

ABSTRACT

SHAUGHNESSY, GRACE RYAN. Daily Fluctuations in Racial Bias: The Role of Emotions. (Under the direction of Dr. Amy Halberstadt).

Racial bias has been thought of as a trait-like, stable variable. However, there is some evidence that racial bias may fluctuate on a more frequent basis (Devine, 1989; Gawronski et al., 2017). One factor that may influence this fluctuation is emotion (Bodenhausen, 1993). This study aimed to demonstrate fluctuation in racial bias on a daily level and determine emotion's role in these fluctuations. Using a nine-day daily diary method, undergraduate students and Amazon Mechanical Turk workers (N=55) were tested for daily racial bias as well as daily and general emotions. Results indicated that racial bias does fluctuate on a daily level. Emotion's role in these daily fluctuations were unclear with general happiness increasing racial bias and general anger decreasing racial bias. Implications and future directions are discussed.

Daily Fluctuations in Racial Bias: The Role of Emotions

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Introduction

Racial bias has wide-ranging impact on social relationships. For example, individuals with more racial bias are less friendly and demonstrate more negative nonverbal behavior toward Black confederates than White confederates (Dovidio, Kawakami, & Gaertner, 2002), have worse perceptions of social interactions with Black individuals than White (McConnell & Leibold, 2001), are more likely to vote for a White candidate over a Black candidate (Payne, Hall, Cameron, & Bishara, 2010), and are less likely to hire a Black individual over a White individual (McConahay, 1983). Because racial bias has pervasive impact on people solely by virtue of their race, it is important to understand more about racial bias, and how it might be ameliorated.

Racial bias can be both explicit, when individuals are aware of and deliberate about their beliefs (Wilson, Lindsey, & Schooler, 2000), and implicit, when individuals are unaware of their own beliefs and feelings (Greenwald & Banaji, 1995). An individual's behaviors are influenced by both implicit and explicit biases (Nosek, 2007). Racial bias is thought to be impacted by two processes: stereotyping and prejudice (Amodio & Devine, 2006; Park & Judd, 2005). A stereotype is a cognitive representation of an outgroup member based on beliefs about that outgroup (Hamilton, 2015). Prejudice is most traditionally defined as a negative affective response to members of an outgroup (Allport, 1954; McConahay & Hough, 1976). Both of these constructs are unique and important components of bias and allow us to gain a better understanding of racial bias as a whole (Park & Judd, 2005; Devine, 1989; Dovidio, Bringham, Johnson, & Gaertner, 1996).

Racial bias begins to form early in life and is generally maintained throughout the lifespan. Children demonstrate use of racial stereotypes as early as age three (Williams, Best,

Boswell, Mattson, & Graves, 1975). Throughout elementary school, children consistently associate pictures of White individuals with positive adjectives and pictures of Black individuals with negative adjectives and this effect peaks in second grade (Williams, Best, & Boswell, 1975). Beginning at age four, racial stereotypes start to affect memory. Children are more likely to remember scenarios that are congruent with their racial stereotypes than those which are incongruent (Bigler & Liben, 1993). Implicit bias is also evident early in life. As early as six years of age, children showed evidence of bias on the IAT (Baron & Banaji, 2006). These studies demonstrate that both implicit and explicit bias emerge early in life, however, bias continues to develop and change throughout the lifespan (Baron & Banaji, 2006; Gawronski, Morrison, Phillips, & Galdi, 2017). The more that researchers learn about what impacts experiences of racial bias and how it changes over time, the more that we can impact these interactions in a positive way.

To date, although a few researchers have demonstrated change over time for racial bias (Devine, 1989; Gawronski et al., 2017), the field has tended to imply that racial bias functions more as a trait-like characteristic, having studied individuals at only one point in time. No one has tested whether racial bias fluctuates on a daily level, although implicit racial bias is consistently found to be a contextually malleable construct. For example, individuals with different levels of familiarity with implicit tasks had different reliabilities (Razeai, 2011); providing different stimuli before the task changed the results of implicit tasks (Han, Czellar, Olson, & Fazio, 2010); and changing the contents of the task to be more self-relevant to the participant also impacted the results (Popa-Roch & Delmas, 2010). If researchers are able to manipulate the results of racial bias tasks within the lab, there is reason to believe that daily environments could also cause fluctuations in racial bias on a daily level.

Emotions give us a particularly interesting lens with which to explore daily fluctuations in racial bias. Various emotions, such as sadness, fear, anger, and happiness, can impact the affective response that individuals have towards members of outgroups (Bodenhausen, 1993). These emotions influence the affective response that an individual has to racial outgroups and can either increase or decrease stereotype thinking. Positive and negative affect have both been found to have an effect on individuals' racial bias (Johnson & Fredrickson, 2005; Bodenhausen, Sheppard, & Kramer, 1994), however, specific emotions (e.g., anger and sadness, which are both subsumed under "negative affect") have unique effects on expression of racial bias (e.g., Bodenhausen, Kramer, & Susser, 1994; Banks & Hicks, 2016).

Many negative emotions have an impact on expressions of racial bias but in different ways. Sadness seems to invite a more detail-oriented focus (Schwarz, 1990; Forgas, 1989, 2013), and, as such, seems to reduce stereotype effects (Bodenhausen, Sheppard, & Kramer, 1994; Park & Banaji, 2000; Huntsinger, Sinclair, & Clore, 2009). Stereotyping is often the result of quick, relatively automatic cognitive processing (Clore & Huntsinger, 2007). Because focusing on details might lead to greater processing, it may also lead to focusing attention to the actual evidence rather than relying on stereotypes.

In comparison, other negative emotions may *increase* racial bias. Fear and anxiety seem to increase implicit racism and stereotyping (Banks & Hicks, 2016; Schaller, Park, & Mueller, 2003). As responses to danger or potential threat which invite very quick processing to avoid those dangers (Lazarus, 1991), fear and anxiety may increase racial bias because the quick processing associated with threat response may encourage reliance on stereotyping. Anger also seems to increase implicit racism and stereotyping (Bodenhausen, Sheppard, & Kramer, 1994; DeSteno, Dasgupta, Bartlett, & Caidric., 2004), As a reaction to a personal offense or a block in

goal achievement (Lazarus, 1991), anger may also lead to the relatively quick cognitive processing that encourages stereotyping. Because each emotion may cause a distinctive affective response, which in turn impacts the cognitive mechanisms that impact racial bias, it is important to explore how each of these negative emotions impact racial bias.

Although few studies assess how different types of positive emotion impact racial bias, happiness inductions do increase stereotyping effects (Park & Banaji, 2000; Bless, Schwarz, & Wieland, 1996; Bodenhausen, Kramer, & Susser, 1994; Huntsinger, Sinclair, & Clore, 2009). This is consistent with the Broaden and Build Theory of positive emotions which suggests that positive emotions broaden an individual's perception and creates a global-information focus (Fredrickson & Cohn, 2008; Isbell, 2004). Having a broader focus causes individuals to look at groups of people rather than considering the individual. When people focus on groups rather than individuals they tend to rely more on quick processing and stereotypes which increases biases (Clore & Huntsinger, 2007).

All of the studies mentioned above examine how emotion inductions impact racial bias in an experimental setting. The degree to which emotions relate to racial bias in real, day-to-day experiences is not known, and is obviously of some importance. One way to examine the ecological validity of these findings is through a daily diary study design that evaluates individuals on the same variables every day for a predetermined number of days. This allows for testing how daily emotions impact expressions of racial bias on that same day, similar to how emotion inductions impact racial bias within the lab setting.

Because the current study tested for associations in real day-to-day situations, there are other factors that may influence the association between emotions and racial bias. A measure of explicit racial bias was also included as a control variable because explicit racial bias tends to be

moderately correlated with implicit racial bias (Hofmann, Gawronski, Gschwendner, Le & Schmitt, 2005). Motivation to control prejudice may also have an impact on daily fluctuations in racial bias. Individuals who score higher in motivation to control prejudice have been found to have lower racial bias even when stereotypes were activated (Dunton & Fazio, 1997). This suggests that those who have higher motivation to control prejudice may have lower scores and less daily fluctuations in racial bias. Therefore, motivation to control prejudice was used as a predictor to help understand what might impact daily fluctuations of racial bias. It was also included as a control variable to help understand the association between emotion and daily racial bias.

Depression may also impact the way emotions affect racial bias because of its impact on daily affect over prolonged periods of time. The DSM-5 outlines negative mood such as sadness for nearly every day and most of the day for a two-week period as one of the symptoms of depression (American Psychiatric Association, 2013). Experiencing one emotion for an extended period of time may have attenuated any variability in emotions across days which may have reduced its associations to racial bias. Therefore, depression was included as a control to help understand the association between emotions and daily racial bias.

The present study

The goals of this study were to assess whether racial bias fluctuates on a daily basis, and, if so, whether it is associated with the emotions that individuals experience in everyday life. Because experimental work has demonstrated consistent and different patterns with specific, discrete emotions, I expected to find similar results in a more ecological setting, that is, in the self-reports of day-to-day living. Specifically, I predicted that sadness, with its detail-focused attentional bias, would be negatively associated with racial bias and that this effect will continue

across the eight days with those who report more sadness having a decrease in racial bias throughout the study. I also predicted that fear/anxiety and anger, with their attention toward threat and protection, would be associated with increases in racial bias. I predict that this effect will continue across the eight days with those who report more fear and anger will have an increase in racial bias across the study. Finally, I predicted that happiness, with its more global assessments, would be associated with increases in racial bias and it will also increase across the eight days with those who report more happiness having more racial bias throughout the study. I examined emotions in terms of individuals' general emotion states (what people report feeling in general) and also their daily fluctuations in emotional states. All of these predictions presumed fluctuations in racial bias, a question not heretofore been studied.

Method

Sample

Altogether, data were collected from 55 participants. The majority of participants were White (79%; 9% Asian, 6% Biracial, 4% Black, 2% Native American, Native Hawaiian or Pacific Islander) and female (64%; 35% male, 1% Gender Variant). Included are 32 college students receiving credit toward a course requirement; their ages ranged from 18 to 22 (M age= 19.25 years), and the family income ranges varied from very low (\$00-\$11,999) to over \$100,000, with the median grouping as \$90,000- \$99,999. Also included are 23 mTurk workers recruited through an online program (Amazon Mechanical Turk) where individuals can sign up to participate in studies for monetary compensation. In this sample, ages ranged from 19 to 59 (M age= 37.96 years), and the family income ranges varied from very low (\$00-\$11,999) to \$50,000-\$59,999, with the median grouping as \$12,000- \$19,999.

Procedure

In order to avoid having a particular subset of participants solely interested in racial bias, which could have affected results, this study was embedded in a larger set of measures provided for the participants. All participants were told we were interested in how emotions, stress, memory, and beliefs varied from day to day. Participants were given a link on Day 1 to a Qualtrics online survey. They signed an IRB approved consent form, which provided the contact information of the researchers in case they had any questions or concerns while completing the surveys. Those who did not give consent were sent to a screen thanking them for their time. The study began with approximately ½ hour of baseline measures which occurred only on the first day. This session tested for trait-like characteristics and the ones relevant to this study were administered in this order: general emotional expression, general explicit racial bias, depressive symptoms, motivation to control prejudice, and demographics. Other measures were included that did not pertain to the current study's hypotheses and were filler measures that distracted from the racial bias measures.

After completing the baseline measures, participants received information on how to complete all following days. For days 2-9, participants received a new link through the SONA or mTurk system each morning and had 16 hours to complete the survey, which took approximately 15 minutes. SONA participant surveys were linked together with an ID number assigned to them by the SONA system. mTurk participants were linked together using a 4-digit ID number they were prompted to create themselves. Each day, participants completed daily measures in this order: their daily emotions, the affect misattribution procedure (AMP) task and the salary estimation task (SET). They also responded to other tasks unrelated to this study, which helped

reduce focus on the racialized aspects of the study. SET and AMP served as the measures of racial bias.

After completing all 9 days of the study, participants were thanked for their time. Participants were given the contact information of the researchers again, in case they had any further questions or concerns.

Baseline Measures

Adapted General-PANAS (Watson, Clark, & Tellegen, 1988; adapted for our study). I adapted the general PANAS to measure discrete emotions instead of affect. I replaced the original words measuring negative and positive affect with the six basic emotion words (Ekman, 1992; see Appendix A), in order to assess whether specific emotions have an impact on racial bias above and beyond positive and negative affect as a whole, as described above. Happiness, sadness, fear, and anger and two of their synonyms were included, as well as disgust and surprise for which there are no obvious synonyms. Participants responded regarding how much they felt the 14 different emotions in general on 5-point Likert scales. Internal reliability of the 3-item emotion clusters was demonstrated for happiness ($\alpha = .79$), sadness ($\alpha = .74$), fear ($\alpha = .84$), and anger ($\alpha = .72$).

Racially Explicit Attitudes of Classroom Teachers: Classic subscale (REACT; Oertwig, Halberstadt & McPhail, in prep): REACT consists of two subscales, classic (general) and classroom-related racial bias. For the purpose of this study, only the Classic Racism subscale was used. This 9-item measure of beliefs about Black people includes question such as “Some Black people are so touchy about race that it is difficult to get along with them” and “Over the past few years, Black people have gotten less than they deserve.” Participants reported how much they agree with the statements on 6-point Likert scales with no neutral option. A mean score was

created for each participant across all nine items with a higher score indicating more racial bias. Reliability (Cronbach's α) = .82, in a sample of preservice teachers (Oertwig, Halberstadt & McPhail, in prep). Reliability was established in the current sample (α = .69).

Motivation to Respond without Prejudice Scale (Dunton & Fazio, 1997): This 10-item scale includes items like "I try to hide any negative thoughts about Black people in order to avoid negative reactions from others" and "I am personally motivated by my beliefs to be non-prejudiced toward Black people." Participants indicated how much they agree with the statements on 9-point scales. A mean score was taken across all items, with a higher score indicate more motivation to control prejudice. Reliability (Cronbach's α) = .81 (Dunton & Fazio, 1997). However, reliability was not established in the current sample (α = .61).

CES-D (Radloff, 1977). This 20-item assessment of depressive symptoms includes items such as "I did not feel like eating; my appetite was poor" and "I thought my life had been a failure." Participants responded to the items on a 4-point Likert scale from "rarely or none of the time" to "most or all of the time", indicating how much they felt each item in the last week. When summed across all items, a high score indicates more depressive symptoms. When introduced, Cronbach's α = .85 (Radloff, 1977). In the current sample reliability was also established (α = .83). Validity was established by comparing scores between patient and general populations. Patient samples consistently scored higher and more reliable on the scale compared to general samples indicating more depressive symptoms (Radloff, 1977). Hundreds of studies provide strong evidence of the construct validity for the measure.

Demographics: A number of demographics were collected including education, ethnicity, chronological age, gender, marital status, income, parents' socioeconomic status, employment status, religion, and political identity.

Daily measures

Adapted Daily-PANAS. The daily PANAS was adapted in the same way as the general PANAS as described above (see Appendix A). Participants were asked how much they felt 14 different emotions on that day, using 5-point Likert scales. Reliability was demonstrated for happiness ($\alpha = .82$), sadness ($\alpha = .82$), fear ($\alpha = .75$), and anger ($\alpha = .77$) with their synonyms.

Affect Misattribution Procedure (AMP; Payne, Cheng, Govorun, & Stewart, 2005). This measure of implicit racial bias includes 24 images of Chinese symbols and 24 images of male faces, 12 Black faces and 12 White faces. Each participant was asked to look at a fixation cross while one face is flashed in the center of the screen as a prime followed quickly by a Chinese symbol. The screen then displays a static image and asks the participant to rate the Chinese symbol they saw as pleasant, unpleasant or no opinion. All 24 Chinese symbols and face pairs were shown twice. Those who give more pleasant scores for symbols primed with White faces and more unpleasant scores for symbols primed with Black faces have more implicit racial bias. An AMP score was calculated by taking the proportion of unpleasant scores that were given to the Black and White faces compared to the overall number of Black and White faces. The proportion score of Black faces was subtracted from the proportion of White faces. Therefore, a *lower score indicates more racial bias* against Black faces. This measure has been found to have higher reliability than other implicit bias tasks (Cronbach's $\alpha = .81$; Payne & Lundberg, 2014). Construct validity of the AMP has also been established. A meta-analysis found an effect size of $r = .30$ for AMP predicting explicit behaviors across 46 studies (Cameron, Brown-Iannuzzi, & Payne, 2012).

Salary Estimation Task (SET). A racial bias task was developed for the purpose of this study. The task asked participants to estimate the appropriate yearly salary for 16 different

individuals based on education and years of experience, utilizing a race (black, white) x gender (female, male) x education (B.A. or M.A.) x experience (low, high) design. There are four conditions within each day, two with higher education and lower years of experience and two with lower education and higher years of experience. To designate race, I included stereotypically “Black” and “White” names; these were chosen based on internet searches of most popular baby names and then piloted with a series of undergraduate samples assured that the names were perceived as racially clear. The order of the employee descriptions was randomized each day for each participant. On each day, participants were asked about a different career track (non-randomized) with a total of eight different scenarios ranging from work in computer science, education, and the restaurant industry (see Appendix B). Careers and educations were researched to ensure that appropriate degrees were chosen for each career.

An overall score was calculated for racial bias with the Salary Estimation Task. For each day, the White male was used as a referent group to create percentage difference scores from the Black male, Black female, and White female for each education/experience example (i.e., a Bachelor of Science in Computer Science and 10 years of experience). For each a positive score means that the White male was given a higher salary and a negative score means that the White male was given a lower salary compared to each race/gender combination (i.e., a higher score equals a preference for White males and more bias). An average score was created between the four percentage scores from each day for each race/gender combination to create an overall score for Black male, Black female and White female for each day. Then an average score was created from the Black female and Black male score from each day to create a daily racial bias score. Participants who give employees with Black names consistently lower salaries than employees

with White Male names would thus have a positive racial bias score, indicating more racial bias against Black employees.

Results

Analytical Strategy

Because samples were collected from two distinct populations, I first tested for significant differences in the samples. I then examined the associations between the bias measures of Racialized Explicit Attitudes of Classroom Teachers (REACT; Classic Racism Subscale), the Affect Misattribution Procedure (AMP) and the Salary Estimation Task (SET) measures in order to assess construct validity for SET. I also ran intercorrelations for the general and daily emotions and their synonyms to assess the coherence of the subscales discussed in the Method section above. Following these preliminary analyses, I used a multi-level modeling approach for analyses to test for associations between general and daily emotions and daily racial bias. Level 1 included all daily variables and Level 2 variable included all baseline variables. Intra-class correlation analyses were conducted to test the amount of and the significance of the variability in SET and the AMP at Level 1. This was used to demonstrate if there is daily fluctuations in racial bias.

Following those analyses, the scores for daily emotions were person-centered to center each participant's score around their own average across all eight days. This also removed individual differences in the daily emotions. Analyses were run with each general emotion from the general, baseline assessment and the daily emotions and each general, baseline assessment and daily emotion subscale to test them as predictors for daily racial bias (AMP and SET) across all eight days. Scores from the REACT, Motivation to Control Prejudice and CES-D were added as controls. Finally, additional exploratory analyses were run to test if there was an association

between motivation to control prejudice and daily racial bias across all eight days as well as overall scores of racial bias.

Preliminary Analyses

Samples. Because potential differences could arise from collecting data from two populations, I first tested for differences in scores on the dependent variables between the two samples. There was a significant difference between the SONA sample ($M = .05$, $SD = .18$) and the mTurk sample ($M = -.07$, $SD = .25$) for the AMP $t(323) = 5.15$, $p < .001$; the SONA sample indicated significantly less bias than the mTurk sample (a lower score indicates more racial bias). In all further analyses with the AMP, the sample variable was included as a control variable. An independent samples t -test revealed no significant difference between the SONA sample ($M = .002$, $SD = .04$) and the mTurk sample ($M = .01$, $SD = .08$) on the Salary Task $t(303) = -1.09$, $p = .28$. Therefore, there was no need to control for sample in further analyses with the Salary Task.

Salary Estimation Task (SET). In order to assess validity of the daily SET, I first ran a random coefficients regression model (Raudenbush & Bryk, 2002) with the daily AMP score. The significant association between the AMP and SET suggests that the two tasks are measuring a similar construct ($\gamma_{10} = -.04$, $t = -2.48$, $p = .01$). I then ran a linear regression to test the association between the average SET score across all eight days and the baseline explicit measure of racial bias (REACT) and found a significant association ($b = .02$, $p < .001$, $r^2 = .22$). These analyses suggest that SET is indeed measuring at least some of the desired construct, daily racial bias.

General Emotions. Similar correlations were run between each emotion and their synonyms for the general emotion measure at baseline. Specifically, for the happy subscale, $r_s = .72$, $.45$, and $.52$ (for happy and joyful, happy and blissful, and joyful and blissful, respectively);

for the fear subscale, $r_s = .58, .71, \text{ and } .71$ (for afraid and anxious, afraid and scared, and anxious and scared, respectively); for the anger subscale, $r_s = .44, .42, \text{ and } .54$, (for angry and irritable, angry and frustrated, and irritable and frustrated, respectively); for the sad subscale, $r_s = .75, .42, \text{ and } .31$ (for sad and upset, sad and melancholy, and upset and melancholy, respectively). These all suggested the value of averaging the 3 items to create subscales. All further analyses were run with the basic emotion items (happy, fear, anger, and sad) and the 3-item emotion groupings for happy, fear, anger and sad.

Daily Emotions. The correlations between each emotion and their synonyms in the daily emotions measure suggest the value of creating combined averages of the 3-item subscale scores. Specifically, for the happy subscale, $r_s = .67, .52, \text{ and } .62$ (for happy and joyful, happy and blissful, and joyful and blissful, respectively); for the fear subscale, $r_s = .46, .71, \text{ and } .51$ (for afraid and anxious, afraid and scared, and anxious and scared, respectively); for the anger subscale, $r_s = .51, .54, \text{ and } .66$, (for angry and irritable, angry and frustrated, and irritable and frustrated, respectively); for the sad subscale, $r_s = .73, .55, \text{ and } .53$ (for sad and upset, sad and melancholy, and upset and melancholy, respectively). All further analyses were run with the basic emotion items (happy, fear, anger, and sad) and the 3-item emotion groupings for happy, fear, anger and sad.

Descriptive Statistics

Descriptive statistics for the AMP, SET, daily and general emotions subscales and individual scores can be found in Table 1.

Table 1. Descriptive Statistics

	Mean	Std. Dev.	Min	Max	Possible Range
General Happy	3.63	.86	1.00	5.00	1.00-5.00
General Blissful	2.16	.92	1.00	4.00	1.00-5.00
General Joyful	3.11	1.21	1.00	5.00	1.00-5.00
General Fear	1.73	.78	1.00	4.00	1.00-5.00
General Anxious	2.91	1.13	1.00	5.00	1.00-5.00
General Scared	1.65	.84	1.00	4.00	1.00-5.00
General Anger	1.88	1.01	1.00	4.00	1.00-5.00
General Irritable	2.31	.98	1.00	5.00	1.00-5.00
General Frustrated	2.24	1.05	1.00	4.00	1.00-5.00
General Sad	2.32	.91	1.00	4.00	1.00-5.00
General Upset	2.04	1.02	1.00	5.00	1.00-5.00
General Melancholy	2.20	1.10	1.00	5.00	1.00-5.00
General Happy Subscale	2.94	.85	1.00	4.33	1.00-5.00
General Fear Subscale	2.11	.76	1.00	4.00	1.00-5.00
General Anger Subscale	2.18	.80	1.00	4.00	1.00-5.00
General Sad Subscale	2.21	.78	1.00	4.00	1.00-5.00
REACT	1.98	.91	1.00	5.11	1.00-6.00
Motivation to Control Prejudice	5.82	1.24	3.40	9.00	1.00-9.00
CES-D	1.96	.64	1.00	3.50	1.00-4.00
AMP	.0065	.21	.92	.83	-1.00-1.00
Salary Estimation Task	.0045	.06	.22	.33	-1.00-1.00
Daily Happy	3.43	1.01	1.00	5.00	1.00-5.00
Daily Blissful	2.00	1.16	1.00	5.00	1.00-5.00
Daily Joyful	2.53	1.26	1.00	5.00	1.00-5.00
Daily Fear	1.42	.75	1.00	5.00	1.00-5.00
Daily Anxious	2.21	1.13	1.00	5.00	1.00-5.00
Daily Scared	1.38	.72	1.00	5.00	1.00-5.00
Daily Anger	1.40	.74	1.00	5.00	1.00-5.00
Daily Irritable	1.72	.91	1.00	5.00	1.00-5.00
Daily Frustrated	1.81	.96	1.00	5.00	1.00-5.00
Daily Sad	1.63	.90	1.00	5.00	1.00-5.00
Daily Upset	1.62	.95	1.00	5.00	1.00-5.00
Daily Melancholy	1.60	.90	1.00	5.00	1.00-5.00
Daily Happy Subscale	2.65	.98	1.00	5.00	1.00-5.00
Daily Fear Subscale	1.67	.72	1.00	5.00	1.00-5.00
Daily Anger Subscale	1.64	.73	1.00	4.33	1.00-5.00
Daily Sad Subscale	1.62	.79	1.00	5.00	1.00-5.00

Daily Fluctuations in Racial Bias

In order to test for fluctuation in racial bias at the daily level, I first tested the variability between levels in daily racial bias, AMP, and SET (Curran, 2000). The intraclass correlation (ICC) indicated that 49% of the AMP variability was between people ($\tau_{00} = .02$, $z = 11.72$, $p < .001$) and 51% of the AMP variability was within people ($\sigma^2 = .02$, $z = 4.20$, $p < .001$). An ICC calculation indicated that 48% of the variability on SET is between person ($\tau_{00} = .002$, $z = 11.34$, $p < .001$) and 52% of the variability is within people ($\sigma^2 = .002$, $z = 4.26$, $p < .001$). These results indicate that racial bias fluctuates at a daily level.

General Emotions and Racial Bias

I ran analyses with the general emotions baseline measure as a predictor of the intercept and slope at Level 2. An equation was built for each of the two racial bias tasks with the general emotion baseline measure score for each of the four emotions and their subscales. An example equation is demonstrated below.

$$\text{Level 1: DAILY RACIAL BIAS}_{it} = \beta_{0it} + \beta_1(\text{DAY})_{it} + r_{it}$$

$$\text{Level 2: } \beta_{0i} = \gamma_{00} + \gamma_{01}(\text{GENERAL EMOTION}) + \gamma_{02}(\text{EXPLICIT BIAS}) + \gamma_{03}(\text{MOTIVATION TO CONTROL}) + \gamma_{04}(\text{DEPRESION}) + u_{0i}$$

$$\beta_{1i} = \gamma_{10} + \gamma_{11}(\text{GENERAL EMOTION})$$

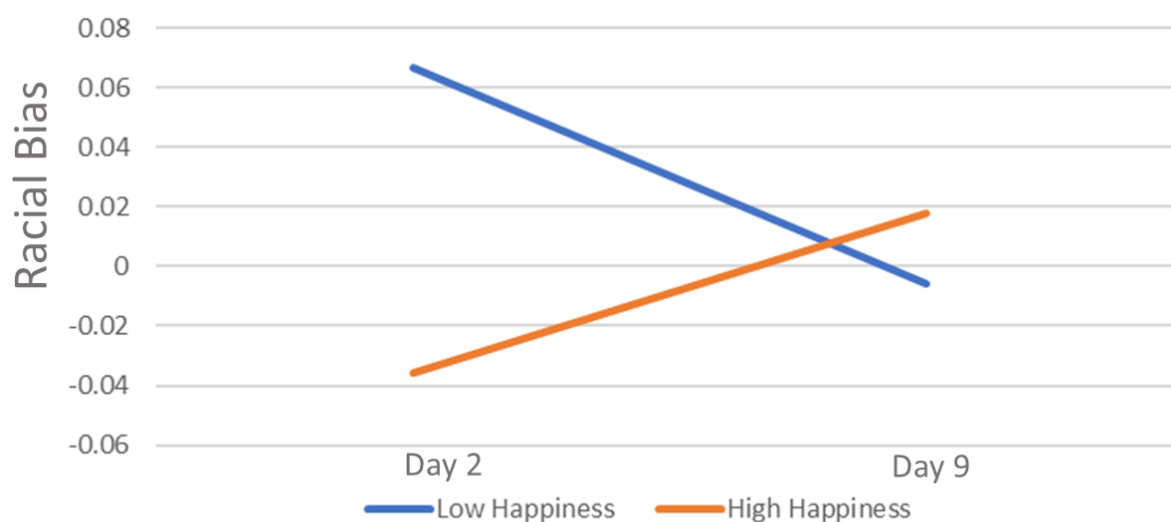
Moderation models were run for the AMP using the emotion subscales, with day as the moderator. There were no significant results for the fear, anger and sadness subscales. However, there were significant results for the happy subscale. As predicted, racial bias was greater when participants were more generally happy ($\gamma_{01} = -.09$, $t = -2.53$, $p = .02$). As found above, the day in the study mattered; participants' AMP scores decreased over time, meaning that their racial bias actually increased over the eight days ($\gamma_{10} = -.03$, $t = -2.17$, $p = .03$). The interaction between general happiness and day revealed that those who reported more happiness in general demonstrated *decreasing* racial bias across the eight days and those reporting less happiness in

general demonstrated *increasing* racial bias across the eight days ($\gamma_{11} = .01, t = 2.17, p = .03$; see Figure 1). A simple slope analysis found that there was a significant difference between high and low happiness individuals at Day 2 of the study ($\gamma_{11} = -.23, t = -1.97, p = .05$) but that this significant difference was lost by Day 9 of the study ($\gamma_{11} = .05, t = .36, p = .72$). This moderation accounted for 7% of the within person variability of the AMP.

Due to the lack of findings for the negative emotion subscales, a factor analysis was conducted to confirm the adequacy of the subscales. A principal axis factor analysis was run on the 14 items in the General Emotion Questionnaire with an oblique rotation (direct oblimin). A Kaiser-Meyer-Olkin test confirmed the sample size was large enough for this analysis, KMO = .84 (Hutcheson & Solfroniou, 1999). The factor analysis revealed three factors. Irritable, frustrated, upset, surprised and disgusted were dropped due to inadequate loadings on any of the three factors. Fear (scared, afraid and anxious) and happiness (happy, joyful and blissful) loaded as expected, creating a fear and happiness factor. However, the final factor included angry, sad and melancholy, creating an unexpected subscale. Table 2 outlines these findings.

Due to the unexpected factor structure, moderation models were run for the AMP using the single emotion items, with day as the moderator to explore how the individual emotions impact daily racial bias. There were no significant results for the happiness, fear and sadness items. However, there was a significant interaction with the anger item. General anger did not affect the participants' AMP score ($\gamma_{01} = -.002, t = -.07, p = .94$). But participants' AMP score decreased over time, meaning their racial bias actually increased over the course of the eight days ($\gamma_{10} = -.02, t = -2.02, p = .04$). Further, there was a significant interaction between general anger level and day; those who reported less anger in general demonstrated *increasing* racial bias across the eight days and those reporting more anger in general demonstrated *decreasing* racial

bias across the eight days ($\gamma_{11} = .01, t = 2.13, p = .03$; see Figure 2). A simple slope analysis found that there was not a significant difference between high and low anger individuals at Day 2 of the study ($\gamma_{11} = .06, t = .89, p = .38$) but by Day 9 of the study there was a significant difference between high and low anger individuals ($\gamma_{11} = .23, t = 2.74, p < .01$). This moderation accounted for 5% of the within person variability of the AMP.



Note: Higher Racial Bias score = less racial bias

Low Happiness = 1 SD below Mean, High Happiness = 1 SD above Mean

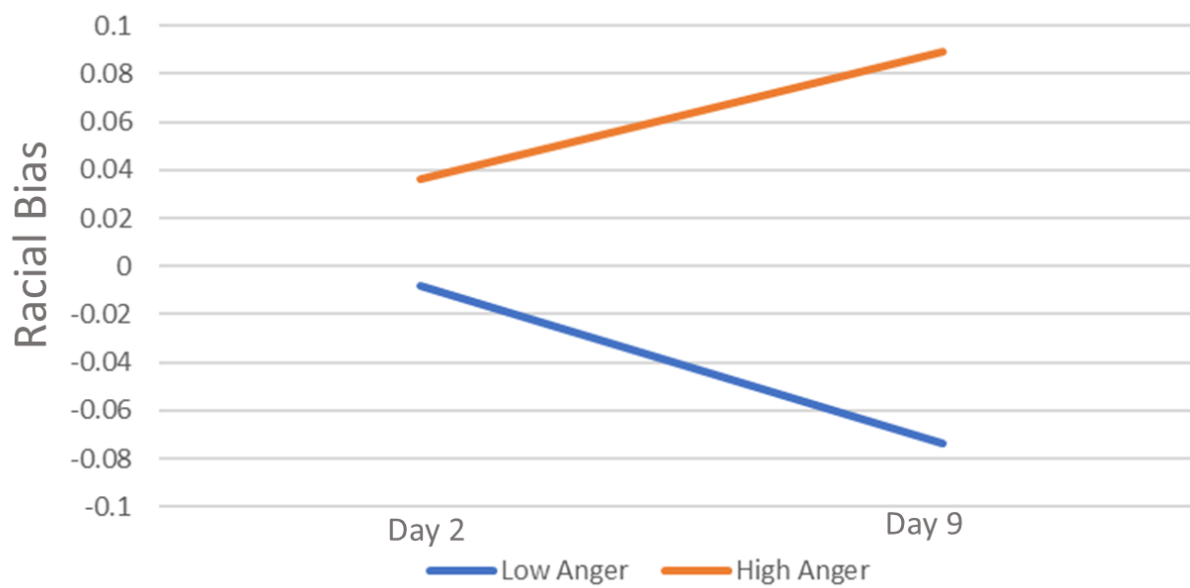
Figure 1. General Happiness and AMP across Days

Table 2.

Factor loadings and communalities based on a principal axis factor analysis with direct oblimin rotation for 14 items from the General Emotions Questionnaire (N = 55)

	Factor 1	Factor 2	Factor 3
Anxious	.93		
Scared	.83		
Afraid	.75		
Joyful		.89	
Happy		.78	
Blissful		.53	
Angry			.90
Sad			.54
Melancholy			.50

Note: Factor Loading $< .5$ were dropped



Note: Higher Racial Bias score = less racial bias
 Low Anger = 1 SD below Mean, High Anger = 1 SD above

Figure 2. General Anger and AMP across Days.

Moderation models were run for SET using the general single emotion items for happy, fear, anger and sad, with day as the moderator. No significant results were found (all $ps > .05$). Moderation models were also run for SET using the general emotion subscales for happy, fear, anger and sad, with day as the moderator. No significant results were found as well (all $ps > .05$).

Daily Emotions and Racial Bias

A multilevel modeling approach was taken to test the association between daily emotions and daily racial bias. An equation was built for each of the two racial bias tasks with each of the four target emotions. An example equation is demonstrated below.

$$\text{Level 1: DAILY RACIAL BIAS}_{it} = \beta_{0it} + \beta_1(\text{DAY})_{it} + \beta_2(\text{DAILY EMOTION})_{it} + \beta_3(\text{DAY} * \text{DAILY EMOTION})_{it} + r_{it}$$

$$\text{Level 2: } \beta_{0i} = \gamma_{00} + \gamma_{11}(\text{EXPLICIT BIAS}) + \gamma_{12}(\text{MOTIVATION TO CONTROL}) + \gamma_{13}(\text{DEPRESSION}) + u_{0i}$$

$$\beta_{1i} = \gamma_{10}$$

$$\beta_{2i} = \gamma_{20}$$

$$\beta_{3i} = \gamma_{30}$$

In order to test whether the fluctuation in racial bias was associated with fluctuation in emotions experienced, I conducted moderation analyses for both the AMP and SET with daily happy, fear, anger and sad single items as predictors and day as a moderator. None yielded significant results (all ps greater than .05). I also ran moderation analyses for both the AMP and SET with the daily happy, fear, anger and sad subscales as predictors and this also yielded no significant results (all ps greater than .05, see Table 3.1-3.4). All analyses were run again with explicit racial bias, motivation to control prejudice, and depression as controls. These controls yielded no changes in the significance of the results.

Table 3.1

Unstandardized Coefficients (and Standard Errors) of Multilevel Models for Daily Racial Bias and Daily Happy Subscale

Fixed Effects	AMP		SET	
Daily Racial Bias, β_0				
Intercept, γ_{00}	.14	(.07)	.01	(.01)
Day, β_1				
Intercept, γ_{10}	-.001	(.004)	-.001	(.001)
Daily Happiness, β_2				
Intercept, γ_{20}	-.02	(.03)	.01	(.01)
Day*Happiness β_3				
Intercept, γ_{01}	.01	(.01)	-.002	(.002)
Random Effects				
Daily Racial Bias (τ_{00})	.02***(.005)		.001*** (.0005)	
Day (τ_{10})	.0001 (.0001)		7.22E-6 (8.56E-6)	
Daily Happiness (τ_{20})	---		---	
Within-person fluctuation (σ^2)	.02***(.002)		.002***(.0002)	

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Table 3.2

Unstandardized Coefficients (and Standard Errors) of Multilevel Models for Daily Racial Bias and Daily Fear Subscale

Fixed Effects	AMP		SET	
Daily Racial Bias, β_0				
Intercept, γ_{00}	.14	(.07)	.01	(.01)
Day, β_1				
Intercept, γ_{10}	-.002	(.004)	-.003	(.001)
Daily Fear, β_2				
Intercept, γ_{20}	-.04	(.03)	.001	(.01)
Day*Fear β_3				
Intercept, γ_{01}	.003	(.006)	.001	(.002)
Random Effects				
Daily Racial Bias (τ_{00})	.02***(.005)		.002***(.0001)	
Day (τ_{10})	.0001 (.0001)		6.86E-6 (8.46E-6)	
Daily Fear (τ_{20})	---		---	
Within-person fluctuation (σ^2)	.02*** (.002)		.002***(.0002)	

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Table 3.3

Unstandardized Coefficients (and Standard Errors) of Multilevel Models for Daily Racial Bias and Daily Anger Subscale

Fixed Effects	AMP		SET	
Daily Racial Bias, β_0				
Intercept, γ_{00}	.14	(.07)	.01	(.01)
Day, β_1				
Intercept, γ_{10}	-.001	(.004)	-.0003	(.001)
Daily Anger, β_2				
Intercept, γ_{20}	.001	(.04)	.001	(.002)
Day*Anger β_3				
Intercept, γ_{01}	.001	(.01)	.001	(.002)
Random Effects				
Daily Racial Bias (τ_{00})	.02***(.005)		.002***(.0005)	
Day (τ_{10})	.0001 (.0001)		7.25E-6 (8.55E-6)	
Daily Anger (τ_{20})	---		---	
Within-person fluctuation (σ^2)	.02***(.002)		.002***(.0002)	

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Table 3.4

Unstandardized Coefficients (and Standard Errors) of Multilevel Models for Daily Racial Bias and Daily Sad Subscale

Fixed Effects	AMP		SET	
Daily Racial Bias, β_0				
Intercept, γ_{00}	.14	(.07)	.01	(.01)
Day, β_1				
Intercept, γ_{10}	-.002	(.004)	-.001	(.001)
Daily Sadness, β_2				
Intercept, γ_{20}	-.01	(.03)	-.02	(.01)
Day*Sadness β_3				
Intercept, γ_{01}	-.0003	(.01)	.003	(.002)
Random Effects				
Daily Racial Bias (τ_{00})	.02***(.005)		.002***(.0005)	
Day (τ_{10})	.0001 (.0001)		7.84E-6 (8.47E-6)	
Daily Sadness (τ_{20})	---		---	
Within-person fluctuation (σ^2)	.02***(.002)		.002*** (.0002)	

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Motivation to Control Prejudice

In order to further understand the daily fluctuations in racial bias, I also ran an exploratory analysis with the Motivation to Respond without Prejudice questionnaire to test for its association with racial bias across the eight days. An equation was built for each other racial bias tasks (AMP and SET) with motivation to control prejudice as a predictor and day as a moderator. An example equation is below.

$$\text{Level 1: DAILY RACIAL BIAS}_{it} = \beta_{0it} + \beta_1(\text{DAY})_{it} + r_{it}$$

$$\text{Level 2: } \beta_{0i} = \gamma_{00} + \gamma_{01} (\text{MOTIVATION TO CONTROL PREJUDICE}) + u_{0i}$$

$$\beta_{1i} = \gamma_{10} + \gamma_{11} (\text{MOTIVATION TO CONTROL PREJUDICE})$$

A moderation analysis was run with the AMP using motivation to control prejudice as the predictor and day as the moderator. There was not a significant main effect for motivation to control prejudice and daily racial bias ($\gamma_{01} = -.02$, $t = -.78$, $p = .44$). The main effect for day was also not significant in this model ($\gamma_{10} = -.03$, $t = -1.11$, $p = .27$). Finally, the interaction was not

significant ($\gamma_{11} = .004$, $t = 1.06$, $p = .29$). A moderation analysis was run with SET using motivation to control prejudice as the predictor and day as the moderator. There was not a significant main effect for motivation to control prejudice and daily racial bias ($\gamma_{01} = .002$, $t = .26$, $p = .79$). The main effect for day was also not significant in this model ($\gamma_{10} = .008$, $t = 1.57$, $p = .12$). Finally, the interaction was not significant ($\gamma_{11} = -.001$, $t = -1.68$, $p = .09$). Motivation to control prejudice did not have an association with daily racial bias.

Discussion

This study was conducted in order to assess whether racial bias fluctuates on a daily basis, and whether those fluctuations could be predicted by emotions as experienced in everyday life. To address these goals, and as part of a larger daily diary study, I invited both college students and community participants to provide baseline data initially and then to respond to measures of racial bias and emotional experiences daily for eight days. A well-validated measure of racial bias, the Affect Misattribution Procedure (AMP; Payne, Cheng, Govorun, & Stewart, 2005), and a newly created measure of racial bias, the Salary Estimation Task, both showed significant variability at the daily level of analysis. This provides evidence for implicit racial bias as a state characteristic in addition to the previously assumed trait characteristic. Evidence of the fluctuation of racial bias also supported further exploration of the constructs that might explain these fluctuations.

Experimental work has suggested that emotions may contribute to fluctuations in racial bias (Bodenhausen, Sheppard, & Kramer, 1994). When induced, the three emotions of happiness, fear, and anger have increased racial bias (Park & Banaji, 2000; Bless, Schwarz, & Wieland, 1996; Banks & Hicks, 2016; Schaller, Park, & Mueller, 2003; DeSteno, Dasgupta, Bartlett, & Cajdric., 2004), whereas sadness has decreased racial bias (Park & Banaji, 2000; Huntsinger,

Sinclair, & Clore, 2009). To assess whether fluctuations in racial bias correspond to daily emotion fluctuations, I included two types of emotion measures. The baseline measure assessed participants' predominant emotion states, and the daily measure of emotions assessed what emotions participants felt that day.

Two associations between the trait-like measures of emotion from baseline predicted daily racial bias. Specifically, a significant interaction was found between anger and day. Contrary to my hypothesis, participants who reported more anger in general had less racial bias than those who report low anger and these lower angry participants became *more* racially biased across the eight days. In contrast, participants who reported higher anger became *less* racially biased across the eight days. This is a counterintuitive finding, and it occurred only for the anger item, as moderation analyses with the other related items (irritable and frustrated) did not achieve significance. It is also the case that the mean for the anger item is relatively low, and so this type of anger might function more in the way that mild negative emotions do. That is, low negativity works to increase a focus on detail (Forgas 2013), and thus a reduction in racial bias, whereas anger greater than the levels captured in this sample might impact racial bias differently. Alternatively, anger in general (which may not even be anger directed at persons) may function differently than hostility. Future work may want to search for curvilinear associations in larger samples or examine hostility as a separate variable.

The 3-item general happiness subscale measured at baseline was also associated with daily racial bias. Those who had higher general happiness had more daily racial bias. Further, an interaction was found between general happiness and day of the study. Participants who reported high happiness in general had more racial bias than those who reported lower happiness, as predicted. This finding has interesting implications and suggests the potential value for neutrality

in emotion when performing tasks that may be prone to racial bias, such as hiring processes. However, the initially happier participants also showed *decreasing* racial bias across the eight days. In contrast, participants who reported lower happiness in general, had *increases* in racial bias across the eight days. Thus, by the end of the study the high and low general happiness individuals are not significantly different in racial bias. This finding is counter to what is expected and understanding this interaction goes beyond the scope current study. Further exploration into how general happiness interactions with daily experiences could help interpret these unexpected findings.

Although the happiness subscale had a significant association with racial bias, the single item for happiness did not. In order to understand these findings, further exploration into the other emotion items in the happiness subscale is needed. It is possible that blissful and joyful have a unique effect on racial bias that happiness does not. That is, blissful and joyful may be responsible for the positive association of the subscale.

I also found that the anger with the single item was significant but the subscale was not. The single items for irritable and frustrated may have an opposite effect of anger. They may not have the same association with racial bias as anger, therefore, including them in the subscale washed out the significant effect for anger. The factor analyses also revealed that irritable and frustrated did not cohere with the single anger item; rather sad and melancholy were a better match. This was challenging for the theoretical predictions that anger and sadness would have different associations with racial bias. More research is still needed on the unique effect of these emotions. If the curious ways in which theoretically-clear associations between the emotions (e.g., irritable, frustrated, angry) were not verified in the actual usage of these emotions by participants are replicated in future research, then using the individual emotion terms rather than

emotion clusters would be advisable in further work testing associations between emotions and racial bias.

Contrary to my hypothesis, MLM analyses indicated no association between fluctuations of any of the four emotions, when assessed daily, and daily racial bias. Many studies on emotions and racial bias induced emotions and measured their racial bias immediately following this induction (e.g., Bodenhausen, Kramer, & Susser, 1994; Banks & Hicks, 2016). In the current study, participants were asked to rate their overall emotions for the day and then take a racial bias task. This may have washed out the effect of emotions on racial bias because the emotion may no longer have been present by the time the participants responded to the racial bias tasks. Instead of asking participants to rate how much they have felt different emotions that day, future studies might instead ask participants what emotions they are feeling in the moment. Also, an experience sampling method in which individuals are alerted at various times throughout the day to give their mood and take a racial bias task like the AMP may be more sensitive to emotions' role in racial bias.

Finally, exploratory analyses testing for associations between motivation to control prejudice and daily racial bias failed to reveal any significant association between them. Although motivation to control prejudice has been negatively associated with racial bias in previous work (Dunton & Fazio, 1997), it did not relate to the daily racial bias found in the current study. Previous work was done with an explicit measure of racial bias which can be a more deliberate form of racial bias. The current study included two implicit racial bias task which enacted unconscious biases. Motivation to control prejudice may be less relevant with implicit racial bias (if the participants are not aware they are being tested for racial bias, their motivations may not impact their responses). This scale also had a relatively low alpha score for

reliability in this sample which may explain why nothing was found in the current study despite previous work finding effects.

Limitations and Future Directions

Despite the important discoveries made in the current study, there were several limitations. The Salary Estimation Task (SET) was developed for this study and was designed to assess racial bias in a less obvious way than the AMP. Although significantly associated with the other racial bias task as expected, it did not yield significant results with general or daily fluctuations of emotions. One challenge when creating a new task is not knowing whether the lack of findings is due to a true lack of association between variables or if the task is not a good instantiation of the construct being measured. Further exploration should test for its association with other validated racial bias tasks. This could be done at both the daily level and at a single time point. It could also be validated by measuring associations with other variables that have been shown to relate to racial bias such as voting behavior (Payne et al., 2010) and hiring discrimination (McConahay, 1983).

Also, there are limitations that are standard with most daily diary designs. Participants were sent the link in the morning and had the freedom to complete the survey at any time of the day. This means that some participants could take the study in the morning and others in the evening when more of the day has passed. Those who took the study in the morning may have had less variability in that day's experience. This could impact how much variability there was in their emotions compared to those who took the survey in the evening. There is also the chance that familiarity with the tasks as the days continue could influence the results across days. This could account for the loss of significant effects for happiness and racial bias by Day 9.

The current sample was majority White, female, and middle- to upper-middle class. A larger and more diverse sample could allow for more analyses based on demographic characteristics. With regard to gender, it might be that men and women respond differently to their emotion states, and we know that, in general, women are more aware of their emotion states than men (Levant, Hall, Williams & Hasan, 2009). If emotion awareness matters, the effects of daily emotion fluctuations on racial bias might be attenuated. To test this, an emotion awareness measure, such as The Level of Emotional Awareness Scale (LEAS; Lane, Quinlan, Schwartz, Walker & Zeitlin, 1990) could be included as a moderator in studies with larger samples.

Because the findings support the presence of fluctuations in racial bias, future studies may want to explore other possibilities as to why racial bias fluctuates. The findings for happiness and anger when tested as a general emotion are intriguing and warrant replication. Also, as suggested above, future studies could test emotions' role in daily fluctuations by testing emotion states directly coinciding with the racial bias task rather than the overall emotion for each day. There may also be other constructs that could explain the fluctuations in racial bias. For example, stress has been shown to increase racial bias (Correll, Hudson, Guillermo, & Ma, 2014; James, 2017). Therefore, stress may play a role in the daily fluctuations. Moving forward, the finding that racial bias does vary on a daily level is important to note and opens a new field of research with regard to influences on, and the impact of moment to moment fluctuations in racial bias.

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APPENDICES

Appendix A: Adapted PANAS

This scale consists of a number of words and phrases that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what the extent that you are feeling this way in the past 24 hours. Use the following scale to record your answers:

1	2	3	4	5
very slightly or not at all	a little	moderately	quite a bit	extremely
_____ happy	_____ sad	_____ afraid	_____ angry	
_____ joyful	_____ melancholy	_____ scared	_____ irritable	
_____ blissful	_____ upset	_____ anxious	_____ frustrated	
_____ surprised	_____ disgusted			

Appendix B: Salary Estimation Task

For the following task we are interested in your decision-making. You will be given a series of employee descriptions from one company. For each example, please indicate what you think their yearly salary should be. We understand that you may not have knowledge or experiences in the field of work. Please just do the best you can to choose a salary that you think is appropriate.

Day 2:

A software development company is interested in hiring a new team of IT professionals. Please indicate what salary you think each of the following new employees should be given based on their education and years of experience.

1. Jaylen has a Bachelor's of Science in Computer Science and 10 years of experience.
2. Jada has a Bachelor's of Science in Computer Science and 10 years of experience.
3. Jacob has a Bachelor's of Science in Computer Science and 10 years of experience.
4. Emma has a Bachelor's of Science in Computer Science and 10 years of experience.
5. Darius has a Master's in Software Development and 5 years of experience.
6. Aisha has a Master's in Software Development and 5 years of experience.
7. Will has a Master's in Software Development and 5 years of experience.
8. Olivia has a Master's in Software Development and 5 years of experience.
9. Deshawn has a Bachelor's of Science in Information Technology Services and 14 years of experience.
10. Quetta has a Bachelor's of Science in Information Technology Services and 14 years of experience.
11. Noah has a Bachelor's of Science in Information Technology Services and 14 years of experience.
12. Sarah has a Bachelor's of Science in Information Technology Services and 14 years of experience.
13. Deandre has a Master's in Computer Engineering and 7 years of experience.
14. Ebony has a Master's in Computer Engineering and 7 years of experience.
15. Daniel has a Master's in Computer Engineering and 7 years of experience.
16. Emily has a Master's in Computer Engineering and 7 years of experience.

Day 3:

A new charter school is opening up in your local community and the principal is hiring a staff of teachers. Please indicate what yearly salary you think each of the following new employees should be given based on their education and years of experience.

1. Marquis has a Bachelor's of Science in Elementary Education and 15 years of experience.
2. Laqueta has a Bachelor's of Science in Elementary Education and 15 years of experience.
3. Michael has a Bachelor's of Science in Elementary Education and 15 years of experience.
4. Anna has a Bachelor's of Science in Elementary Education and 15 years of experience.
5. Darnell has a Master's in Teaching and 8 years of experience.
6. Shanice has a Master's in Teaching and 8 years of experience.
7. Connor has a Master's in Teaching and 8 years of experience.
8. Chloe has a Master's in Teaching and 8 years of experience.

9. Terrell has a Bachelor's of Science in Middle Grades Education and 11 years of experience.
10. Precious has a Bachelor's of Science in Middle Grades Education and 11 years of experience.
11. Tanner has a Bachelor's of Science in Middle Grades Education and 11 years of experience.
12. Madison has a Bachelor's of Science in Middle Grades Education and 11 years of experience.
13. Tyrone has a Master's in Instructional Technology and 6 years of experience.
14. Sheniqua has a Master's in Instructional Technology and 6 years of experience.
15. Wyatt has a Master's in Instructional Technology and 6 years of experience.
16. Angela has a Master's in Instructional Technology and 6 years of experience.

Day 4:

A graphic design firm is hiring a new team of graphic designers. Please indicate what yearly salary you think each of the following new employees should be given based on their education and years of experience.

1. Trevon has a Bachelor's of Arts in Communications and 12 years of experience.
2. Rihanna has a Bachelor's of Arts in Communications and 12 years of experience.
3. Cody has a Bachelor's of Arts in Communications and 12 years of experience.
4. Molly has a Bachelor's of Arts in Communications and 12 years of experience.
5. Demetrius has a Master's of Fine Arts in Graphic Design and 6 years of experience.
6. Diamond has a Master's of Fine Arts in Graphic Design and 6 years of experience.
7. Justin has a Master's of Fine Arts in Graphic Design and 6 years of experience.
8. Amy has a Master's of Fine Arts in Graphic Design and 6 years of experience.
9. Jamal has a Bachelor's of Arts in Graphic Imaging and 16 years of experience.
10. Asia has a Bachelor's of Arts in Graphic Imaging and 16 years of experience.
11. Jack has a Bachelor's of Arts in Graphic Imaging and 16 years of experience.
12. Claire has a Bachelor's of Arts in Graphic Imaging and 16 years of experience.
13. Devontae has a Master's in Web Design and 8 years of experience.
14. Princess has a Master's in Web Design and 8 years of experience.
15. Dustin has a Master's in Web Design and 8 years of experience.
16. Katie has a Master's in Web Design and 8 years of experience.

Day 5:

A new health clinic has opened up in your local community and a new staff of nurses has been hired. Please indicate what yearly salary you think each of the following new employees should be given based on their education and years of experience.

1. Jakeem has a Bachelor's of Science in Nursing and 10 years of experience.
2. Kimmani has a Bachelor's of Science in Nursing and 10 years of experience.
3. Luke has a Bachelor's of Science in Nursing and 10 years of experience.
4. Caitlyn has a Bachelor's of Science in Nursing and 10 years of experience.
5. Keontae has a Master's of Science in Nursing, Clinical Nurse Specialist and 5 years of experience.

6. Breyona has a Master's of Science in Nursing, Clinical Nurse Specialist and 5 years of experience.
7. Scott has a Master's of Science in Nursing, Clinical Nurse Specialist and 5 years of experience.
8. Abigail has a Master's of Science in Nursing, Clinical Nurse Specialist and 5 years of experience.
9. Markell has a Bachelor's of Science in Nursing and 24 years of experience.
10. Chatonya has a Bachelor's of Science in Nursing and 24 years of experience.
11. Logan has a Bachelor's of Science in Nursing and 24 years of experience.
12. Carly has a Bachelor's of Science in Nursing and 24 years of experience.
13. Cordell has a Master's of Science in Nursing, Nurse Practitioner and 12 years of experience.
14. Daeshanda has a Master's of Science in Nursing, Nurse Practitioner and 12 years of experience.
15. Cole has a Master's of Science in Nursing, Nurse Practitioner and 12 years of experience.
16. Jenna has a Master's of Science in Nursing, Nurse Practitioner and 12 years of experience.

Day 6:

A hotel chain is opening up a new location and has hired a large kitchen staff. Please indicate what yearly salary you think each of the following new employees should be given based on their education and years of experience.

1. Darius has a Bachelor's of Science in Culinary Arts and 18 years of experience.
2. Rihanna has a Bachelor's of Science in Culinary Arts and 18 years of experience.
3. Dylan has a Bachelor's of Science in Culinary Arts and 18 years of experience.
4. Alison has a Bachelor's of Science in Culinary Arts and 18 years of experience.
5. Trevon has a Master's in Nutrition and Food Science and 9 years of experience.
6. Ladaishia has a Master's in Nutrition and Food Science and 9 years of experience.
7. Colin has a Master's in Nutrition and Food Science and 9 years of experience.
8. Olivia has a Master's in Nutrition and Food Science and 9 years of experience.
9. Jamar has a Bachelor's of Science in Hospitality Management and 20 years of experience.
10. Latoya has a Bachelor's of Science in Hospitality Management and 20 years of experience.
11. Will has a Bachelor's of Science in Hospitality Management and 20 years of experience.
12. Molly has a Bachelor's of Science in Hospitality Management and 20 years of experience.
13. Jerome has a Master's in Restaurant Management and 10 years of experience.
14. Aisha has a Master's in Restaurant Management and 10 years of experience.
15. Cody has a Master's in Restaurant Management and 10 years of experience.
16. Holly has a Master's in Restaurant Management and 10 years of experience.

Day 7:

An advertising firm has hired a new marketing team. Please indicate what yearly salary you think each of the following new employees should be given based on their education and years of experience.

1. Jaylen has a Bachelor's of Science in Advertising and 22 years of experience.
2. Diamond has a Bachelor's of Science in Advertising and 22 years of experience.
3. James has a Bachelor's of Science in Advertising and 22 years of experience.
4. Charlotte has a Bachelor's of Science in Advertising and 22 years of experience.
5. Demetrius has a Master's in Marketing Research and 11 years of experience.
6. Sapphire has a Master's in Marketing Research and 11 years of experience.
7. Ben has a Master's in Marketing Research and 11 years of experience.
8. Emma has a Master's in Marketing Research and 11 years of experience.
9. Lamont has a Bachelor's of Science in Marketing and 14 years of experience.
10. Taheisha has a Bachelor's of Science in Marketing and 14 years of experience.
11. Jacob has a Bachelor's of Science in Marketing and 14 years of experience.
12. Amy has a Bachelor's of Science in Marketing and 14 years of experience.
13. Quenton has a Master's in Marketing and Brand Management and 7 years of experience.
14. Jada has a Master's in Marketing and Brand Management and 7 years of experience.
15. Justin has a Master's in Marketing and Brand Management and 7 years of experience.
16. Hannah has a Master's in Marketing and Brand Management and 7 years of experience.

Day 8:

A bank has opened up a new branch and has hired a new staff. Please indicate what yearly salary you think each of the following new employees should be given based on their education and years of experience.

1. Marquis has a Bachelor's of Science in Finance and 16 years of experience.
2. Kimmani has a Bachelor's of Science in Finance and 16 years of experience.
3. Brad has a Bachelor's of Science in Finance and 16 years of experience.
4. Elizabeth has a Bachelor's of Science in Finance and 16 years of experience.
5. Jakeem has a Master's in Bank and Financial Management and 8 years of experience.
6. DeeJay has a Master's in Bank and Financial Management and 8 years of experience.
7. Matthew has a Master's in Bank and Financial Management and 8 years of experience.
8. Anna has a Master's in Bank and Financial Management and 8 years of experience.
9. Daquain has a Bachelor's of Science in Business and 20 years of experience.
10. Vondra has a Bachelor's of Science in Business and 20 years of experience.
11. Michael has a Bachelor's of Science in Business and 20 years of experience.
12. Caitlyn has a Bachelor's of Science in Business and 20 years of experience.
13. Ledell has a Master's in Marketing and Investment Banking and 10 years of experience.
14. Ebony has a Master's in Marketing and Investment Banking and 10 years of experience.
15. Luke has a Master's in Marketing and Investment Banking and 10 years of experience.
16. Heather has a Master's in Marketing and Investment Banking and 10 years of experience.

Day 9:

An architecture firm has hired a new team to design a new building. Please indicate what yearly salary you think each of the following new employees should be given based on their education and years of experience.

1. Darnell has a Bachelor's of Science in Architecture and 18 years of experience.
2. Breyona has a Bachelor's of Science in Architecture and 18 years of experience.
3. Garrett has a Bachelor's of Science in Architecture and 18 years of experience.

4. Sophia has a Bachelor's of Science in Architecture and 18 years of experience.
5. Keontae has a Master's in Urban Design and 9 years of experience.
6. Jamila has a Master's in Urban Design and 9 years of experience.
7. Jackson has a Master's in Urban Design and 9 years of experience.
8. Chloe has a Master's in Urban Design and 9 years of experience.
9. Denzel has a Bachelor's of Science in Construction Management and 12 years of experience.
10. Larhonda has a Bachelor's of Science in Construction Management and 12 years of experience.
11. Connor has a Bachelor's of Science in Construction Management and 12 years of experience.
12. Abigail has a Bachelor's of Science in Construction Management and 12 years of experience.
13. Tyrek has a Master's in Architecture and 6 years of experience.
14. Shanice has a Master's in Architecture and 6 years of experience.
15. Scott has a Master's in Architecture and 6 years of experience.
16. Katherine has a Master's in Architecture and 6 years of experience.