

DIFFERENTIAL EFFECTS OF POSITIVE MOOD
STATES ON RACIAL INGROUP PERCEPTION

by

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Certificate of Approval

This is to certify that the accompanying thesis by Alan T. Pugh and Beverly S. Li has been accepted in partial fulfillment of the requirements for graduation with Honors in Psychology.

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Abstract

Positive emotions may have the ability to elicit more inclusive, flexible thinking, but positive moods can also lead to more stereotyping behavior. We examined whether two positive mood states, joy and contentment, had different effects on racial ingroup perception. We hypothesized that joy would elicit a more inclusive framework whereby participants would perceive ambiguous-/other-race faces as more a part of their racial ingroup, whereas contentment would promote a more exclusive framework. We induced White participants ($n = 58$) into one of three mood conditions (joy, contentment, neutral); then they rated a series of monoracial and White/Asian biracial faces on a spectrum from completely White to completely Asian. After inducing participants into a different mood state, they rated the attractiveness of other-race and same-race faces. Our results did not support our hypotheses likely because the mood inductions were unsuccessful. However, those in the contentment condition (relative to the neutral condition) found other-race faces more attractive. Although this was a significant finding, it was in the opposite direction of our predictions. Two potential moderators, strength of racial group identification and interracial dating experience, showed interesting trends but were not significant. Implications of the mood, interracial dating, and group identification effects for ingroup bias and racial prejudice are discussed.

Differential Effects of Positive Mood States on Racial Ingroup Perception

Most people agree that being happy feels good and may even lead to more positive interactions with other people. Although research has supported the personal benefits of experiencing positive emotions (e.g., increased emotional well-being and life satisfaction), the positive emotion literature has produced ambivalent results in regards to the effect of positive emotional experiences on intergroup relations. This study seeks to understand and potentially resolve this discrepancy in the research.

One area of positive emotion research has pointed to the many positive consequences associated with positive emotions. In her analysis of the adaptive benefits of emotions, Fredrickson (2001) explained how negative emotions elicit specific action tendencies associated with the source of the emotional reaction. For instance, the negative emotion of fear narrows one's focus, or thought-action repertoire, and results in a fight-or-flight response. When it comes to positive emotions, however, there is little research that proposes any specific adaptive benefits for feeling happy; additionally, what little research exists neglects to differentiate between various states of positive emotion, instead choosing to lump this state of being into one large category. As a response, Fredrickson (2001) introduced the *broaden-and-build theory* of positive emotions, which states that positive emotions serve to broaden, instead of narrow, thought-action repertoires and also build long-term personal resources that enable people to better cope with life stressors.

While negative emotions elicit specific responses that are immediately adaptive for survival, positive emotions elicit general responses, such as using more broad-minded coping strategies (e.g., infusing ordinary events with positive meaning), which is

correlated with increased resiliency and better emotional well-being in the long-term (Fredrickson, 2001). It is this broadened thinking, resulting from experiences of positive emotion, that then builds lasting personal resources and enables better coping with adversity, which consequently leads to more experiences of positive emotion, creating an upward spiral toward improved general life satisfaction (Cohn, Fredrickson, Brown, Mikels, & Conway, 2009). Research in support of this theory has also found that positive emotions promote a complex understanding of other people in the formation of new relationships (Vaughn & Fredrickson, 2006).

The theory also includes a delineation of different discrete states of positive emotion, specifically joy, interest, contentment, pride and love, each of which broadens cognition in unique ways (Fredrickson, 2001). The present study focuses on the emotions of joy and contentment, because these two emotions in particular (in terms of high and low arousal) should theoretically result in behavioral variation. Joy elicits the general action tendencies of exploration, play and creativity while contentment is correlated with appreciation of current life circumstances and development of dynamic views of the self and world (Fredrickson, 2001). Fredrickson and Branigan (2005) conducted a study that focused on the unique broadening effects of positive emotions (specifically, joy and contentment). The experimenters induced participants into five different mood states and discovered that participants in the joy and contentment mood conditions demonstrated more global biases, as opposed to local biases, on a global-local visual processing task as well as more action urges on the Twenty Statements Test (TST) as opposed to those in negative and neutral moods. The global-local task presented participants with a target image made up of individual shapes arranged to create an

overall shape (e.g., three squares arranged in a triangle pattern) and then asked them to select which other image was most similar to the target image. A global bias on this task meant that participants would choose an image that took the overall shape of the target image (e.g., three triangles arranged in a triangle pattern) as being more similar, whereas a local bias meant that participants would choose an image that arranged the specific elements of the target image in a different overall pattern (e.g., four squares arranged in a square pattern) as being more similar. The TST was a task which asked participants to complete the sentence “I would like to...” on twenty blank lines and was used to measure quantity of action urges. The authors used these findings as evidence that positive mood states broaden thought-action repertoires, although no significant distinction was found between joy and contentment. Other studies using differing methodologies have found that participants induced to feel an equivalent of joy demonstrate increased cross-cultural empathy (Nelson, 2009) and reduced own-race bias in face recognition (Johnson & Fredrickson, 2005).

Emotions and Cognition

One of the important ways in which emotions, both good and bad, can affect our everyday lives is through the influence that they have on categorization. Isen and Daubman (1984) demonstrated how positive affect impacted how participants categorized words and colors. Participants in a positive affect condition exhibited more flexible thinking than controls in the way they created and used different categories; for instance, on one task participants tended to perceive generally low-prototypic examples of a category (e.g., *camel*) as belonging to that category (e.g., *transportation*). Later studies expanded upon this initial research on categorization of things to include the

influence of different emotions on social categorization. Bodenhausen, Sheppard, and Kramer (1994) found that two distinct negative emotions – anger and sadness – had differential impacts on social information-processing strategies. The authors discovered that participants induced to feel angry were more likely than those induced to feel sad to process heuristically, and thus stereotype, in a social perception task and to rely on heuristic cues in a persuasion situation. From an evolutionary perspective, it makes sense that people who feel sad are more inclined to use systematic thinking because sadness indicates a problem in the environment and thus cues a problem-solving response. The ability to think systematically is not adaptive in situations in which anger is present, however, because anger often arises in situations of threat which trigger the need for quick responses, not extensive contemplation of various courses of action.

Experimenters have also considered the impact of positive emotions on social judgment. Whereas Fredrickson and colleagues have touted the beneficial effects of positive emotions in relating to others (e.g., cross-cultural empathy, complex understanding of others, etc), other researchers seem to have discovered a potential downside to feeling happy. Bodenhausen, Kramer and Susser (1994) found that participants induced into a state of positive emotion were more likely than those in a neutral condition to use stereotypic thinking later in evaluating the guilt of other-race defendants in a courtroom scenario. Apparently, feeling happy can have socially negative outcomes in an applied setting. The authors posited that stereotypic judgments were more likely to be rendered by individuals in a positive state of emotion because they were less inclined to engage in effortful cognitive processing out of a desire to remain happy. Importantly, the stereotypic thinking among participants in a positive mood was

attenuated when the experimenters told the participants that they would be held directly accountable for their decisions. This instruction was sufficient to snap participants out of their emotional state and force them to think deeply, instead of relying on heuristics, in their social judgments. A limitation of this study is that the researchers treated positive mood as a unitary construct and did not identify particular states of positive emotion.

According to the *broaden-and-build theory*, the consequences of positive emotions are universally positive for the individual (e.g., undoing the effects of negative emotions, broadening cognition, fostering resiliency and personal resources) as well as for society (e.g., increased cross-cultural empathy, reduced own-race bias). However, other researchers have determined that positive emotions lead people to render more stereotypic judgments which may be beneficial for individuals' preservation of cognitive resources (Macrae, Milne, & Bodenhausen, 1994), but can be detrimental for society in situations where social perception plays a key role in how people are treated. How can these two areas of research be reconciled? The first step is finding areas where more research needs to be done as well as areas of overlap between the two research domains. For instance, extant research on the *broaden-and-build theory* has not differentiated between joy and contentment but instead has lumped them together to demonstrate that they broaden cognition more than being in a neutral or negative mood (e.g., Fredrickson & Branigan, 2005). Differential outcomes between these two positive mood states have not been explored, which may indicate that positive mood states are more alike than different negative mood states. This study seeks to explore the theoretical distinctions between joy and contentment and, furthermore, if these differences result in behavioral variation.

In trying to reconcile the divergent results on the effect of positive emotions on cognitive processing, we found an area of overlap. Bodenhausen, Kramer et al.'s (1994) explanation that participants did not want to use effortful thinking in their study because they were content in their state of being is descriptively similar to Fredrickson's (2001) elucidation of the discrete positive state of contentment. According to Fredrickson, contentment leads people to appreciate their current condition in life and to then integrate this state of being into the formation of an ever-changing worldview (Fredrickson, 2001). Interestingly, although the difference was not significant, Fredrickson and Branigan (2005) found that participants induced to feel joy exhibited a greater global bias (indicative of broadened cognition) as well as more action urges than did participants induced to feel contentment. It is possible that this finding indicates a fundamental difference in the type of thinking that takes place when feeling joyful as opposed to feeling content. Based on Bodenhausen, Kramer et al.'s (1994) finding that positive emotions (i.e., contentment) result in stereotypical thinking and Fredrickson's (2001) differing conceptions of joy and contentment, we propose that the two mood states are phenomenologically distinct and should impact cognition in different ways.

Emotions and Motivational States

In determining how joy and contentment might elicit distinct cognitive states, it is important to discuss the relationship between moods and motivational states on subsequent behavior. It is clear from psychological research that emotions influence behavior (Bodenhausen, Sheppard et al., 1994; Bodenhausen, Kramer et al., 1994; Isen & Daubman, 1984) but Brockner and Higgins (2001) demonstrated that emotions are connected to motivational states (and thus future behavior) and that emotional regulation

impacts the focus, nature, and strength of the emotional experience. These authors showed that those who are promotion-focused in their motivation try to become their ideal selves by thinking about opportunities and what they can gain, heightening the salience of the (potential) positive outcomes. On the other hand, those who are prevention-focused are motivated to become their “ought” selves by thinking about their current state and what they can lose, heightening the salience of (potential) negative outcomes.

In terms of future behavior, promotion-focused people are approach-oriented while prevention-focused people are avoidant-oriented (Shah, Brazeal, & Higgins, 2004). Shah et al. determined that people in a promotion-focused framework were likely to feel more cheerful and less dejected toward ingroup members while people in a prevention-focused framework were likely to feel less relaxed and more agitated toward outgroup members. Furthermore, those in the promotion framing condition were more likely to engage in approach-related behaviors toward ingroup members and nonavoidance behaviors toward outgroup members than participants in the prevention framing condition. Overall, people in a prevention-focused frame of mind are less inclined to actively engage with their environment and feel more uncomfortable toward outgroups. The creative and explorative aspects of Fredrickson’s (2001) conception of joy led us to contend that joy causes people to become more promotion-focused while the passive, serene aspects of contentment causes people to become more prevention-focused and thus more motivated to maintain their current cognitive state.

Social Categorization

Considering the breadth of research on emotions and social judgment, we wanted

to explore the differences between joy and contentment in terms of ingroup perception, particularly racial ingroup perception. There are a number of factors, including social categorization, that contribute to the establishment of an ingroup. Ingroup membership can often be based on arbitrary characteristics as shown by the minimal group paradigm (Tajfel, Flament, Billig, & Bundy, 1971). Tajfel and colleagues (1971) randomly divided participants into two groups based on supposed preference of a painting that was in actuality decided by a coin toss. The participants then completed a distribution task, where they were asked to distribute valuable resources (e.g., money or points) to other participants who were only identified by a code number and group membership. These researchers demonstrated that while participants showed a considerable amount of fairness, they also showed a significant preference for their arbitrarily assigned ingroup members by allocating more coins to them. This study showed how easily ingroups are formed and maintained.

Within ingroups, members often show ingroup favoritism, a preference for ingroup members over outgroup members (Aberson, Healy, & Romero, 2000). Research has demonstrated how ingroup favoritism can negatively affect outgroup members when certain individuals are allocated more resources or evaluated differently (Tajfel et al., 1971), particularly in the case of race relations (Brewer, 1999). Given the significant impact of racial prejudice and discrimination in society, we wanted to explore how different emotions might affect racial ingroup perception because this seemed to be a socially meaningful way to measure differences in cognition.

The other-race effect (ORE), which states that same-race faces are more easily recognized than other-race faces (Anzures et al., 2013), is an ingroup process that has a

direct bearing on racial perception. The ORE refers to an ingroup familiarity bias, whereby one can recognize ingroup members more easily and faster than outgroup members, even if people are unfamiliar or new (Beaupré & Hess, 2006). In evolutionary terms, this can be thought of as an ingroup advantage since being able to quickly and accurately determine who belongs to one's ingroup guards against improper allocation of resources to outgroup members. Thus, individuals who are of the same race should be more easily determined to be part of one's ingroup than those who are not of the same race. As a result of this ingroup familiarity, it should be more difficult for monorace people to assess the group membership of ambiguous-race faces because the faces cannot be easily included nor easily excluded from their ingroup.

Determining ingroup member status for racially ambiguous individuals is also influenced by a number of factors, such as whether ambiguous-race faces are presented with a specific monoracial label (Hourihan, Fraundorf, & Benjamin, 2013), or in a specific context (e.g., a Black/White biracial face seen with mostly White faces will be considered Black but seen as less Black in a Black only context) (Ito, Willadsen-Jensen, Kaye, & Park, 2011), or if the evaluator is presented with a race stereotype prior to making judgments (e.g., negative racial primes impede the ability to quickly categorize racially ambiguous faces compared to positive primes) (Dickter & Kittel, 2012). From these studies, we know that we do not categorize ambiguous-race faces easily or automatically and as a result, other factors (such as emotions) have the potential to impact our perceptions. Since we know that environmental factors influence ingroup perception, we wanted to explore whether environmentally manipulated mood states can influence the malleability of ingroups as well.

Study Overview

We wanted to know whether environmentally induced mood states differentially affect perceptions of one's racial ingroup. To accomplish this, we randomly assigned participants into three different mood groups and then administered two different tasks to assess perceptions of ambiguous- and other-race faces in terms of their closeness to participants' own racial ingroups. On the first task, in which participants rated ambiguous-race (Asian/White biracial) faces on a spectrum from completely White to completely Asian, we predicted that participants in the joy condition would rate the faces as closer to their racial ingroup (relative to neutral) and that participants in the contentment condition would rate the faces as further away from their racial ingroup (relative to neutral).

We predicted these different outcomes in terms of the distinct motivational states elicited by these two emotions. Specifically, those who feel joy should be more motivated to actively pursue their ideals, which (to the extent that people value racial equality and inclusion) would prompt them to be more inclusive than exclusive in their ingroup category conceptions when presented with ambiguous-race faces (Brockner & Higgins, 2001; Fredrickson & Branigan, 2005). In a contentment condition, however, in which people are satisfied with their current life circumstances, they would be more likely to evaluate ambiguous-race faces as part of an outgroup because they are prevention-focused and thus more concerned about losing something that they have (i.e., happiness) than in changing their social category conceptions (Brockner & Higgins, 2001). They are likely to notice certain features that are dissimilar to their own and automatically view those faces as not belonging to their racial ingroup.

On the second task, in which participants rated the attractiveness of other-race faces, we predicted that participants in the joy condition would rate the faces as more attractive (relative to neutral) while participants in the contentment condition would rate the faces as less attractive (relative to neutral). This second task was a way to further test our main hypothesis that joy elicits an inclusive ingroup perception while contentment elicits an exclusive one. An important quality of ingroup membership is that ingroup members are afforded certain benefits, such as empathy (Gutsell & Inzlicht, 2012), recognizability (Anzures et al., 2013) and perceived attractiveness (Folkes, 1982). Furthermore, an expansion of ingroup membership to others who are not automatically considered a part of that group would mean sharing those benefits with them. This would mean that evaluating people of another race as attractive would be an indicator that they were viewed more as members of the evaluator's ingroup since we know that people who are perceived to be similar to ourselves are also seen as more attractive (Folkes, 1982). Thus, perceived attractiveness of other-race faces should reflect a more inclusive ingroup mindset.

Insofar as joy ought to elicit a promotion-focused framework, which is associated with feeling more relaxed and less agitated toward outgroup members (Shah et al., 2004), people who experience joy should find outgroup members more attractive than people who experience contentment. Those who feel content, on the other hand, should find outgroup members less attractive than those who feel joyful because these participants are more likely to be prevention-focused, which is associated with feeling less relaxed and more agitated toward outgroup members (Shah et al., 2004).

Method

Participants

We recruited 58 White participants (29 men and 29 women) from a small, liberal arts college in the Pacific Northwest. Their ages ranged from 18 - 22 ($M = 19.97$, $SD = 1.24$). Among the participants, 31 percent ($n = 18$) were first-years, 25.9 percent ($n = 15$) were sophomores, 17.2 percent ($n = 10$) were juniors, and 25.9 percent ($n = 15$) were seniors. Additionally, 16 participants reported having dated people of another race than their own. We randomly assigned participants into one of three different experimental groups (joy, contentment, and neutral) per dependent variable with roughly 20 participants per cell.

Pilot Tests

We conducted two pilot tests to determine 1) which videos to use in order to induce participants into the desired mood states, and 2) which faces to use based on the extent to which they were found to be average in attractiveness and near the biracial location on a White-to-Asian racial spectrum scale. We collected responses from 30 people (15 different people for each pilot test) who reflected the sample population of our study in terms of age and education. None of the pilot test participants took part in the actual study. The participants filled out the modified Differential Emotions Scale (mDES) for each video they watched, rating the intensity of each emotion item on a 5-point scale in which 0 = “not at all” and 4 = “extremely”. Of the 12 videos that we pilot tested, we decided to use a video of red pandas for joy (M joy = 2.64, M contentment = 1.07), a video of nature scenes for contentment (M contentment = 2.77, M joy = 0.97) and a video of birds eating at a feeder for neutral (M total = 0.50). The neutral video that we selected was determined to elicit the least amount of emotions (either positive or

negative) of any video. We also pilot tested 67 different White and Asian faces and then deleted 15 to make a total of 52 faces. The six ambiguous-race faces that we excluded were rated as furthest away from the center on the racial spectrum that ranged from 1 (completely White) to 7 (completely Asian) (average difference from the center for the six excluded faces = 1.31). The nine monorace faces that we excluded were rated as the most unattractive on a scale from 1 (not at all attractive) to 7 (extremely attractive) (M attractiveness of excluded faces = 2.48, M attractiveness of included faces = 2.83).

Design and Procedure

We used a one-way between-groups experimental design. Our independent variable was mood with three different levels: joy, contentment and neutral. We measured two dependent variables. The first was racial ingroup inclusion ratings of ambiguous-race faces and the second was attractiveness ratings of other-race faces. Experience with interracial romantic relationships and strength of racial ingroup identification were primary moderators. The dependent variable tasks and the emotion videos were counterbalanced across trials.

Prior to the study, participants completed a pre-screening survey that was sent out to student listservs and students in psychology courses that signed up for our study that asked basic demographic questions (i.e., age, race, class year, major, hometown) in addition to some filler questions to de-emphasize the importance of the racial portion of this pre-screening process. For example, one of the filler questions was “How often do you watch YouTube videos?” We then screened for individuals who self-identified as Asian American or White/Caucasian, as these were the racial groups we were interested in including in our study.

Participants arrived at the lab in groups of one to four people. They sat at a table with a desktop computer in front of them. Each station was separated by a divider so participants could not see each other's screens. One experimenter, either a White man or an Asian American woman, welcomed the participants to the lab and instructed them to read the electronic informed consent form and let them know they were free to ask any questions. The effect of the experimenter's race was not considered because the presence of varying numbers of participants during any given experimental session and the fact that sometimes White and Asian participants were tested together meant that the effect of the experimenter's race could not be isolated. Nevertheless, it is certainly possible that social desirability effects could have played a role when White participants were in the presence of the Asian female experimenter, but since the tasks were not explicitly about evaluating racial attitudes, we are dubious about this possibility. Participants were told on the informed consent form that the study was about media and its impact on decision-making and judgment. After participants gave us their consent electronically, they were then presented with a demographics questionnaire in which we were specifically interested in the race with which they identified. We also included a Collective Self-Esteem Scale (CSES) out of concern that people who strongly identify with their own race would be more likely to have a restricted view of racial ingroup inclusion, regardless of their mood. The CSES assesses strength of racial identity. We presented the CSES at the beginning of the study because we wanted to make participants reflect on their own race so that later during the face judgment tasks, participants would rate the faces according to the perceived proximity to their own personal racial ingroup. The participants were allowed an unlimited amount of time to complete these items. Upon

completion, the participants were randomly assigned into one of three mood manipulation conditions: joy, contentment, or neutral. Those in the joy condition were subsequently presented with a short video of playing red pandas; those in the contentment condition were presented with a short video of nature scenes; and those in the neutral condition were presented with a short video of birds eating.

After the mood manipulation, the participants were instructed to complete a rapid categorization task in which participants rated racially ambiguous faces (in addition to some same-race and other-race faces as controls) on a computer, using a numerical scale from 1 (completely White) to 7 (completely Asian). The experimenters told the participants that they must try to complete the categorization task quickly on the pretense that completion time was factored into their overall scores on the task. After completing the task, participants filled out the modified Differential Emotions Scale (mDES) as a manipulation check to determine what emotions they were feeling when they were watching the video. This scale ensured that the mood manipulation video actually induced the participants into the desired mood. The mDES was administered after the task because being asked to reflect on one's emotional state would have potentially reduced the capacity to actually feel the emotion. Furthermore, we wanted as little delay time as possible between the mood manipulation and the task due to the fact that emotions tend to fade rapidly. The mDES ended the first portion of the study.

We were concerned about the transitory effects of the mood inductions and that the mood induction would no longer be present by the second task. We resolved this issue by re-inducing participants into new mood states after a five-minute break. They were told that the next component of the study involved cognitive tasks. Participants

then completed two filler tasks during this five-minute break to ensure that any lingering effects from the first mood induction were mitigated. The first task was decoding anagrams, and the second one was naming as many U.S. states as possible with the aid of a blank map. Each task lasted two and a half minutes. After the filler tasks, participants were shown one of the three mood manipulation videos (joy, contentment, or neutral) from the first part of the study. We ensured that participants saw a different video than the one they saw at the beginning of the study.

Participants next looked at a series of other-race faces and same-race faces and rated the attractiveness of the faces on a computer, using a numerical scale from 1 (not at all attractive) to 7 (extremely attractive). The experimenter told participants that they must try to complete the perceived attractiveness task quickly on the pretense that completion time was factored into their overall scores on the task. We asked the participants to complete both tasks quickly because we wanted to encourage subjective, automatic processing as opposed to more cerebral, objective processing. This instruction was consistent with our intent to make the face judgments more personal and relevant to the participants since we wanted to assess personal ingroup perceptions. The participants then completed the mDES as they did in the first half of the study. Completing this scale ended the study. The participants were debriefed, asked to sign a data release form, compensated, and thanked.

Measures

Demographics. Participants were asked to report on basic personal information regarding age, race, education, and visual ability. We were primarily interested in their self-reported racial identity as well as whether they had ever dated a person of another

race before. Participants answered either yes or no when answering the question if they had ever dated someone of another race. Participants' experience of having intimate relationships with people of another race was a potential moderator because it may have indicated that their ingroup was already more inclusive to begin with and/or that their ingroup was more flexible due to this experience.

Collective Self-Esteem Scale (Luhtanen & Crocker, 1992). The Collective Self-Esteem Scale (CSES) measures individual's social identity based on membership to ascribed groups (e.g., ethnicity, gender, etc.), and we wanted to focus on racial identity. Measuring participants' collective self-esteem demonstrated how they felt about and to what extent they identified with their racial group. Those high in collective self-esteem are more likely to engage in group-serving biases to maintain and protect their group image as a function of ingroup favoritism (Tajfel & Turner, 1986). It is possible, then, that the stronger this identification, the less susceptible people are to outside influences (i.e., emotions) in their perception of stimuli relevant to this social category. In other words, their personally held beliefs would overpower experimentally manipulated conditions. It is important to keep in mind that strong ingroup identification is not equivalent to negative views of outgroups (Brewer, 1999). Thus, participants in our study who strongly identified with their race were not necessarily racially biased in the sense that they held prejudicial views of racial outgroups.

The CSES originally had four subscales (Membership, Private, Public, and Identity) with four items per scale, but we were primarily interested in the Identity subscale ($\alpha = .76$) to measure how much our participants identified with their race. We presented participants with a modified version of the CSES scale in which they saw a

total of 10 (out of 16) item measures. All four item measures from the Identity subscale were used, and two each from the other three subscales were included in this modified CSES. Only the items from the Identity subscale were analyzed, but we wanted to include the other items to disguise our main focus. The Identity subscale included items like, “The racial group I belong to is unimportant to my sense of what kind of a person I am” and “In general, belonging to my race is an important part of my self-image.” Participants rated their responses on a 7-point scale (1 = strongly disagree, 7 = strongly agree). See Appendix A.

Videos (emotion prime). We pilot tested short videos which were intended to induce a particular mood state, either joy, contentment, or neutral. Joy was induced through a 90 s video of two baby red pandas frolicking in the snow to the tune of fun, upbeat music. We induced feelings of contentment with a 90 s nature video which showed slow pans of vast landscapes from around the world with calming music in the background. Lastly, we produced a neutral mood with a 3 min video of birds eating at a bird feeder with no sounds, other than the birds chirping, in the background. The participants saw two of the three videos during the duration of their participation, one before the rapid categorization task (see below), and one before the perceived attractiveness task (see below).

Modified Differential Emotions Scale (mDES). This questionnaire was a manipulation check used to determine what types of emotions were elicited while watching the mood manipulation videos. This scale is effective at capturing the temporal frame of a study by focusing on a particular time when the participant was experiencing certain emotions. The questionnaire asks about peak emotional experiences (“greatest

amount you've experienced each of the following feelings") because findings indicate that people are better at recalling peak experiences rather than determining an average level of emotion across different time periods (Fredrickson & Kahneman, 1993, as cited in Fredrickson, in press). The scale has 20 items with emotions presented in groups of threes. We only presented 15 of the 20 possible items to prevent any potential fatigue effects. Participants in our study rated the intensity with which they experienced each emotion triad while watching the video, using a numerical scale in which 0 = "not at all" and 4 = "extremely". For example, the first question read, "What is the most amused, fun-loving or silly you felt?"

We also created three subscales for joy, contentment and neutral based on specific items on the mDES. The joy subscale was formed from two items on the scale which assessed feelings of joy and amusement ($r = .68, p < .001$). The contentment subscale was formed from two items on the scale which assessed feelings of awe and serenity ($r = .39, p = .002$). Lastly, the neutral subscale was formed by averaging the sum of all 15 items ($\alpha = .84$). An item that measured joy was, "What is the most joyful, glad, or happy you felt?" and an item that measured contentment was, "What is the most serene, content, or peaceful you felt?" See Appendix B.

Rapid categorization task. The participants were instructed that they were about to be presented with faces that they must categorize on a scale from 1 (completely White) to 7 (completely Asian). Rapid categorization of racially ambiguous faces has precedent in the literature (Hugenberg & Bodenhausen, 2004; Peery & Bodenhausen, 2008), but participants in previous studies engaged in dual-categorization, meaning that they had to decide between two options (e.g., Black/not White or White/not Black). Based on the

finding that as faces became increasingly ambiguous, participants tended to rate them as belonging to the opposite race category (i.e., a biracial White/Asian face being categorized as Asian) (Freeman, Pauker, Apfelbaum, & Ambady, 2010), we decided to have participants rate the faces on a scale of ambiguity to measure to what degree participants thought a face belonged to a certain racial category.

Participants saw a total of 20 different ambiguous-race faces, as well as 6 monoracial faces of each race as a control, for the duration of this task. The monorace White faces were drawn from the Productive Aging Lab Face Database developed by Minear and Park (2004) and the monorace Asian faces were drawn from CAS-PEAL Face Database developed by Gao et al. (2008). We mixed the various monorace faces to create 50% Asian, 50% White mixed-race faces using FantaMorph technology (Version 5; Abrosoft Co., Beijing, China). Faces were presented in the middle of the screen, in black-and-white photos, and remained on the screen until the participants made a decision. See Appendix C.

Perceived attractiveness task. Participants were presented with a series of images of same-race and other-race monoracial faces (i.e., completely Asian faces and completely White faces). They saw 10 White faces and 10 Asian faces that were monoracial versions of the morphed faces used in the rapid categorization task. They then rated attractiveness on a scale from 1 (not at all attractive) to 7 (extremely attractive). Similar to the rapid categorization task, the faces were presented in the middle of the screen, in black-and-white photos, and remained on screen until the participants made a decision. See Appendix D.

Results

Preliminary Analyses

We collected responses from both White and Asian participants, but only included analyses of the White participants because the number of Asian participants was very small ($n = 12$) and they were unevenly distributed among the conditions. Of the 60 White participants, two were excluded from the analyses because they expressed high levels of suspicion and atypical reactions to the experimental stimuli.

We used a factorial ANOVA (mood condition X sex) across the dependent variables and found nonsignificant sex differences for the categorization of ambiguous-race faces, $F(1, 52) = 1.76, p = .19$ and for perceived attractiveness of Asian faces, $F(1, 52) = 0.44, p = .51$.

We randomly assigned participants to one of two different dependent variable order groups, one of which experienced the rapid categorization task followed by the perceived attractiveness task and vice versa. We also randomly assigned participants to one of six different mood video order groups, which presented two of the three possible mood videos in every possible order. We ran a one-way between-groups ANOVA to test for order effects of the two dependent variables as well as for the three mood videos. We found no significant dependent variable order effects on ratings of perceived attractiveness of Asian faces, $F(1, 57) = 0.84, p = .37$ or on ratings of ambiguous-race face categorization, $F(1, 57) = 0.00, p = .97$. We also did not find mood video order effects on perceived attractiveness of Asian faces, $F(5, 57) = 0.26, p = .94$ or on rapid categorization of ambiguous-race faces, $F(5, 57) = 0.25, p = .94$.

Manipulation Checks

We used the three subscales for joy, contentment and neutral to assess the effectiveness of the mood videos in capturing the intended emotional state. As a side

note, the participants saw a scale from 0 to 4, but responses were recorded and analyzed on a 1 to 5 scale. The mDES does not include any specific items that assess neutral mood but one large-scale validation study (Schaefer, Nils, Sanchez, & Philippot, 2010) determined the neutrality of film clips by ensuring that they elicited the least amount of arousal and the least amount of positive and negative affect relative to other emotion-inducing film clips. Therefore, we defined neutrality as the absence of emotion, either positive or negative, which is why we computed a composite of each of the 15 emotion items on our modified DES and determined that the closer the score was to 1 on the scale (i.e., no emotional response), the more neutral the score.

We conducted one-sample t tests to determine if the mood videos elicited particular emotions that were significantly greater than the midpoint (i.e., 3) on the 5-point mDES scale. These tests determined that the contentment video elicited an average contentment score ($M = 2.82$, $SD = 0.72$) that was not significantly different from the midpoint on the scale, $t(57) = -1.86$, $p = .07$, while the joy video elicited an average joy score ($M = 2.50$, $SD = 0.71$) that was significantly less than the midpoint on the scale, $t(57) = -5.29$, $p < .001$. Nevertheless, these positive emotions scores were significantly greater than the minimum point (i.e., 1) on the scale, $t(57) = 16.05$, $p < .001$ for joy, $t(57) = 19.18$, $p < .001$ for contentment. Additionally, the neutral video elicited emotional responses that were significantly greater ($M = 2.02$, $SD = 0.40$) than the minimum point on the scale, $t(57) = 19.29$, $p < .001$.

We conducted three one-way between-group ANOVAs to test the effect of each mood video on mDES joy scores, contentment scores and neutral scores for the mood videos presented before the rapid categorization task. Unexpectedly, there was no

significant effect of the mood videos on mDES joy scores, $F(2, 57) = 1.08, p = .35$.

Those who watched the joy video ($M = 2.75, SD = 1.30$) did not feel more joyous than those who watched the contentment video ($M = 2.72, SD = 0.89, p = .92$), or those who watched the neutral mood video ($M = 1.96, SD = 0.52, p = .34$). Contrary to our predictions, there was also no significant effect of the mood videos on mDES contentment scores, $F(2, 57) = 2.50, p = .12$. Those who watched the contentment video ($M = 3.34, SD = 0.91$) did not feel significantly more content than those who watched the joy video ($M = 2.61, SD = 1.00, p = .12$), or those who watched the neutral video ($M = 2.24, SD = 0.47, p = .27$), though the means were trending in the right direction. Unfortunately, the positive mood manipulating videos presented before the rapid categorization task were not effective in inducing participants to feel distinct positive emotions.

We then conducted another three one-way between-group ANOVAs to test the effect of each mood video on mDES joy scores, contentment scores and neutral scores for the mood videos presented before the other-race perceived attractiveness task. There was no significant effect of the mood videos on mDES neutral scores, $F(2, 57) = 1.78, p = .18$. Participants who watched the neutral video ($M = 1.83, SD = 0.42$) did not feel more neutral than those in the joy condition ($M = 2.30, SD = 0.91$) or those in the contentment condition ($M = 2.75, SD = 0.79$), although the means were trending in the right direction. Levene's statistic for the Test of Homogeneity of Variances showed that the averages for the feelings of joy and contentment on the second mDES were significant ($p = 0.04$ and $p < .001$, respectively) and the assumption of homogeneity was not met. Kruskal-Wallis tests were used instead of ANOVAs, and they showed no effect of the joy and

contentment videos on feelings of joy and contentment ($p = .15$ and $p = .77$, respectively). The joy video did not elicit significantly more feelings of joy than the other mood videos and the contentment video did not elicit more feelings of contentment than the other mood videos. Ultimately, the positive mood manipulating videos presented before the other-race perceived attractiveness task were also not effective in inducing participants to feel distinct positive emotions. We considered separating the different subscale responses and comparing those who scored high on either positive emotion to those who scored low, regardless of the mood video groups. However, we determined that there was not enough variation in the subscale scores (likely due to the small number of items which made up the subscales) to meaningfully separate participants based on their scores.

Rapid Categorization Task

Although we determined that the mood induction videos were not especially effective at eliciting distinctive mood states, we still ran analyses based on these different mood conditions since some of the emotion ratings were trending in the right direction. Additionally, there could have been differences between the mood conditions that we were not able to assess or even differences in emotion that the mDES failed to capture. We used a one-way between groups ANOVA to measure the effect of the mood conditions on people's tendency to perceive ambiguous-race faces as more a part of their racial ingroup by rating them as more White. We expected that those in the joy condition would rate ambiguous-race faces as closer to the "White" end of the racial spectrum on the scale from 1 (completely White) to 7 (completely Asian). We also expected those in the contentment condition would rate ambiguous-race faces as closer to the "Asian" end

of the racial spectrum. On average, participants rated the White faces as White ($M = 1.57, SD = 0.46$), Asian faces as Asian ($M = 6.03, SD = 0.50$), and ambiguous-race faces as fairly biracial ($M = 3.80, SD = 0.62$). Contrary to our predictions, there was no difference between mood conditions in participants' responses on their perception of ambiguous-race faces, $F(2, 55) = 0.34, p = .71, \eta^2 = .01$. Those who watched the joy video ($M = 3.71, SD = 0.71$) did not differ in their perception of ambiguous-race faces from those who watched the contentment video ($M = 3.79, SD = 0.73$), $p = .91$, or those who watched the neutral video ($M = 3.88, SD = 0.43$), $p = .69$. Those who watched the contentment video ($M = 3.79, SD = 0.73$) also did not differ significantly in their responses compared to those in the neutral mood condition ($M = 3.88, SD = 0.43$), $p = .91$.

Perceived Attractiveness Task

A one-way between groups ANOVA was used to measure the effect of the mood conditions on perceptions of other-race face attractiveness, a measure that is theoretically linked to racial ingroup perception. We expected those in the joy condition would rate other-race faces as more attractive than those who in the neutral condition. We also predicted that those in the contentment condition would rate other-race faces as being less attractive than those who felt neutral. On average, participants rated White faces as average in attractiveness ($M = 3.92, SD = 0.63$) and Asian faces as average in attractiveness as well ($M = 3.79, SD = 0.70$). There was a significant difference between mood conditions in participants' perceptions of other-race faces' attractiveness, $F(2, 55) = 3.52, p = .04, \eta^2 = 0.11$. Tukey post-hoc comparisons between the three video groups showed that participants who watched the contentment video rated other-race faces as

significantly more attractive ($M = 4.10$, $SD = 0.68$) than those who watched the neutral mood video ($M = 3.52$, $SD = 0.83$), $p = .03$. However, there was no significant difference in attractiveness ratings when comparing those in the contentment condition ($M = 4.10$, $SD = 0.68$) with those in the joy condition ($M = 3.80$, $SD = 0.45$), $p = .35$. Comparisons between those in the joy and neutral conditions also did not reveal a significant difference in attractiveness ratings, $p = .41$. This indicated that those who watched the contentment video perceived other-race faces as more attractive than those who watched the neutral video but not compared to those who watched the joy video.

Considering the significant effect of contentment on other-race perceived attractiveness (compared to neutral), we also ran a one-way between groups ANOVA to measure the effect of the different mood conditions on same-race (White) perceived attractiveness. In terms of perceived attractiveness of White faces, participants in the various mood conditions did not differ in their scores, $F(2, 55) = 1.69$, $p = .19$. Participants in the contentment condition ($M = 4.14$, $SD = 0.46$) did not find same-race faces significantly more attractive than participants in the joy condition ($M = 3.83$, $SD = 0.57$) or participants in the neutral condition ($M = 3.82$, $SD = 0.77$). We then ran a paired samples t test to test for a significant difference between average other-race perceived attractiveness scores ($M = 3.79$, $SD = 0.70$) and same-race perceived attractiveness scores ($M = 3.92$, $SD = 0.63$) and found no significant difference, $t(57) = 1.30$, $p = .20$. Participants did not rate same-race faces as significantly more attractive than other-race faces.

Moderating Variables

In addition, we tested for the effects of two potentially moderating variables: interracial dating experience and racial ingroup identity strength. We ran an independent samples t test and found no significant effects of having been in a personally significant relationship with a person of a different race on the perceived attractiveness of Asian faces, $t(56) = 0.96, p = .34$, nor on the categorization of ambiguous-race faces, $t(56) = 0.73, p = .47$. However, we then ran a 2 (interracial relationship experience: yes vs. no) x 3 (mood: joy, contentment, neutral) ANOVA to test whether relationship experience interacted with the mood conditions in terms of perceived attractiveness. As shown in Table 1, we found a marginal interaction between relationship experience and the mood conditions on the perceived attractiveness of Asian faces measure, $F(2, 52) = 2.70, p = .08$. Pairwise comparisons reveal that among those participants who had interracial relationship experience, those in the joy condition rated Asian faces as significantly more attractive ($M = 4.07, SD = 0.35$) than those in the neutral condition ($M = 3.08, SD = 1.22$), $p = .02$, and those in the contentment condition also rated Asian faces as significantly more attractive ($M = 4.44, SD = 0.43$) than those in the neutral mood condition, $p = .003$. However, it is important to recognize that cell totals for the three mood groups among the participants who had interracial relationship experience were quite low (joy = 7, contentment = 5, neutral = 4). See Table 2 for comparisons of means and simple effects.

In terms of racial ingroup identity strength ($M = 3.39, SD = 1.20$), we did find one significant relationship. We found a significant negative correlation between ratings on the Identity subscale of the Collective Self-Esteem Scale (CSES) and the perceived attractiveness of Asian faces, $r = -.34, p = .01$. Regression analysis indicated that group

identity ratings significantly predicted perceived attractiveness scores, $t(56) = -2.69$, $p = .01$, whereby higher group identification was related to lower perceived attractiveness ratings of other-race (Asian) faces. Analyses also indicated that 11.4 percent of the variance in the perceived attractiveness of Asian faces could be explained by group identity ratings. We did not find any significant correlations between group identification and ratings of ambiguous-race faces.

We used a hierarchical linear regression to test for the effect of the mood conditions and group identification on perceived attractiveness to see if group identification moderated the effect of the mood conditions on perceptions of attractiveness of Asian faces. Group identification and dummy codes for the joy and neutral mood conditions were entered in Step 1, and the interactions between group identification and mood were entered into Step 2. The overall model accounted for 29.1 percent of variance for the perceived attractiveness task, but the overall interactions were not significant as they accounted for only 6.3 percent of the variance, $R^2 = 0.29$, $F(2, 52) = 2.31$, $p = .11$. Group identification did not interact with the mood conditions to affect participants' perceptions of Asian faces' attractiveness overall.

Discussion

Our study aimed to examine the differential effects of specific positive moods on racial ingroup perception. We expected that participants induced to feel joy would engage in more flexible thinking and see ambiguous-race faces and other-race faces as more a part of their racial ingroup than those in a neutral mood state, while those induced to feel contentment would engage in less flexible thinking, and be more exclusive in their

racial ingroup perception. We found that our results did not support our main hypotheses, but there were some interesting trends.

Rapid Categorization Task

We determined that there were no differences in perceptions of ambiguous-race face across the three mood conditions, meaning that there was no significant effect of mood on racial perception. Although it is possible that our moods have no bearing on how we perceive race, we think it is equally possible that the specific limitations of our experimental study contributed to this result. A number of participants commented on the fake or bizarre nature of some of the biracial faces in the rapid categorization task due to particular effects of the morphing technology. A few went so far as to say that they were more likely to think a face was completely biracial if they noticed this strange quality about it. Additionally, in the interest of reducing any fatigue effects, we presented participants with only 20 ambiguous-race faces instead of 30, a number which has precedent in the literature (Ito et al., 2011). However, the chief issue with this dependent measure likely has to do with the mood videos that were presented before the task in an attempt to induce specific positive mood states. Our analyses demonstrated that neither joy, contentment, nor neutral scores significantly differed among participants in each of the mood conditions, potentially meaning that the mood videos did not effectively put participants into a particular mood state more than another. The fact that we cannot confidently contend that the independent variable was sufficiently manipulated calls into question the validity of the results of the rapid categorization task.

Perceived Attractiveness Task

Our analyses indicated that there was a significant difference in perceived attractiveness of other-race (Asian) faces between participants in the contentment condition and participants in the neutral condition, whereby those in the contentment condition rated Asian faces as significantly more attractive than those in the neutral condition. This difference was in the opposite direction of our predictions but it is still interesting to note that some quality of the different mood conditions affected perceived attractiveness. Cullen and Newell (2012) studied the role of cross-sensory information on the perceived attractiveness of static face images and found that emotional content, especially content positive in nature (e.g., laughter), that was presented along with a face image positively influenced perceived attractiveness of the face. Based on this research, perhaps the contentment video was better than the joy video at eliciting the particular positive mood state that has been shown to influence perceived attractiveness.

Additionally, we found that the different mood groups differentially affected participants' perceptions of same-race and other-race face attractiveness. Analyses indicated that participants in the contentment condition found other-race, but not same-race, faces significantly more attractive than those in the neutral condition. In other words, the contentment condition affected participants' perceptions of other-race faces' attractiveness, but did not affect their perceptions of same-race faces. Considering the fact that overall attractiveness ratings did not differ between other-race and same-race faces, we surmise that this result must have something to do with the effect of the mood video and not an effect of the faces. Although we know that people perceive similar levels of variation in attractiveness across racial groups (Bernstein, Lin, & McClellan, 1982), it is unclear if the *way* in which people perceive attractiveness is different when

evaluating members of one's racial ingroup versus evaluating members of racial outgroups. It is possible that perceptions of the attractiveness of people of our own race are more fixed, but when it comes to people of another race, our perceptions of their attractiveness are more malleable and can be influenced by mood effects. This is an area of research that future studies could work to address.

Importantly, however, our results seemed to indicate that none of the mood manipulation videos effectively manipulated mood, meaning that people who saw the joy video did not feel significantly more joyous than people in the other conditions and people who saw the contentment video did not feel significantly more content than people in the other conditions (although these means were in the right direction). The same pattern was true for neutral scores on the neutral video. The fact that a significant difference was found between two mood groups (contentment and neutral) that did not effectively manipulate participant mood may indicate that other factors could be accounting for this difference. One factor that could have contributed to this difference was the type of music that accompanied the contentment video. A number of participants remarked afterwards that the music in the contentment video was distinctly "Asian" sounding. North (2012) showed that auditory stimuli can influence our perception of taste, so there is a possibility that auditory stimuli can influence the perception of our other senses. Thus, it is possible that when participants were presented with other-race (Asian) faces, they made an easier connection back to that video due to the music and it was this aspect of the video (not so much the mood) that influenced perceived attractiveness responses. Although it remains unclear what exactly differentiated the contentment and neutral mood groups if it was not mood (although there could be a

difference in mood that the mDES failed to capture), analyses on two potential moderating variables (see below) indicated that other factors could easily be involved.

Moderating Variables

We tested for the effect of interracial dating experience on the two dependent variables. We found no main effect of interracial relationship experience for either dependent variable but we did find a marginally significant interaction effect of relationship experience and the mood conditions on perceived attractiveness of other-race faces. Specifically, we found that among participants who claimed to have had an interracial relationship experience, those in the joy and contentment conditions found other-race faces significantly more attractive than those in the neutral condition.

Assuming that participants in the positive mood conditions felt more positive emotions than those in the neutral condition (and the numbers were trending in this direction), this finding is interesting because it indicates that having intimate interracial experiences has the potential to alter perceived attractiveness of other-race individuals, but only if in a positive mood.

This finding is consistent with research that found that college interracial dating experience predicted lower ingroup bias ratings by the end of their fourth year of college (Levin, Taylor, & Caudle, 2007). Ingroup bias was measured on a 7-point affect scale which asked about participants' feelings toward various racial/ethnic groups from 1 (very negatively) to 7 (very positively). Participants who had interracial dating experience reported lower ingroup bias ratings, meaning that they felt more positively toward other-race groups than did people who did not have interracial dating experience. Based on this research that found that interracial dating experience predicts positive emotions toward

racial outgroups, it is possible that this relationship works in the other direction, meaning that positive emotions in general could lead people with interracial dating experience to think in more racially inclusive terms and thus feel more positively toward racial outgroups (which could manifest itself in higher ratings of perceived attractiveness). It could be that when in a positive mood, people are more inclined to draw upon diverse experiences when forming perceptions of others compared to when they are in a neutral mood. The bi-directionality of this relationship would be a good topic for future studies.

Although we cannot speak to differences between positive mood states, this result does appear to support *broaden-and-build theory* (Fredrickson, 2001) generally because people who received positive mood inductions demonstrated broadened cognition. The caveat of our results is that being in a positive mood state is not sufficient, necessarily, to broaden cognition, but that it is being in a positive mood in conjunction with having had a life experience that is relevant to the social perception at hand that predicts such mental expansion. Importantly, we did not ask participants if they had had a significant relationship with someone of an Asian race, but just of another race in general, because we presented our measures to participants of two different races to examine other-race perception more generally. It would be interesting to see what patterns emerged if we isolated participants who had had an other-race relationship experience with the specific other race measured in the study. Given the finding that having a significant relationship with an other-race individual is linked to greater liking of racial outgroups in general (Levin et al., 2007), we imagine that a stronger moderating effect of interracial dating experience on the relationship between mood and perceived attractiveness would emerge if we only analyzed those White participants who had relationship experience with Asian

people. We would be interested to discover if interracial dating experience could even affect racial perception on its own beyond any interactions with mood.

We also tested for the potential moderating factor of racial ingroup identification on the effect of the mood conditions on perceived attractiveness of other-race faces. Although there was a significant negative correlation between group identification and other-race perceived attractiveness, regression analyses determined that group identification did not effectively moderate the relationship between the mood conditions and perceived attractiveness. These results can perhaps be understood in the context of the findings by Wilton, Sanchez and Giamo (in press) on the moderating effect of racial identification on the relationship between ambiguous-race face exposure and intergroup similarity ratings. Participants in their study were shown either White, Asian or White/Asian biracial faces with a corresponding racial label and were then asked to rate their beliefs on the similarity between Whites and Asians in terms of attitudes, beliefs and behaviors. The authors found that biracial label exposure (as opposed to monoracial labels) predicted greater intergroup similarity ratings and that racial identification moderated this relationship, whereby Whites who were low in racial identification reported higher intergroup similarity ratings compared to Whites who were high in racial identification.

The results of Wilton et al. (in press) indicate that being exposed to faces that blur dichotomous racial lines leads to greater perceived similarity between races (i.e., ingroup expansion) but that being highly identified with one's racial ingroup disrupts this relationship, presumably because these people are more motivated to engage in ingroup bias processes to protect collective self-esteem. These findings lend credence to the

marginally significant moderating effect of racial group identification on the effect of the mood conditions on the perception of other-race faces' attractiveness in our study.

Although the independent variable manipulations were different in our study, we assessed the equivalent of intergroup similarity with our other-race perceived attractiveness task since we know that perceived attractiveness is indicative of psychological closeness and similarity (Folkes, 1982). It is likely that the differences in manipulations between these two studies accounted for the differences in the moderating effect of racial group identification. Nevertheless, our study appears to support the literature that group identification impacts ingroup perception and biases.

Limitations

There were a few limitations in our study. We decided to recruit Asian American participants since they represented the greatest minority student population and we wanted to test the generalizability of our findings across different races. Unfortunately, the participation rate of Asian Americans was not adequate enough so we were unable to get a better understanding of how certain positive emotions may have differential effects on people based on their race. Future studies can hopefully explore this avenue further by effectively recruiting a more diverse sample of participants. Although we know that all racial/ethnic groups (not just White people) engage in ingroup bias processes (e.g., Lee, 1993), we would be interested to find out if particular mood manipulation techniques are more effective for certain racial groups, if group identification is qualitatively different for minority racial groups than the majority group and if racial minority individuals' perceived attractiveness of White faces would differ from White's

perception of other-race faces due to a difference in cultural salience between White and racial minority individuals.

Another limitation was that our positive mood videos did not seem to successfully induce the specific emotions we were trying to manipulate. This could be due to the fact that we placed our manipulation check after the dependent variables, and at that point, the positive or neutral mood had dissipated. However, research has shown that the presentation of the manipulation check preceding the dependent variable dilutes the effect of the manipulation (Brown & Brown, 2011; Fredrickson & Branigan, 2005; Kühnen, 2010). They are essentially “unprimed” (Sparrow & Wegner, 2006). Future research can hopefully find a balance between the timing of the manipulation and the presentation of the dependent variable, and the manipulation check.

Although the length of the clips that we used has precedent in the literature (Fredrickson & Branigan, 2005), it is possible that they were too short to successfully induce a particular emotion that remained through the duration of our dependent measures and subsequent manipulation check questionnaire. It is also possible that our dependent variable tasks induced strong emotions (e.g., stress, guilt) that interfered with participants’ ability to accurately recall the emotions they felt during the mood manipulation videos. Research into the effect of music on emotions has found that people feel more positively toward familiar music (Pereira et al., 2011) and that specific structural elements of background music (e.g., harmony, tempo, dynamics, rhythm) affect emotional responses (Alpert & Alpert, 1990). Although subjective reactions to the music used in our video clips included the fact that it was congruent with the video content and appropriate for the specific positive emotion attempting to be elicited, measuring for

music familiarity and/or manipulating specific structural elements of the music could greatly improve the videos' effectiveness at manipulating mood.

Conclusion

Although our results did not match our predictions, we think that there is a strong theoretical foundation for a measurable difference between specific positive mood states in terms of social perception. Given the fact that people in positive moods have been shown to demonstrate flexible, broadened and inclusive cognition (Fredrickson, 2001; Fredrickson & Branigan, 2005; Isen & Daubman, 1984; Waugh & Fredrickson, 2006) as well as narrow, heuristic judgments (Bodenhausen, Kramer et al., 1994; Macrae, Milne, & Bodenhausen, 1994), it is clear that there is a gap in the literature related to understanding the effects of positive emotions. With a larger, more diverse participant sample and effectively piloted mood manipulation videos, we contend that different positive moods should have an impact on our perception of others.

Given the detrimental effects of discrimination and racial bias (Brewer, 1999; Cole, Kemeny, & Taylor, 1997; Jamieson, Koslov, Nock, & Mendes, 2013), it is important to understand how to combat these unconscious processes. We all engage in automatic ingroup biases that preferentially favor those who we perceive as being a part of our ingroup (Aberson, Healy, & Romero, 2000; Beaupré & Hess, 2006; Gutsell & Inzlicht, 2012; Folkes, 1982; Tajfel et al., 1971) but if we know how to expand who gets included in our ingroups, then these same ingroup advantages could be applied to people who would normally get excluded. This process would have important implications in real-world settings, such as in corporations, schools and courtrooms. If we know, for example, that jurors are inherently biased against outgroup members but that being in a

certain positive mood effectively broadens ingroup perception, then more efforts could be made to ensure that the jurors are in that mood state when rendering their judgments.

Ultimately, if we can learn how positive emotions lead to more inclusive thinking or if specific types of positive emotions differentially impact social perception, then we will be one step closer to understanding how to reduce racial bias and discrimination.

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Table 1

Mood Condition x Other-Race Relationship Experience Factorial Analysis of Variance for Perceived Attractiveness of Other-Race Faces

Source	<i>Df</i>	<i>F</i>	<i>p</i>
(A) Mood condition	2	5.78	.005
(B) Relationship	1	0.33	.566
A x B (interaction)	2	2.70	.077
Error (within groups)	52		

Table 2

Means and Simple Effects for the Interaction between Mood and Interracial Relationship Experience on Other-Race Perceived Attractiveness

	Mood Condition Groups			Simple Effects: F $df(2, 52)$
	Joy	Contentment	Neutral	
Relationship Experience	4.07 _b (0.35)	4.44 _b (0.43)	3.08 _a (1.23)	5.09**
No Relationship Experience	3.65 _a (0.44)	3.97 _a (0.73)	3.63 _a (0.71)	1.15
Simple Effects: F $df(1, 52)$	1.92	1.87	2.31	

Note. ** = $p \leq .01$. Standard deviations appear in parentheses below means. Means with differing subscripts within rows are significantly different at the $p \leq .05$ level based on post-hoc pairwise comparisons.

APPENDIX A

Collective Self-Esteem Scale (CSES)

INSTRUCTIONS: We are all members of different social groups or social categories. Some of such social groups or categories pertain to gender, race, religion, nationality, ethnicity, and socioeconomic class. We would like you to consider your membership in your racial group, and respond to the following statements on the basis of how you feel about that group and your memberships in them. There are no right or wrong answers to any of these statements; we are interested in your honest reactions and opinions. Please read each statement carefully, and respond by using the following scale from 1 to 7:

		Strongly Disagree	Disagree	Disagree Somewhat	Neutral	Agree Somewhat	Agree	Strongly Agree
1.	I often regret that I belong to the racial group I do.	1	2	3	4	5	6	7
2.	Overall, my racial group is considered good by others.	1	2	3	4	5	6	7
3.	Overall, my racial group membership has very little to do with how I feel about myself.	1	2	3	4	5	6	7
4.	I feel I don't have much to offer to the racial group I belong to.	1	2	3	4	5	6	7
5.	In general, I'm glad to be a member of the racial group I belong to.	1	2	3	4	5	6	7
6.	The racial group I belong to is an	1	2	3	4	5	6	7

	important reflection of who I am.							
7.	I am a cooperative participant in the racial group I belong to.	1	2	3	4	5	6	7
8.	The racial group I belong to is an unimportant to my sense of what kind of a person I am.	1	2	3	4	5	6	7
9.	I feel good about the racial group I belong to.	1	2	3	4	5	6	7
10.	In general, belonging to a racial group is an important part of my self image.	1	2	3	4	5	6	7

APPENDIX B

modified Differential Emotions Scale (mDES)

Instructions: Please think back to how you felt during the video that you watched. Using the 0-4 scale below, indicate the greatest amount that you've experienced each of the following feelings.

Not at all	A little bit	Moderately	Quite a bit	Extremely
0	1	2	3	4

- ___ 1. What is the most amused, fun-loving, or silly you felt?
- ___ 2. What is the most angry, irritated, or annoyed you felt?
- ___ 3. What is the most awe, wonder, or amazement you felt?
- ___ 4. What is the most contemptuous, scornful, or disdainful you felt?
- ___ 5. What is the most embarrassed, self-conscious, or blushing you felt?
- ___ 6. What is the most grateful, appreciative, or thankful you felt?
- ___ 7. What is the most hopeful, optimistic, or encouraged you felt?
- ___ 8. What is the most inspired, uplifted, or elevated you felt?
- ___ 9. What is the most interested, alert, or curious you felt?
- ___ 10. What is the most joyful, glad, or happy you felt?
- ___ 11. What is the most love, closeness, or trust you felt?
- ___ 12. What is the most proud, confident, or self-assured you felt?
- ___ 13. What is the most sad, downhearted, or unhappy you felt?
- ___ 14. What is the most serene, content, or peaceful you felt?
- ___ 15. What is the most stressed, nervous, or overwhelmed you felt?

APPENDIX C

Rapid Categorization Task



Circle a number below

1
Completely
White

2

3

4
Biracial

5

6

7
Completely
Asian

APPENDIX D

Perceived Attractiveness Task



Circle a number below

1
Not at all
attractive

2

3

4

5

6

7
Extremely
attractive