orientation scores and Motive Profile group membership in predicting IAT Implicit Bias scores. Results are shown in

Table 5. The test of the overall regression model was not statistically significant. Despite a significant main effect of social dominance beliefs, there was no evidence that the association between social dominance orientation and implicit racial bias is greater in persons with the agonistic striving profile than in persons with the transcendence striving or the dissipated striving profiles.

**H1.2: Agonistic Striving, Modern Racism, and Implicit Biases.** The second regression model evaluated the interaction of Modern Racism scores and Motive Profile group membership in predicting IAT Implicit Bias scores. Results are shown in Table 6. The test of the overall regression model was not statistically significant; neither modern racist beliefs, nor motive profile, nor the interaction of these variables predicted implicit racial biases. There was no evidence that the association between modern racism and implicit racial bias is greater in persons with the agonistic striving profile than in persons with the transcendence striving or the dissipated striving profiles.

**Primary Hypothesis 2 (H2): Does SCI Reactive Anger magnify the association between explicit social beliefs and IAT Implicit Biases?**

**H2.1: Reactive Anger, Social Dominance Orientation, and Implicit Biases.** The first regression model evaluated the interaction of Social Dominance Orientation scores and SCI Reactive Anger scores in predicting IAT Implicit Bias scores. Results are shown in Table 7. The test of the overall model was not statistically significant. Despite a significant main effect of social dominance beliefs, there was no evidence that the association between social dominance orientation and implicit racial bias is magnified by higher levels of reactive anger to a threatened striving.

**H2.2: Reactive Anger, Modern Racism, and Implicit Biases.** The second regression model evaluated the interaction of Modern Racism scores and SCI Reactive Anger scores in predicting IAT Implicit Bias scores. Results are shown in Table 8. The test of the overall model was not statistically significant. Thus there was no evidence that the association between modern racism and implicit racial biases is magnified by higher levels of reactive agonistic anger to a threatened personal striving.

### **Exploratory Hypotheses**

Exploratory hypotheses concerning the influences of agonistic social control motives and agonistic reactive anger on explicit anti-Black discrimination behavior were tested in a subsequent set of analyses. The dependent variable in these analyses was explicit anti-Black discrimination indexed by the Hiring Preference Task, in which a higher score indicates a greater preference for hiring White rather than Black job applicants. Preliminary analyses disclosed that hiring preference scores differed by gender; comparisons of females and males showed that female participants expressed a stronger bias in favor of hiring white job applicants than did male participants,  $t(147) = -2.03, p = 0.04$ . Therefore, sex was included as a covariate in these analyses. The analyses used the same regression modeling approach that was used to test the primary hypotheses, except that that hiring preference score served as the dependent variable.

**Exploratory Hypothesis 1 (EH1): Does Agonistic Striving magnify the association between explicit social beliefs and explicit anti-Black discrimination?**

**EH1.1: Agonistic Striving, Social Dominance Orientation, and Explicit Discrimination.** The first regression model evaluated the interaction of Social Dominance Orientation and Motive Profile group membership in predicting explicit discrimination indexed by the hiring preference scores, controlling for sex differences. The results are shown in Table 9.



The test of the overall regression model was not statistically significant; neither social dominance orientation, nor motive profile, nor the interaction of these variables predicted explicit racial biases in hiring. Thus there was no evidence that the association between social dominance orientation and explicit racial discrimination is greater in persons with the agonistic striving profile than in persons with the transcendence striving or the dissipated striving profiles.

**EH1.2 Agonistic Striving, Modern Racism, and Explicit Discrimination.** The second regression model evaluated the interaction of Modern Racism beliefs and Motive Profile group membership in predicting Explicit Bias (discrimination) indexed by hiring preference scores, controlling for sex differences. Results are shown in Table 10. The test of the overall regression model was not statistically significant. Thus there was no evidence that the association between modern racism and explicit racial bias is greater in persons with the agonistic striving profile than in persons with the transcendence striving or the dissipated striving profiles.

**Exploratory Hypothesis 2 (EH2): Does SCI Reactive Anger magnify the association between explicit social beliefs and explicit anti-Black discrimination?**

**EH2.1: Reactive Anger, Social Dominance Orientation, and Explicit Discrimination.** The first regression model evaluated the interaction of Social Dominance Orientation scores and Reactive Anger scores in predicting Explicit Hiring Bias scores, controlling for sex differences. Results are shown in Table 11. The test of the overall model was statistically significant,  $F(4, 145) = 3.08, p=0.02$ . Results revealed a significant main effect of SCI Reactive Anger, which accounted for approximately 6.1% of the total variance in explicit anti-Black discrimination. The tendency to discriminate against Black applicants increases with rising anger responses induced by threats to personal goals.

**EH2.2: Reactive Anger, Modern Racism Beliefs, and Explicit Discrimination.** The second regression model evaluated the interaction of Modern Racism scores and Reactive Anger scores in predicting Explicit Hiring Bias scores, controlling for sex differences. Results are shown in Table 12. The test of the overall model was statistically significant,  $F(4, 145) = 2.91$ ,  $p = 0.03$ . Results revealed a significant main effect of Reactive Anger, which accounted for approximately 5.7% of the total variance in explicit hiring bias. As in the previous regression model, the tendency to discriminate against Black applicants increases with rising anger responses induced by threats to personal goals.

### **Ancillary Analyses**

Support for the prediction that SCI reactive anger may increase the tendency to discriminate against Blacks prompts an important ancillary question. Is the observed anger effect specific to reactive agonistic anger induced by focusing on a threatened personal striving during the SCI? Or might this association instead reflect a much broader average tendency to be angrier in general (high trait anger) and hence more ready to disparage other people when given an opportunity to do so? For example, individuals who frequently get angry and vent their anger at others (high trait anger) may more readily feel angry and disparage unfamiliar faces during a job applicant screening task. Their angry emotions might lead them to prefer more familiar-looking (i.e. White) faces to less familiar-looking (i.e., Black) faces. To examine this possibility, I repeated the tests of the second set of exploratory hypotheses (EH2) with regression models that substituted the trait Anger scale score of the Buss-Perry Aggression Questionnaire for the SCI Reactive Anger score. There were no significant differences in the level of trait anger between sexes,  $t(149) = -0.70$ ,  $p = 0.48$ , therefore sex was not included as a covariate. These analyses tested the hypothesis that trait anger-proneness magnifies the association between

explicit social beliefs and explicit anti-Black discrimination behavior assessed by the Hiring Preferences task.

**AA1: Social Dominance Orientation, Trait Anger, and Explicit Discrimination.** The first regression model evaluated the interaction of Social Dominance Orientation scores and Trait Anger scores in predicting Explicit Hiring Preference scores. Results are shown in Table 13. The test of the overall regression model was not statistically significant. There was no evidence that trait anger proneness increases the tendency to discriminate against Blacks.

**AA2: Modern Racism, Trait Anger, and Explicit Discrimination.** The second regression model evaluated the interaction of Modern Racism scores and Trait Anger scores in predicting Explicit Hiring Preference scores. Results are shown in Table 14. The test of the overall regression model was not statistically significant. There was no evidence that trait anger proneness increases the tendency to discriminate against Blacks.

### **Sub-Analyses with Other Aggressive Traits**

To more fully evaluate the possible effects of dispositional aggressiveness on implicit and explicit biases I repeated the Ancillary Analyses by testing regression models in which the Reactive Anger score was replaced by the score on each of the three other aggressive personality dispositions assessed by the Buss-Perry Aggression Questionnaire (Verbal Aggression, Physical Aggression, Hostility) in predicting scores on the IAT Implicit Bias test and the Hiring Preferences Task. Each of these regression models included one of the three trait aggression moderators. None of these models were found to be statistically significant ( $p > 0.05$ ). Thus the association between increased SCI anger responses and a greater readiness to discriminate against Black job applicants did not appear to be explained by a greater average tendency to be

especially anger-prone, more verbally or physically aggressive, or more inclined to view unfamiliar people with hostility.

## Discussion

The tests of the primary hypotheses and exploratory hypotheses may expand our understanding of the reasons why people's explicitly stated beliefs about disparaged social outgroups do not necessarily coincide with their implicit anti-outgroup biases or explicit discriminatory behaviors (Amodio, 2006; Fishbein & Ajzen, 1974; Kraus, 1995; Nosek, 2007). The observed pattern of negative and positive findings also raises important methodological and theoretical questions.

Analyses testing the primary hypothesis that the association between explicit social beliefs and implicit anti-Black biases is magnified by agonistic striving for social control, or by agonistic reactive anger, afforded support for neither hypothesis. Although Social Dominance Orientation scores predicted IAT Implicit Bias scores, Modern Racism scores did not. Neither agonistic striving for social control, nor agonistic reactive anger, moderated these relationships.

However, tests of the exploratory hypotheses did offer some support for hypotheses derived from social action theory. Participants' anti-Black discriminatory behavior measured with the hiring preferences task, although unrelated to overtly expressed social beliefs or implicit agonistic goals, was predicted by the degree to which a participant became angry when focusing on a threatened goal during the SCI. The more one's anger rose, the more one subsequently indicated a preference for hiring job applicants whose faces resembled one's own racial in-group. This hiring bias was associated with reactive (agonistic) anger but not with agonistic striving. Nor was it explained by a trait tendency to be angrier on average, or to a tendency to be more reactive to the experimental setting and experimenter indexed by Pre-SCI Baseline Anger scores.

This pattern of findings raises a number of questions. First, the tests of the primary hypotheses raise questions about implicit anti-outgroup biases. Why were implicit anti-Black

biases not associated with explicit racist beliefs, implicit agonistic goals, or agonistic anger? A second set of questions arises from the tests of the exploratory hypotheses. Why was explicit anti-Black discrimination behavior associated with reactive agonistic anger but not with social beliefs or agonistic goals? Why were these explicit discriminatory behaviors associated with SCI reactive (state) anger but not with trait anger-proneness?

I will consider the questions raised by the tests of the primary hypotheses before addressing questions raised by the tests of the exploratory hypotheses. Major questions include considerations involving the research methods and the interpretation of the guiding theories.

### **Tests of Primary Hypotheses**

**Why were implicit anti-Black attitudes unrelated to explicit racist beliefs, implicit agonistic goals, or reactive agonistic anger?**

I will approach these questions first by considering the possibility that methodological aspects of the research may explain why the predicted associations among explicit racist beliefs, agonistic striving, reactive anger, and implicit anti-Black biases were not detected. It is important to consider the possible role of participant characteristics, measurement methods, and experimental procedures.

### **Participant Characteristics**

Characteristics or life circumstances of the *research participants* may have limited the study's ability to detect the predicted relationships among the study variables. Psychological research, and especially studies of social prejudice, may be particularly vulnerable to well-known participant biases that are associated with student samples. The university is a setting where concerns about racial prejudice are often made salient and are freely discussed within a liberal intellectual climate. College campuses afford students opportunities to form relationships with

people whose race or ethnicity differs from their own. In a university, students are exposed to a liberally-oriented academic curriculum and to politically active groups on campus (Henry, 2008; Rudman, 2008). This setting may influence how student research participants respond when participating in studies of racial prejudice. These influences may lead student participants to suppress, minimize, or conceal their true racial beliefs or attitudes. This tendency could adversely affect the construct validity of the present study measures.

It is important to consider also that explicit measures of prejudice tend to be reactive, especially when administered by a member of a subordinate group (Henry & Sears, 2002; Rudman, 2008). This explanation might be particularly relevant in the present study. A large proportion of the study participants were examined by a researcher who is a member of an ethnic subordinate group. Although this researcher is not a member of the target out-group (Blacks), participants still may have felt some pressure to respond favorably toward minorities. This is consistent with the findings of other studies that used self-report measures of prejudice such as the Modern Racism scale: White college students tend to report more favorable attitudes toward Blacks in the presence of a Black experimenter, when they sense they are being evaluated, or when there are pressures toward egalitarian responses (Lowery, Hardin & Sinclair, 2001). Comparisons of university students and general adult samples reveal that, even when an outgroup member is not present, university students tend to endorse more favorable attitudes toward all social groups regardless of their ethnicity (Henry, 2008). It is thought that this difference reflects the students' greater exposure to members of outgroups (Aberson, Shoemaker & Tomolillo, 2004; Binder et al., 2009; Henry, 2008; Hewston et al., 2014; Pettigrew & Tropp, 2008). Thus the participants in the present study may have been more motivated, if not explicitly pressured, to appear unprejudiced.

It is possible, further, that the participants may have guessed the true purpose of the study. Participants in the present sample were enrolled in an introductory psychology course that included learning about research on attitudes and behaviors related to social prejudice and discrimination. Participants' responses may have been shaped by these learning experiences. It could be hypothesized that participants in this sample responded in a manner which reflected exposure to research they had studied. This explanation is consistent with research evidence indicating that inaccurate self-reports of behaviors can lead to lower attitude-behavior correlations if participants simply infer their behaviors from research findings they have been exposed to ((Ajzen, Timko & White, 1982; Henry, 2008). By studying research on social prejudice and discrimination, the present participants may have been sensitized to the hypotheses that were under investigation. Having been thus sensitized they may have been able to quickly unmask the purpose of the study.

A final consideration involves the question of the participant's social-emotional development. Developmental factors that affect social attitudes, personal identity, and the self may have influenced responses to the study measures. The mean age of the participants was 18 years. They may have been too socially inexperienced to have developed strong racial attitudes. Previous research indicates that higher attitude-behavior correlations are observed in the general population than in student samples (Kraus, 1995; Peterson & Merunka, 2014) Student research participants may exhibit lower attitude-behavior correlations because their attitudes are still developing and are based on limited information rather than on direct personal experience (Kraus, 1995). Hence, college students as a group tend to exhibit a narrower range of attitudes. Restricted variance either in attitudes or in behaviors can lead to low attitude-behavior associations.



Despite these limitations, the present use of a university student sample may have afforded certain advantages. For example, the factors that tend to constrain a researcher's ability to detect hypothesized attitude-behavior correlations in a relatively young, demographically homogeneous, and socially inexperienced student population (e.g., issues of range restriction in statistical analyses) also may render a research design more robust against Type I errors, thus reducing the tendency to detect spurious associations between social beliefs, agonistic strivings, and implicit racial biases (Rudman, 2008).

### **Measurement Methods**

It is important to consider the possibility that certain limitations of the *measurement* methods may have reduced the study's ability to detect the predicted relationships among explicit racist beliefs, implicit social control motives, reactive anger, and implicit anti-Black biases. Of particular concern here is the Modern Racism Scale which, unlike the Social Dominance Orientation scale, failed to predict IAT Implicit Bias scores.

**Modern Racism.** The decision to include the Modern Racism Scale in this study was influenced by the scale's widespread use and by published psychometric assessment data that supported the scale's construct validity. However, present results did not reveal significant associations between Modern Racism scale scores and IAT Implicit Bias scores. This finding, and the time period from which the Modern Racism scale dates (1970's), might lead one to question if this measure still affords a valid measure of racist beliefs. For example, the item, "Blacks have more influence upon school desegregation plans than they ought to have (McConahay, 1986)," is less relevant today than it was four decades ago, when court-ordered school desegregation plans were the focal points of heated and often violent political controversy. Second, most of the items in the Modern Racism Scale are worded so that

agreement reflects higher levels of overt racism reflected in the beliefs that "Government officials usually pay less attention to a request or complaint from a black person than from a white person (McConahay, 1986)" (reverse-scored), and "Most blacks who receive money from welfare programs could get along without it if they tried (McConahay, 1986)." Such items, although originally thought to represent subtle forms of racial prejudice, today might be regarded as blatantly and offensively racist (Fazio, Jackson, Dunton & Williams, 1995; Henry, 2002; Rudman, 2008). Hence, the reactive nature of this scale may have increased participants motivation to respond in a non-prejudiced manner.

Despite these limitations, Modern Racism Scale responses did yield useful information in showing that White participants did not endorse overtly and provocatively racist beliefs. Instead anti-Black biases were reflected in discriminatory behaviors that will be considered below in the discussion of the exploratory hypotheses.

**Agonistic Goals and Reactive Anger.** Other concerns pertain to the SCI. The SCI has not previously been used to assess agonistic goals or reactive anger in a college population. It is possible that the characteristics of this population limited the SCI's ability to measure implicit motives and related anger reactivity. The SCI is designed to measure recurring stress arising from threats to an important personal goal or striving. Participants in the present study usually selected "Stress with my studies" as their most distressing recurring problem. Perhaps focusing on an academic problem reduced the SCI's sensitivity to agonistic strivings associated with interpersonal relationships. This might have limited the SCI's ability to measure participants' implicit social control motives.

However, present results indicate that the SCI succeeded in identifying exactly the same three motive profiles (clusters) that have been observed in community-based research with

adolescents and adults of different ages. This study reproduced, in a college sample, the same motive profiles that had emerged earlier in community studies with low income urban adolescents in Baltimore, Maryland, in adolescents and young adults in Nashville, Tennessee, and in adolescents and middle-aged adults in Syracuse, New York. The SCI also evoked in the present university sample exactly the same pattern of reactive anger responses that has been observed in the other research. The present participants' self-reports of emotions they experienced before and during the SCI suggest that, relative to individuals with the transcendence striving or dissipated striving profiles, individuals who exhibited the agonistic striving profile did not react to the experimental setting and experimenter with greater anger. However, they did experience a significantly greater surge of anger during the SCI when focusing on a threatened personal striving. Thus, in the present university sample, the SCI performed exactly as it has in community-based samples with participants of widely different ages and diverse racial, ethnic, socioeconomic, and educational backgrounds. These findings lower the likelihood that the observed pattern of results is attributable to measurement characteristics of the SCI in a university student sample.

**Implicit Attitudes.** The study's primary dependent variable, implicit anti-Black bias, was measured with the Race IAT protocol. The limitations of this measure must be considered. Several studies suggest that the popularity of the Race IAT has weakened its ability to detect racial biases (Azar, 2008; Frantz, Cuddy, Burnett, Ray & Hart, 2004). The IAT is one of those rare research methods that has transcended the laboratory to catch the attention not only of social psychologists, who use it in increasing numbers, but also a large portion of the general public. The IAT has been reported in newspapers, featured on radio and television, and garnered more than 5 million visits to its official Web site (<https://implicit.harvard.edu>) by people who

want to take the test. The primary concern regarding this exposure arises from evidence indicating that the IAT demonstrates low test-retest reliability (Azar, 2008; Frantz, Cuddy, Burnett, Ray & Hart, 2004; Oswald, Mitchell, Blanton, Jaccard & Tetlock, 2013 ;Oswald, Mitchell, Blanton, Jaccard & Tetlock, 2015). Individuals who have taken this test on an earlier occasion may respond differently when taking it a second or even a third time. Participants in the present study were asked during post-experiment debriefing if they had been previously exposed to the IAT. The debriefing responses to this question indicated that approximately 50% of the participants were aware that the IAT is designed to measure racial prejudice. Of this group, approximately 30% had taken the test online. To check the possibility that differences in prior exposure to the IAT could have affected the present findings, I repeated the primary hypothesis tests described above in a sample of participants that contained only those participants who reported that they had not taken the Race IAT previously. The results of these analyses did not differ from the results of analyses with the full sample reported above. Thus there was no indication that prior experience with the IAT protocol might account for the present negative findings.

An advantage of measures of implicit attitudes is that, unlike measures of explicit beliefs, they are not influenced by social desirability or self-presentation biases (Brauer, Wasel, & Niedenthal, 2000). Implicit measures presumably tap attitudes that individuals are unlikely or unable to express overtly (Greenwald & Banaji, 1995). The IAT's success in measuring implicit anti-Black attitudes in the present study is indicated by the finding that White participants' IAT scores indicated a pro-ingroup bias favoring White faces over Black faces. This implicit bias is evident in the mean IAT score, which represents the overall implicit association effect size. Scores on the IAT range from -2 to +2. Scores greater or lower than 0 indicate a positive or

negative association with White faces relative to Black faces (Greenwald, Nosek & Banaji, 2003; Nosek, Greenwald & Banaji, 2005). The mean score of +0.46 found in the present study suggests a moderate implicit positive bias favoring White over Black faces. Although the present data did not indicate that this implicit bias was related to participants' explicit anti-Black social beliefs, social control motives, or reactive anger, the present pattern of findings is consistent with the interpretation that the IAT successfully detected implicit racial biases. Further, IAT implicit bias scores were positively correlated with scores on the Social Dominance Orientation scale as indicated previously. These findings support the IAT's construct validity in the present study.

### **Study Procedures**

The study procedures, including the sequence in which the experimental tasks were presented as well as the laboratory setting itself, may have affected the study's ability to detect the predicted attitude-behavior associations. First, the experimental setting and task sequence may have lowered the level of social threat. The procedures may not have fostered sustained states of agonistic vigilance throughout the experiment session. Agonistic striving involves seeking to influence, manage, or control other people. It is possible that procedures used in the present study evoked agonistic goals and reactive anger during the SCI but did not sustain alert social vigilance long enough for vigilance to affect IAT performance. Failure to maintain agonistic social vigilance could result from switching from the active SCI task to passive self-report (computer based) tasks that did not induce alert attention to external social-environmental cues (Trawalter, Richeson & Shelton, 2009). Study procedures also may have limited the protocol's ability to assess the predicted influences of SCI reactive anger. An interval of about 15 minutes elapsed between the end of the SCI and the onset of the IAT Implicit Bias and Hiring Preferences protocols. After completing the post-SCI questionnaire, the participant was escorted

to a different laboratory room, and was introduced to a different experimenter who then explained the IAT / Hiring tasks. This time interval and the distracting activities and change of setting may have reduced the likelihood that anger experienced during the SCI would influence IAT scores (DeSteno, Dasgupta, Bartlett & Cajdric, 2004; Konecni, 1975; Trawalter, Richeson & Shelton, 2009).

Thus, to the extent that experimental procedures may not have fostered sustained levels of alert agonistic vigilance or reactive anger, they may not have been optimally sensitive to the associations between agonistic control motives or emotions and implicit anti-Black biases.

**Why was explicit anti-Black discrimination behavior associated with agonistic reactive anger but not with social beliefs or agonistic goals?**

Explicit racial discrimination assessed with the Hiring Preferences Task was positively correlated with levels of SCI Reactive Anger but not with social beliefs or agonistic goals. In the case of explicit social beliefs, limitations of the Modern Racism scale have been discussed above. The Social Dominance Orientation scale, in contrast, yielded evidence of construct validity in this sample by predicting IAT Implicit Bias scores. However, social dominance beliefs did not predict explicit anti-Black discrimination behavior. The challenge is to explain why neither the Social Dominance Orientation scores nor agonistic goals predicted explicit racial discrimination.

Potential methodological explanations include some limitations of the Hiring Preferences Task and the experimental procedures. First, participants in the present sample likely were too young to have had extensive experience in occupational settings. Considering that the mean age of participants was 18 years, it seems likely that few or none of them may have had any direct hiring experience. Thus, their performance on the hiring task may have reflected their lack of

relevant knowledge. A lack of occupational experience also may have made White participants less disposed to view members of racially subordinate groups as potential competitors and hence as threats to their employment. These factors may have weakened the association between participants' beliefs about inter-group resource competition or social dominance and their evaluations of job applicants' less familiar faces.

The absence of the predicted association between agonistic goals and hiring discrimination scores may be attributable to the same experimental procedural factors that might explain why agonistic goals did not predict IAT implicit anti-Black bias (Sherwood, Dolan & Light, 1990; Trawalter, Richeson & Shelton, 2009). The distracting events that followed the SCI could have lowered participants' vigilant attention to their interpersonal environment when they performed the Hiring Preferences Task. It is important to note that the hiring task did not involve an interpersonal encounter or challenge.

Why then did SCI *reactive anger* predict explicit anti-Black discrimination on the hiring task? Potential explanations are suggested by research on social prejudice and by studies of agonistic striving. Research on social prejudice suggests that research participants are more likely to discriminate against disparaged social outgroups when the participants are feeling angry or distressed (DeSteno, Dasgupta, Bartlett & Cajdric, 2004; Konecni, 1974; Lerner & Tiedens, 2006). It is hypothesized that angry affect shapes cognition by increasing the accessibility of negative social stereotypes about the denigrated outgroup. These negative stereotypes facilitate discriminatory anti-outgroup behaviors.

Several aspects of the present research design limit the relevance of this explanation, however. First, events that intervened between the SCI and the IAT likely allowed reactive SCI anger to subside and dissipate. Second, recall that the order in which the tests of IAT implicit

bias and anti-Black discriminatory hiring behavior were presented was *counterbalanced* across participants: Half of the participants completed the IAT Implicit Bias test followed by the Hiring Preferences Task, and the other half completed these tasks in the reverse sequence. If persisting SCI anger arousal had shaped discrimination responses to the Hiring Preferences task by evoking negative racial stereotypes, then these anger and stereotyping effects also should have affected the IAT index of implicit racial bias. However, SCI reactive anger did not predict IAT Implicit Bias responses.

A second explanation is suggested by research on agonistic striving. As noted above in the Introduction, research with the SCI indicates that persons who exhibit the agonistic striving profile are not especially anger-prone in general (Ewart, 2016). For example, they do not score higher on measures of *trait* anger relative to persons with the transcendence striving or the dissipated striving profiles (Ewart, Elder, Laird, Shelby, & Walker, 2014; Maisto, Ewart, Witkiewitz, Connors, Elder, Krennek, & Ditmar; in press). However, persons with the agonistic profile do become angrier when they perceive that their ability to influence or control other people is threatened (Ewart et al., 2011; Ewart & Jorgensen, 2004). For example, compared to individuals with the transcendence striving or dissipated striving profiles, those with the agonistic striving profile exhibit significantly greater reactive anger during the SCI, and also display more intense anger during an anger-recall task administered on a different occasion (Ewart et al., 2011; Ewart & Jorgensen, 2004). This suggests that their reactive anger is situationally specific, and serves social dominance goals in circumstances where their ability to exert social control is challenged or uncertain (Wright, Lindgren, & Zakriski, 2001). Thus it is not anger's overall frequency, but rather its situational trigger and social control function that characterizes individuals with the agonistic profile. Their situational anger reflects and expresses



a strong negative evaluation of those who are perceived to thwart agonistic strivings for social control.

The Hiring Preferences Task requires participants to control unfamiliar job applicants' access to employment by evaluating the applicants' facial expressions. Present findings indicate that Whites who exhibit high levels of reactive anger when reliving a threatened personal striving during the SCI tend to evaluate unfamiliar "Black-looking" faces more negatively when controlling applicants' access to employment on the Hiring Preferences Task. SCI Reactive Anger scores and hiring discrimination scores are positively correlated because both indices indicate a heightened readiness to negatively evaluate unfamiliar others (e.g., outgroup members), especially under conditions where one's ability to exert control is ambiguous or uncertain.

Why does SCI reactive anger predict overt anti-Black discrimination but not covert anti-Black implicit biases? An obvious explanation is suggested by the fact that the IAT does not involve exercising *social control* (Fazio & Olson, 2003; Greenwald, 1995; Greenwald, Nosek & Banaji, 2003; Nosek, Greenwald & Banaji, 2005; McConnell & Leibold, 2001). When performing the IAT, the participant is not required to evaluate strangers' faces in order to control a stranger's access to a limited resource. A second explanation is suggested by a social-cognitive *knowledge and appraisal architecture (KAPA)* analysis of personality proposed by Cervone (2004). In the KAPA analysis, cognitive operations are comprised of three qualitatively distinct phenomena: *Beliefs, aims, and evaluations*. Beliefs represent *associations*, as in "If X, then Y." Evaluations represent *comparative* judgments, as in "X is better than Y." Viewed from this perspective, the IAT measures implicit, automatic associations: "If Black, then avoid." The Hiring Preference Task, on the other hand, measures conscious (reflective) job eligibility

*evaluations*: “The more familiar-looking, the better.” These two potential explanations are not incompatible, and may operate together. Both may explain why SCI reactive anger was associated with overt anti-Black discrimination behavior indexed by hiring evaluations but not with anti-Black biases indexed by implicit associations.

### Ancillary Analyses

#### **Why were explicit anti-Black discrimination behaviors associated with agonistic reactive anger but not with trait anger-proneness?**

A strength of the present study is the varied assessment of angry affect, which included the measurement of subjective anger aroused by a significant personal threat (SCI) as well as average levels of *trait* anger. The assessment of state and trait anger made it possible to compare the agonistic profile group to the other profile groups with respect to participants’ *usual* trait levels of negative affect and their tendency to experience stress-evoked situational fluctuations in angry emotional states. The analysis showed that, whereas persons who exhibit the agonistic motive profile do not experience more frequent or intense anger *on average* relative to persons who exhibit the other two motive profiles, they do become angrier when their social control goals are threatened.

The measurement of angry affect immediately before the SCI (Pre-SCI Baseline Anger) revealed that, compared to individuals with the transcendence striving or dissipated striving profiles, individuals with the agonistic striving profile did not experience higher levels of situational or *state* anger upon entering the laboratory setting and interacting with the experimenter and SCI interviewer. It was the greater rise in anger that agonistically-focused participants experienced when describing a threatened personal goal that distinguished this profile. The present finding is compatible with research evidence indicating that personality

traits, which usually are measured by asking people to report their *average* tendencies, do not account for specific instances of racial bias (Caprara, 1986; Porter, Stone & Schwartz, 1999; Wright, Lindgren & Zakriski, 2001). Initially, negative outgroup biases were thought to represent personality profiles, specifically in the form of the Authoritarian personality (Altemeyer & Hunsberger, 1992). However, these theoretical assertions failed to explain patterns of racism very well because biased reactions toward outgroups did not remain consistent across contexts and therefore, conflicted with the definition of personality traits. The results of the present study are consistent with these findings.

### **Future Directions**

Present results contribute to our understanding of racial prejudice and discrimination by suggesting that covert anti-Black racial biases in young White men and women are associated with the belief that it is desirable for Blacks to occupy a subordinate position in society. However, these beliefs may not necessarily lead to acts of overt discrimination against people of color. Young Whites in the present study were more likely to discriminate against Blacks if the perceivers readily became angry when their important personal strivings (assessed with the SCI) were threatened. Their anti-Black discriminatory behavior was linked to angry emotions aroused by threats to personal regulatory control—not to a tendency to feel angry, aggressive, or hostile in general. If replicated in further work, this finding and the methodologic limitations discussed above have implications for efforts to advance our understanding of the determinants of racial prejudice and discrimination, as well as for our understanding of social action theory.

Study findings have implications for the assessment of social beliefs that may be conducive to anti-outgroup biases. It appears that the Modern Racism scale may need to be

updated or replaced with a different measurement method. Alternative approaches include using the Symbolic racism scale rather than the Modern Racism Scale used in this study. This scale was originally developed in response to many critiques of the Modern Racism scale, specifically as related to the relevance of items on the Modern Racism Scale (McConahay, 1988). The symbolic Racism scale was developed in response to prevent response biases and mindless response patterns (Henry & Sears, 2002). Items on this scale do not target Blacks but rather address outgroups in general. It might be that future studies could use one or both scales to assess differences in responding which could offer information about societal changes in the phenomenon of prejudice.

It is possible too that the Race IAT method for assessing implicit anti-Black biases may need to be supplemented with other implicit measurement approaches. One way this might be addressed in future studies is by using psycho-physiological measurements to examine emotional reactivity. The guiding assumption of using indexes of emotions as an alternative to direct self-report measures or in addition to the IAT implicit measure is that people's emotional responses are presumably more resistant to voluntary (explicit) suppression and would be more valid predictors of prejudiced attitudes (Nosek, 2005; Nosek & Smyth, 2007). The inclusion of affect measures in addition to cognitive measures would help examine prejudice in its entirety because prejudice, by definition, consists of affective and cognitive components. Therefore, an important direction for future research would be to consider adopting a multi-method assessment model, according to which the two basic components (cognitive and affective) are investigated at both implicit and explicit levels. The cognitive bases of prejudice can be investigated, at the implicit level by means of automatic stereotype activations (e.g., the IAT) and at the explicit level, with traditional self-report measures. Non controlled affective responses can be studied with psycho-

physiological procedures, whereas controlled emotional reactions can be assessed with standard self-report measures (i.e., feeling thermometers etc) (Nosek, 2005; Nosek & Smyth, 2007).

This multi-method approach can be further extended by also examining behavioral components as they relate to negative outgroup biases. Specifically, the measurement of anti-Black discriminatory behavior may benefit from a multi-method approach. For example, in addition to the Hiring Preferences Task, additional indices of tendencies to discriminate against outgroups might be obtained by measuring preferences for certain groups in other arenas. For example, modification of the Hiring Preferences Task to examine preferences for Blacks as neighbors or peers might help distinguish which contexts trigger negative biases. Additionally, this measure could also be extended to other subordinate groups. Given the growing ethnic diversity of the United States, it is important that future studies broaden this focus to the study of racial prejudice among non-whites, so as to capture a more complete representation of Americans' attitudes toward all outgroups.

Finally, present findings have important implications for the further development of a social action theory of chronic stress. Past research has focused on understanding how agonistic strivings induce states of alert vigilance to the social environment that increase blood pressure levels, magnify the effects of stress-induced cortisol on vascular remodeling, and contribute to unexplained medical illnesses by increasing somatic symptoms such as pain, fatigue, and gastric distress. Present findings, however, point to other unexplored pathways by which agonistic striving may undermine health and increase risk for stress-related illnesses. By inducing reactive anger when social control motives are threatened, agonistic struggles may evoke hostile counter-responses from other people and adversely alter one's social-ecological niche. Agonistic anger

may damage social networks and relationships, impair social support, and contribute to environmental stressors that damage health. These causal processes merit further study.

The analysis of agonistic striving also suggests potential avenues for interventions to reduce anti-outgroup discriminatory behavior and lower chronic stress. Social Action Theory holds that agonistic striving develops when important social networks and relationships are repeatedly threatened, undermined, or damaged. These disruptions often arise in the workplace, or in home, community, or other settings. Although the agonistic motive profile by itself was not associated with negative outgroup biases, it cannot be ignored that agonistic reactive anger did predict increases in discriminatory behavior. It might be that motives alone do not increase biases, however individuals with this motive profile in combination with the tendency to experience heightened anger are particularly vulnerable to perceiving outgroups negatively. From this perspective, future studies could inform intervention techniques that focus on reducing anger (e.g. breathing exercises, distraction techniques or mindfulness) specifically for individuals who demonstrate a desire to manage or control interpersonal interactions. Workplace, family, and school-based interventions to reduce conflict and help people manage anger may not only curb agonistic striving and lower physiologic stress, these interventions also have the potential to decrease the tendency to discriminate against members of subordinant groups. Social action theory proposes that it is important to combine social-structural and psychoeducational interventions that target both the social origins of agonistic striving and its personal emotional consequences. Present findings suggest that this combined approach may potentially yield valuable societal and public health benefits.

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Table 1

*Sequence of Assessments and Experimental Procedures*


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Assessment	Experimental Task
1	Complete Questionnaires: <ol style="list-style-type: none"> <li>1. Demographic Questionnaire</li> <li>2. Modern Racism Scale</li> <li>3. Social Dominance Orientation scale</li> <li>4. Buss-Perry Aggression scale</li> </ol>
2	Feelings at Present Moment Questionnaire
3	Social Competence Interview
4.	Feelings During the Interview
5	Race Implicit Association Task*
6	Hireability Questionnaire*

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*Note:* \* Task order for measures 5 and 6 were reversed for half of the sample.

Table 2.

*Pearson coefficients showing the correlations among the dependent and independent variables (N= 149).*

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Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5
<i>Implicit Bias</i>							
1. Implicit Attitudes Test	0.46	0.34					
<i>Explicit Social Beliefs</i>							
2. Modern Racism	14.90	3.84	0.07				
3. Social Dominance	35.76	10.93	0.17*	0.33**			
<i>Anger</i>							
4. Reactive Anger	0.64	1.46	-0.07	0.07	-0.08		
<i>Explicit Hiring Preference</i>							
5. White Hiring Preference Score	3.89	10.9	0.04	0.05	0.03	0.23**	

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•  $p < .05$ , \*\* $p < 0.001$

Table 3

*Motive profiles (N= 149)*

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Variable	<i>n</i>	Expressiveness  <i>M (SD)</i>	Agonistic Goal  <i>M (SD)</i>	Transcendent Goal  <i>M (SD)</i>
Agonistic Striving	63	39.22(5.19)	23.28 (7.36)	12.17(3.58)
Transcendent Striving	32	37.18 (5.06)	12.47(3.79)	29.09(7.40)
Dissipated Striving	54	26.61(5.78)	14.77(5.59)	15.26(5.45)

---

Table 4

*Mean and Standard Deviations of Study Variables for Total Sample (N = 149) and the Three Motive Profile Groups.*

Variable	M (SD)	Profile Groups		
		Agonistic Striving (N= 63) M (SD)	Transcendence Striving (N= 32) M (SD)	Dissipated Striving (N=54) M (SD)
Implicit Association Test (IAT)	0.46 (0.31)	0.48 (0.31)	0.49 (0.42)	0.42 (0.44)
Modern Racism Beliefs (MR)	14.92 (3.8)	14.32(4.20)	13.40 (3.83)	13.72 (3.90)
Social Dominance Orientation(SDO)	35.83 (10.93)	36.43 (11.44)	35.71 (12.33)	35.01 (9.60)
SCI Baseline Anger	1.45 (0.99)	1.50 (0.96)	1.50 (1.22)	1.37 (0.89)
SCI Reactive Anger	0.64 (1.46)	1.08 (1.61) <sup>a</sup>	0.13 (0.97) <sup>b</sup>	0.44 (1.39) <sup>b</sup>
Trait Anger	18.16 (7.30)	19.74 (8.10)	17.72 (6.43)	16.58(6.51)

*Note.* Significantly different group means are indicated by different superscripts.

Table 5

*Regression of Implicit Bias on Social Dominance Orientation, Motive Profile and their interaction.*

Variable	<i>n</i>	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Social Dominance Orientation	149	.05	0.03	1.95	0.05
Motive Profile	149	.02	0.03	0.74	0.46
Social Dominance Orientation x Motive Profile	149	-0.02	0.03	-0.50	0.61

*B = Standardized regression coefficient      SE = Standard error*



Table 6

*Regression of Implicit Bias on Modern Racism, Motive Profile and their interaction.*

Variable	<i>n</i>	B	SE	<i>t</i>	<i>p</i>
Modern Racism	149	-0.001	0.07	-0.07	0.94
Motive Profile	149	0.02	0.03	0.77	0.44
Modern Racism x Motive Profile	149	0.01	0.03	0.44	0.66

*B = Standardized regression coefficient      SE = Standard error*

Table 7

*Regression of Implicit Bias on Social Dominance Orientation, Agonistic Reactive Anger and their interaction.*

---

Variable	<i>n</i>	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Social Dominance Orientation	149	0.46	0.02	2.00	0.04
Agonistic Reactive Anger	149	-0.20	0.02	-0.74	0.47
Social Dominance Orientation x Agonistic Reactive Anger	149	-0.002	0.03	-0.08	0.93

---

*B = Standardized regression coefficient      SE = Standard error*

Table 8

*Regression of Implicit Bias on Modern Racism, Agonistic Reactive Anger and their interaction.*

Variable	<i>n</i>	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Modern Racism	149	0.03	0.03	1.03	0.31
Agonistic Reactive Anger	149	-0.02	0.03	-0.95	0.34
Modern Racism x Agonistic Reactive Anger	149	-0.001	0.03	-0.05	0.96

*B = Standardized regression coefficient      SE = Standard error*

Table 9

*Regression of Hiring Preferences on Social Dominance Orientation, Motive Profile and their interaction, controlling for Sex.*

Variable	<i>n</i>	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Social Dominance Orientation	149	0.22	0.23	0.96	0.34
Motive Profile	149	4.34	3.63	1.19	0.23
Sex	149	3.28	1.81	1.10	0.27
Social Dominance Orientation x Motive Profile	149	-0.08	0.09	-0.91	0.36

*B = Standardized regression coefficient      SE = Standard error*

Table 10

*Regression of Hiring Preferences on Modern Racism, Motive Profile, and their interaction, controlling for Sex.*

Variable	<i>n</i>	B	SE	<i>t</i>	<i>p</i>
Modern Racism	149	-0.32	0.58	-0.55	0.58
Motive Profile	149	-1.74	3.64	-0.48	0.63
Sex	149	3.21	1.81	1.77	0.08
Modern Racism x Motive Profile	149	0.21	0.25	0.83	0.41

*B = Standardized regression coefficient      SE = Standard error*

Table 11

*Regression of Hiring Preferences on Social Dominance Orientation, Agonistic Reactive Anger and their interaction, controlling for Sex.*

Variable	<i>n</i>	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Social Dominance Orientation	149	0.08	0.09	0.89	0.40
Agonistic Reactive Anger	149	3.28	1.99	1.98	0.04
Sex	149	2.79	1.79	1.56	0.12
Social Dominance Orientation x Agonistic Reactive Anger	149	-0.04	0.05	-0.81	0.42

*B = Standardized regression coefficient      SE = Standard error*

Table 12

*Regression of Hiring Preference on Modern Racism, Agonistic Reactive Anger and their interaction, controlling for Sex.*

Variable	<i>n</i>	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Modern Racism	149	0.	0.25	0.69	0.50
Agonistic Reactive Anger	149	3.18	2.55	2.20	0.03
Sex	149	0.26	0.16	1.56	0.12
Modern Racism x Agonistic Reactive Anger	149	-0.11	0.17	-0.60	0.55

*B = Standardized regression coefficient      SE = Standard error*

Table 13

*Regression of Hiring Preferences on Social Dominance Orientation, Trait Anger and their interaction.*

Variable	<i>n</i>	B	SE	<i>t</i>	<i>p</i>
Social Dominance Orientation	149	0.24	0.24	1.00	0.32
Trait Anger	149	0.38	0.48	0.79	0.43
Social Dominance Orientation x Trait Anger	149	-0.01	0.01	-0.93	0.36

*B = Standardized regression coefficient      SE = Standard error*



Table 14

*Regression of Hiring Preference on Modern Racism, Trait Anger and their interaction.*

Variable	<i>n</i>	B	SE	<i>t</i>	<i>p</i>
Modern Racism	149	0.69	0.67	1.02	0.31
Trait Anger	149	0.38	0.51	0.74	0.47
Modern Racism x Trait Anger	149	-0.03	0.03	-0.86	0.40

*B = Standardized regression coefficient      SE = Standard error*

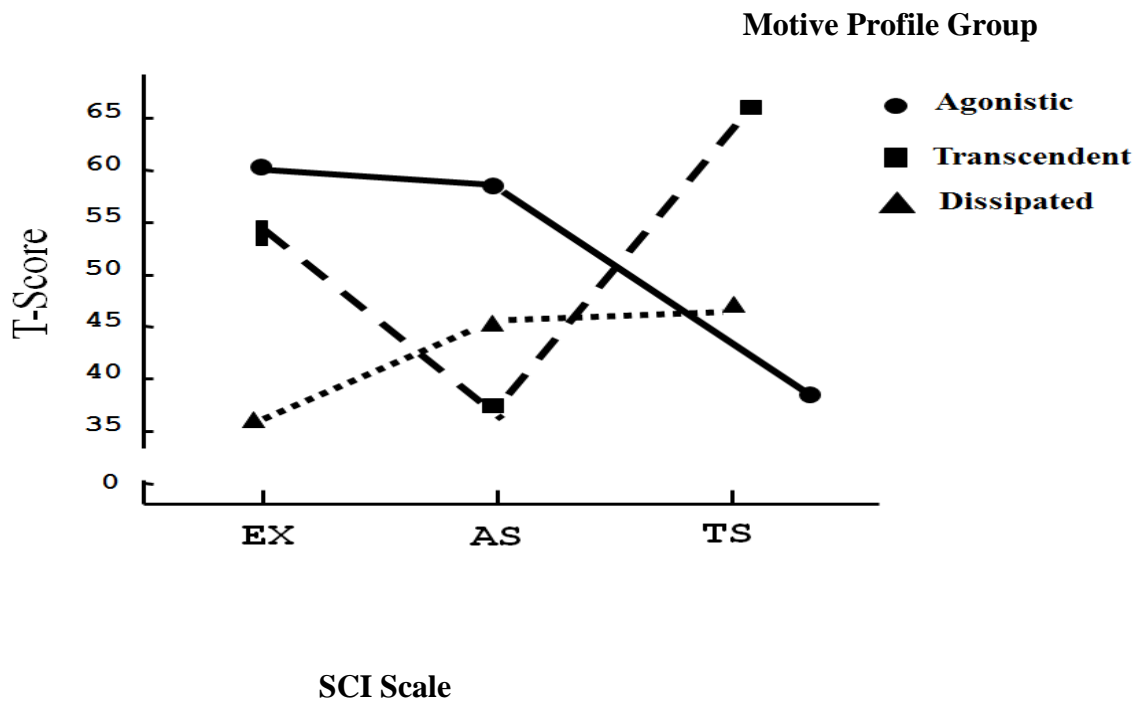


Figure 1. Motive profiles identified by cluster analyses of scores on the SCI Expressiveness (EX) scale, Agonistic Striving (AS) scale and Transcendence Striving (TS) scale in the University Sample (N = 149).

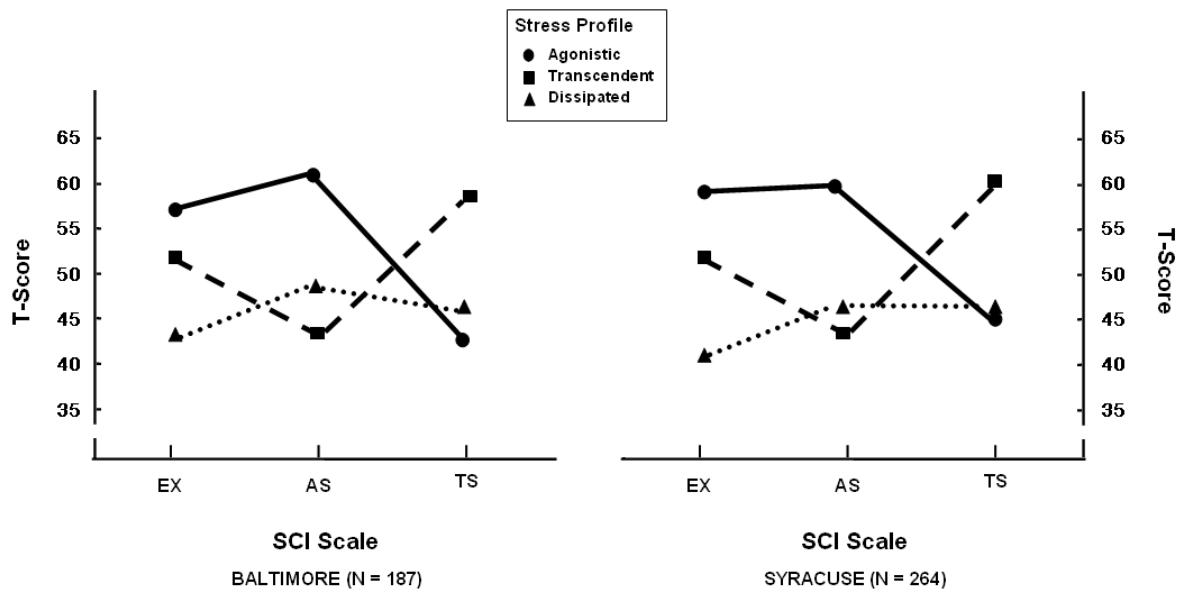


Figure 2. Motive profiles identified by cluster analyses of scores on the SCI Expressiveness (EX) scale, Agonistic Striving (AS) scale and Transcendence Striving (TS) scale in studies of Baltimore and Syracuse Adolescents.

List of Appendices

Appendix A- Demographic Questionnaire

Appendix B- Social Dominance Orientation Scale

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Appendix D- Buss-Perry Aggression Questionnaire

Appendix E- Feelings at Present Moment

Appendix F- Feelings During the Interview

Appendix G- Hireability Measure

## Appendix A

**Demographics**

1. **How old are you?** \_\_\_\_\_ years

2. **Are you male or female?** 1. Male 2. Female

3. **Do you consider yourself to be Hispanic/Latina/Latino?** 1. Yes 2. No

4. **Which of the following best describes your racial/ethnic background?**

1. African-American or Black
2. White or Caucasian
3. Asian or Pacific Islander
4. American Indian or Alaska Native
5. Mixed or Multiracial
6. Other

5. **Class Standing**

1. Freshman
2. Sophomore
3. Junior
4. Senior

6. **College**

1. School of Architecture
2. The College of Arts and Sciences
3. School of Education
4. Syracuse University College of Engineering and Computer Science
5. David B. Falk College of Sport and Human Dynamics
6. School of Information Studies
7. The Martin J. Whitman School of Management
8. Maxwell School of Citizenship and Public Affairs
9. S.I. Newhouse School of Public Communications
10. College of Visual and Performing Arts

7. **Are you considered and in-state or out-of-state student for tuition purposes?**

1. In-state
2. Out-of-state

8. **How many hours do you work for pay OFF-campus**

1. None
2. 1-10 hours/week
3. 11-20 hours/week
4. 21-20 hours/week
5. More than 30/hours/week

**9. How many hours do you work for pay ON-campus**

1. None
2. 1-10 hours/week
3. 11-20 hours/week
4. 21-20 hours/week
5. More than 30/hours/week

**10. Do you consider yourself to be :**

1. Athlete
2. Community student
3. Fraternity or sorority member
4. Student with a physical disability
5. None of the above

**11. Which statement describes your current living arrangement?**

1. I pay rent for my housing
2. I own my own home
3. I live in housing where I do not pay rent

**12 Which of the following are applicable to your living situation (Check all that apply)**

1. I live alone
2. I live with other students
3. I live with roommates who are not students
4. I live with parent(s), relative(s) or guardian(s)
5. I live with a husband/wife/domestic partner/ significant other
6. I live with my child/children

## Appendix B

**Social Dominance Orientation Scale**

Which of the following objects or statements do you have a positive or negative feeling towards?  
Beside each object or statement, place a number from " 1" to "7" which represents the degree of your positive or negative feeling.

7 = extremely positive 3 = slightly negative

6 = somewhat positive 2 = somewhat negative

5 = slightly positive 1 = extremely negative

4 = neutral

1. We should strive to make incomes as equal as possible.\*
2. Group equality should be our ideal.\*
3. It's OK if some groups have more of a chance in life than others.
4. To get ahead in life, it is sometimes necessary to step on other groups.
5. We should do what we can to equalize conditions for different groups.\*
6. It's probably a good thing that certain groups are at the top and others are at the bottom.
7. Inferior groups should stay in their place.
8. We would have fewer problems if groups were treated more equally.\*
9. It would be good if groups could be equal.\*
10. In getting what you want, it is sometimes necessary to use force against other groups.
11. All groups should be given an equal chance in life.\*
12. If certain groups stayed in their place, we would have fewer problems.
13. We should strive for increased social equality.\*
14. Sometimes other groups must be kept in their place.
15. Some groups of people are simply inferior to other groups.
16. No one group should dominate in society.\*

\*reverse-scored

## Appendix C

**Modern Racism Scale**

Indicate the degree to which you agree with these statements by typing the correct number from the following scale in front of each item.

1 = Strongly Disagree

2 = Disagree

3 = Neither Agree Nor Disagree

4 = Agree

5 = Strongly Agree

1. Discrimination against blacks is no longer a problem in the United States.

1  2  3  4  5

2. It is easy to understand the anger of black people in America.

1  2  3  4  5

3. Blacks have more influence upon school desegregation plans than they ought to have.

1  2  3  4  5

4. Blacks are getting too demanding in their push for equal rights.

1  2  3  4  5

5. Blacks should not push themselves where they are not wanted.

1  2  3  4  5

6. Over the past few years, blacks have gotten more economically than they deserve.

1  2  3  4  5

7. Over the past few years, the government and news media have shown more respect to blacks than they deserve.

1  2  3  4  5

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## Appendix D

**Aggression Questionnaire**

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## Items

## Physical Aggression

1. Once in a while I can't control the urge to strike another person.
2. Given enough provocation, I may hit another person.
3. If somebody hits me, I hit back.
4. I get into fights a little more than the average person.
5. If I have to resort to violence to protect my rights, I will.
6. There are people who pushed me so far that we came to blows.
7. I can think of no good reason for ever hitting a person.\*
8. I have threatened people I know.
9. I have become so mad that I have broken things

## Verbal Aggression

1. I tell my friends openly when I disagree with them.
2. I often find myself disagreeing with people.
3. When people annoy me, I may tell them what I think of them.
4. I can't help getting into arguments when people disagree with me.
5. My friends say that I'm somewhat argumentative.

## Anger

1. I flare up quickly but get over it quickly.
2. When frustrated, I let my irritation show.
3. I sometimes feel like a powder keg ready to explode.
4. I am an even-tempered person.\*
5. Some of my friends think I'm a hothead.
6. Sometimes I fly off the handle for no good reason.
7. I have trouble controlling my temper

## Hostility

1. I am sometimes eaten up with jealousy.
2. At times I feel I have gotten a raw deal out of life.
3. Other people always seem to get the breaks.
4. I wonder why sometimes I feel so bitter about things.
5. I know that "friends" talk about me behind my back.
6. I am suspicious of overly friendly strangers.
7. I sometimes feel that people are laughing at me behind my back.
8. When people are especially nice, I wonder what they want.

Appendix E

**FEELINGS AT PRESENT MOMENT**

By circling the appropriate number below, please indicate how you are feeling at the present moment.

	Very slightly or not at all		Moderately			Extremely		
<b>Happy</b>	1	2	3	4	5	6	7	[HAP1]
<b>Interested</b>	1	2	3	4	5	6	7	[INT1]
<b>Proud</b>	1	2	3	4	5	6	7	[PRO1]
<b>Nervous</b>	1	2	3	4	5	6	7	[NER1]
<b>Angry</b>	1	2	3	4	5	6	7	[ANG1]
<b>Sad</b>	1	2	3	4	5	6	7	[SAD1]

**STOP**

\*\*\*\*\*

**DO NOT TURN PAGE UNTIL TOLD TO DO SO**

Appendix F

**FEELINGS DURING THE INTERVIEW**

How did you feel during the interview? By circling the appropriate number below, please indicate how you felt DURING THE INTERVIEW when talking about the problem that causes you stress.

	Very slightly or not at all		Moderately			Extremely		
	1	2	3	4	5	6	7	
<b>Happy</b>	1	2	3	4	5	6	7	[HAP2]
<b>Interested</b>	1	2	3	4	5	6	7	[INT2]
<b>Proud</b>	1	2	3	4	5	6	7	[PRO2]
<b>Nervous</b>	1	2	3	4	5	6	7	[NER2]
<b>Angry</b>	1	2	3	4	5	6	7	[ANG2]
<b>Sad</b>	1	2	3	4	5	6	7	[SAD2]

Appendix G

**Measure of Hireability**

Please indicate your agreement to the following statements on the following scale.

Disagree strongly			Neither agree nor disagree			Agree strongly
1	2	3	4	5	6	7
1)	This person would have a good chance of being hired					_____
2)	This person appears competent					_____
3)	This person is probably well spoken and fluent.					_____
4)	This person is a likable person.					_____
5)	This person would be a good team player					_____
6)	This person would work hard to meet deadlines					_____
7)	This person would be professional in the workspace					_____
8)	This person would not fit well with other employees					_____
9)	This person is not a good match for the company					_____
10)	This person would be a good asset to the company					_____

**Curriculum Vitae**  
**Mariam Parekh**

White River Junction VA Medical Center  
215 N. Main Street  
White River Junction, VT 05009  
Work: 802-295-9363 x6525  
Personal: 734-709-7469  
[Mariam.Parekh@va.gov](mailto:Mariam.Parekh@va.gov)  
[mparekh@syr.edu](mailto:mparekh@syr.edu)

**EDUCATION**

---

**Ph.D Candidate**, Clinical Psychology, Syracuse University (APA- accredited), Syracuse, NY  
**Dissertation Title** : *Anti-Outgroup Beliefs, Implicit Agonistic Goals, and Negative Perceptions of Outgroup Members: A Social Action Theory Analysis of Covert Racial Prejudice.*  
**Advisor**: Craig K. Ewart, Ph.D  
**Committee Members**: Randall S. Jorgenson, Ph.D., Leonard Newman, Ph.D.  
Defense Anticipated: February 2016

**Master of Science** in Clinical Psychology, Syracuse University (APA-accredited), Syracuse, NY  
**Thesis Title**: *Does Impaired Parasympathetic Control Moderate the Effects of Agonistic Striving on Heart Disease Risk?*  
**Advisor**: Craig K. Ewart, Ph.D.  
**Committee Members**: Randall S. Jorgenson, Ph.D., Stephen A. Maisto, Ph.D & Aesoon Park, Ph.D  
Degree Awarded 2011

**Bachelor of Science at University of Michigan-Ann Arbor, 2009**

B.A., Psychology  
Major: Psychology (Honors) Minor: Criminal Justice  
Degree Awarded 2009

**PRE-DOCTORAL INTERNSHIP**

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**White River Junction VA Medical Center & Dartmouth College Health Services**  
**APA Accredited Pre-doctoral Internship: Clinical Psychology**  
*PTSD Sub-specialty*

## CLINICAL TRAINING EXPERIENCE

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### Clinical Psychology Intern

*Jul 2015 – Present*

#### **Veterans Health Administration, Department of Mental Health**

#### **White River Junction VA, VT & Geisel School of Medicine at Dartmouth, NH**

Provide clinical psychological services in both the VA and the Dartmouth College Counseling Center. Clinical hours consist of four year-long VA rotations, one year-long non-VA rotation at the Dartmouth Counseling Center, and three four-month VA rotations.

### PTSD Sub-Specialty Rotation

*Jul 2015 – Present*

#### **Responsibilities:**

- Cognitive Processing Therapy VA National Training; certified provider upon licensure
  - Two-Day CPT Training.
  - Weekly consultation calls to discuss specific cases with other clinicians and receive supervision.
- Trained on PTSD assessment using the Clinician Administered PTSD Scale (CAPS).
- Brief seminar in Acceptance and Commitment Therapy for PTSD.
- Brief seminar on Prolonged Exposure for PTSD.
- National Center for PTSD: Weekly attendance and two presentations at the PTSD Journal Club discussing novel research and treatment implications
- Participation in Seeking Safety Group: Expected to co-lead treatment group for patients with PTSD and Substance Use Disorders.

#### **Clinical Focus:**

PTSD and co-occurring disorders.

#### **Measures Administered:**

CAPS, PTSD Check-List (PCL-IV and 5), PHQ-9.

#### **Primary Supervisor:** *Coordinator*

Lisa Harmon, Ph.D., *VA Certified Empirically Based Psychotherapy*

### Cognitive Behavioral Therapy (CBT) Outpatient Rotation

*Jul 2015 – Present*

#### **Responsibilities**

- Provide outpatient individual psychotherapy for veterans in the Serious Mental Health Clinic (ages 20-70).
- Treatment approaches consist of Cognitive Behavior Therapy (CBT) and Acceptance/Mindfulness-Based Treatments, including exposure-based treatments, Cognitive Processing Therapy (CPT), Dialectical Behavior Therapy (DBT) skills training and Mindfulness Training.

**Clinical Focus:** PTSD, mood disorders, anxiety disorders, personality disorders, eating disorders, sleep disorder, chronic pain disorders and general difficulties in emotion regulation.

**Measures Administered:** Clinician Assessment for PTSD Scale (CAPS), PTSD Check-List (PCL 5), Life Events Checklist (LEC), AUDIT, BAI, BDI-II, PHQ-9, GAD-7.

**Primary Supervisor:** Lisa Harmon, Ph.D.

MOVE! Health Psychology Rotation

July 2015-October 2015

**Responsibilities** - Team member in the Managing Overweight and/or Obesity for Veterans Everywhere! (MOVE!) Program along with a postdoctoral fellow, health psychology supervisor, and a nutritionist.

- Identified and developed component to improve quality of MOVE! Group
- Led/co-led MOVE! Groups with participants and telehealth participants
- Met individually with veterans to assess and develop healthy weight loss plans and assisted in the maintenance of weight loss
- Conducted Bariatric Evaluations to assess for psychological stability and ability to cope with post-surgical consequences, assess degree of knowledge regarding procedure and provide recommendations to interdisciplinary team.
- Plan to participate in organ donor evaluation process and work to provide supportive therapy to patients on the oncology unit

**Clinical Focus:** Obesity and co-occurring mood disorders, PTSD, anxiety and personality disorders.

**Primary Supervisor:** Glenna Rousseau, Ph.D. & Sara Lacy, Psy.D.

Primary Mental Health Clinic (PMHC) (Current Rotation)

Nov 2015-February 2016

**Responsibilities:** - Provide mental health intake evaluations, short-term behavioral psychotherapy, crisis management and risk assessments for veterans (ages 20-80) visiting the Primary Care Clinic.

**Clinical Focus:** Mood disorders, PTSD, anxiety disorders, and interpersonal/vocational difficulties.

**Measures Administration:** PHQ-9, GAD-7, SF-12, PCL-5, AUDIT.

**Primary Supervisor:** Adam Smith, Ph.D.

Neuropsychology Rotation

Jul 2015 – Present

**Responsibilities:** - Required completion of 10 integrated neuropsychological reports (currently finished 5) for veterans (ages 20-80) referred for evaluation and diagnostic clarification by their providers.

- Evaluations consist of a thorough history review, diagnostic evaluation, cognitive testing, and/or personality assessments.

- Rotation includes weekly assessment case seminar meetings to consult on cases and review assessment measures.

**Clinical Focus:** Bariatric evaluation, dementia, autism spectrum disorder (ASD), PTSD, personality disorders, and co-occurring mood and anxiety disorders. Expected to participate in organ donor evaluations and related assessments

**Measures Administered:** Wechsler Abbreviated Scale of Intelligence (WASI- II), Wechsler Memory Scale (WMS), Wechsler Adult Intelligence Scale-IV (WAIS-IV), Test of Memory Malingering (TOMM), Dementia Rating Scale (DRS-2), Wide-Range Achievement Test (WRAT-4), California Verbal Learning Test (CVLT-II), Thematic Apperception Test (TAT), Minnesota Multiphasic Personality Inventory (MMPI-II), Rorschach, Ray-Osterrieth Complex Figure Test, Sentence-Completion Test, Alcohol Use Disorder Identification Test (AUDIT) BDI, PCL-5, BAI.

**Primary Supervisors:** Robert Sokol, Ph.D. and Rosalind Jones, Ph.D.

Time Limited Dynamic Psychotherapy (TLDP) & Brief Dynamic Therapy

Jul 2015 – Present

**Responsibilities:** - Provide outpatient individual psychotherapy for veterans in the Serious Mental Health Clinic (ages 20-70).

- 18-week seminar reviewing the TLDP protocol and theory

- Treatment approaches consist of TLDP and brief dynamic therapy

**Clinical Focus:** Interpersonal difficulties.

**Measures Administered:** BAI, BDI-II, PHQ-9, GAD-7, PCL, CAPS.

**Primary Supervisor:** Sarah Kohl, Psy.D.

Dartmouth College Counseling Center Rotation

Sep 2015 – Present

**Responsibilities:** - Provide outpatient individual psychotherapy for undergraduate and graduate college students (ages 17-35) at Dartmouth College.



- Treatment approaches consist of Cognitive Behavior Therapy (CBT) and Acceptance/Mindfulness-Based Treatments, including exposure-based therapies, Dialectical Behavior Therapy (DBT) skills training and Mindfulness Training.

**Clinical Focus:** Culturally related adjustment difficulties, mood disorders, anxiety disorders, attention deficit/hyperactivity disorder (ADHD), substance abuse and general interpersonal/scholastic/learning difficulties.

**Primary Supervisor:** Sarah Chung, Psy. D. & Mark Hiatt, Ph.D.

Inpatient Mental Health Services Rotation (Future Rotation)

March 2016-June 2016

- Expected Responsibilities:**
- Provide brief individual Cognitive Behavior Therapy (CBT) to veterans (ages 20-80) on the inpatient unit.
  - Co-lead CBT psychotherapy groups and a Wellness Recovery Action Plan (WRAP) group on the unit.
  - Serve on the inter-disciplinary treatment team and consult on patient care and treatment planning.
  - Attend and participated in interdisciplinary inpatient rounds
  - Provide Dialectical Behavior Therapy (DBT) groups on the unit.
  - Provide weekly supervision to a psychology practicum student

**Expected Clinical Focus:** Severe mood and anxiety disorders, suicidality assement, psychotic disorders, and personality disorders.

**Primary Supervisor:** Adam Smith, Psy.D.

Graduate Therapist/Research Assistant (Clinical Focus)

June 2013-May 2015

**Syracuse Veteran Affairs Medical Center (VAMC)  
Center for Integrated Healthcare- Syracuse, NY**

- Responsibilities:**
- Administrative management of studies relating to mood and health behaviors (alcohol use, depression, anxiety and behavior modification) in veterans (ages 35-70)
  - Conducted interventions adopting a Behavioral Activation for Depression model to assess the relationship between behavior change and mood
  - Implemented interventions for Insomnia using the CBT-Insomnia model
  - Participated in monthly “Journal Club” conference calls examining current Evidence Based Treatments, review of theories and critical examination of assessment instruments
  - Conducted and reviewed internal audits of ongoing studies, past studies and reviewed appropriate IRB approved material for future studies

- Conducted study analyses, generated hypothesis and conducted statistical analyses to analyze research data using SAS and SPSS software
- Collaborated with multidisciplinary professionals to increase veteran participation in research studies

**Measures Administered:** PhQ-9, GAD, ISI, MINI, Columbia Suicide Inventory, Beck Suicide Inventory & AUDIT

**Clinical Focus:** Mild-Moderate Depression, Insomnia, Anxiety

**Primary Supervisors:** Stephen Maisto, Ph.D. & Jennifer Funderburk, Ph.D.

*Psychodiagnostic Evaluator/Consultant*

*August 2013-May 2014*

**Inpatient Psychiatry Unit (4B) - SUNY Upstate Medical University Department of Psychiatry and Behavioral Sciences - Syracuse, NY**

**Responsibilities:**

- Diagnostic assessments on adults (ages 16-65) evaluating personality and/or cognitive impairments to assess referral questions

- Worked with psychiatry residents in a consultant capacity to clarify diagnostic questions, distinguish underlying psychoses, and recommend treatment plans

**Measures Administered:** Minnesota Multiphasic Personality Inventory-II (MMPI-II) and Wechsler Adult Intelligence Scale, Version IV (WAIS-IV)

**Clinical Focus:** Cognitive disabilities and personality disorders

**Primary Supervisor:** Dr. Kevin Antshel, Ph.D.

*Therapist Trainee*

*June 2013-May 2014*

**Department of Psychiatry and Behavioral Sciences, SUNY – Upstate Medical University-Syracuse, NY**

**Responsibilities:**

- Conducted intake evaluations to identify substance abuse disorders, developed treatment plans to monitor progress, maintain abstinence and provided regular one-to-one psychoanalytic psychotherapy
- Assisted in management of outpatient opioid and alcohol detoxification
- Attended seminars on psychopharmacology, and drug associations with presenting substance use disorders and withdrawal symptoms
- Collaborated with medical residents and students to develop a collaborative treatment plan integrating psychological and physiological symptomatology

- Presented patient profiles and justification for diagnosis/treatment plan in interdisciplinary case conferences
- Expected to provide consults to various members of the medical team.

**Clinical Focus:** Substance use disorders, cognitive and personality disorders

**Primary Supervisors:** Brian Johnson, M.D. & Jennifer Funderburk, Ph.D.

*Therapist Trainee*

*August 2012-May 2013*

**Behavioral Health Outpatient Clinic (BHOC), Syracuse Veteran Affairs Medical Center (VAMC) - Syracuse, NY**

- Responsibilities:**
- Provided short-term psychotherapy adopting a cognitive-behavioral therapy (CBT) model to Veterans (ages 25-70)
  - Participated in observation psychotherapy
  - Co-led and participated in weekly DBT skills group in a VAMC Behavioral Health Outpatient clinic with veteran population experiencing range of interpersonal dysfunction and emotion dysregulation. Training emphasis on leading mindfulness activities and DBT modules as directed by and adapted from Marsha Linehan’s Skills Training Module for Treating Borderline Personality Disorder.

**Clinical Focus:** Anxiety, PTSD, Substance use and depressive disorders.

**Primary Supervisors:** Carlos Finlay, Ph.D., Jennifer Funderburk, Ph.D., Jane Higham, Ph.D. & Shawn Steiger, L.M.S.W

*Therapist Trainee*

*January 2011-August 2013*

**Psychological Services Center (PSC), Syracuse University - Syracuse, NY**

- Responsibilities:**
- Managed a full client case load of 8 clients (consisting of Undergraduate and graduate students and community patients, ages 17-35) for long-term and short- term psychotherapy
  - Conducted clinical and diagnostic interviews for initial evaluations.
  - Conducted clinical, diagnostic and feedback interviews for ADHD evaluations.
  - Presented at case conferences to discuss ongoing client treatment, therapy progress and problems and plans for continued treatment
  - Handled crisis care for clients and developed plan for suicide risk, transfer of high-risk clients, and worked in a team crisis environment to ensure

client safety

**Clinical Focus:** Culturally related adjustment difficulties, mood disorders, anxiety disorders, attention deficit/hyperactivity disorder (ADHD), substance abuse and general interpersonal/scholastic/learning difficulties.

**Measures Administered:** Adult ASRS, Connors Adults ADHD Rating Scales and Continuous Performance Task), Brief Test of Attention, Test of Memory Malingering, BDI-II, PSS, AUDIT, BAI, Weschler Adult Intelligence Scale – 4<sup>th</sup> edition(WAIS-IV) and MMPI-II

**Primary Supervisors:** Mark Ginsberg, Ph.D., Joseph Himmelsbach, Ph.D., Thomas Krisher, Psy.D.& Kevin Antshel, Ph.D.

**Specialized Clinic Training**

**Seminars:**

*“The Delicate Art of Uncovering Suicidal Ideation: The Chronological Assessment of Suicide Events.”* 2015  
 Presenter: Dr. Shawn Shea, M.D

*VA Regional Cognitive Processing Therapy Training; Two-day training* 2015  
 Presenter: Lisa Harmon, Ph. D.

*Cognitive-Behavioral Treatment for Insomnia* 2013  
 Presenter: Will Pigeon, Ph.D.

*Seminar in Neuropsychoanalysis for Substance Use Disorders* 2013  
 Presenter: Brian Johnson, M.D.

*Forensic Assessment and Expert Testimony* 2012  
 Presenter: Bud Ballinger, Ph.D.

*Working with Gay, Lesbian, and Transgendered Patients* 2012  
 Presenter: Deb Coolhart, Ph.D.

*Motivational Interviewing for Suicidal Ideation* 2011  
 Presenter: Peter Britton, Ph.D.

**Workshops:**

*Brief Cognitive Behavioral Therapy for Chronic Pain* 2015  
 Presenter: Jennifer L. Murphy, Ph.D (VACO CBT-CP Master Trainer), National Center for PTSD (NCPTSD), White River Junction, VT

- Discuss foundational information underlying the chronic pain cycle and the facilitation of effective chronic pain management
- Provide the rationale for use of CBT-CP for veterans with chronic pain
- Demonstrate the skills required to implement a brief CBT-CP protocol
- Describe use of CBT-CP in various settings (e.g., Primary Care, CBOCs) and in various applications (i.e., individual and group)

*Sexual Health*

2014

Presenters: Jill Sneider, M.F.T., Peter Venable, Ph.D., Brian Amidon, LMSW., & Robyn Fielder, Ph.D., Syracuse, NY

- Discussion of normal sexual health and how it plays out in psychotherapy
- Oriented to variable included in effective sexual health assessments
- Discussion of sexual health in an HIV population
- Behavioral Treatment of Erectile Dysfunction

*Systems Centered Training Workshop*

2011

Presenter: Yvonne Agazarian, Ph.D. Atlanta, Georgia

- Learned a framework of Systems-Centered Training to explore dynamics of group therapy
- Learned concepts such as communication in groups, functioning of leader and group members, intergroup power dynamics, and functional sub-grouping
- Developed techniques to enhance group dialogue and sharing of information
- Administered techniques to manage group conflict and understand inter group conflicts
- Participated in group therapy sessions to assess functioning of various techniques and observed roles within groups.
- Identified and practiced methods to examine implicit and explicit processes of group functioning

### RESEARCH EXPERIENCE

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*Graduate Research Assistant*

September 2011-May 2013

**Alcohol Relapse Project- Syracuse University Department of Psychology - Syracuse, NY**

- Responsibilities:**
- Worked with team members to generate hypothesis about alcohol dependent populations using current existing evidence based treatment protocols
  - Analyzed cardiovascular data, specifically assessment of irregular arrhythmias, ectopic beats and rhythmic sinus arrhythmia

**Primary Supervisors:**

Craig, K. Ewart, Ph.D. & Stephen Maisto, Ph.D.

*Graduate Research Assistant*

March 2011-August 2012

**Systems-Centered Training Project, Department of Psychiatry and Behavioral Sciences SUNY - Upstate Medical University – Syracuse, NY**

- Responsibilities:**
- Assisted with manuscript preparation for a study focusing on group dynamics using a Systems-Centered Theory (SCT) framework
  - Conducted literature reviews to understand group therapy processes and developed a literature base for SCT theory
  - Analyzed data and review hypotheses to ensure correct interpretation of results and adequate reporting
  - Supervised and trained undergraduates to develop manuscript-writing and literature reviewing skills
  - Attended workshops to understand practical applications of Systems-Centered Theory and took part in group therapy processes

**Primary Supervisor:** Richard O'Neill, Ph.D.

*Graduate Research Assistant*

*September 2009-Present*

**Project Heart- Syracuse University Department of Psychology- Syracuse, NY**

- Responsibilities:**
- Examined cardiovascular functioning using a Social Action Theory framework to identify adverse cardiovascular effects due to daily stressors
  - Managed and developed databases and conducted statistical analyses using SAS and SPSS software for hypothesis testing
  - Administered interviews and recorded blood pressure measurements on participants for study purposes
  - Trained undergraduate researchers to administer the Social Competence Interview and the Anger Transcendence Challenge
  - Mentored undergraduate researchers to develop independent projects and prepare for University poster presentations

**Primary Supervisor:** Craig K. Ewart, Ph.D

*Research Assistant*

*October 2008-May 2009*

**Multidisciplinary Alcoholism Research Training Program- Institute of Social Research, University of Michigan – Ann Arbor, MI**

- Responsibilities:**
- Assisted with investigating the relationship between obesity and substance abuse for various populations
  - Conducted literature review for studies related to obesity and alcohol,

obesity and other non-substance related addictions as well as, obesity as an addiction

- Developed proficiency in SPSS statistical software.

**Primary Supervisors:** Kristi R. Jenkins Ph.D., & Robert A. Zucker Ph.D

Research Assistant

May 2008-May 2009

**Problem Solving in Daily Life, Culture and Cognition Lab- University of Michigan Culture and Cognition Lab – Ann Arbor, MI**

- Responsibilities:**
- Explored effects of social interaction on subsequent cognitive and creativity tasks
  - Involvement in data collection and analysis processes.

**Faculty Mentor:** Oscar Ybarra, Ph.D.

Research Assistant

January 2008-April 2008

**Chronobiology and Neuroendocrinology Lab, University of Michigan- Ann Arbor, MI**

- Responsibilities:**
- Examined the relationship between circadian effects on seasonal behavior and physiology Research duties included studying and caring for lab specimens such as Degu rats, updating, maintaining and recording specimen activity during lab experiments, applying methods such as incest patrol to ensure groupings of same-sex specimens, and vaginal screening of female rats to record changes in physiological responses secondary to environmental manipulation

**Faculty Mentor:** Theresa Lee, Ph.D.

**HONORS/AWARDS**

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- Citation award at American Psychosomatic Society (2013)
  - Citation award at Society of Behavioral Medicine (2012)
  - Citation award at American Psychosomatic Society (2011)

**PUBLICATIONS**

- 
- Ewart, K. Craig., **Parekh, Mariam.**, Jorgenson, S. Randall. (submitted for review). The Stress-Prone Adolescent Heart: Implicit Agonistic Goals and Blunted Vagal Control Predict Heightened Cardiac

Response to Anger. *Journal of Behavioral Medicine*.

- O'Neill, Richard., Murphy, Verena., Mogle, Jacqueline., MacGregor, Kristin L., MacKenzie, Michael J. **Parekh, Mariam** and Pearson, Mind. (2013). Are Systems-Centered® teams more collaborative, productive and creative? *Team Performance Management*, 19 (3/4), 201-221.

### MANUSCRIPTS IN PREPARATION

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- Ewart, K. Craig., He, Allison., LaFont, Sarah., Gump, Brooks & Parekh, Mariam. Measuring Experiences of Social Exclusion and Devaluation in Multiracial Populations: The Social Rejection and Denigration Scales.
- Funderburk, Jennifer., Pigeon, Will., Shepardson, Robyn & Parekh, Mariam. Behavioral Activation for Depression in Primary Care.

### CONFERENCE PRESENTATIONS

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**Parekh, M.**, Elder, G., He, J., Schoolman, J., Lafont, S., Fitzgerald, S., Ewart, C. (2014, March). Does Transcendence Striving Buffer the Cardiovascular Stress of Social Interactions in Persons with Hypertension? Poster session presented at the 2014 Annual Meeting of the American Psychosomatic Society, San Francisco, California.

Elder, G., **Parekh, M.**, He, J., Schoolman, J., Lafont, S., Ewart, C., Fitzgerald, S. (2014, March). *Social support and cardiovascular stress: The positive perception of social support buffers against stress of negative interactions with support providers in the natural environment*. Poster session presented at the 2014 Annual Meeting of the American Psychosomatic Society, San Francisco, California.

Lafont, R.S., Elder, G., **Parekh, M.**, Schoolman, J., Fitzgerald, S., & Ewart, C. (2014, March). *Dissipated Striving Predicts Increased Hypertension Risk in Persons with Symptoms of Depression*. Poster session presented at the 2014 Annual Meeting of the American Psychosomatic Society, San Francisco, California.

**Parekh, M.**, Elder, G., Schoolman, J., & Ewart, C. (2013, March). *Non-conscious Agonistic motives (but not negative emotions) magnify cardiac responses to anger in persons with blunted PNS control*. Poster session presented at the 2013 Annual Meeting of the American Psychosomatic Society, Miami, Florida.

Elder, G., **Parekh, M.**, Schoolman, J., He, A. June & Ewart, C. (2013, March). *Implicit Agonistic motives moderate the strength of the longitudinal relationship between diastolic reactivity in youth and adulthood*. Poster session presented at the 2013 Annual Meeting of the American Psychosomatic Society, Miami, Florida.

He, J., Velasquez, H., Fitzgerald, S., Raj, M., Elder, G., **Parekh, M.**, Schoolman, J. (2013, March). *Higher perceived neighborhood disorder and lower subjective SES predict higher metabolic syndrome risk*. Poster



session presented at the 2013 Annual Meeting of the American Psychosomatic Society, Miami, Florida.

**Parekh, M.**, Elder, G., Schoolman, J., & Ewart, C. (2012, April). *Agonistic striving, blunted parasympathetic system, and heart rate response to anger in low income youth: Early mechanism cardiovascular risk?* Poster session presented at the 2012 Annual Meeting of the Society of Behavioral Medicine, New Orleans, LA.

Schoolman, J., Elder, G., **Parekh, M.**, & Ewart, C. (2012, April). *Self-Defense and Cortisol Reactivity in Response to Interpersonal Stress.* Poster session presented at the 2012 Annual Meeting of the Society of Behavioral Medicine, New Orleans, LA.

He, A. June., Elder, G., Schoolman, J., **Parekh, M.**, Fitzgerald, S., & Ewart, C. (2012, April). *Adverse cardiovascular effect of exposure to neighborhood disorder and violence are increased by agonistic striving.* Poster session presented at the 2012 Annual Meeting of the Society of Behavioral Medicine, New Orleans, LA

**Parekh, M.**, Elder, G., Schoolman, J. & Ewart, C. (2011, March). *Is the impact of agonistic striving on blood pressure magnified by impaired behavioral activation?* Poster session presented at the 2011 Annual Meeting of the American Psychosomatic Society, San Antonio, TX.

Elder, G., **Parekh, M.**, Schoolman, J., & Ewart, C. (2011, March). *Agonistic striving, everyday self-regulation, and blood pressure: A moderation analysis.* Poster session presented at the 2011 Annual Meeting of the American Psychosomatic Society, San Antonio, TX.

Schoolman, J., Elder, G., **Parekh, M.** & Ewart, C.,(2011, March). *Control motives, social competence and blood pressure in nature settings: A multi-informant analysis.* Poster session presented at the 2011 Annual Meeting of the American Psychosomatic Society, San Antonio, TX.

**Parekh, M.**, Elder, G., Schoolman, J., Ewart, C. (2010, March). *Agonistic striving impairs anger regulation but not recovery.* Poster session presented at the 2010 Annual Meeting of the American Psychosomatic Society, Portland, OR.

Elder, **Parekh**, Schoolman, J., & Ewart, C. (2010, March). *Neighborhood stress and hypertension risk: Does perceived subordination explain the link?* Poster session presented at the 2010 Annual Meeting of the American Psychosomatic Society, Portland, OR.

Schoolman, Elder, **Parekh**, Ewart, C. (2010, March). *Impaired anger recovery amplifies impact agonistic control motives on ambulatory blood pressure.* Poster session presented at the 2010 Annual Meeting of the American Psychosomatic Society, Portland, OR.

### **AFFILIATIONS**

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- American Psychosomatic Society
  - Society of Behavioral Medicine
  - American Psychological Association

### **TEACHING EXPERIENCE**

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Graduate Teaching Assistant

September 2010-May 2011

**Allport Teaching Assistant, Syracuse University Department of Psychology - Allport Project developed to provide career counseling to undergraduate students.**

- Responsibilities:**
- Counseled students and assisted in planning coursework schedules aimed at long term career aspirations
  - Met with students one-to-one to discuss personal difficulties and developed plans for remediation
  - Organized a clinical internship class for undergraduates to help gain clinical experiences at various clinical community sites
  - Interviewed and selected students to enroll in Clinical Assessment seminars for undergraduates
  - Conducted seminars designed to increase student interest in research and awareness of potential departmental research opportunities

**Primary Supervisor:** Linda Galbato, M.S.

Graduate Teaching Assistant

September 2009-May 2010

**Introduction to Psychology, Syracuse University Department of Psychology**

- Responsibilities:**
- Responsible for leading 4 weekly discussion sections (20 students per section)
  - Formulated, planned and presented information emphasizing key psychological concepts covered in lectures
  - Used interactive in-class activities to promote alternative ways of applying theoretical material
  - Administered evaluative tests to gauge understanding of information
  - Worked with fellow TA's in developing guidelines to enhance consistency across evaluation procedures

**Supervisor:** Tibor Palfai, Ph.D.

Undergraduate Teaching Assistant

September –December 2007

**Project Outreach- University of Michigan Department of Psychology**

- Responsibilities:**
- Assisted in helping students explore interests within psychology through involvement in the community

- Led weekly class discussions and presented a lecture entitled “*Presentation: Importance of Non-verbal Behavior in Professional Settings.*”

**Supervisor:** Anna Nikolaeva Olson, M.A.

**SERVICE**

*Graduate Student Panel Information Session* 2015  
 Syracuse University, Syracuse, NY

- Responsibilities:**
- Provided information for graduate school internship applicants.

*Committee member for the Director of Clinical Training Search committee, Syracuse University* 2013

*Student representative for the Syracuse University Clinical Psychology program* 2011-2012

*Volunteer at Washtenaw County Jail* *September – December 2007*

**Project Outreach, University of Michigan- Ann Arbor, MI**

- Responsibilities:**
- Enhanced awareness of current issues facing adults who were involved in the criminal justice system.
  - Provided mentoring and helped in developing and/or identifying an external support system
  - Developed in-house projects in collaboration with the inmates designed to critically think about alteration of lifestyle and work toward rehabilitation

*Assistant worker for Human Rights Organization* *July 2007-August 2007*

**Institute Affiliation: Sindh Education Foundation (SEF), Karachi, Pakistan.**

**Objective**

- The Sindh Education Foundation is a semi-autonomous organization that has launched several educational initiatives in disadvantaged areas of Sindh, Pakistan.

- Responsibilities:**
- Conducting field research experiments exploring the relationship between low socioeconomic conditions and level of education.
  - Assisted in carrying out interviews with children ages 7-12 concerning school environment, learning opportunities available in relation to gender, and influence of culture towards perception of the importance of education.
  - Co-organized charity fundraisers to help raise funds for research and aided in

identifying other funding sources such as potential benefactors and human rights programs known for funding projects related to education

**Primary Investigator:**

Sana Haydri, Graduate Student from University of Karachi, Pakistan.

**REFERENCES**

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**Craig K. Ewart, Ph.D.**

Professor of Psychology  
Syracuse University  
404 Huntington Hall  
Syracuse, NY 13244  
[ckewart@syr.edu](mailto:ckewart@syr.edu)  
315-443-5799

**Jennifer S. Funderburk, Ph.D.**

Research Psychologist  
Syracuse VA Medical Center  
800 Irving Ave  
Syracuse, NY 13210  
[jschum@rochester.rr.com](mailto:jschum@rochester.rr.com)  
585-727-0577

**Lisa Harmon, Ph. D.**

Psychologist  
[Lisa.Harmon@va.gov](mailto:Lisa.Harmon@va.gov)  
White River Junction VA Medical Center  
215 N Main St  
White River Junction, VT 05009  
802-295-9363 ext 6033

**Robert Sokol, Ph. D.**

Director of Internship Training  
[Robert.Sokol@va.gov](mailto:Robert.Sokol@va.gov)  
White River Junction VA Medical Center  
215 N Main St  
White River Junction, VT 05009  
802-295-9363 ext 6961

