We Can't Breathe: Affective and Psychophysiological Reactivity of Vicarious Discrimination

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Abstract

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Many high-profile incidents of police brutality against African Americans have catalyzed racial tension in police-community relations. While these current events are undoubtedly harmful for the individuals directly affected, how might they shape the health and well-being of Americans at large, who experience perceived acts of discrimination vicariously through news and social media? While connected to cardiovascular recording equipment, 84 White and 67 African American participants were randomly assigned to read and give a speech about either police brutality or car accidents that harmed African Americans. Participants also completed several positive and negative affect assessments throughout the study. Participants in the police brutality condition experienced increased reactivity in heart rate, pre-ejection period, systolic blood pressure, and respiratory sinus arrhythmia compared to participants in the car accidents condition. For systolic blood pressure, this condition effect was stronger among African Americans than Whites. Additionally, participants in the police brutality condition reported greater affective reactivity, both positive and negative, compared to participants in the control condition, and these effects were stronger among African Americans than Whites. The findings shed light on how vicarious discrimination impacts

stress pathways of both White and African Americans who are not directly targeted by these incidents and have implications for physical and mental health.

We Can't Breathe: Affective and Psychophysiolgical Reactivity of Vicarious Discrimination

The deaths of unarmed African Americans at the hands of police officers have played a major role in catalyzing Black Lives Matter, a social justice movement raising awareness of and combating racial inequality and police brutality against African Americans. "We can't breathe," has become a popular slogan for proponents of the movement. Though the words come from a victim of police violence who literally could not breathe, Eric Garner, the use of this phrase metaphorically represents how police brutality and racism make it difficult for Americans to breathe – to live healthfully. Because African American victims and White police officers have been at the center of social discourse on racism and policing, Americans of different races may be processing police brutality and racism in unique ways. The current research project explores whether witnessing police brutality targeting African Americans has tangible effects on the cardiovascular and affective states of Black and White Americans who are not directly the targets of these incidents.

Vicarious Discrimination

Discrimination is defined as unfair treatment due to one's social identity, which can be experienced directly or vicariously (by witnessing someone else experience discrimination; Tajfel, 1982; Glomb et al., 1997; Major, Mendes, & Dovidio, 2013; Tynes, Giang, Williams, & Thompson, 2008; Steward et al., 2008; Sengupta, Strauss, Miles, Roman-Isler, Banks, & Corbie-Smith, 2010; Miner-Rubino & Cortina, 2007; Miner & Cortina, 2016). Targets of vicarious discrimination share a social identity with a target of direct discrimination. For example, when a woman in a company is subjected to gender

discrimination, her female, but not male, coworkers who witness her mistreatment are understood as experiencing vicarious gender discrimination (Glomb et al., 1997). In addition to interpersonal sources of vicarious discrimination in local environments and interpersonal networks (Jones-Correa & Fennelly, 2009), other possible sources of vicarious discrimination include news media, television, and social media (Corrigan et al., 2005; Schmader, Block, & Lickel, 2015; Tynes et al., 2008).

To this point, scholarship on vicarious discrimination has focused primarily on in-group members who share an identity with targets of direct discrimination. We argue that the effects of vicarious discrimination extend beyond the in-group. Individuals in an environment more broadly may be affected by vicarious discrimination because of the stresses that discrimination poses in an intergroup context. Out-group members may be experience stress by simply bearing witness to societal injustices, as well as experiencing guilt or shame if their identities are tied to discrimination against another group. To be sure, we expect the stresses of vicarious discrimination in the form of police brutality to impact African Americans more than Whites. Nevertheless, we expect these effects to extend beyond same-race targets. Expanding the scope of vicarious discrimination research to include both in-group and out-group targets represents an important opportunity in discrimination scholarship to advance theory.

A small handful of studies have operationalized and manipulated vicarious exposure to discrimination. These manipulations involved reading about pervasive prejudice against a particular group (Schmitt, Branscombe, & Postmes, 2002), exposure to stigmatizing content on television and commercials (e.g., portraying overweight women as clumsy; Schvey, Puhl, & Brownell, 2011), witnessing biased hiring decisions

(Salvatore & Shelton, 2007), and recalling salient instances of discrimination in current events (e.g., the death of Trayvon Martin; Richman, Blodorn, & Major, 2016). In these studies, vicarious discrimination manipulations resulted in increased negative affect and reduced self-esteem, and less healthy decisions among stigmatized group members.

A large body of scholarship has investigated the impacts of discrimination, both direct and vicarious, on physical and mental health – outcomes which have important links to cardiovascular reactivity and can inform predictions. A great deal of evidence indicates that perceiving discrimination against one's group, like many other social stressors, has detrimental effects on mental health, physical health, and well-being (for reviews, see Pascoe & Richman, 2009; Schmitt, Branscombe, Postmes, & Garcia, 2014).

Discrimination and Well-being

Many studies have tested the links between direct discrimination and well-being, with a growing body of scholarship of the well-being impacts of vicarious discrimination. A vast literature of correlational studies indicates a strong positive relationship between perceived discrimination and well-being (Pascoe & Richman, 2009; Schmitt, Branscombe, Postmes, & Garcia). However, an important limitation in the literature on the effects of discrimination on cardiovascular reactivity and affect is a heavy reliance on correlational methodologies. Thus, while a relationship between discrimination and well-being outcomes is well established, causal ties between the phenomena are less clear.

In the experimental realm, imagining unfair treatment due to one's group status has been linked to higher negative affect and anger-related emotions, compared to

participants who imagined non-racist scenarios (Bennett, Merritt, Edwards, & Sollers, 2004; Gibbons et al., 2012; Gibbons et al., 2010). Additionally, experimental manipulations that involved interacting with prejudiced experimenters or confederates have resulted in increases in overall negative affect, anger, sadness, and anxiety, compared to interactions with non-prejudiced experimenters or confederates (Schneider et al., 2001; Salomon et al., 2015; Dion & Earn, 1975).

A few experiments have also tested the links between vicarious discrimination and well-being, manipulating vicarious discrimination by instructing participants to read articles that describe prejudice against their in-group as pervasive, rare, or non-existent. Reading that prejudice against the in-group is pervasive was linked to decreased positive affect compared to reading that this prejudice was rare or non-existent (Schmitt, Branscombe, & Postmes, 2002). McCoy & Major (2003) found that reading about pervasive prejudice against the in-group led to a greater degree of depressed affect than reading about pervasive prejudice against an out-group. Meegan and Kashima (2010) also found that reading about pervasive prejudice against a group led to depressed affect if participants associated themselves with that group, compared to participants who do not associate themselves with the group. Thus, a small body of experimental literature indicates that both direct and vicarious discrimination adversely impact psychological well-being. In the context of vicarious discrimination, well-being was found to be depressed more among individuals who shared identities with the targets of discrimination than those who did not (McCoy & Major, 2003; Meegan & Kashima, 2010). These findings have important implications for testing the effects of vicarious discrimination on well-being of both in-group and out-group members.

Psychophysiology of Direct Discrimination

Several experiments have exposed individuals to laboratory stressors relevant to direct discrimination and measured momentary physiological stress responses in the autonomic nervous system – a branch of the nervous system responsible for adapting to changes in an organism's environment (Cannon, 1929). One laboratory procedure involves asking African American participants to imagine and respond to a scenario in which they are unfairly accused of shoplifting, which led to increases in blood pressure reactivity, compared to participants who responded to nonracial stressors (e.g., a flight delay, a difficult mirror-tracing task) or non-stressful scenarios (e.g., giving a tour, or having a supportive friend present; Lepore et al., 2006; Guyll, Matthews, & Bromberger, 2001; McNeilly et al., 1995). Another study found that making weight stigma salient for overweight women by making physical appearance visible in a dating context also resulted in increased blood pressure reactivity when compared to a non-stigmatizing condition, in which women were not visible (Major, Eliezer, & Rieck, 2012). Increases in cardiovascular reactivity have also been found when stigmatized group members interact with non-stigmatized laboratory confederates who express prejudicial beliefs and/or unfairly treat the stigmatized participants, compared to interactions with non-prejudiced confederates (Schneider, Tomaka, & Palacios, 2001; Salomon, Burgess, & Bosson, 2015; Mendes, McCoy, Major, & Blascovich, 2008; Sawyer, Major, Casad, Townsend, & Mendes, 2012). The findings from a robust literature on the physiological effects of direct discrimination establish that direct discrimination adversely impacts autonomic nervous system responses – a physiological network closely linked to stress responses and health consequences.

The physiological effects of vicarious discrimination have not been studied to the same extent as the impacts of direct discrimination. Two experiments showed that vicarious discrimination manipulations resulted in greater cardiovascular reactivity than non-discriminatory control conditions. Eliezer, Major, & Mendes (2010) found that reading about prevalent sexism, compared to rare sexism, led to greater cardiovascular reactivity among women. Similarly, African Americans who watched commercials showed increases in blood pressure in response to racist commercials, but not in response to anger-provoking or neutral commercials (Armstead, Lawler, Gorden, Cross, & Gibbons, 1989). Another study showed that African American participants in a subtly racist condition condition (unfair shoplifting accusations without racial cues) exhibited greater reactivity in diastolic blood pressure than those in a blatant discrimination condition (unfair shoplifting accusations with racial cues), indicating greater cardiovascular reactivity to ambiguous vicarious events (Merritt, Bennett, Williams, Edwards, & Sollers, 2006). Finally, one study found that reactivity did not depend on racial identity nor racist content, but anger-provoking content more generally, as diastolic blood pressure reactivity was higher among White and African American men who watched films of racist and anger-provoking situations, compared to films of neutral situations (Fang & Myers, 2001). The small handful studies on the cardiovascular reactivity effects of vicarious discrimination has benefitted from a diversity of methodologies. However, inconsistent findings coupled with the increasing scope of vicarious discrimination from social media's amplification of high-profile instances of discrimination justify the necessity for further research in this domain.

Important limitations in research on the effects of vicarious discrimination on affective and psychophysiological reactivity lay the groundwork for the current study. One key consideration is that experimental studies conducted to test the causality of the relationship are limited in addressing the effects of vicarious discrimination in a number of ways. A common limitation is a nearly exclusive focus on the direct, rather than vicarious, targets of discrimination (for reviews of direct discrimination scholarship, see Schmitt et al., 2014; Pascoe & Richman, 2009; Barreto & Ellemers, 2015; Major & O'Brien, 2005; Major, Quinton, & McCoy, 2002). Additionally, some experimental conditions involve imagined discrimination, such as unfair treatment from a boss or an unfair accusation of theft while shopping (Lepore et al., 2006; Guyll et al., 2001; McNeilly et al., 1995; Gibbons et al., 2012). While the imagined scenarios may be common manifestations of discrimination, these studies may be confounded as discrimination conditions may lead participants to imagine scenarios that are vastly more severe than control conditions (e.g., flight delays) that are also intended to evoke stress.

Furthermore, control conditions in some experimental studies may be limited in not accounting for stress processes that explain the link between discrimination and health outcomes. In other words, negative health outcomes may be attributable to exposure to generally stressful content instead of discrimination exclusively. Non-stressful control conditions in some studies (e.g., insurance commercials, or describing the weather) make it difficult to disentangle whether discrimination or negative experiences more generally produced negative health effects (Sawyer et al., 2012; Eliezer, Major, & Mendes, 2010; Schvey, Puhl, & Brownell, 2014; Richman et al., 2016).

Thus, findings from these studies fail to rule out stress or general negativity as a possible pathway by which participants in discrimination conditions exhibit greater cardiovascular reactivity or other negative health responses.

Stress and the Autonomic Nervous System

In the current study, we focus on the autonomic nervous system. When an individual is subjected to social stressors, such as vicarious discrimination, the autonomic nervous system typically reacts with increased activity in the sympathetic nervous system, which is tasked with "fight or flight" responses (Cacioppo et al., 1998; Ulrich-Lai & Herman 2009). When an individual encounters stressors, the sympathetic nervous system, on average, responds with increased heart rate and blood pressure, as well as decreased pre-ejection period, which refers to the amount of time between the closing of the left ventricle and the opening of the aortic valve (Mendes, 2009). Additionally, the parasympathetic "rest and digest" nervous system is expected to exhibit a contrary pattern of reactivity with decreased respiratory sinus arrhythmia – a biologically adaptive pattern of variable heart rate due to respiration, as increases in heart rate during inhalation and decreases during exhalation maximize the efficiency of oxygen exchange in the lungs (Mendes, 2009; Berntson et al., 1997; Porges, 1995; Porges, 2007; Berntson, Cacioppo, & Quigley, 1993; Grossman & Taylor, 2007; Allen, Chambers, & Towers, 2007).

The emergence of stress is highly linked with the activation of affective processes. (Bolger, DeLongis, Kessler, & Schilling, 1989; van Eck, Berkhof, Nicolson, & Sulon, 1996; Mroczek & Almeida, 2004). A greater frequency of positive affective states throughout the lifespan has health-protective qualities, while chronic negative affectivity

predicts the emergence of health problems (Richman, Kubzansky, Maselko, Kawachi, Choo, & Bauer, 2005). Thus, stress is closely linked to maladaptive affective responses.

However, stress is not inherently maladaptive, as at least some exposure to stressors may promote resilience (Seery, 2011). However, when the autonomic nervous system is chronically stressed, regulatory systems become worn out, a process known as allostatic load (McEwen, 1998). This pattern of chronic autonomic nervous system activation is linked to poor physical and mental health outcomes, including heart disease and depression (McEwen & Seeman, 1999; McEwen, 2000; McEwen, 2012; Taylor, Repetti, & Seeman, 1997). Thus, experiencing discrimination chronically, whether directly or vicariously, may elicit a similar pattern of poor physical and mental health. Furthermore, patterns of momentary autonomic nervous system activation in laboratory settings carry important implications for downstream health consequences, especially if similar stressors are encountered outside of the laboratory.

While we theorize that vicarious discrimination will impact psychophysiological stress responses of people of all races, we expect these effects to be stronger among African Americans for a number of reasons. For one, stressful events occurring to in-group members may have larger effects because of a greater overlap in self-concept, via a shared identity, with the victims (Decety, 2015; Lickel, Schmader, Curtis, Scarnier, & Ames, 2005; Mackie, Devos, & Smith, 2000; Tajfel & Turner, 1986). This increased self-concept overlap may heighten vigilance to the possibility of future direct encounters with discrimination and police brutality. African Americans may thus be stressed to a greater extent than Whites because these incidents may lead them to believe that they too might become victims. That being said, Whites might also exhibit stress responses

in the face of discrimination targeting African Americans because they may be allies or experience guilt, shame or defensiveness from a shared group membership with the officers perpetrating violence (Doosje, Branscombe, Spears, & Manstead, 1998). Thus, measuring both in-group and out-group members' responses can methodologically bolster a study and maximize theoretical contributions to disentangle the scope of vicarious discrimination's effects.

Many published studies demonstrating the negative health effects of discrimination collect data on one population – the stigmatized group whose response to discrimination was in question. These studies cannot rule out that similar stress responses would occur for non-stigmatized groups as well, which would expand the scope of discrimination's effects to include out-group members. Certainly research on discrimination's effects on in-group members has generated important theoretical advancements in discrimination scholarship, and further contributions can be enhanced by measuring the effects of perceived discrimination in both stigmatized and non-stigmatized populations of interest.

The Current Research

The goals of the current research are to expand our understanding of discrimination as a stress process that need not be directly experienced in order to have an impact on physical and psychological wellbeing. The effects of vicarious discrimination on cardiovascular reactivity represent an important theoretical contribution to social psychology literature on discrimination more broadly because of a scant extant literature and prior inconsistent findings on the topic. Direct experiences of discrimination are by no means rare, but we are currently limited in our understanding of

how bias targeted against individuals can affect large swaths of people in society more broadly. Framing instances of discrimination as vicarious and experienced by all in-group members in society, and perhaps even out-group members, represents an exciting opportunity to elucidate how the experiences of a small few can impact the health and well-being of many in the population at large.

Model 1 outlines the hypotheses of the current study. We posit that vicarious discrimination amplifies stress responses, manifested by changes in affect and cardiovascular reactivity. Additionally, we contend that this pathway is moderated by group status, as we expect stress responses to vicarious discrimination to differ among African Americans and Whites. Altogether, we hypothesize that vicarious discrimination will negatively impact affective and psychophysiological responses for Whites and even more so for African Americans. Confirmation of these hypotheses would be manifested by *increased heart rate, blood pressure, and negative affect reactivity*, as well as *decreased pre-ejection period, respiratory sinus arrhythmia, and positive affect reactivity*, among participants exposed to vicarious discrimination and those expected to be most stressed by vicarious discrimination – African Americans.

Methods

Participants

One-hundred-fifty-one college students (84 White and 67 African American) were recruited for a 90-minute study advertised as researching "Attitudes on Current Events". All White and 4 African American participants were recruited from an introductory psychology subject pool in exchange for course extra credit. Given scant representation of African Americans in introductory psychology courses, the remaining 63 African

American participants were offered a $50 cash payment in exchange for their participation. All participants provided informed consent.

G*Power (Düsseldorf, Germany) software was used to conduct a power analysis to determine the expected sample size necessary for detecting significant effects at a power of 1-β = .8, a .05 significance level, and a medium effect size (η^2 = .09) in a 2 x 2 ANCOVA design with 1 covariate (Faul, Erdfelder, Lang, & Buchner, 2007). To find such effects, a sample size of *N* = 128 was determined suitable. To uncover simple effects of condition within each racial group, an identical power analysis was conducted except with 1 x 1 ANCOVA with 1 covariate parameters, for which the suitable sample size was determined of *N* = 158 to detect a difference between any of the four experimental cells. We arrived at a final sample size of *N* = 151 because we aimed to collect 40 participants in each of the four cells of our experimental design, for a total of *N* = 160, hitting the target of 158 participants along with equal cell sizes. Because we planned to complete data collection in a single academic year, we fell slightly short of our goal.

Procedure

Participants were connected to psychophysiological recording equipment by an experimenter. Electrocardiogram (ECG) recordings were obtained with a Biopac ECG amplifier using a modified Lead II configuration. Cardiac impedance cardiography (ICG) recordings were obtained with a Bio-Impedance Technology model HIC-2500 ICG. One pair of mylar tapes encircled the neck and another pair encircled the torso. A continuous 500μA AC 95 kHz current was passed through the two outer electrodes, and basal thoracic impedance (z0) and the first derivative of basal impedance (*dz/dt*) was measured from the inner electrodes. The ECG and ICG signals were sampled at 1.0

kHz and integrated with Acqknowledge software. Participants were also connected to an oscillatory blood pressure machine. This allowed for measurement of the sympathetic nervous system markers of heart rate, systolic blood pressure, and pre-ejection period, and the parasympathetic nervous system marker of respiratory sinus arrhythmia.

Baseline

After all equipment was connected, the experimenter verified the quality of the psychophysiological signals. If adjustments were necessary, they were made at this time. Once signal quality was ensured, the experimenter returned to the participant and instructed them to sit as still as possible for five minutes while baseline psychophysiological responses were monitored.

Affect Assessment 1

Following the baseline period, participants completed the 20-item Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) to assess baseline affect.

Stimulus Presentation

The experimenter returned and instructed participants that the next part of the study involved watching a set of news media slides. Participants were instructed to attend carefully to the information in the slides as they would be asked to recall some of that information later on in a speaking task.

At this point, a computer randomly assigned condition so that experimenters would be blind. In each condition, five slides were presented consecutively for one minute each and automatically advanced. Each slide contained a date, location, brief

synopsis of an event, and accompanying images. The police brutality condition's slides entailed salient cases of police violence against African Americans between 2014 and 2015. The victims in these stories were Michael Brown (killed in Ferguson, Missouri by Officer Darren Wilson), Eric Garner (killed in Staten Island, New York by Officer Daniel Pantaleo), Tamir Rice (killed in Cleveland, Ohio by Officer Timothy Loehmann), Walter Scott (killed in Charleston, South Carolina by Officer Michael Slager), and Dajerria Becton (pinned down in McKinney, Texas by Officer Eric Casebolt). The control condition recounted automobile accidents with victims who faced identical outcomes (4 deaths, 1 minor injury) and were age and gender-matched to the police brutality victims, in addition to date-matched to the dates of the police brutality instances. This particular control condition was designed in order to control for traumatic and unfair events affecting African Americans. Appendix A contains images of the stimuli used in the study. During this phase of stimulus presentation, psychophysiological signals were monitored.

Stimulus Checks & Affect Assessment 2

Afterwards, participants completed a few items assessing their responses to the news media slides (perceived positivity, negativity, threat, unfairness, and familiarity) and completed the PANAS a second time.

Speech Preparation

The experimenter returned and detailed instructions about a speech task, in which participants were asked to describe their reactions to the news media slides they had just viewed while being video and audiotaped. Participants were then given 5

minutes to prepare mentally, without taking notes, for the speech while psychophysiological signals were monitored.

Speech Delivery

Then, participants delivered their speeches to a video camera, which was monitored by a second experimenter, to ensure that the primary experimenter remained blind to condition. To ensure that participants completed the task as instructed, if participants paused for longer than 15 seconds during the speech task, the second experimenter prompted participants to continue speaking via an intercom. Psychophysiological signals were measured during the speech as well.

Recovery

After the speech, participants were instructed to sit still and relax while psychophysiological signals were recorded one final time.

Affect Assessment 3 & Self-report Questionnaires

Finally, participants completed the PANAS a third time and a host of self-report questionnaires following the recovery period. Supplement B contains descriptions and the full-text of these measures.

Measures

Stimulus Checks

Immediately after viewing the news media slides, participants rated on a scale from one to seven how familiar, negative, threatening, positive, and unfair they believed the stimuli were. These items were administered to provide an understanding of how participants in each condition and from each racial group were processing the stimuli. We anticipated that the police brutality condition stimuli would be more familiar (as the

car accident condition stimuli were fabricated), but that both conditions would be perceived as equally negative, threatening, positive, and unfair.

Psychophysiological Reactivity

Psychophysiological reactivity indices of heart rate and respiratory sinus arrhythmia were gathered from electrocardiogram signals. Pre-ejection period scores were collected from impedance cardiography signals. The blood pressure cuff provided readings of systolic and diastolic blood pressure. Psychophysiological data were collected during five five-minute time intervals throughout the study: at baseline, stimulus presentation, speech preparation, speech delivery, and post-speech recovery. Heart rate, respiratory sinus arrhythmia, and pre-ejection period readings were provided for each of the 25 minutes of physiological data collection, for a total of 25 readings per measure. Blood pressure readings were provided for the first and final minute of each five-minute segment of data collection, for a total of 10 readings per measure.

Positive and Negative Affect

Positive and negative affect were measured via the PANAS-20X self-report questionnaire (e.g., "right now I am feeling 'guilty,' 'scared,' 'proud,' 'strong'", 1 = very slightly or not at all, 5 = extremely) administered at 3 time points: at baseline (positive α = .89, negative α = .78), after stimulus presentation (positive α = .84, negative α = .86), and after the speech task (positive α = .87, negative α = .89) (Watson, Clark, & Tellegen, 1988).

Nonverbal Affective States

Another means by which we assessed affectivity was through non-verbal behaviors. Videotaped speeches were trimmed to just the first minute, and audio

content was removed. Three coders, blind to condition, were instructed to rate participants in randomized order on a scale from 0 (not at all) to 5 (moderately) to 10 (very much) on a set of positive affective states: determined, strong, active, and alert. Coders utilized body language and facial expression cues to inform their ratings. Agreement between coders was assessed via Cronbach's alpha, and inter-rater reliability ranged from an acceptable to moderate range: determined (α = .79), strong (α = .79), active (α = .86), alert (α = .74). Thus, each of the four items was averaged across the three coders to compute composite indices for analyses. Coding under a similar scheme for negative affective states (anger, sadness, stress) is currently underway.

Self-report Questionnaires

Participants answered many self-report questionnaires throughout the study. The primary dependent variables of interest were affective and psychophysiological reactivity. Therefore, descriptions and analyses of the remaining self-report questionnaires are outlined in Supplement A.1. Supplement A.2 also contains the full text of all self-report questionnaires administered in the study.

Analysis Plan

Following guidelines, physiological files were inspected and edited where deviations from standard waveforms occurred (Mendes, 2009). One coder processed all psychophysiological files, and reliability (αs > .95) was established on a randomly selected 20% subset of participants for each minute of data collected. Psychophysiological variables were analyzed in the form of reactivity scores – computed by subtracting psychophysiological activity from the final minute of baseline

(when participants are most relaxed) from the first minute of the speech task (when participants are most reactive as they have not yet habituated) (Mendes, 2009). The resultant reactivity scores were subjected to a 2 x 2 analysis of covariance (ANCOVA), using race (African American or White) and condition (police brutality or car accidents) as independent variable fixed factors, and baseline psychophysiological scores on the dependent measure as a covariate, to control for the relationship between baseline and absolute change (Cohen, Cohen, Aiken, & West, 2003).

The results section includes psychophysiological reactivity during the speech task, but reactivity at other time points (stimulus presentation, speech preparation, and recovery) was examined in the same manner. Analyses of the reactivity during the speech task were prioritized because psychophysiological reactivity metrics are especially sensitive to motivated performance contexts (Mendes, 2002). In the context of our study, we expected that participants would exhibit the greatest reactivity during a motivated performance speech task. This time point thus presented the best opportunity for measuring and detecting effects of the largest possible size. The results of the analyses of other time points, which we expected to be in the same direction as the hypothesized speech reactivity results, are presented in Supplement B.

Because affect was examined at three distinct time points, positive and negative affect variables were subjected to a 2 (race) x 2 (condition) x 3 (time) mixed analysis of variance (ANOVA), with repeated measures of the last factor. In an effort to present consistent approaches to analyses, affective reactivity scores from the post-stimulus time period were also analyzed identically to psychophysiological reactivity variables,

using a 2 (condition) x 2 (race) ANCOVA and controlling for baseline affective responses.

Because we anticipated that African Americans in the police brutality condition would exhibit greater stress responses than African Americans in the car accident condition, we conducted simple effects tests of condition within each racial group and at each time point of affective and psychophysiological measures.

Data were lost from 7 participants due to equipment or procedural errors, and 2 participants withdrew from the study (one due to illness, and one who declined being videotaped). Distributions of dependent variables were examined for deviations from normality and outliers (values more extreme than 3 standard deviations away from a race-condition cell mean). For all variables, we employed an outlier replacement procedure in which extreme values were reassigned a score of 1 percent greater than the next-most extreme value within a given cell (Tabachnik & Fidell, 1996). All statistical tests were conducted at a .05 significance level.

Confidence intervals for race effects indicate the mean for White participants subtracted from the mean for African American participants. Confidence intervals for condition effects indicate the mean for participants in the car accidents condition subtracted from the mean in the police brutality condition. Confidence intervals may not be symmetrical due to rounding.

Results

Tables 1a-1e provide basic descriptive statistics on outcome variables, as well as tables of correlations for primary study dependent variables for the overall analytic sample and each of the four analytic cells. Generally, psychophysiological reactivity

variables were highly correlated with one another, but not with affect reactivity variables. Additionally, positive affect reactivity variables highly correlated with one another, and negative affect reactivity variables highly correlated with one another. However, positive and negative affect reactivity variables did not tend to correlate.

Missing Data

Because the quality of psychophysiological signals is sensitive to participants' movements, data were lost on some psychophysiological reactivity variables for several participants. Data were not lost for heart rate and respiratory sinus arrhythmia variables, as these values are deducted from electrocardiogram signals, which are less sensitive to movement. There were 6 values missing for pre-ejection period reactivity: 3 from African American participants in the car accidents condition, 2 from African American participants in the police brutality condition, and 1 from a White participant in the police brutality condition. Substantially more data were lost for blood pressure. Twenty-eight points were lost for both systolic and diastolic blood pressure reactivity: 5 participants in the car accident condition from each race, and 9 participants in the police brutality condition from each race.

Chi-square tests were conducted to determine if psychophysiological data loss was non-random and differed by race and/or condition. Chi-square tests indicated that data loss did not significantly deviate from random chance for pre-ejection period (χ^2 = 1.20, p = .27) and systolic/diastolic blood pressure (χ^2s = 0, ps = 1).

Analyses were also performed to determine if data loss for pre-ejection period and blood pressure predicted heart rate and respiratory sinus arrhythmia reactivity to rule out amplified stress responses as a mechanism for missing data. Small cell sizes

prevented us from conducting inferential tests for missing pre-ejection period reactivity data, but simply reviewing the means was informative. Participants with missing pre-ejection period data had diminished heart rate reactivity (*M* = 14.85, *SD* = 8.80) and respiratory sinus arrhythmia reactivity (*M* = -.26, *SD* = .79) than those who were not missing pre-ejection period data (*M*s = heart rate 20.84, respiratory sinus arrhythmia -.49, *SD*s = 12.80, 1.34). The pattern of results implied that missing pre-ejection period data was actually more predictive of diminished, rather than enhanced, stress responses. T-tests were conducted on blood pressure reactivity missing data because of sufficient cell sizes, and Levene's test for equality of variances indicated that variances were equal across missing and non-missing cells, *F*s < .4, *p*s > .5. Missing systolic/diastolic blood pressure reactivity data did not significantly predict differences in heart rate reactivity, *t*s(149) = -1.64, *p*s = .10, *CI*s = (-9.57, .88), nor respiratory sinus arrhythmia reactivity *t*s(149) = 1.12, *p*s = .27, *CI*s = (-.24, .86). These null t-tests further ruled out amplified stress responses as a missing data mechanism.

Stimulus Checks

Table 2 displays the analyses on the 5 stimulus check items. African Americans perceived the stimuli as significantly more familiar and threatening than Whites. Participants in the police brutality condition perceived the stimuli as significantly more familiar, negative, threatening, and less positive than participants in the car accidents condition. There was a significant race-by-condition interaction on perceived negativity, which revealed significantly greater perceived negativity in the police brutality condition than car accident condition for African Americans, but not Whites. There was not a significant interaction on perceived positivity, but simple effects tests indicated a similar

pattern of results, with significantly less perceived positivity of the police brutality images than car accident images for African Americans, but not Whites. There were not racial or condition differences, interactions, or simple effects on perceived unfairness of the stimuli.

Blood Pressure Reactivity

There was greater systolic blood pressure reactivity in the police brutality condition than the car accident condition, $F(1, 118) = 12.48$, $p = .001$, $\eta^2 = .10$, $CI = (4.11, 14.58)$. This effect was qualified by a significant race-by-condition interaction, $F(1, 118) = 6.08$, $p = .02$, $\eta^2 = .05$, indicating that the police brutality condition yielded higher reactivity than the car accident condition for African Americans, $F(1, 118) = 15.62$, $p < .001$, $\eta^2 = .12$, $CI = (7.95, 23.93)$, but not for Whites, $F(1, 118) = .63$, $p = .43$, $\eta^2 = .01$, $CI = (-4.13, 9.62)$, for whom the effect was in the same direction, but not significant. Overall, African Americans exhibited significantly greater diastolic blood pressure reactivity than Whites, $F(1, 118) = 4.15$, $p = .04$, $\eta^2 = .03$, $CI = (.15, 10.48)$. However, no other main effects, interactions, nor simple effects of condition were observed for diastolic blood pressure reactivity, ps > .15.

Heart Rate Reactivity

The police brutality condition also elicited significantly higher heart rate reactivity than the car accidents, $F(1, 146) = 11.82$, $p < .01$, $\eta^2 = .08$, $CI = (2.95, 10.91)$. Additionally, we found a marginally significant interaction between race and condition, $F(1, 146) = 3.29$, $p = .07$, $\eta^2 = .02$. Follow-up tests indicated there was higher heart rate reactivity in the police brutality condition for African Americans, $F(1, 146) = 12.40$, $p <$

.01, η^2 = .08, *CI* = (4.64, 16.50), but not Whites, *F*(1, 146) = 1.51, *p* = .22, η^2 = .01, *CI* = (-2.00, 8.58), for whom the effect was in the same direction, but not significant.

Pre-ejection Period Reactivity

The police brutality condition elicited significantly more (negative) pre-ejection period reactivity than the car accident condition, *F*(1, 140) = 7.04, *p* = .01, η^2 = .05, *CI* = (1.13, 7.76). While there was not a significant interaction, *F*(1, 140) = .43, *p* > .5, η^2 = 0), simple effects tests indicated there was greater pre-ejection period reactivity in the police brutality condition for African Americans, *F*(1, 140) = 4.64, *p* = .03, η^2 = .03, *CI* = (.46, 10.63), but not Whites, *F*(1, 140) = 2.42, *p* = .12, η^2 = .02, *CI* = (-.90, 7.61), for whom the effect was in the same direction, but not significant.

Respiratory Sinus Arrhythmia Reactivity

A similar pattern of results was found for respiratory sinus arrhythmia, with more (negative) reactivity in the police brutality condition, *F*(1, 146) = 12.08, *p* < .01, η^2 = .08, *CI* = (.27, .97). In the absence of a significant interaction, *F*(1, 146) = 1.91, *p* = .17, η^2 = .01, simple effects indicated greater respiratory sinus arrhythmia reactivity in the police brutality condition for African Americans, *F*(1, 146) = 10.55, *p* < .01, η^2 = .07, *CI* = (.34, 1.39), but not Whites, *F*(1, 146) = 2.44, *p* = .12, η^2 = .02, *CI* = (-.10, .84), for whom the effect was in the same direction, but not significant. Figure 1 displays our psychophysiological findings.

Negative Affect Reactivity

The hypothesized three-way interaction between race, condition, and time was not significant for negative affect, *F*(2, 273) = 2.41, *p* = .10, η^2 = .02. The highest-order significant interaction revealed a time-by-condition interaction, *F*(2, 273) = 15.29, *p* <

.001, η^2 = .10, indicating that changes in negative affect over time depended on condition. Follow-up simple effects tests were conducted to determine if there were effects of condition within each racial group at each time point. These tests indicated that there were not condition differences in negative affect at baseline for African Americans and Whites, *F*s(1, 146) < 1.2, ps > .27, η^2s ≤ .01, *CI*s = (-.08, .27; -.14, .18). The police brutality condition resulted in higher negative affect after stimulus exposure for both African Americans, *F*(1, 146) = 14.87, *p* < .001, η^2 = .09, *CI* = (-.97, -.31), and Whites, *F*(1, 146) = 4.52, *p* = .04, η^2 = .03, *CI* = (-.61, -.02). This condition difference in negative affect persisted following the speech for African Americans, *F*(1, 146) = 4.87, *p* = .03, η^2 = .03, *CI* = (-.74, -.04), but not Whites *F*(1, 146) = .90, *p* = .34, η^2 = .01, *CI* = (-.46, .16). Figure 2a displays the negative affect findings.

At the post-stimulus time point, analyzing negative affect as reactivity scores indicated main effects of race and condition, *F*s(1, 145) > 16, *p*s < .001, η^2s > .10, *CI*s = (.21, .61; .33, .72), as well as a significant race-by-condition interaction, *F*(1, 145) = 4.07, *p* < .05, η^2 = .03. Follow-up simple effects tests indicated that there was a significant increase in negative affect in the police brutality condition for Whites, *F*(1, 145) = 24.18, *p* = .01, η^2 = .14, *CI* = (.07, .59), and an even greater one for African Americans, *F*(1, 145) = 6.37, *p* < .001, η^2 = .04, *CI* = (.43, 1.02).

At the post-speech time point, analyzing negative affect as a reactivity score indicated that African Americans continued to have a greater increase in negative affect than Whites, *F*(1, 145) = 6.16, *p* = .01, η^2 = .04, *CI* = (.06, .49). There was also a greater increase in negative affect in the police brutality condition compared to the car accidents condition, *F*(1, 145) = 8.79, *p* < .01, η^2 = .06, *CI* = (.11, .53). There was not a significant

interaction, $F(1, 145) = 2.01$, $p = .16$, $\eta^2 = .01$, but simple effects tests revealed that there was a greater increase in negative affect in the police brutality condition for African Americans, $F(1, 145) = 8.55$, $p < .01$, $\eta^2 = .06$, $CI = (.15, .79)$, but not Whites, $F(1, 145) = 1.37$, $p = .24$, $\eta^2 = .01$, $CI = (-.12, .45)$.

We *post hoc* suspected that both African Americans and Whites would exhibit increases in negative affect, but in distinct ways. Thus, negative affect reactivity scores were also analyzed at the single-item level. Tables 3a and 3b display the results of single-item negative affect analyses. Figure 3a illustrates a selection of these item-level analyses. Additionally, Table 4a displays a correlation matrix for negative affect reactivity indices of particular interest.

At the post-stimulus time point, African Americans reported significantly greater increases in all negative affective states than Whites, except for guilt, for which there was no effect, and shame, for which Whites reported a greater increase than African Americans. There was a greater increase of all negative affective states in the police brutality condition than in the car accident condition, except for guilt, nervousness, and jitteriness. The guilty, scared, hostile, irritable, and afraid items all showed significant race-by-condition interactions. Scared, irritable, and afraid showed a pattern of a greater increase in the police brutality than car accident condition for African Americans, but not Whites. Both Whites and African Americans showed significantly greater increases in hostility in the police brutality compared to the car accident condition, but this increase was greater for African Americans. Guilt reactivity showed a pattern of the police brutality condition eliciting significantly higher guilt than the car accident condition

among Whites, and the opposite patterns was marginally observed for African Americans.

A very similar pattern of results followed for the post-speech time point. African Americans reported significantly greater increases that Whites for all negative affective states, except for guilty, ashamed, nervous, and jittery. The police brutality condition elicited significantly greater increases than the car accident condition for all negative affective states, except for distressed and nervous, and the effects were only marginally significant for irritable and afraid. Race and condition significantly interacted for scared and hostile, as well as marginally significantly for irritable and afraid. Scared, irritable, and afraid showed a pattern of greater increases in the police brutality condition than the car accident condition for African Americans, but not Whites. Hostile increased both for Whites and African Americans, but the effect was stronger among African Americans.

Positive Affect Reactivity

The hypothesized three-way interaction between race, condition, and time was not significant for positive affect, $F(2, 241) = 2.44$, $p = .10$, $\eta^2 = .02$. Positive affect results similarly indicated that the highest-order effect was a time-by-condition interaction, $F(2, 241) = 7.72$, $p < .01$, $\eta^2 = .05$, indicating that changes in positive affect over time depended on condition. Follow-up simple effects tests indicated that there were not condition differences for Whites at any time points, *CI*s = (-.35, .31; -.18, .35; -.10, .52), nor African Americans at baseline, *CI* = (-.49, .25), *F*s(1, 146) < .40, *p*s > .18, η^2s = 0. At the post-stimulus and post-speech time points, however, African Americans in the police brutality condition reported greater positive affect than those in the car

accident condition, *F*s(1, 146) > 9.80, *p*s < .01, η^2s ≥ .03, *CI*s = (-.95, -.34; -.91, -.21). These effects were not observed for Whites, *F*s(1, 146) < 1.82, *p*s > .18, η^2s < .02, *CI*s = (-.35, .18; -.52, .10). Figure 2b displays the positive affect findings.

At the post-stimulus time point, analyzing positive affect as reactivity scores indicated main effects of race and condition, *F*s(1, 145) > 16, *p*s < .001, η^2s ≥ .10, *CI*s = (.16, .47; .19, .49), as well as a significant race-by-condition interaction, *F*(1, 145) = 9.86, *p* < .01, η^2 = .06. Follow-up simple effects tests indicated that African Americans' positive affect decreased significantly more in the car accident condition than the police brutality condition, *F*(1, 145) = 25.23, *p* < .001, η^2 = .15, *CI* = (.35, .81). The same effect was not observed for Whites, *F*(1, 145) = .88, *p* = .35, η^2 = .01, *CI* = (-.10, .30), indicating similar decreases in positive affect across conditions.

At the post-speech time point, analyzing positive affect as reactivity scores indicated main effects of race and condition, *F*s(1, 145) > 4, *p*s < .05, η^2s ≥ .03, *CI*s = (.01, .40; .16, .55), but not a significant race-by-condition interaction, *F*(1, 145) = 1.92, *p* = .17, η^2 = .01. Follow-up simple effects tests indicated that African Americans' positive affect decreased significantly more in the car accident condition than the police brutality condition, *F*(1, 145) = 11.29, *p* < .01, η^2 = .07, *CI* = (.20, .78). The same effect was not observed for Whites, *F*(1, 145) = 2.91, *p* = .09, η^2 = .01, *CI* = (-.04, .48), indicating similar decreases in positive affect across conditions.

Positive affect findings were counter-hypothetical, so their reactivity scores were also analyzed at the single item level. We *post hoc* suspected that African Americans and Whites would exhibit distinct positive affect reactivity mechanisms. Thus, positive affect reactivity scores were also analyzed at the single-item level. Tables 3c and 3d

display the results of single-item positive affect analyses. Figure 3b illustrates a selection of these item-level analyses. Additionally, Table 4b displays a correlation matrix for positive affect reactivity indices of particular interest.

At the post-stimulus time point, African Americans reported significantly smaller decreases on all positive affective states, except for interested, enthusiastic, and active, for which there were no racial differences, and excited, for which Whites reported significantly smaller decreases than African Americans. Participants in the police brutality condition experienced significantly smaller decreases than those in the car accidents condition on all positive affect states, except for excited, enthusiastic, and inspired, as well as active, for which the effect was only marginal. Race and condition significantly interacted on strong, proud, and determined, and marginally significantly on alert, inspired, and active. For all items with significant or marginally significant interactions, the police brutality condition elicited significantly smaller decreases in positive affect than the car accidents condition for African Americans, but not Whites.

At the post-speech time point, African Americans reported significantly smaller decreases than Whites on strong, proud, alert, inspired, determined, and attentive. Participants in the police brutality condition reported significantly smaller decreases than those in the car accidents condition on all positive affective states, except for excited, alert, as well as interested and inspired, for which the effects were marginally significant. Race and condition significantly interacted on strong, proud, and determined, which all showed a pattern of significantly smaller decreases in the police brutality condition than the car accidents condition for African Americans, but not Whites.

Nonverbal Affective States

Nonverbal affective states tended to average near the scales' midpoints: determined (M = 5.30, SD = 1.66), strong (M = 4.94, SD = 1.53), active (M = 4.72, SD = 1.72), alert (M = 5.30, SD = 1.41). All four variables correlated highly with one another. Table 5 displays a correlation matrix of the nonverbal affective states.

Analyses of "determined" indicated a marginally significant main effect of race, $F(1, 145) = 3.81$, $p = .05$, $\eta^2 = .03$, $CI = (-.01, 1.07)$. However, no other main effects, interactions, nor simple effects were found, Fs(1, 145) < .7, ps > .4, η^2s < .01. The "strong" state yielded a similar pattern of results with African Americans scored as significantly stronger than Whites, $F(1, 145) = 4.54$, $p = .04$, $\eta^2 = .03$, $CI = (.04, 1.03)$. However, no other effects were found for "strong", Fs(1, 145) < .6, ps > .4, η^2s < .01. Analyses of "active" and "alert" also yielded no significant effects, Fs(1, 145) < 1.9, ps > .15, η^2s < .02.

Discussion

In the current study, we found that reading and speaking about vicarious discrimination lead to higher psychophysiological reactivity, negative affect, and positive affect than reading and speaking about vicarious trauma that was not related to discrimination. These results occurred for participants from both the stigmatized group that was victimized in the stimulus (African Americans) as well as a non-stigmatized group (Whites). Some of the observed condition effects (systolic blood pressure, negative affect, and positive affect reactivity) were stronger among African Americans than Whites.

Additionally, condition differences in affective reactivity across the different racial groups could be attributable to distinct affective states. Whites' increases in negative affect in the police brutality condition were distinguished by the contribution of guilt. On the other hand, African Americans' lack of a decrease in positive affect in the police brutality condition was attributable to the states of being active, alert, strong, proud, determined, and inspired.

While the psychophysiological findings indicate a momentary response in the autonomic nervous system, repeated exposure to stressors of perceived vicarious discrimination may trigger similar psychophysiological responses. Thus, to the extent that an individual encounters stressors similar to those presented in the current study, the individual's autonomic nervous system becomes chronically taxed. In the context of research on allostatic load and its implications for long-term health consequences, the current study suggests that vicarious discrimination may be an important contributor to racial health disparities. Evidence from our study indicated that African Americans reported a greater frequency of past experiences and anticipation of future encounters with both direct and vicarious discrimination. Therefore, the findings imply that a world plagued by discrimination will disproportionately affect individuals who belong to the groups targeted.

We were surprised to find that the police brutality condition did not lead to decreases in positive affect, as this effect was directly counter to our hypotheses and contrasts a trend in the overall literature that discrimination is linked to marked decreases in positive affect (Schmitt et al., 2014). This finding may be reconciled because some of the items used to assess positive affect (e.g., proud, strong, alert,

determined, inspired, active) are words that are readily associated with the Black Lives Matter movement. Exploratory analyses on the item-level for positive affect indeed confirmed this hypothesis, as these six items accounted the lack of decreasing positive affect among African Americans in the police brutality condition. Thus, it may be the case that the context of police brutality and Black Lives Matter is a unique circumstance in which vicarious discrimination may not dampen positive affect as has been found in other studies. The rejection identification-model may reconcile this surprising finding. A large body of research indicates that the detrimental well-being effects of identity threats may be buffered by enhanced group identification (Branscombe, Schmitt, & Harvey, 1999). In the context of the current study, African American participants in the police brutality condition may have buffered the threatening content of vicarious discrimination via enhanced identification with their in-group, because of increases in feelings of inspiration, pride, strength, determination, activity, and alertness. Future research efforts may attempt to deepen our understanding of the counterintuitive positive affect reactivity findings.

Another important consideration for the interpretation of results is the unexpected strong degree of psychophysiological reactivity among White participants in the car accidents condition. One possible explanation is that Whites' anxiety in discussing racially relevant content (all victims were African American) without an explicit racial context, such as police brutality in the experimental condition. Such a pattern would mirror prior research on Whites' anxiety in interracial contexts (Salvatore & Shelton, 2007). However, these rationalizations are speculative, and future research efforts on

the topic of vicarious discrimination may utilize control conditions that can better disentangle effects.

The findings must be interpreted in light of a few limitations. We experienced difficulties recruiting African American undergraduates through the psychology subject pool, from which we recruited White participants in exchange for course credit. Therefore, 94% of the African American participants in our sample were recruited by other means and were compensated with cash instead of course credit. While our African American sample is otherwise demographically indistinguishable from our White sample, we must acknowledge that the two racial groups were recruited from and thus comprise distinct populations. Additionally, a cash compensation could have resulted in differential motivation to perform among African American participants. This type of incentive is a notable limitation in a study on psychophysiological reactivity, an outcome which is particularly sensitive to motivated performance contexts (Mendes et al., 2002). While we argue the topic of police brutality is distressing and paid participants showed many signs of distress, they may have found at least some solace and positive affectivity in being able to leave the laboratory with $50.

There was a moderate degree of missing data for pre-ejection period and blood pressure reactivity indices. Because missing data patterns did not deviate from random chance, we do not anticipate that these points would significantly alter results. Nevertheless, future work on this topic should take additional safeguards to prevent data loss, perhaps by immobilizing participants' arms during blood pressure measurements.

Moreover, because of a small sample size, particularly of African American participants, statistical tests relied on diminished statistical power. Limited statistical power made the current study more difficult than a study with a larger sample to detect statistically significant interactions. The initial power analysis was conducted with the expectation for medium effect sizes (η^2 = .09). However, many of the observed effects in the current study were of a small-to-medium size (.01 < η^2 < .09), which would require a sample as a large as *N* = 400 to sufficiently detect. However, because of *a priori* anticipated simple effects of condition for African Americans and not Whites, simple effects tests were conducted and many of these hypotheses were confirmed.

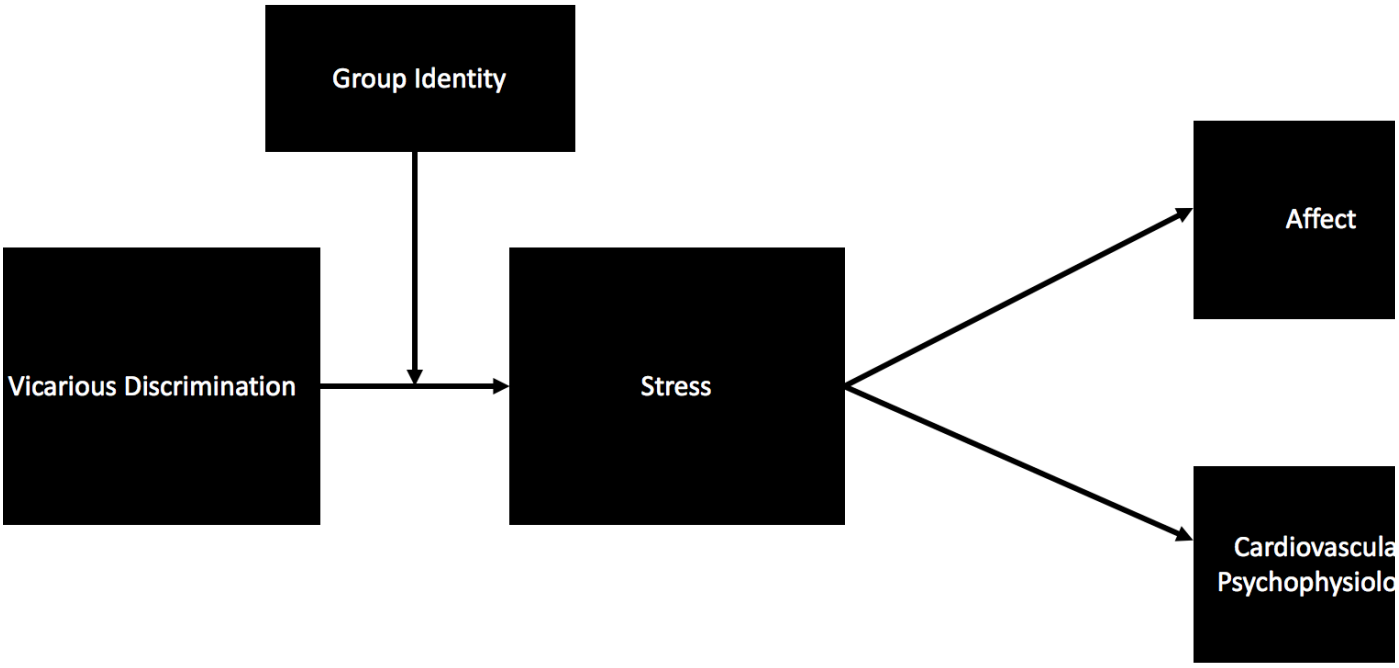
Therefore, future research may seek to replicate the current study with a larger sample of participants who are uniformly recruited and compensated. Other possible directions for future research include identifying moderators in the pathway by which vicarious discrimination elicits stress and affective responses for both White and African Americans. For example, heightened stress responses may have only manifested for individuals who have experienced more past instances of vicarious discrimination, are advocates of police reform, or supporters of the Black Lives Matter movement.

Future research may also seek to test the links between vicarious discrimination and physical and psychological health in temporally longer windows. The current study provided evidence for immediate stress responses and affective responses, but these effects may persist long after 90-minute laboratory sessions, especially as Americans encounter these stressors with a growing frequency. Employing longitudinal methods may be one method to circumvent this concern.

The current study provides additional data on the emerging interdisciplinary and scholarly phenomenon of vicarious discrimination. Primarily, the robust effects of vicarious discrimination on cardiovascular reactivity for White and African Americans contribute to framing vicarious discrimination as a public health phenomenon that may disadvantage the health of individuals in society. In particular, the current study suggests that discrimination against a small few in society can affect the hearts and minds of much broader swaths of people. Additionally, the current study may help refine theoretical frameworks on vicarious discrimination and the phenomenon of discrimination in society more broadly. Results from the current study suggest that the victims of vicarious discrimination can come from multiple social groups. Additionally, the results shed some light on the potential for group status to moderate the effects of vicarious discrimination on stress responses. That being said, future work is needed to address this question, as this moderation was not uniform for all condition effects in the current study.

In conclusion, the findings from the current study may explain why White and African Americans have exhibited such high degrees of distress about police brutality in society. Concern over the issue of police brutality against unarmed African Americans has triggered a cascade of protests, marches, and online activism. "We can't breathe," is indeed more than a metaphor. This research provides evidence that exposure to police brutality in society penetrates the hearts and minds of White and African Americans, with implications that chronic exposure may indeed make it more difficult for Americans to live healthfully.

Model 1. Theoretical framework of the current study.



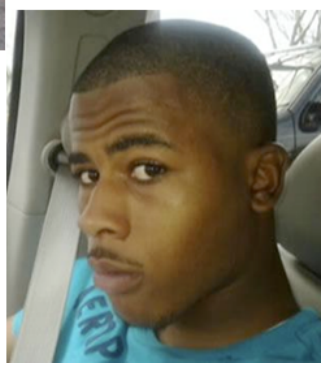
Appendix A. Stimuli from car accidents and police brutality manipulations.

July 17, 2014 – Auburndale, Florida

44-year-old Verne Lee Davis Jr. died in a two-car collision that occurred north of 46th street on 37th avenue. A vehicle traveling south slammed into Davis's car, and he died at the hospital one hour later. Phone records indicated that the driver of the other vehicle was texting while driving.

August 9, 2014 – Indianapolis, Indiana

18-year-old Michael Barnes was traveling northbound on Fall Creek Road, when a drunk driver crossed the center line and struck his Ford Explorer. Barnes was pronounced dead on the scene.



November 22, 2014 – Arcadia, Missouri

12-year-old Tyrone Sutton died in an accident on Route JJ. The accident occurred when a car traveling northbound crossed the center divider and collided with the car Sutton's father was driving. Investigators stated that the driver of the other vehicle had taken medication that caused him to fall asleep at the wheel.

April 4, 2015 – Dania Beach, Florida

50-year-old John Hollingshed was driving south on 29th Street, when a car ran a red light and struck his vehicle at the Victory Boulevard intersection. Hollingshed died on the scene after a failed resuscitation. An eyewitness stated that the other driver was applying makeup while driving.

June 5, 2015 – Sacramento, California

16-year-old Tamika Bolton was driving northbound on Interstate 5 near 43rd avenue when she was caught in a 6-car collision. Investigators stated that the accident was caused by a driver in another vehicle who was operating a car with broken brakes. Bolton sustained minor injuries.

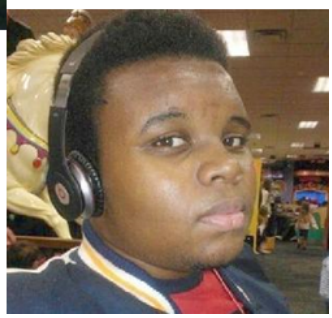
July 17, 2014 – Staten Island, New York

Daniel Pantaleo (left), a New York City police officer, attempted to arrest Eric Garner (right) in Staten Island. During the arrest, Pantaleo placed Garner in a chokehold. Garner died at the hospital one hour later.

WE CAN'T BREATHE

August 9, 2014 – Ferguson, Missouri

Darren Wilson (left), a Ferguson police officer, fatally shot unarmed Michael Brown (right) at approximately noon on August 9th. Authorities left Brown's body in the street for 4 hours while they investigated the shooting.



November 22, 2014 – Cleveland, Ohio

Responding to a call about a male pointing a gun at people in a park, Timothy Loehmann (left), a Cleveland police officer, shot Tamir Rice (right), within two seconds of arriving on the scene. The officer did not administer first-aid to Rice, who was carrying a toy gun and died the following day.

April 4, 2015 – North Charleston, South Carolina

Following a traffic stop for a non-functioning brake light, Michael Slager (left), a North Charleston police officer, fatally shot unarmed Walter Scott (right), after he exited his car and fled. Bystander footage revealed Slager chasing Scott and firing from 15-20 feet away.

June 5, 2015 – McKinney, Texas

During a pool party, Eric Casebolt (left), a McKinney Police Corporal, restrained unarmed teenager Dajerria Becton (right), while responding to a call that described the gathering as a disturbance. Bystander footage revealed Casebolt pinning Becton to the ground and then drawing his gun.

Table 1a. Basic descriptive statistics and correlations of primary study dependent variables for overall analytic sample.

		1 (*M* = 21.39, *SD* = 15.85)	2 (*M* = 9.66, *SD* = 15.25)	3 (*M* = 20.60, *SD* = 12.70)	4 (*M* = -13.14, *SD* = 10.01)	5 (*M* = -.48, *SD* = 1.32)	6 (*M* = .70, *SD* = .68)	7 (*M* = -.45, *SD* = .62)	8 (*M* = .52, *SD* = .68)	9 (*M* = -.38, *SD* = .71)
1.	**Systolic Blood Pressure Reactivity**	1								
2.	**Diastolic Blood Pressure Reactivity**	.503*	1							
3.	**Heart Rate Reactivity**	.430*	.185*	1						
4.	**Pre-ejection Period Reactivity**	-.507*	-.252*	-.736*	1					
5.	**Respiratory Sinus Arrhythmia Reactivity**	-.257*	-.124	-.717*	.438*	1				
6.	**Negative Affect Reactivity (Time 2)**	.174	-.039	.153	-.073	-.129	1			
7.	**Positive Affect Reactivity (Time 2)**	.059	-.019	.004	-.010	-.121	.156	1		
8.	**Negative Affect Reactivity (Time 3)**	.123	-.048	.154	-.018	-.150	.699*	.219*	1	
9.	**Positive Affect Reactivity (Time 3)**	.039	.075	.049	-.091	-.136	.162*	.772*	.167*	1

Note. Asterisks indicate correlations significant at $p < .05$. Psychophysiological reactivity data represent the baseline scores subtracted from scores during the speech task. Affect reactivity data represent the baseline scores subtracted from scores prior to speech preparation (time 2) and after speech delivery (time 3).

Table 1b. Basic descriptive statistics and correlations of primary study dependent variables for African Americans in the car accidents condition.

		1 (*M* = 13.40, *SD* = 15.34)	2 (*M* = 4.43, *SD* = 18.95)	3 (*M* = 14.23, *SD* = 9.33)	4 (*M* = -8.98, *SD* = 7.85)	5 (*M* = .06, *SD* = .91)	6 (*M* = .56, *SD* = .69)	7 (*M* = -.57, *SD* = .76)	8 (*M* = .42, *SD* = .64)	9 (*M* = -.52, *SD* = .81)
1.	**Systolic Blood Pressure Reactivity**	1								
2.	**Diastolic Blood Pressure Reactivity**	.538*	1							
3.	**Heart Rate Reactivity**	.241	.068	1						
4.	**Pre-ejection Period Reactivity**	-.481*	-.203	-.721*	1					
5.	**Respiratory Sinus Arrhythmia Reactivity**	-.317	-.105	-.457*	.255	1				
6.	**Negative Affect Reactivity (Time 2)**	.053	-.399*	.242	-.348	-.019	1			
7.	**Positive Affect Reactivity (Time 2)**	.095	-.207	-.166	.207	-.103	-.030	1		
8.	**Negative Affect Reactivity (Time 3)**	.107	-.306	.084	-.075	-.040	.497*	.289	1	
9.	**Positive Affect Reactivity (Time 3)**	-.013	-.026	-.231	.222	-.052	.063	.825*	.350*	1

Note. Asterisks indicate correlations significant at $p < .05$. Psychophysiological reactivity data represent the baseline scores subtracted from scores during the speech task. Affect reactivity data represent the baseline scores subtracted from scores prior to speech preparation (time 2) and after speech delivery (time 3).

Table 1c. Basic descriptive statistics and correlations of primary study dependent variables for African Americans in the police brutality condition.

		1 (*M* = 27.17, *SD* = 13.95)	2 (*M* = 7.57, *SD* = 15.91)	3 (*M* = 24.83, *SD* = 15.23)	4 (*M* = -14.19, *SD* = 9.61)	5 (*M* = -1.01, *SD* = 1.56)	6 (*M* = 1.29, *SD* = .69)	7 (*M* = -.04, *SD* = .69)	8 (*M* = .91, *SD* = .88)	9 (*M* = -.08, *SD* = .66)
1.	**Systolic Blood Pressure Reactivity**	1								
2.	**Diastolic Blood Pressure Reactivity**	.598*	1							
3.	**Heart Rate Reactivity**	.363	.267	1						
4.	**Pre-ejection Period Reactivity**	-.357	-.296	-.796*	1					
5.	**Respiratory Sinus Arrhythmia Reactivity**	-.362	-.283	-.733*	.501*	1				
6.	**Negative Affect Reactivity (Time 2)**	.565*	.294	.186	-.179	-.094	1			
7.	**Positive Affect Reactivity (Time 2)**	.029	.203	-.014	-.311	-.075	.213	1		
8.	**Negative Affect Reactivity (Time 3)**	.370	.131	.272	-.236	-.201	.811*	.230	1	
9.	**Positive Affect Reactivity (Time 3)**	-.015	.297	.179	.305	-.209	.346	.759*	.322	1

Note. Asterisks indicate correlations significant at $p < .05$. Psychophysiological reactivity data represent the baseline scores subtracted from scores during the speech task. Affect reactivity data represent the baseline scores subtracted from scores prior to speech preparation (time 2) and after speech delivery (time 3).

Table 1d. Basic descriptive statistics and correlations of primary study dependent variables for Whites in the car accidents condition.

		1 (*M* = 21.13, *SD* = 15.05)	2 (*M* = 11.45, *SD* = 11.98)	3 (*M* = 20.02, *SD* = 11.68)	4 (*M* = -12.75, *SD* = 10.47)	5 (*M* = -.39, *SD* = 1.27)	6 (*M* = .37, *SD* = .45)	7 (*M* = -.61, *SD* = .38)	8 (*M* = .32, *SD* = .47)	9 (*M* = -.56, *SD* = .57)
1.	**Systolic Blood Pressure Reactivity**	1								
2.	**Diastolic Blood Pressure Reactivity**	.553*	1							
3.	**Heart Rate Reactivity**	.600*	.348*	1						
4.	**Pre-ejection Period Reactivity**	-.455*	-.273	-.753*	1					
5.	**Respiratory Sinus Arrhythmia Reactivity**	-.327*	-.227	-.687*	.507*	1				
6.	**Negative Affect Reactivity (Time 2)**	.070	.203	.055	.185	-.159	1			
7.	**Positive Affect Reactivity (Time 2)**	-.051	.009	-.206	.198	.119	-.009	1		
8.	**Negative Affect Reactivity (Time 3)**	.105	.232	.200	.040	-.199	.587*	-.076	1	
9.	**Positive Affect Reactivity (Time 3)**	-.039	.085	-.028	.078	-.002	-.015	.738*	-.238	1

Note. Asterisks indicate correlations significant at $p < .05$. Psychophysiological reactivity data represent the baseline scores subtracted from scores during the speech task. Affect reactivity data represent the baseline scores subtracted from scores prior to speech preparation (time 2) and after speech delivery (time 3).

Table 1e. Basic descriptive statistics and correlations of primary study dependent variables for Whites in the police brutality condition.

		1 (*M* = 25.03, *SD* = 14.06)	2 (*M* = 14.06, *SD* = 13.16)	3 (*M* = 23.34, *SD* = 12.25)	4 (*M* = -16.11, *SD* = 10.48)	5 (*M* = -.63, *SD* = 1.33)	6 (*M* = .70, *SD* = .58)	7 (*M* = -.50, *SD* = .49)	8 (*M* = .50, *SD* = .63)	9 (*M* = -.32, *SD* = .72)
1.	**Systolic Blood Pressure Reactivity**	1								
2.	**Diastolic Blood Pressure Reactivity**	.338	1							
3.	**Heart Rate Reactivity**	.190	-.065	1						
4.	**Pre-ejection Period Reactivity**	-.545*	-.095	-.662*	1					
5.	**Respiratory Sinus Arrhythmia Reactivity**	.168	.116	-.764*	.321*	1				
6.	**Negative Affect Reactivity (Time 2)**	-.150	.050	-.165	.099	.125	1			
7.	**Positive Affect Reactivity (Time 2)**	-.056	-.090	.030	-.059	-.109	-.299	1		
8.	**Negative Affect Reactivity (Time 3)**	-.275	-.146	-.172	.253	.091	.688*	-.118	1	
9.	**Positive Affect Reactivity (Time 3)**	.006	.144	-.019	-.199	-.063	-.187	.733*	-.143	1

Note. Asterisks indicate correlations significant at $p < .05$. Psychophysiological reactivity data represent the baseline scores subtracted from scores during the speech task. Affect reactivity data represent the baseline scores subtracted from scores prior to speech preparation (time 2) and after speech delivery (time 3).

Table 2. Statistical analyses of stimulus check items.

Variable	Statistic	Main Effect of Race	Main Effect of Condition	Race * Condition Interaction	Simple Effect of Condition for African Americans	Simple Effect of Condition for Whites
Familiar	Test Statistic	19.99	196.33	1.73	106.05	90.31
***M* = 3.85**	Significance	<.001	<.001	.19	<.001	<.001
***SD* = 2.54**	Effect Size	.57	.86	.01	.42	.38
***df* = 146**	Confidence Interval	(.67, 1.73)	(3.23, 4.29)		(3.32, 4.90)	(2.70, 4.11)
Negative	Test Statistic	.93	31.63	13.18	38.47	2.23
***M* = 5.98**	Significance	.34	<.001	<.001	<.001	.137
***SD* = 1.40**	Effect Size	.01	.18	.08	.21	.02
***df* = 147**	Confidence Interval	(-.60, .21)	(.75, 1.56)		(1.29, 2.50)	(-.13, .95)
Threatening	Test Statistic	13.04	33.73	3.70	26.85	8.50
***M* = 4.71**	Significance	<.001	<.001	.06	<.001	<.01
***SD* = 1.90**	Effect Size	.08	.19	.03	.15	.06
***df* = 147**	Confidence Interval	(.45, 1.53)	(1.05, 2.13)		(1.31, 2.92)	(.34, 1.78)
Positive	Test Statistic	.16	4.55	3.42	7.12	.05
***M* = 1.31**	Significance	.69	.04	.07	.01	.83
***SD* = .74**	Effect Size	0	.03	.02	.05	0
***df* = 147**	Confidence Interval	(-.19, .29)	(.02, .49)		(-.83, -.12)	(-.35, .28)
Unfair	Test Statistic	1.74	.68	2.36	2.50	.29
***M* = 6.36**	Significance	.19	.41	.13	.12	.59
***SD* = 1.11**	Effect Size	.01	.01	.02	.02	0
***df* = 147**	Confidence Interval	(-.12, .60)	(-.21, .51)		(-.11, .96)	(-.61, .35)

Note. Confidence intervals for race effects indicate the mean for White participants subtracted from the mean for African American participants. Confidence intervals for condition effects indicate the mean for participants in the car accidents condition subtracted from the mean in the police brutality condition. Confidence intervals may not be symmetrical due to rounding. Significance indicates *p*-values; effect sizes are η^2 values; df = between-subjects degrees of freedom.

Table 3a. Statistical analyses of negative affect reactivity at the post-stimulus time-point.

Variable	Statistic	Main Effect of Race	Main Effect of Condition	Race*Condition Interaction	Simple Effect of Condition for African Americans	Simple Effect of Condition for Whites
Distressed	Test Statistic	12.13	14.97	1.32	11.23	4.16
***M* = 1.08**	Significance	<.01	<.001	.25	<.01	.04
***SD* = 1.19**	Effect Size	.08	.09	.01	.07	.03
***df* = 145**	Confidence Interval	(.26, .93)	(.32, .98)		(.35, 1.34)	(.01, .90)
Upset	Test Statistic	21.37	23.81	1.21	16.06	7.46
***M* = 2.03**	Significance	<.001	<.001	.27	<.001	.01
***SD* = 1.32**	Effect Size	.13	.14	.01	.10	.05
***df* = 144**	Confidence Interval	(.51, 1.26)	(.55, 1.31)		(.58, 1.71)	(.20, 1.23)
Guilty	Test Statistic	.78	.04	10.03	3.60	6.51
***M* = .41**	Significance	.38	.84	<.01	.06	.01
***SD* = .84**	Effect Size	.01	0	.07	.02	.04
***df* = 144**	Confidence Interval	(-.15, .38)	(-.30, .25)		(-.80, .02)	(.10, .79)
Scared	Test Statistic	21.25	10.14	5.40	13.49	.44
***M* = .59**	Significance	<.001	<.01	.02	<.001	.51
***SD* = 1.09**	Effect Size	.13	.07	.04	.09	0
***df* = 145**	Confidence Interval	(.42, 1.04)	(.19, .82)		(.40, 1.34)	(-.28, .55)
Hostile	Test Statistic	29.15	52.11	13.40	52.76	7.21
***M* = .72**	Significance	<.001	<.001	<.001	<.001	.01
***SD* = 1.00**	Effect Size	.17	.27	.09	.27	.05
***df* = 144**	Confidence Interval	(.47 1.01)	(.69, 1.21)		(1.04, 1.82)	(.12, .81)
Irritable	Test Statistic	16.82	13.87	11.03	22.24	.08
***M* = .86**	Significance	<.001	<.001	<.01	<.001	.78
***SD* = 1.24**	Effect Size	.11	.09	.07	.13	0
***df* = 144**	Confidence Interval	(.39, 1.11)	(.32, 1.03)		(.74, 1.82)	(-.41, .55)
Ashamed	Test Statistic	5.76	16.78	.44	5.11	13.59
***M* = .70**	Significance	.02	<.001	.51	.03	<.001
***SD* = 1.07**	Effect Size	.04	.10	0	.03	.09
***df* = 145**	Confidence Interval	(-.72, -.07)	(.36, 1.02)		(.07, 1.08)	(.37, 1.23)
Nervous	Test Statistic	3.95	.34	.02	.23	.11
***M* = -.11**	Significance	<.05	.56	.90	.63	.74
***SD* = 1.13**	Effect Size	.03	0	0	0	0
***df* = 145**	Confidence Interval	(0, .65)	(-.23, .42)		(-.37, .60)	(-.36, .50)
Jittery	Test Statistic	6.51	1.60	0	.78	.32
***M* = .03**	Significance	.01	.21	.95	.38	.37
***SD* = .89**	Effect Size	.04	.01	0	.01	.01
***df* = 145**	Confidence Interval	(.08, .60)	(-.10, .43)		(-.22, .57)	(-.19, .51)
Afraid	Test Statistic	10.11	5.41	8.93	12.22	.28
***M* = .78**	Significance	<.01	.02	<.01	<.01	.60
***SD* = 1.19**	Effect Size	.07	.04	.06	.08	0
***df* = 144**	Confidence Interval	(.23, .96)	(.07, .80)		(.43, 1.55)	(-.61, .35)

Note. Confidence intervals for race effects indicate the mean for White participants subtracted from the mean for African American participants. Confidence intervals for condition effects indicate the mean for participants in the car accidents condition subtracted from the mean in the police brutality condition. Confidence intervals may not be symmetrical due to rounding. Significance indicates *p*-values; effect sizes are η^2 values; df = between-subjects degrees of freedom.

Table 3b. Statistical analyses of negative affect reactivity at the post-speech time point.

Variable	Statistic	Main Effect of Race	Main Effect of Condition	Race*Condition Interaction	Simple Effect of Condition for African Americans	Simple Effect of Condition for Whites
Distressed	Test Statistic	7.59	1.81	.08	.50	1.50
***M* = .85**	Significance	.01	.18	.78	.48	.22
***SD* = 1.17**	Effect Size	.05	.01	0	0	.01
***df* = 144**	Confidence Interval	(.14, .85)	(-.11, .58)		(-.34, .71)	(-.18, .75)
Upset	Test Statistic	19.16	5.91	1.23	5.61	.90
***M* = 1.38**	Significance	<.001	.02	.27	.02	.35
***SD* = 1.29**	Effect Size	.12	.04	.01	.04	.01
***df* = 144**	Confidence Interval	(.47, 1.24)	(.09, .86)		(.12, 1.28)	(-.27, .78)
Guilty	Test Statistic	0	.20	.52	.03	.80
***M* = .38**	Significance	.95	.66	.47	.87	.37
***SD* = .81**	Effect Size	0	0	0	0	.01
***df* = 144**	Confidence Interval	(-.24, .26)	(-.20, .32)		(-.42, .36)	(-.18, .48)
Scared	Test Statistic	12.23	4.48	5.20	8.59	.01
***M* = .41**	Significance	<.01	.04	.02	<.01	.91
***SD* = 1.03**	Effect Size	.08	.03	.04	.06	0
***df* = 145**	Confidence Interval	(.24, .87)	(.02, .65)		(.23, 1.17)	(-.44, .39)
Hostile	Test Statistic	4.61	23.62	5.19	22.60	3.82
***M* = .56**	Significance	.03	<.001	.03	<.001	.05
***SD* = .91**	Effect Size	.03	.14	.04	.14	.03
***df* = 145**	Confidence Interval	(.02, .59)	(.40, .94)		(.57, 1.39)	(0, .71)
Irritable	Test Statistic	7.88	2.95	2.99	5.35	0
***M* = .61**	Significance	.01	.09	.09	.02	.98
***SD* = 1.12**	Effect Size	.05	.02	.02	.04	0
***df* = 143**	Confidence Interval	(.14, .83)	(-.05, .64)		(.09, 1.11)	(-.46, .45)
Ashamed	Test Statistic	1.29	4.32	.01	2.07	2.33
***M* = .55**	Significance	.26	.04	.91	.15	.13
***SD* = 1.03**	Effect Size	.01	.03	0	.01	.02
***df* = 145**	Confidence Interval	(-.51, .14)	(.02, .68)		(-.14, .87)	(-.10, .76)
Nervous	Test Statistic	2.20	.02	.08	.01	.10
***M* = -.11**	Significance	.14	.89	.78	.92	.76
***SD* = 1.11**	Effect Size	.02	0	0	0	0
***df* = 145**	Confidence Interval	(-.08, .55)	(-.33, .29)		(-.44, .49)	(-.48, .35)
Jittery	Test Statistic	0	10.00	.91	7.55	2.77
***M* = .11**	Significance	.97	<.01	.34	.01	.10
***SD* = 1.06**	Effect Size	0	.06	.01	.05	.02
***df* = 145**	Confidence Interval	(-.31, .30)	(.18, .80)		(.18, 1.10)	(-.06, .75)
Afraid	Test Statistic	5.87	3.69	3.83	6.60	0
***M* = .55**	Significance	.02	.06	.05	.01	.97
***SD* = .99**	Effect Size	.04	.03	.03	.04	0
***df* = 144**	Confidence Interval	(.07, .71)	(-.01, .62)		(.14, 1.10)	(-.42, .41)

Note. Confidence intervals for race effects indicate the mean for White participants subtracted from the mean for African American participants. Confidence intervals for condition effects indicate the mean for participants in the car accidents condition subtracted from the mean in the police brutality condition. Confidence intervals may not be symmetrical due to rounding. Significance indicates *p*-values; effect sizes are η^2 values; df = between-subjects degrees of freedom.

Table 3c. Statistical analyses of positive affect reactivity at the post-stimulus time point.

Variable	Statistic	Main Effect of Race	Main Effect of Condition	Race*Condition Interaction	Simple Effect of Condition for African Americans	Simple Effect of Condition for Whites
Interested	Test Statistic	2.23	6.72	.01	2.80	4.07
***M* = -.03**	Significance	.14	.01	.94	.10	<.05
***SD* = 1.06**	Effect Size	.02	.04	0	.02	.03
***df* = 145**	Confidence Interval	(-.08, .55)	(.10, .72)		(-.07, .86)	(.01, .83)
Excited	Test Statistic	5.08	.98	1.07	1.83	0
***M* = -.89**	Significance	.03	.33	.30	.18	.97
***SD* = 1.03**	Effect Size	.03	.01	.01	.01	0
***df* = 145**	Confidence Interval	(-.48, -.03)	(-.11, .34)		(-.11, .57)	(-.31, .29)
Strong	Test Statistic	18.98	13.39	8.08	18.75	.38
***M* = -.23**	Significance	<.001	<.001	.01	<.001	.54
***SD* = 1.11**	Effect Size	.12	.09	.05	.12	0
***df* = 144**	Confidence Interval	(.35, .93)	(.25, .82)		(.52, 1.38)	(-.26, .50)
Enthusiastic	Test Statistic	0	.62	.64	1.12	0
***M* = -1.09**	Significance	1	.43	.43	.29	.99
***SD* = 1.01**	Effect Size	0	0	0	.01	0
***df* = 144**	Confidence Interval	(-.21, .21)	(-.13, .29)		(-.14, .48)	(-.28, .27)
Proud	Test Statistic	11.68	4.28	20.29	19.34	3.39
***M* = -.89**	Significance	.04	<.01	<.001	<.001	.07
***SD* = 1.19**	Effect Size	.08	.03	.12	.12	.02
***df* = 145**	Confidence Interval	(.18. 69)	(.01, .51)		(.46, 1.21)	(-.64, .02)
Alert	Test Statistic	5.48	8.55	3.25	9.82	.74
***M* = .05**	Significance	.02	<.01	.07	<.01	.39
***SD* = 1.31**	Effect Size	.04	.06	.02	.06	<.01
***df* = 144**	Confidence Interval	(.07, .78)	(.09, .60)		(.32, 1.42)	(-.27, .68)
Inspired	Test Statistic	21.29	1.61	3.50	4.39	.21
***M* = -.71**	Significance	<.001	.21	.06	.04	.65
***SD* = 1.21**	Effect Size	.13	.01	.02	.03	0
***df* = 145**	Confidence Interval	(.39, .97)	(-.10, .47)		(.03, .88)	(-.47, .29)
Determined	Test Statistic	8.90	11.39	6.28	15.44	.43
***M* = -.37**	Significance	<.01	<.01	.01	<.001	.51
***SD* = 1.20**	Effect Size	.06	.07	.04	.10	0
***df* = 145**	Confidence Interval	(.17, .81)	(.23, .87)		(.48, 1.44)	(-.29, .57)
Attentive	Test Statistic	12.68	7.81	.17	4.55	3.27
***M* = .02**	Significance	<.01	<.01	.69	.04	.07
***SD* = 1.06**	Effect Size	.08	.05	0	.03	.02
***df* = 143**	Confidence Interval	(.25, .86)	(.13, .74)		(.04, .96)	(-.04, .78)
Active	Test Statistic	1.91	3.35	3.55	6.21	0
***M* = -.36**	Significance	.17	.07	.06	.01	.97
***SD* = 1.03**	Effect Size	.01	.02	.02	.04	0
***df* = 144**	Confidence Interval	(-.09, .50)	(-.02, .56)		(.11, .99)	(-.40, .38)

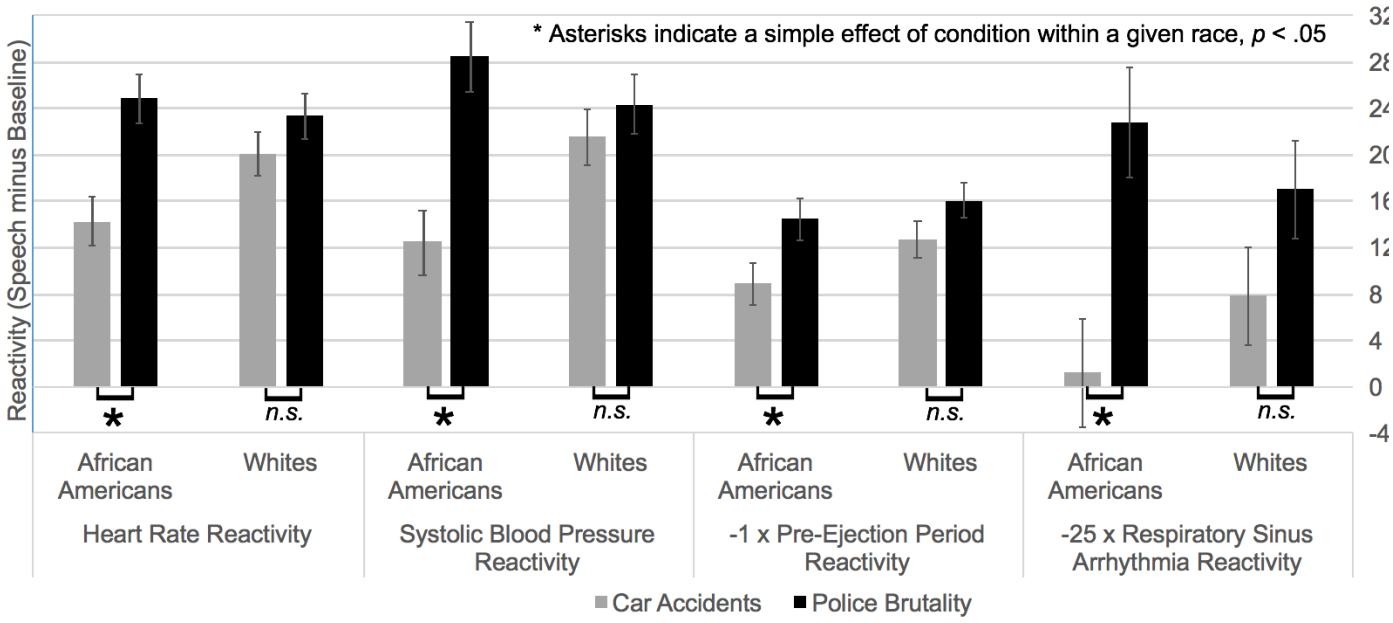
Note. Confidence intervals for race effects indicate the mean for White participants subtracted from the mean for African American participants. Confidence intervals for condition effects indicate the mean for participants in the car accidents condition subtracted from the mean in the police brutality condition. Confidence intervals may not be symmetrical due to rounding. Significance indicates *p*-values; effect sizes are η^2 values; df = between-subjects degrees of freedom.

Table 3d. Statistical analyses of positive affect reactivity at the post-speech time point.

Variable	Statistic	Main Effect of Race	Main Effect of Condition	Race*Condition Interaction	Simple Effect of Condition for African Americans	Simple Effect of Condition for Whites
Interested	Test Statistic	1.17	3.61	1.15	3.96	.38
***M* = -.19**	Significance	.28	.06	.29	<.05	.54
***SD* = 1.05**	Effect Size	.01	.02	.01	.03	0
***df* = 146**	Confidence Interval	(-.13, .48)	(-.01, .60)		(0, .92)	(-.28, .54)
Excited	Test Statistic	2.25	1.51	.03	.50	1.08
***M* = -.72**	Significance	.14	.22	.88	.48	.30
***SD* = 1.13**	Effect Size	.02	.01	0	0	.01
***df* = 144**	Confidence Interval	(-.49, .07)	(-.11, .45)		(-.27, .57)	(-.17, .56)
Strong	Test Statistic	8.45	12.19	5.16	14.71	.86
***M* = -.21**	Significance	<.01	<.01	.03	<.001	.36
***SD* = 1.09**	Effect Size	.06	.08	.04	.09	.01
***df* = 144**	Confidence Interval	(.15, .77)	(.24, .86)		(.44, 1.37)	(-.22, .60)
Enthusiastic	Test Statistic	2.51	4.78	.07	2.71	2.08
***M* = -.87**	Significance	.12	.03	.79	.10	.15
***SD* = 1.13**	Effect Size	.02	.03	0	.02	.01
***df* = 146**	Confidence Interval	(-.48, .05)	(.03, .56)		(-.07, .73)	(-.10, .62)
Proud	Test Statistic	6.99	7.65	10.73	16.20	.16
***M* = -.62**	Significance	.01	.01	<.01	<.001	.69
***SD* = 1.20**	Effect Size	.05	.05	.07	.10	0
***df* = 144**	Confidence Interval	(.10, .68)	(.12, .70)		(.45, 1.32)	(-.46, .31)
Alert	Test Statistic	4.78	1.13	.03	.34	.90
***M* = .01**	Significance	.03	.29	.86	.56	.35
***SD* =1.25**	Effect Size	.03	.01	0	0	.01
***df* = 144**	Confidence Interval	(.04, .74)	(-.17, .55)		(-.38, .70)	(-.24, .69)
Inspired	Test Statistic	9.60	3.43	.46	2.86	.79
***M* = -.35**	Significance	<.01	.07	.50	.09	.38
***SD* = 1.14**	Effect Size	.06	.02	0	.02	.01
***df* = 145**	Confidence Interval	(.19, .85)	(-.02, .63)		(-.07, .90)	(-.24, .62)
Determined	Test Statistic	8.90	11.39	6.28	15.44	.43
***M* = -.33**	Significance	<.01	<.01	.01	<.001	.51
***SD* = 1.38**	Effect Size	.06	.07	.04	.10	0
***df* = 145**	Confidence Interval	(.17, .81)	(.23, .87)		(.48, 1.44)	(-.29, .57)
Attentive	Test Statistic	4.41	7.59	0	3.33	4.38
***M* = -.25**	Significance	.01	.04	.97	.07	.04
***SD* = 1.22**	Effect Size	.03	.05	0	.02	.03
***df* = 145**	Confidence Interval	(.02, .69)	(.13, .80)		(-.04, .95)	(.03, .92)
Active	Test Statistic	.02	13.19	.67	8.73	4.59
***M* = -.38**	Significance	.90	<.001	.42	<.01	.03
***SD* = 1.03**	Effect Size	0	.08	.01	.06	.03
***df* = 143**	Confidence Interval	(-.27, .31)	(.24, .82)		(.22, 1.08)	(.03, .79)

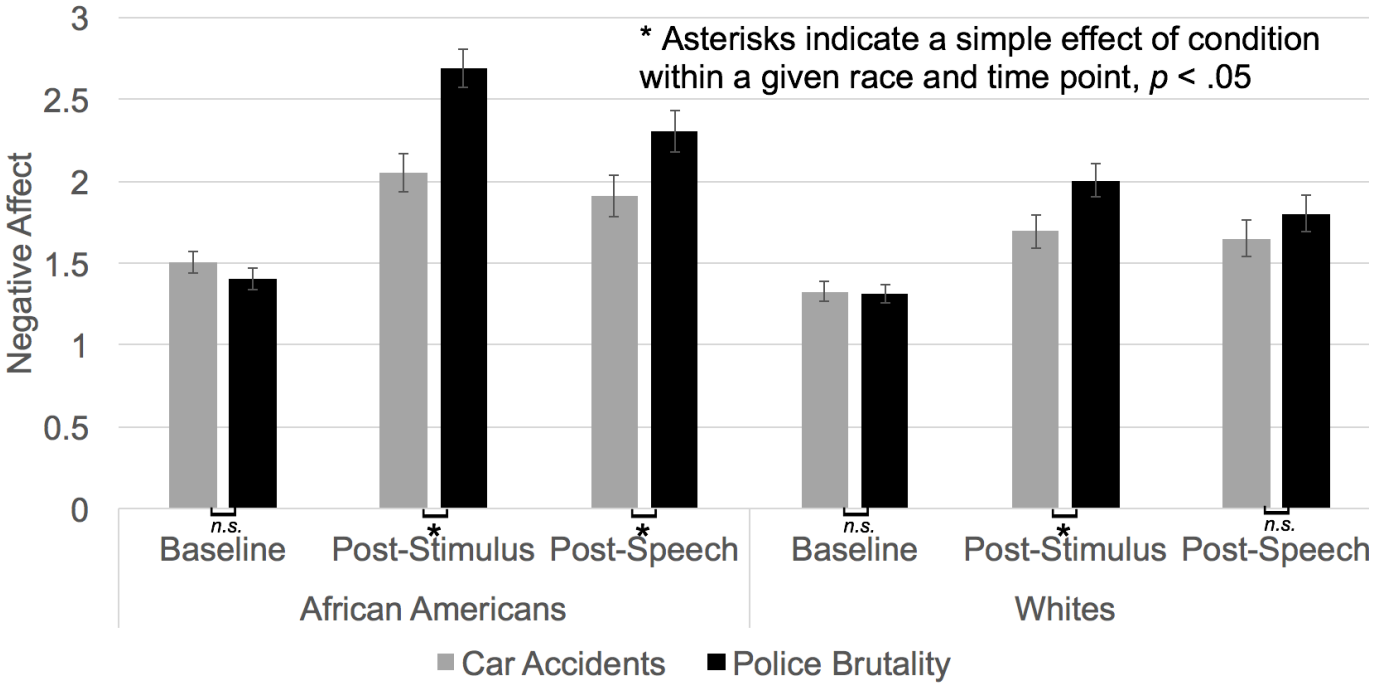
Note. Confidence intervals for race effects indicate the mean for White participants subtracted from the mean for African American participants. Confidence intervals for condition effects indicate the mean for participants in the car accidents condition subtracted from the mean in the police brutality condition. Confidence intervals may not be symmetrical due to rounding. Significance indicates *p*-values; effect sizes are η^2 values; df = between-subjects degrees of freedom.

Figure 1. Psychophysiological reactivity as a function of condition and participant race. Participants in the police brutality condition exhibited greater psychophysiological reactivity across all indices, but these effects were especially strong among African Americans.



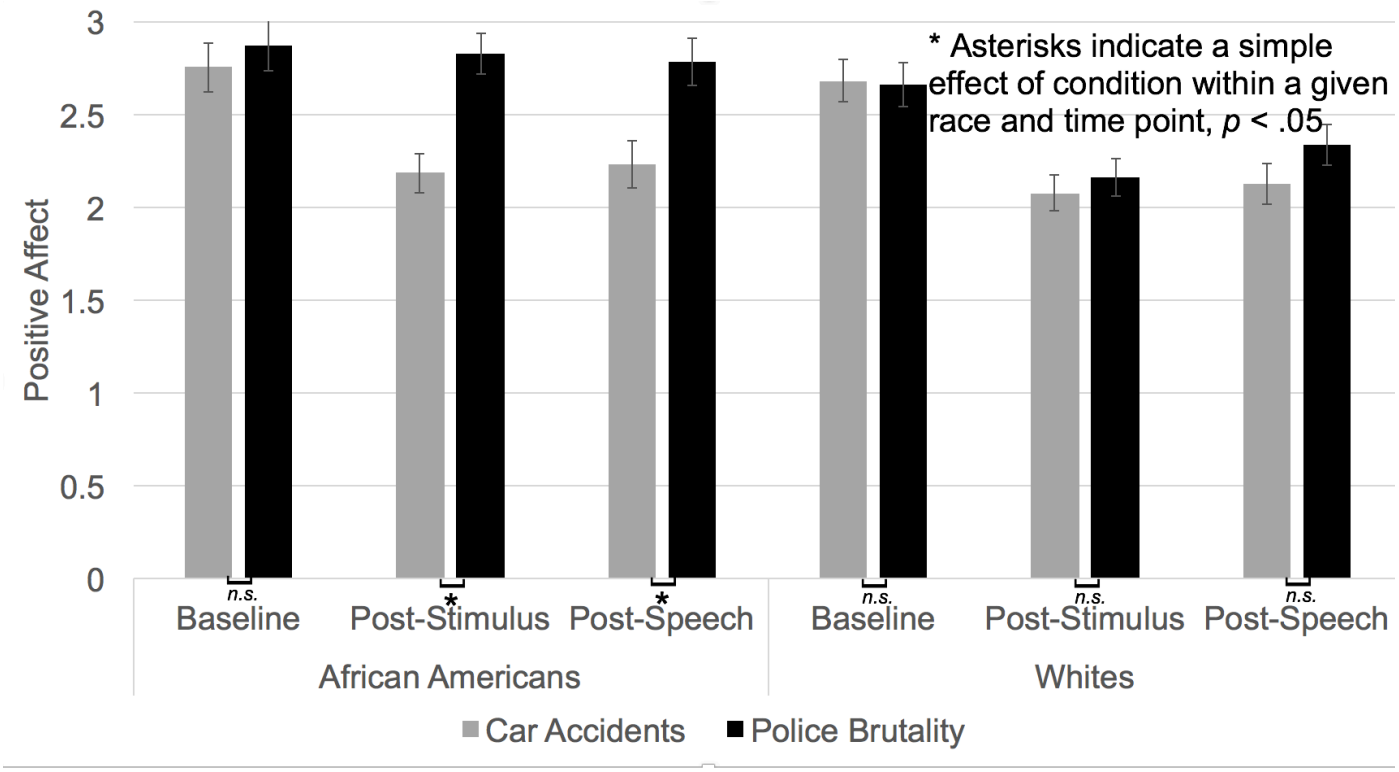
Note. Pre-ejection period and respiratory sinus arrhythmia reactivity scores were transformed by factors of -1 and -25 respectively to improve visibility. Error bars represent +/- 1 standard error.

*Figure 2*a. Negative affect as a function of condition, participant race, and time point of administration. Participants in the police brutality condition exhibited increased negative affect at the post-stimulus time point, but these effects were especially strong and lasted through the post-speech time point for African Americans.



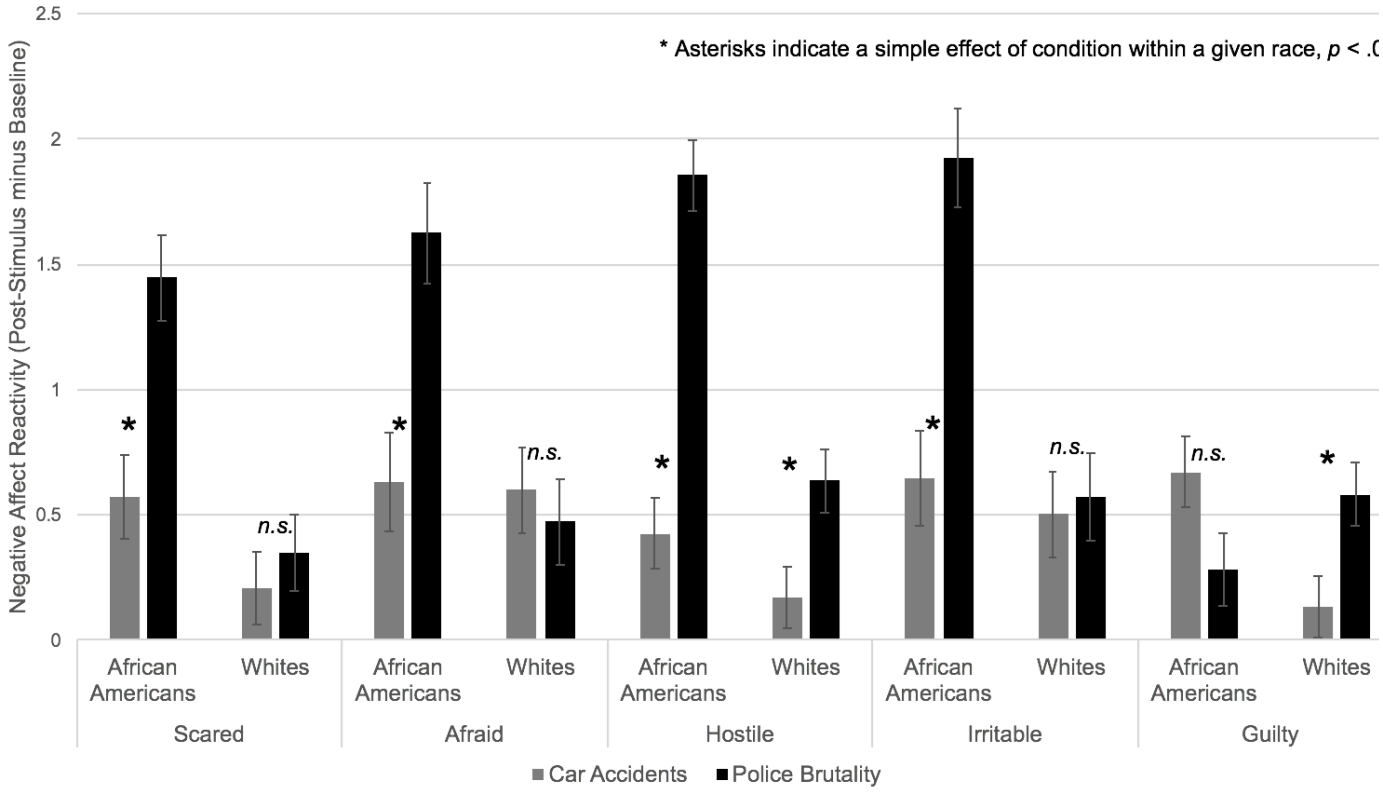
Note. Error bars represent +/- 1 standard error.

Figure 2b. Positive affect as a function of condition, participant race, and time point of administration. African American participants in the police brutality exhibited less of a decrease in positive affect at the post-stimulus and post-speech time points than African American participants in the car accident condition. White participants' positive affect responses did not differ by condition.



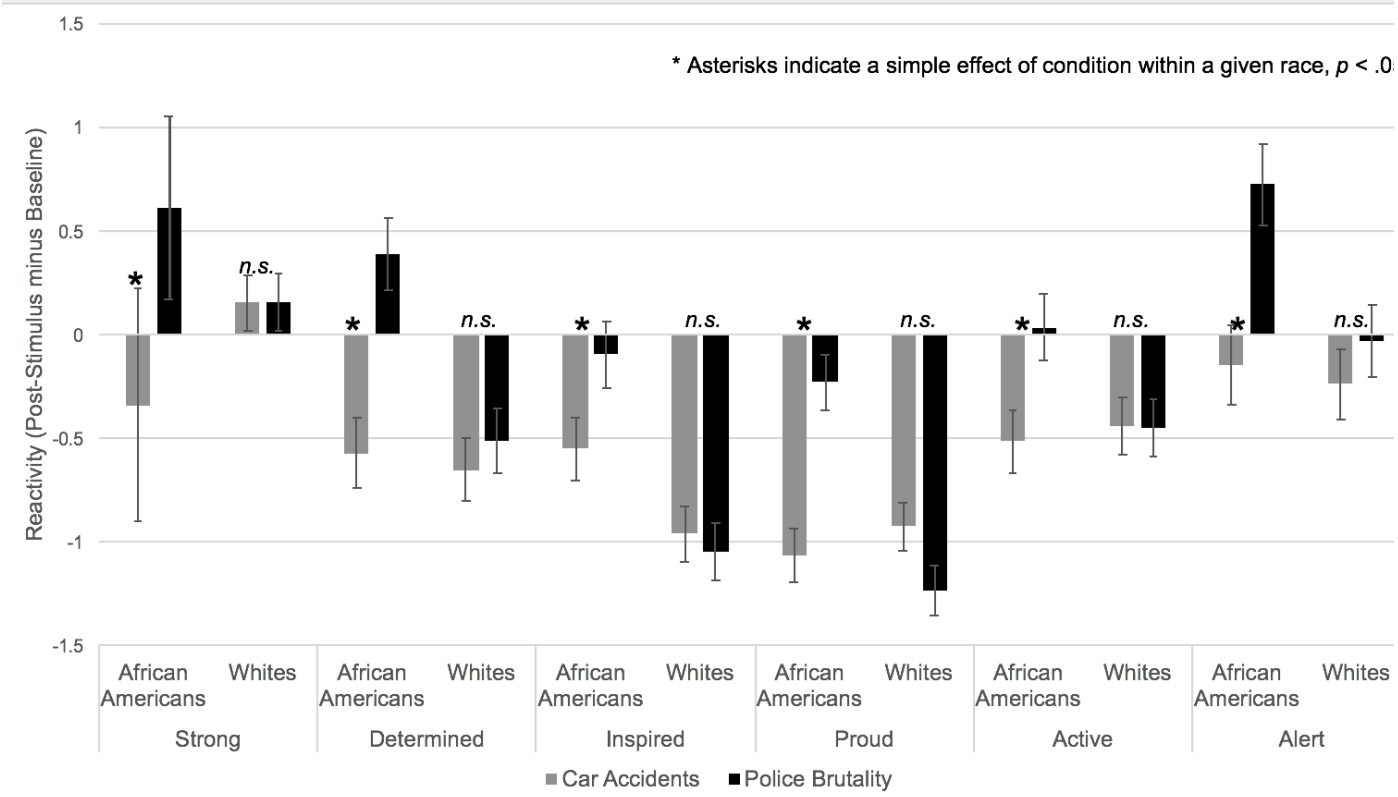
Note. Error bars represent +/- 1 standard error.

Figure 3a. Single item negative affect reactivity at the post-stimulus time point as a function of condition and participant race. African Americans in the police brutality condition reported a distinct uptick on items of "scared," "afraid," "hostile," and "irritable," while Whites in the police brutality condition exhibited an increase in self-reported guilt.



Note. Error bars represent +/- 1 standard error.

Figure 3b. Single item positive affect reactivity at the post-stimulus time point as a function of condition and participant race. African Americans in the police brutality condition did not exhibit the expected pattern of a decrease in positive affect reactivity. Rather, they showed slight decreases in self-reported inspiration and pride, and increases in alertness, activity, strength, and determination.



Note. Error bars represent +/- 1 standard error.

Table 4a. Correlation matrix of reactivity for negative affect states of interest.

	1	2	3	4	5	6	7	8	9	10
1. Scared (T2)	1									
2. Afraid (T2)	.683*	1								
3. Hostile (T2)	.451*	.451*	1							
4. Irritable (T2)	.253*	.283*	.579*	1						
5. Guilty (T2)	.268*	.086	.172*	.230*	1					
6. Scared (T3)	.732*	.623*	.269*	.210*	.113	1				
7. Afraid (T3)	.626*	.759*	.311*	.166*	.086	.838*	1			
8. Hostile (T3)	.367*	.398*	.692*	.448*	.118	.395*	.418*	1		
9. Irritable (T3)	.178*	.245*	.348*	.623*	.146	.402*	.313*	.534*	1	
10. Guilty (T3)	.212*	.280*	.239*	.162*	.478*	.289*	.406*	.334*	.230*	1

Note. Asterisks indicate correlations significant at $p < .05$. T2 reactivity data represent the baseline scores subtracted from scores prior to speech preparation. T3 reactivity data represent the baseline scores subtracted from scores after speech delivery.

Table 4b. Correlation matrix of reactivity for positive affect states of interest.

		1	2	3	4	5	6	7	8	9	10	11	12
1.	**Strong (T2)**	1											
2.	**Determined (T2)**	.240*	1										
3.	**Inspired (T2)**	.302*	.374*	1									
4.	**Proud (T2)**	.396*	.397*	.455*	1								
5.	**Active (T2)**	.164*	.280*	.180*	.211*	1							
6.	**Alert (T2)**	.137	.300*	.102	.110	.348*	1						
7.	**Strong (T3)**	.724*	.302*	.181*	.271*	.215*	.130	1					
8.	**Determined (T3)**	.263*	.628*	.267*	.430*	.268*	.319*	.280*	1				
9.	**Inspired (T3)**	.271*	.409*	.636*	.449*	.200*	.193*	.319*	.462*	1			
10.	**Proud (T3)**	.299*	.387*	.355*	.753*	.262*	.079	.381*	.456*	.454*	1		
11.	**Active (T3)**	.087	.273*	.171*	.179*	.685*	.314*	.159	.366*	.262*	.238*	1	
12.	**Alert (T3)**	.064	.219*	.066	.091	.311*	.759*	.065	.329*	.214*	.061	.329*	1

Note. Asterisks indicate correlations significant at $p < .05$. T2 reactivity data represent the baseline scores subtracted from scores prior to speech preparation. T3 reactivity data represent the baseline scores subtracted from scores after speech delivery.

Table 5. Correlation matrix of nonverbal affect states.

	1	2	3	4
1. Determined	1			
2. Strong	.868*	1		
3. Active	.770*	.737*	1	
4. Alert	.902*	.828*	.766*	1

Note. Asterisks indicate correlations significant at $p < .05$.

Supplement A.1. Additional self-report questionnaires.

Measures

Threat Appraisals and Vigilance

Threat appraisals were assessed in the context of the speech, racism, and overall vigilance. Prior to undergoing speech preparation, participants completed 8 items (4 negative – α = .79, 4 positive – α = .86) on a scale from 1 (strongly disagree) to 7 (strongly agree) assessing their challenge/threat appraisals of the upcoming speech task (e.g., "The upcoming speech task will be stressful," "I expect to perform well on the speech task"). A similar set of negative (α = .93) and positive (α = .87) items related to racism was administered after the speech: "Racism will have a severe impact on my life," "I am prepared to deal with racism". For both the speech and racism appraisals, the negative items were subtracted from the positive items to create composite scores of challenge/threat appraisals. Following the speech, 4 items also assessed participants' personal experiences with racism (α = .96): "I experience discrimination because of my race/ethnicity". Another item asked how much participants believe that "discrimination against African Americans is a big problem in America today". Also after the speech task, participants completed 4 items rating the frequency (1 = never, 5 = every day) they anticipated to be vigilant in the next week (e.g., try to prepare for possible insults from other people before leaving home) (α = .79).

Emotions and Emotional Regulation

Participants also rated the extent to which they utilized certain emotion regulation strategies after the speech task (1 = strongly disagree, 7 = strongly agree). 6 items assessed reappraisal (α = .86) (e.g., "To feel more positive emotion, right now I am

changing the way I'm thinking about the situation"), and 4 items assessed suppression (α = .79) (e.g., "Right now, I am controlling my emotions by not expressing them") (Gross & John, 2003). Rumination was assessed with a 5-item scale in which participants rated how much they were currently thinking certain ruminative thoughts (α = .80) (1 = not at all, 4 = a lot): "Right now, I am wishing the current situation had gone better" (Treynor, Gonzalez, & Nolen-Hoeksema, 2003). Finally, all videotaped speeches were transcribed and subsequently verified for verbatim accuracy by a team of research assistants. Affective and emotional content in transcribed speeches were measured using Linguistic Inquiry and Word Count software's dictionaries of words related to overall affect, positive emotion, negative emotion, sadness, anger, and anxiety (Tausczik & Pennebaker, 2010).

Experiences/Expectations of Police Brutality and Collective Action

Experiences and expectations of police brutality and collective action were assessed with two self-report questionnaires after the speech task (1 = strongly disagree, 7 = strongly agree). One 16-item questionnaire contained 4 subscales asking participants to rate their past experiences with police brutality (α = .92) (e.g., "I have been racially profiled by the police"), police brutality experiences of close others (α = .95) (e.g., People I care about have been unfairly hassled by the police because of their race/ethnicity), expectations about police brutality personally affecting participants in the future (α = .94) (e.g., "I am likely to be targeted by police brutality in the future"), and future-oriented items for close others (α = .95) (e.g., "In the future, people I care about are likely to be victims of racial profiling by police"). The other questionnaire included 8 items, 2 of which asked about past participation in activism against police brutality (α =

.79) (e.g., "In the past couple years, I have participated in online/social media activism or other online political action in response to police brutality directed at African Americans"). The remaining 6 items asked about participants' aptitudes to engage in future activism (α = .94): "I am committed to working toward ending police brutality directed at African Americans".

Group-Based Ideologies

Group-based ideologies were measured after the speech task. Participants completed 12 items assessing their endorsement of system-justifying beliefs (α = .87) (1 = strongly disagree, 7 = strongly agree): "If people work hard they almost always get what they want". 8 items assessed social dominance orientation (α = .80) (e.g., "No one group should dominate society") (Pratto, Sidanius, Stallworth, & Malle, 1994). 10 items assessed stigma consciousness (α = .88): "Most members of other racial/ethnic groups have a problem viewing my racial/ethnic group as equals" (Pinel, 1999). 16 items comprised 4 scales to assess collective self-esteem (membership (α = .70): "I am a worthy member of my racial/ethnic group," public (α = .83): "Overall, my racial/ethnic group is considered good by others," private (α = .75): "Overall, I often feel that my racial/ethnic group is not worthwhile," and identity (α = .89): "The racial/ethnic group I belong to is an important reflection of who I am") (Luhtanen & Crocker, 1992). Finally, 3 items assessed racial common fate (α = .86): "My opportunities in life are tied to those of my racial group as a whole" (Lowery, Knowles, & Unzueta, 2007).

Health and Demographics

Health and demographic questions bookended the study. At the beginning of the study, participants completed a 10-item health intake questionnaire assessing sleep,

caffeine consumption, and heart problems. At the study's conclusion, participants self-reported their gender identity, level of education, political ideology, race/ethnicity, and their parents' races/ethnicities.

Results

Table A.1a displays a correlation matrix and descriptive statistics for the threat appraisal and vigilance items. Table A.1b displays the statistical analyses conducted on threat appraisal and vigilance items. Notably, participants in the police brutality condition were marginally significantly more likely than those in the car accidents condition to rate that discrimination against African Americans is a problem in America today. There was also a significant interaction between race and condition on past personal experiences with racial discrimination. Simple effects tests indicated that compared to the car accident condition, the police brutality condition elicited a significant decrease in ratings of past personal discrimination for Whites, but no change for African Americans.

Table A.2a displays a correlation matrix and descriptive statistics for the emotion and emotional regulation variables. Table A.2b displays the statistical analyses conducted on emotion and emotional regulation variables. Notable results included that speeches about the car accident stimuli included significantly more sadness-related words than speeches about the police brutality stimuli. On the other hand, police brutality speeches contained significantly more anger-related words than car accident speeches.

Table A.3a displays a correlation matrix and descriptive statistics for the experiences/expectations and expectations of police brutality and collective action variables. Statistical analyses for these variables can be found in Table A.3b. Compared

to those in the car accidents condition, participants in the police brutality condition rated a significantly greater frequency of police brutality against close others in the past, greater anticipation of police brutality against close others in the future, greater frequency of past activism against police brutality, and a greater anticipation of future activism against police brutality. Race and condition significantly interacted on anticipation of future personal instances of police brutality. Simple effects indicated that the police brutality condition resulted in greater expectations of future personal victimization by police brutality than the car accident condition for African Americans, but not Whites.

A correlation matrix and descriptive statistics of group-based ideologies can be found in Table A.4a. Statistical analyses for these variables are found in Table A.4b. Participants in the car accident condition scored significantly higher than participants in the police brutality condition on status justifying beliefs, marginally significantly higher on social dominance orientation, and significantly lower on racial common fate. Race and condition significantly interacted on membership collective self-esteem, and simple effects indicated that compared to the car accidents condition, the police brutality condition resulted in greater membership collective self-esteem for African Americans and diminished membership collective self-esteem for Whites.

Supplement A.2. Full-text of all administered self-report questionnaires.

Variable Name	Items
Positive Affect	Right now I am feeling: interested; excited; strong; enthusiastic; proud; alert; inspired; determined; attentive; active
Negative Affect	Right now I am feeling: distressed; upset; guilty; scared; hostile; irritable; ashamed; nervous; jittery; afraid
Stimulus Checks	Prior to this study, how familiar were you with the news media stories you viewed in the slide show?; How negative were the news media stories you viewed in the slide show?; How threatening were the news media stories you viewed in the slide show?; How positive were the news media stories you viewed in the slide show?; The victims in the news media stories you viewed were subjected to unfair life outcomes.
Negative Speech Appraisals	The upcoming speech task will be: demanding; stressful; distressing; threatening
Positive Speech Appraisals	I expect to perform well on the speech task; The speech task will be a positive challenge; I am the type of person who will do well on the speech task; I have the resources to perform the speech task successfully.
Negative Racism Appraisals	Racism will have a negative impact on my future; Racism will have a harmful or bad consequences for me; Racism will affect many areas of my life; Racism will have a severe impact on my life.
Positive Racism Appraisals	I am prepared to deal with racism; I have the resources I need to handle problems posed by racism; I do the best I can to deal with racism; I am able to rise up and meet the demands posed by racism.
Personal Racial Discrimination	I experience discrimination because of my race/ethnicity; I personally have been a victim of race/ethnicity discrimination; My racial/ethnic group is discriminated against; My racial/ethnic group is a victim of race/ethnicity discrimination.
American Racial Discrimination	Discrimination against African Americans is a big problem in America today.
Vigilance	In the next week, how often do you think you will do/think the following things: Try to

	prepare for possible insults from other people before leaving home; Feel that you always have to be very careful about your appearance (to get good service or avoid being harassed); Carefully watch what you say and how you say it; Try to avoid certain social situations and places.
Reappraisal	To feel more positive emotion (such as joy or amusement), right now I am changing what I'm thinking about; To feel less negative emotion (such as sadness or anger), right now I am changing what I'm thinking about; Right now, I am making myself think about my current situation in a way that helps me stay calm; To feel more positive emotion, right now I am changing the way I'm thinking about the situation; To control my emotions, right now I am changing the way I think about the situation I'm in; To feel less negative emotion, right now I am changing the way I'm thinking about the situation.
Suppression	Right now, I am keeping my emotions to myself; To feel positive emotions, right now I am careful not to express them; Right now, I am controlling my emotions by not expressing them; If I am feeling negative emotions, right now I am making sure not to express them
Rumination	Right now, I am thinking "What am I doing to deserve this?"; Right now, I am thinking "Why do I always react this way?"; Right now, I am wishing the current situation had gone better; Right now I am thinking "Why do I have these problems that other people don't have?"; Right now I am thinking "Why can't I handle things better?"
Past Personal Police Brutality Victimization	I have been targeted by police brutality; I have been unfairly hassled by the police because of my race/ethnicity; I have been racially profiled by the police; I have experienced negative police officer interactions that were due to my race/ethnicity;
Past Close Other Police Brutality Victimization	People I care about have been targeted by police brutality; People I care about have been unfairly hassled by the police because of their

	race/ethnicity; People I care about have been racially profiled by the police; People I care about have experienced negative police officer interactions that were due to their race/ethnicity.
Future Personal Police Brutality Victimization	I am likely to be targeted by police brutality in the future; In the future, I am likely to be unfairly hassled by the police because of my race/ethnicity; In the future, I am likely to be a victim of racial profiling by the police; I will experience negative police officer interactions in the future.
Future Close Other Police Brutality Victimization	People I care about are likely to be targeted by police brutality in the future; In the future, people I care about are likely to be unfairly hassled by the police because of their race/ethnicity; In the future, people I care about are likely to be victims of racial profiling by police; People I care about will experience negative police officer interactions in the future.
Past Police Brutality Activism	I am committed to working toward ending police brutality directed at African Americans; I consider myself an activist on behalf of groups working toward ending police brutality directed at African Americans.
Future Police Brutality Activism	I identify with activist groups that are working toward eliminating police brutality directed at African Americans; I plan to engage in activism targeting police brutality directed at African Americans; I plan to affiliate with groups protesting police brutality directed at African Americans; When I get home today, I will look into how to get more involved with groups aiming to eliminate police brutality directed at African Americans; In the past couple years, I have participated in online/social media activism or other online political action in response to police brutality directed at African Americans; In the past couple years, I have participated in non-internet based activism, rallies, or other political action in response to police brutality directed at African Americans.

Status Justifying Beliefs	If people work hard they almost always get what they want; Most people who don't get ahead should not blame the system; they really have only themselves to blame; In America, getting ahead doesn't always depend on hard work; Even if people work hard, they don’t always get ahead; America is an open society where all individuals can achieve higher status; Advancement in American society is possible for all individuals; Individual members of certain groups have difficulty achieving higher status; Individual members of certain groups are often unable to advance in American society; America is a just society where differences in status between groups reflect actual group differences; Differences in status between groups in American society are fair; Differences in status between groups in American society are the result of injustice; It is unfair that certain groups in America have poorer living conditions than other groups.
Social Dominance Orientation	An ideal society requires some groups to be on top and others to be on the bottom; Some groups of people are simply inferior to other groups; No one group should dominate in society; Groups at the bottom are just as deserving as groups at the top; Group equality should not be our primary goal; It is unjust to try to make groups equal; We should do what we can to equalize conditions for different groups; We should work to give all groups an equal chance to succeed.
Stigma Consciousness	Stereotypes about my racial/ethnic group have not affected me personally; I never worry that my behaviors will be viewed as stereotypical of my racial/ethnic group; When interacting with members of other racial/ethnic groups, I feel like they interpret all my behaviors in terms of my race/ethnicity; Most members of other racial/ethnic groups do not judge members of my racial/ethnic group on the basis of our race/ethnicity; Being a member of my racial/ethnic group does not influence how other racial/ethnic groups act with me; I almost never think about the fact that I am a

	member of my racial/ethnic group when I interact with members of other racial/ethnic groups; Being a member of my racial/ethnic group does not influence how people from other racial/ethnic groups act with me; Most members of other racial/ethnic groups have a lot more racist thoughts about my group than they actually express; I often think that members of other racial/ethnic groups are unfairly accused of being racist toward my group; Most members of other racial/ethnic groups have a problem viewing my racial/ethnic group as equals.
Membership Collective Self-Esteem	I am a worthy member of my race/ethnic group; I feel I don't have much to offer to my racial/ethnic group; I am a cooperative participant in the activities of my racial/ethnic group; I often feel I'm a useless member of my racial/ethnic group.
Private Collective Self-Esteem	I often regret that I belong to my racial/ethnic group; In general, I'm glad to be a member of my racial/ethnic group; Overall, I often feel that my racial/ethnic group is not worthwhile; I feel good about the race/ethnicity I belong to.
Identity Collective Self-Esteem	Overall, my race/ethnicity has very little to do with how I feel about myself; The racial/ethnic group I belong to is an important reflection of who I am; My race/ethnicity is unimportant to my sense of what kind of a person I am; In general, belonging to my race/ethnicity is an important part of my self image.
Private Collective Self-Esteem	Overall, my racial/ethnic group is considered good by others; Most people consider my racial/ethnic group, on the average, to be more ineffective than other groups; In general, others respect my race/ethnicity; In general, others think that my racial/ethnic group is unworthy.
Racial Common Fate	What happens to my racial group as a whole in this country will have something to do with what happens in my life; My opportunities in life are tied to those of my racial group as a whole; My fortunes in life can be expected to rise and fall with those of my racial group as a

whole.

Table A.1a. Correlation matrix and descriptive statistics of threat appraisal and vigilance variables.

		1	2	3	4	5	6	7	8	9
1.	**Negative Speech Appraisal *M* = 3.36 *SD* = 1.22**	1								
2.	**Positive Speech Appraisal *M* = 4.01 *SD* = 1.18**	-.297*	1							
3.	**Net Speech Appraisal *M* = -.65 *SD* = 1.93**	.813*	-.798*	1						
4.	**Negative Racism Appraisal *M* = 3.73 *SD* = 1.88**	-.125	.076	-.125	1					
5.	**Positive Racism Appraisal *M* = 4.90 *SD* = 1.33**	-.166*	.350*	-.319*	.331*	1				
6.	**Net Racism Appraisal *M* = -1.17 *SD* = 1.91**	-.007	-.170*	.100	.751*	-.374*	1			
7.	**Personal Racial Discrimination *M* = 3.75 *SD* = 2.39**	-.156	.098	-.158	.715*	.320*	.479*	1		
8.	**American Racial Discrimination *M* = 6.13 *SD* = 1.37**	-.022	.017	-.025	.395*	.232*	.227*	.375*	1	
9.	**Vigilance *M* = 2.52 *SD* = .92**	.121	.100	.015	.463*	.148	.352*	.510*	.198*	1

Note. Asterisks indicate correlations significant at $p < .05$. "Net" appraisals are the positive appraisals subtracted from the negative appraisals.

Table A.1b. Statistical analyses of threat appraisal and vigilance variables.

Variable	Statistic	Main Effect of Race	Main Effect of Condition	Race * Condition Interaction	Simple Effect of Condition for African Americans	Simple Effect of Condition for Whites
Negative	Test Statistic	7.46	.42	.43	0	.95
Speech	Significance	.01	.52	.51	1	.33
Appraisal	Effect Size	.05	0	0	0	.01
***df* = 147**	Confidence Interval	(-.92, -.15)	(-.26, .51)		(-.58, .58)	(-.26, .77)
Positive	Test Statistic	4.58	.64	2.09	2.27	.24
Speech	Significance	.03	.42	.15	.13	.63
Appraisal	Effect Size	.03	0	.01	.02	0
***df* = 147**	Confidence Interval	(.03, .78)	(-.53, .22)		(-.99, .13)	(-.38, .62)
Speech	Test Statistic	9.34	.82	.23	.86	.10
Appraisal	Significance	<.01	.37	.64	.36	.75
(Neg minus	Effect Size	.06	.01	0	.01	0
Pos) *df* = 147	Confidence Interval	(-1.55, -.33)	(-.33, .89)		(-.48, 1.33)	(-.68, .94)
Negative	Test Statistic	124.32	2.37	.25	1.87	.60
Racism	Significance	<.001	.13	.62	.17	.44
Appraisal	Effect Size	.46	.02	0	.01	0
***df* = 147**	Confidence Interval	(2.09, 2.99)	(-.10, .80)		(-.21, 1.14)	(-.36, .84)
Positive	Test Statistic	24.49	1.08	1.57	2.36	.03
Racism	Significance	<.001	.30	.21	.13	.87
Appraisal	Effect Size	.14	.01	.01	.01	0
***df* = 147**	Confidence Interval	(.61, 1.41)	(-.19, .61)		(-.13, 1.07)	(-.58, .49)
Racism	Test Statistic	28.14	.23	.24	0	.53
Appraisal	Significance	<.001	.63	.63	1	.47
(Neg minus	Effect Size	.16	0	0	0	0
Pos) *df* = 147	Confidence Interval	(.96, 2.11)	(-.43, .71)		(-.85, .85)	(-.48, 1.04)
Personal	Test Statistic	695.58	.04	6.37	2.45	4.14
Racial	Significance	<.001	.85	.01	.12	.04
Discrimination	Effect Size	.83	0	.04	.02	.03
***df* = 147**	Confidence Interval	(4.03, 4.68)	(-.36, .30)		(-.10, .87)	(-.88, -.01)
American	Test Statistic	40.79	3.48	.09	1.11	2.63
Racial	Significance	<.001	.06	.77	.30	.11
Discrimination	Effect Size	.22	.02	0	.01	.02
***df* = 147**	Confidence Interval	(.88, 1.67)	(-.02, .77)		(-.28, .90)	(-.09, .96)
Vigilance	Test Statistic	35.30	.92	.60	1.35	.02
***df* = 147**	Significance	<.001	.34	.44	.25	.89
	Effect Size	.19	.01	0	.01	0
	Confidence Interval	(.54, 1.08)	(-.14, .40)		(-.17, .64)	(-.33, .39)

Note. Confidence intervals for race effects indicate the mean for White participants subtracted from the mean for African American participants. Confidence intervals for condition effects indicate the mean for participants in the car accidents condition subtracted from the mean in the police brutality condition. Confidence intervals may not be symmetrical due to rounding. Significance indicates *p*-values; effect sizes are η^2 values; df = between-subjects degrees of freedom.

Table A.2a. Correlation matrix and descriptive statistics of emotion and emotional regulation variables.

		1	2	3	4	5	6	7	8	9
1.	**Reappraisal** ***M*** **= 3.89** ***SD*** **= 1.31**	1								
2.	**Suppression** ***M*** **= 3.83** ***SD*** **= 1.25**	.504*	1							
3.	**Rumination** ***M*** **= 1.73** ***SD*** **= .68**	.301*	.390*	1						
4.	**Speech Affect** ***M*** **= 4.26** ***SD*** **= 2.07**	.040	.017	-.115	1					
5.	**Speech Positive Emotion** ***M*** **= 1.68** ***SD*** **= 1.40**	.076	-.061	-.095	.514*	1				
6.	**Speech Negative Emotion** ***M*** **= 2.65** ***SD*** **= 1.73**	-.017	.068	-.057	.778*	-.096	1			
7.	**Speech Sadness** ***M*** **= .39** ***SD*** **= .76**	-.059	-.091	-.142	.339*	-.038	.439*	1		
8.	**Speech Anger** ***M*** **= .97** ***SD*** **= .92**	.068	.125	-.044	.346*	-.079	.462*	-.152	1	
9.	**Speech Anxiety** ***M*** **= .61** ***SD*** **= .76**	-.013	.080	.099	.411*	-.055	.531*	.063	-.025	1

Note. Asterisks indicate correlations significant at $p < .05$.

Table A.2b. Statistical analyses conducted on emotion and emotional regulation variables.

Variable	Statistic	Main Effect of Race	Main Effect of Condition	Race * Condition Interaction	Simple Effect of Condition for African Americans	Simple Effect of Condition for Whites
Reappraisal	Test Statistic	.54	1.12	.84	1.75	.01
***df* = 147**	Significance	.47	.29	.36	.19	.92
	Effect Size	0	.01	.01	.01	0
	Confidence Interval	(-.58, .27)	(-.20, .65)		(-.21, 1.06)	(-.54, .60)
Suppression	Test Statistic	.65	1.50	.92	2.15	.04
***df* = 147**	Significance	.42	.22	.34	.15	.84
	Effect Size	0	.01	.01	.01	0
	Confidence Interval	(-.24, .57)	(-.15, .66)		(-.16, 1.06)	(-.49, .60)
Rumination	Test Statistic	15.17	.24	1.59	1.38	.34
***df* = 147**	Significance	0	.63	.21	.24	.56
	Effect Size	.10	0	.01	.01	0
	Confidence Interval	(.21, .63)	(-.16, .26)		(-.13, .50)	(-.37, .20)
Speech Affect	Test Statistic	.46	0	.11	.05	.07
***df* = 143**	Significance	.50	.99	.74	.83	.80
	Effect Size	0	0	0	0	0
	Confidence Interval	(-.93, .45)	(-.69, .69)		(-.93, 1.15)	(-1.02, .79)
Speech	Test Statistic	.52	.92	.96	1.66	0
Positive	Significance	.47	.34	.33	.20	.99
Emotion	Effect Size	0	.01	.01	.01	0
***df* = 143**	Confidence Interval	(-.63, .29)	(-.24, .69)		(-.24, 1.15)	(-.61, .60)
Speech	Test Statistic	0	.05	.10	.13	0
Negative	Significance	.99	.82	.76	.72	.95
Emotion	Effect Size	0	0	0	0	0
***df* = 143**	Confidence Interval	(-58, .57)	(-.64, .51)		(-1.02, .71)	(-.73, .78)
Speech	Test Statistic	1.17	4.73	.07	1.61	3.43
Sadness	Significance	.28	.03	.79	.21	.07
***df* = 143**	Effect Size	.01	.03	0	.01	.02
	Confidence Interval	(-.11, .38)	(-.52, -.03)		(-.61, .13)	(-.63, .02)
Speech Anger	Test Statistic	.01	11.58	.28	3.65	8.90
***df* = 143**	Significance	.91	<.01	.60	.06	<.01
	Effect Size	0	.08	0	.03	.06
	Confidence Interval	(-.31, .28)	(.21, .80)		(-.02, .87)	(.20, .97)
Speech	Test Statistic	.25	.09	2.08	.58	1.75
Anxiety	Significance	.62	.77	.15	.45	.19
***df* = 143**	Effect Size	0	0	.01	0	.01
	Confidence Interval	(-.19, .32)	(-.29, .21)		(-.23, .53)	(-.55, .11)

Note. Confidence intervals for race effects indicate the mean for White participants subtracted from the mean for African American participants. Confidence intervals for condition effects indicate the mean for participants in the car accidents condition subtracted from the mean in the police brutality condition. Confidence intervals may not be symmetrical due to rounding. Significance indicates *p*-values; effect sizes are η^2 values; df = between-subjects degrees of freedom.

Table A.3a. Descriptive statistics and correlation matrix of experiences and expectations of police brutality and collective action variables.

		1	2	3	4	5	6
1.	**Past Personal Police Brutality Victimization** ***M* = 2.04** ***SD* = 1.71**	1					
2.	**Past Close Other Police Brutality Victimization** ***M* = 3.36** ***SD* = 2.24**	.662*	1				
3.	**Future Personal Police Brutality Victimization** ***M* = 2.97** ***SD* = 2.05**	.773*	.761*	1			
4.	**Future Close Other Police Brutality Victimization** ***M* = 3.91** ***SD* = 2.14**	.577*	.867*	.793*	1		
5.	**Past Activism Against Police Brutality** ***M* = 3.35** ***SD* = 2.09**	.455*	.681*	.569*	.682*	1	
6.	**Future Activism Against Police Brutality** ***M* = 3.79** ***SD* = 1.70**	.407*	.571*	.517*	.668*	.777*	1

Note. Asterisks indicate correlations significant at $p < .05$.

Table A.3b. Statistical analyses for experiences and expectations of police brutality and collective action variables.

Variable	Statistic	Main Effect of Race	Main Effect of Condition	Race * Condition Interaction	Simple Effect of Condition for African Americans	Simple Effect of Condition for Whites
Past Personal	Test Statistic	85.19	1.58	1.65	2.91	0
Police Brutality	Significance	<.001	.21	.20	.09	.98
Victimization	Effect Size	.37	.01	.01	.02	0
***df* = 147**	Confidence Interval	(1.62, 2.51)	(-.16, .72)		(-.09, 1.23)	(-.60, .58)
Past Close Other	Test Statistic	136.88	4.66	2.13	5.88	.27
Police Brutality	Significance	<.001	.03	.15	.02	.60
Victimization	Effect Size	.48	.03	.01	.04	0
***df* = 147**	Confidence Interval	(2.57, 3.61)	(.05, 1.09)		(.18, 1.74)	(-.51, .88)
Future Personal	Test Statistic	249.96	2.80	4.15	6.19	.08
Police Brutality	Significance	<.001	.10	.04	.01	.79
Victimization	Effect Size	.63	.02	.03	.04	0
***df* = 147**	Confidence Interval	(2.85, 3.66)	(-.06, .75)		(.16, 1.37)	(-.62, .47)
Future Close Other	Test Statistic	142.14	4.25	1.63	5.00	.35
Police Brutality	Significance	<.001	.04	.20	.03	.56
Victimization	Effect Size	.49	.03	.01	.03	0
***df* = 147**	Confidence Interval	(2.49, 3.48)	(.02, 1.01)		(.10, 1.57)	(-.46, .86)
Past Activism	Test Statistic	67.94	6.26	1.59	6.35	.87
Against Police	Significance	<.001	.01	.21	.01	.35
Brutality	Effect Size	.32	.04	.01	.04	.01
***df* = 147**	Confidence Interval	(1.76, 2.88)	(.15, 1.26)		(.23, 1.89)	(-.39, 1.09)
Future Activism	Test Statistic	42.12	7.62	1.15	6.59	1.61
Against Police	Significance	<.001	.01	.29	.01	.21
Brutality	Effect Size	.22	.05	.01	.04	.01
***df* = 147**	Confidence Interval	(1.10, 2.06)	(.19, 1.15)		(.21, 1.65)	(-.23, 1.05)

Note. Confidence intervals for race effects indicate the mean for White participants subtracted from the mean for African American participants. Confidence intervals for condition effects indicate the mean for participants in the car accidents condition subtracted from the mean in the police brutality condition. Confidence intervals may not be symmetrical due to rounding. Significance indicates *p*-values; effect sizes are η^2 values; df = between-subjects degrees of freedom.

Table A.4a. Descriptive statistics and correlation matrix for group-based ideology variables.

		1	2	3	4	5	6	7	8
1.	**Status Justifying Beliefs** ***M* = 2.85** ***SD* = 1.04**	1							
2.	**Social Dominance Orientation** ***M* = 2.36** ***SD* = 1.11**	.591*	1						
3.	**Stigma Consciousness** ***M* = 4.28** ***SD* = 1.44**	-.382*	-.170*	1					
4.	**Membership Collective Self-Esteem** ***M* = 5.41** ***SD* = 1.14**	-.171*	-.208*	.352*	1				
5.	**Private Collective Self-Esteem** ***M* = 5.96** ***SD* = 1.04**	-.013	-.109	.296*	.504*	1			
6.	**Identity Collective Self-Esteem** ***M* = 4.34** ***SD* = 1.53**	.337*	.171*	-.707*	-.249*	-.128	1		
7.	**Public Collective Self-Esteem** ***M* = 3.95** ***SD* = 1.90**	-.287*	-.176*	.709*	.510*	.464*	-.534*	1	
8.	**Racial Common Fate** ***M* = 4.05** ***SD* = 1.70**	-.288*	-.070	.432*	.325*	.135	-.334*	.455*	1

Note. Asterisks indicate correlations significant at $p < .05$.

Table A.4b. Statistical analyses for group based ideology variables.

Variable	Statistic	Main Effect of Race	Main Effect of Condition	Race * Condition Interaction	Simple Effect of Condition for African Americans	Simple Effect of Condition for Whites
Status Justifying Beliefs	Test Statistic	21.15	6.26	.54	4.70	1.76
	Significance	<.001	.01	.47	.03	.19
	Effect Size	.13	.04	0	.03	.01
***df* = 147**	Confidence Interval	(-1.04, -.42)	(-.71, -.08)		(-.98, -.05)	(-.70, .14)
Social Dominance Orientation	Test Statistic	17.06	3.18	.19	2.20	1.03
	Significance	<.001	.08	.67	.14	.31
	Effect Size	.10	.02	.001	.02	.01
***df* = 147**	Confidence Interval	(-1.05, -.37)	(-.65, .03)		(-.89, .13)	(-.69, .22)
Stigma Consciousness	Test Statistic	117.89	2.54	1.66	3.73	.05
	Significance	<.001	.11	.20	.06	.82
***df* = 147**	Effect Size	.45	.02	.01	.03	0
	Confidence Interval	(1.57, 2.27)	(-.07, .63)		(-.01, 1.03)	(-.41, .52)
Membership Collective Self-Esteem	Test Statistic	23.57	.98	6.07	5.36	1.23
	Significance	<.001	.32	.02	.02	.27
	Effect Size	.14	.01	.04	.04	.01
***df* = 147**	Confidence Interval	(.50, 1.18)	(-.17, .51)		(.09, 1.10)	(-.71, .20)
Private Collective Self-Esteem	Test Statistic	17.49	.23	5.36	3.49	1.91
	Significance	<.001	.64	.02	.06	.17
	Effect Size	.11	0	.04	.02	.01
***df* = 147**	Confidence Interval	(.36, .99)	(-.24, .39)		(-.03, .92)	(-.72, .13)
Identity Collective Self-Esteem	Test Statistic	83.64	.68	3.46	3.23	.61
	Significance	<.001	.41	.07	.07	.44
	Effect Size	.36	.01	.02	.02	0
***df* = 147**	Confidence Interval	(1.79, 2.77)	(-.29, .70)		(-.07, 1.40)	(-.92, .40)
Public Collective Self-Esteem	Test Statistic	230.67	.03	2.50	1.39	1.11
	Significance	<.001	.86	.12	.24	.29
	Effect Size	.61	0	.02	.01	.01
***df* = 147**	Confidence Interval	(-2.71, -2.09)	(-.34, .28)		(-.74, .19)	(-.19, .64)
Racial Common Fate	Test Statistic	14.81	11.00	1.07	8.50	2.94
	Significance	<.001	.01	.30	<.01	.09
***df* = 147**	Effect Size	.09	.07	.01	.06	.02
	Confidence Interval	(.48, 1.51)	(.35, 1.38)		(.36, 1.90)	(-.09, 1.28)

Note. Confidence intervals for race effects indicate the mean for White participants subtracted from the mean for African American participants. Confidence intervals for condition effects indicate the mean for participants in the car accidents condition subtracted from the mean in the police brutality condition. Confidence intervals may not be symmetrical due to rounding. Significance indicates *p*-values; effect sizes are η^2 values; df = between-subjects degrees of freedom.

Supplement B. Physiological reactivity at stimulus presentation, speech preparation, and recovery periods.

We conducted exploratory analyses on physiological reactivity at the stimulus presentation, speech preparation, and recovery periods of the study to further investigate the onset of cardiovascular reactivity in our study. Reactivity scores for heart rate, systolic and diastolic blood pressure, pre-ejection period, and respiratory sinus arrhythmia were analyzed in an identical manner to the analyses conducted on the speech delivery time period.

Stimulus Presentation

During the first minute of stimulus presentation, we observed no post-hoc hypothesized condition, race, nor interaction effects, *p*s > .09. There was, however, a simple effect of condition on systolic blood pressure reactivity for African Americans, p = .04, η^2 = .03, *CI* = (.21, 8.53), but not Whites, p = .94, η^2 = 0, *CI* = (-3.51, 3.79), indicating greater systolic blood pressure reactivity in the police brutality condition than in the car accident condition. No other simple effects of condition within either racial group were observed, *p*s > .1.

Speech Preparation

Consistent with the speech delivery period, we observed main effects of condition on all psychophysiological reactivity indices: heart rate, $F(1, 146) = 10.90$, p = .01, η^2 = .07, *CI* = (1.58, 6.29); systolic blood pressure, $F(1, 138) = 6.42$, p = .01, η^2 = .04, *CI* = (.95, 7.70); pre-ejection period, $F(1, 140) = 5.46$, p = .02, η^2 = .04, *CI* = (-4.55, -.38); and respiratory sinus arrhythmia, $F(1, 146) = 7.19$, p = .01, η^2 = .05, *CI* = (-.58, -.09); with the exception of diastolic blood pressure, $F(1, 138) = 2.37$, p = .13, η^2 = .02,

CI = (-.63, 5.07). The effects were all in the same direction as those in the speech delivery period, indicating greater reactivity in the police brutality condition than the car accident condition. No race or interaction effects were observed at this time point, *p*s > .12.

Simple effects tests of condition within each racial group revealed greater heart rate reactivity in the police brutality condition for African Americans, $F(1, 146) = 3.04$, $p = .01$, $\eta^2 = .05$, *CI* = (1.60, 8.62), but not Whites, $F(1, 146) = 8.29$, $p = .08$, $\eta^2 = .02$, *CI* = (-.37, 5.89). Additionally, we found greater systolic blood pressure reactivity in the police brutality condition for African Americans, $F(1, 138) = 4.36$, $p = .04$, $\eta^2 = .03$, *CI* = (.29, 10.47), but not Whites, $F(1, 136) = 2.11$, $p = .15$, $\eta^2 = .02$, *CI* = (-1.18, 7.71). No simple effects of condition within racial groups were found for diastolic blood pressure, *F*s(1, 138) < 2.3, *p*s > .13, η^2s < .02, *CI*s = (-1.03, 7.50; -2.55, 4.97). We also found greater (more negative) respiratory sinus arrhythmia reactivity in the police brutality condition for African Americans, $F(1, 146) = 4.06$, $p < .05$, $\eta^2 = .03$, *CI* = (-.74, -.01), but not Whites, $F(1, 146) = 3.08$, $p = .08$, $\eta^2 = .02$, *CI* = (-.61, .04). Inconsistent with speech delivery results, we unexpectedly found greater (more negative) pre-ejection period reactivity in the police brutality condition for Whites, $F(1, 140) = 4.64$, $p = .03$, $\eta^2 = .03$, *CI* = (-5.60, -.24), but not African Americans, $F(1, 140) = 1.55$, $p = .22$, $\eta^2 = .01$, *CI* = (-5.21, 1.19).

Recovery

We found a main effect of condition on heart rate reactivity in the recovery period, indicating greater reactivity in the police brutality condition, $F(1, 146) = 4.29$, $p = .04$, $\eta^2 = .03$, *CI* = (.08, 3.56). No other condition, race, or interaction effects were found on psychophysiological reactivity variables in the recovery period, *p*s > .06.

Unexpectedly, simple effects tests of condition within each racial group for heart rate reactivity revealed greater reactivity in the police brutality condition for Whites, $F(1, 146) = 4.73$, $p = .03$, $\eta^2 = .03$, $CI = (.23, 4.85)$, but not African Americans, $F(1, 146) = .71$, $p = .4$, $\eta^2 = .01$, $CI = (-1.49, 3.69)$. No other simple effects were found.

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