When Race Matters: Racially Stigmatized Others and Perceiving Race as a Biological Construction Affect Biracial People's Daily Well-Being

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Stigmatized group members experience greater well-being in the presence of similar others, which may be driven by the perception that similar others value their shared stigmatized identities (i.e., high public regard). Using experience sampling methodology, this hypothesis is tested with biracial people (29 Asian/White, 23 Black/White, and 26 Latino/White biracial participants). This study proposes that the greater percentage of stigmatized similar others in one's daily context would predict greater daily well-being for biracial people through higher public regard, but only if biracial people believe that race has biological meaning. These findings add to a growing, but limited, literature on biracial individuals. These findings are situated within the broader literature on stigma and similar others, as well as new theories regarding the consequences of believing race has biological meaning.

Keywords: *multiracial; race; intergroup relations; experience sampling; social identity*

Social contexts determine the meaning and value of social identities (Murphy, Steele, & Gross, 2007; Turner et al., 1987; Turner, Oakes, Haslam, & McGarty, 1994; Yip, 2005) and consequently may influence daily well-being. For example, the presence of other people who share one's social identities provides a very powerful contextual cue that may determine the perceived public value of one's racial identity (i.e., public regard) and, in turn, personal well-being. Research indicates that the presence of similar others, such as those who share one's stigmatized background, predicts greater daily state self-esteem among stigmatized group members (Frable, Pratt, & Hoey, 1998). Moreover, the presence of people who have the same ethnic identity increases the prominence and the value of this shared ethnic identity (Postmes & Branscombe, 2002; Yip, 2005). Using the Experience Sampling Program (ESP; Barrett & Feldman-Barrett, 2000), Yip (2005) found that Chinese Americans reported that their ethnic identity was more salient when in a context that had a strong presence of Chinese Americans.

Previous research on the relationship between the daily presence of racially similar others and the malleability of identity meanings across contexts has only examined people with monoracial backgrounds, leaving the experiences of biracial people largely unexplored. This may be due, in part, to the complexity inherent in examining multiracial experiences. For example, when exploring identity meanings and the racial composition of daily contexts for a person of both Asian and White heritages, a researcher could investigate her Asian, White, or multiracial identity meanings. In the present study, we examine the link between biracial people's daily well-being and the presence of racially similar stigmatized others who share part of

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their racial background: the presence of same race but monoracial minorities (e.g., other Asians for Asian/White people, other Blacks for Black/White people) and the presence of other multiracial people (e.g., those of any multiracial background).

For the present study, we focused on people of biracial White descent (i.e., Latino/White, Asian/White, and Black/White biracial people). We explored the link between the presence of racially similar stigmatized others and daily well-being as well as how attitudes about the biological construction of race may moderate this link. We chose to examine biracial people not only because this population is understudied in psychological research (Shih & Sanchez, 2005, 2009) but also because racially similar others for biracial people is inherently more complex than racially similar others for monoracial populations. That is, a biracial person could consider as a similar other someone who shares (a) one of his component racial identities, (b) both specific racial identities, and/or (c) two or more nonidentical racial component identities (i.e., another person who also identifies as biracial or multiracial regardless of the overlap of his component identities). Conversely, for a monoracial person, only a person who shares his unique racial identity would be construed as a racially similar other. Thus, racially similar others for biracial people may be more theoretically interesting to examine.

In addition, because of their small population, biracial individuals may have more difficulty finding similar others who have their exact biracial background. For example, Harris (2002) found that incoming freshmen of multiracial backgrounds came from neighborhoods where only 1.8% shared their background compared to African American incoming freshmen who came from neighborhoods where 51.6% shared their racial background. This lack of similar others has been proposed to cause social isolation and lower psychological well-being, yet biracial people tend to have psychological well-being that is similar to monoracial minority populations (Shih & Sanchez, 2005). Perhaps the well-being of biracial individuals is buffered from such isolation because they reap the benefits of the presence of similar others even if those others only share part of their racial background. For example, a biracial person of Black and White descent may have positive well-being in the presence of other Black monoracial people as well as other multiracial people who simply share the experience of being multiracial rather than Black/White per se. Thus, the present study examines whether the presence of racially similar stigmatized others who share part of their racial background (not necessarily their exact racial background) predicts biracial people's daily well-being and public regard. We expected that the presence of racially similar stigmatized others would be associated with greater daily well-being and daily public regard. In addition, we expected that beliefs about the meaning of race would moderate these effects.

The Moderating Role of Beliefs That Race Has Biological Meaning

Pinker (2002), a well-known psychologist, wrote, "Some categories really are social constructions: they exist only because people tacitly agree to act as if they exist" (p. 202). Although race plays an important role in social interactions, a growing body of research demonstrates that race has little meaning outside of its socially constructed one. Contrary to what many once believed and some still do, race is not an indicator of biological traits or genetic differences between groups. Research highlights that there is far greater genetic variation within racial and ethnic groups than between them (Goodman, 2000; Zack, 1995). Despite the dearth of scientific evidence for biological differences between races, some people still believe that race has biological meaning (RB; Williams & Eberhardt, 2008). Yet few studies have examined whether believing RB affects the meaning and power of race in daily life. Using ESP, the present study examines whether RB beliefs moderate whether people show greater daily well-being and public regard in response to being with racially similar stigmatized others.

Previous work finds that viewing race as socially constructed rather than biological may make people less susceptible to the pernicious effects of racial stereotypes (Shih, Bonam, Sanchez, & Peck, 2007). After being reminded that race has no biological meaning, participants were buffered from traditional stereotype threat effects (Shih et al., 2007, Study 4). Moreover, people who are less likely to view race as biological tend to have greater comfort with interracial contexts including interest in having closer and more intimate relationships with those who do not share their racial background (Bonam & Shih, 2009; Williams & Eberhardt, 2008).

Williams and Eberhardt (2008) argue that RB beliefs cause people to perceive racial outgroups as more dissimilar, and thus, people are less interested and empathetic toward outgroup members. Following this reasoning, believing RB may also predict greater perceptions of similarity with ingroup members as well as more positive affective responses to ingroup members. We examine this possibility by examining whether RB beliefs influence biracial people's daily well-being in response to people of similar minority races. We expected that biracial people who were higher in RB would show greater daily well-being when the percentage of racially similar stigmatized others was higher, whereas biracial people who were lower in RB would show daily well-being that was less contingent on the presence of racially

similar others. Because RB beliefs are associated with less comfort in interracial interactions (Bonam & Shih, 2009; Shih et al., 2007; Williams & Eberhardt, 2008), biracial people with higher RB beliefs may have a more difficult time navigating their often interracial contexts and may hold less optimistic views of race relations. Thus, we expected that RB would also be associated with lower daily well-being overall. We also tested whether perceptions of public regard would mediate the links between the greater presence of similar stigmatized others and well-being for those higher in RB.

Public Regard as Mediator

The perception of how others value one's race—public regard—has been linked to a wide array of outcomes, including academic attitudes, coping with discrimination, self-esteem, and psychological well-being (e.g., Sellers, Caldwell, Schmeelk-Cone, & Zimmerman, 2003). These effects have been primarily found for ethnic minorities (e.g., Chavous et al., 2003; Crocker, Luhtanen, Blaine, & Broadnax, 1994). Many social identity threat theories assume that the composition of the contexts sends an implicit or explicit message about the value placed on one's social identities in a particular situation and, thus, the potential threat posed by certain social contexts (Inzlicht & Ben-Zeev, 2000, 2003; Murphy et al., 2007; Postmes & Branscombe, 2002; Purdie-Vaughns, Steele, Davies, Ditlmann, & Crosby, 2008; Sekaquaptewa & Thompson, 2003). For example, Murphy et al. (2007) showed that women who were exposed to conference videos with unbalanced gender-ratios showed greater cognitive and physiological vigilance as well as less of a sense of belonging than if they had viewed a gender balanced video. Moreover, other studies have demonstrated that having numerical minority or solo-status results in similar impairments on performance, especially on stereotype-relevant tasks (Inzlicht & Ben-Zeev, 2000, 2003; Sekaquaptewa & Thompson, 2003). In addition, Purdie-Vaughns et al. (2008) found that African American professionals trusted corporate environments more if they depicted their environments as more ethnically diverse (through photos in business pamphlets). The study demonstrated that the link between greater perceived diversity and greater trust in corporate environments was mediated by beliefs about the greater perceived value of their racial background in these corporate environments.

These findings suggest that the presence of similarly stigmatized others (women or other racial minorities) changes people's perception of whether their shared or unshared (when in solo status situations) identity is valued by others and thus changes their daily well-being. For those with high RB, the presence of racially similar stigmatized others is expected to relate to higher public regard and thus higher daily well-being. For example, Asian/White biracial people around other Asians would feel that their Asian identity was more valued if they were higher in RB. For those who are lower in RB, the presence of similar others would have a less strong association with their public regard and well-being because race carries less significance in determining similarity between the self and others.

The Present Study

Using ESP, we assess how the presence of racially stigmatized similar others (monoracial same-race minorities and multiracial minorities) affects daily well-being and public regard. We test five hypotheses:

Hypothesis 1: The presence of racially similar stigmatized others will result in greater daily well-being. For the current study, racially similar stigmatized others are considered those who share the biracial participants' minority background or multiracial background (broadly defined).

Hypothesis 2: Those who have higher RB beliefs will have lower daily well-being.

Hypothesis 3: For those who are higher in RB beliefs, the presence of racially similar stigmatized others will have a stronger link to well-being than for those who are lower in RB beliefs.

Hypothesis 4: For those who are higher in RB beliefs, the presence of racially similar stigmatized others will have a stronger link to public regard than for those with lower RB beliefs.

Hypothesis 5: The links between the presence of racially similar stigmatized others and well-being for those higher in RB beliefs will be mediated by perceptions of public regard.

In the present study we examine the following indices of well-being: self-esteem, autonomy, and relatedness. Autonomy and relatedness (along with competence) have been proposed as the main underlying basic fundamental needs of human beings; thus, we predict that autonomy and relatedness along with self-esteem will be good indices of overall life satisfaction and well-being (Baumeister & Leary, 1995; Deci & Ryan, 2000).

METHOD

Participants and Procedure

Biracial participants were recruited through advertisements and flyers from New Jersey (New Brunswick area) and California (San Francisco area) to participate in a week-long diary data collection in exchange for $50. Participants consisted of 23 Black/White, 29 Asian/White, and 26 Latino/White biracial respondents. Participants ranged in age from 18 to 55 with a mean age

of 22.87 (*SD* = 7.06; 64% women). The study had two stages: (a) the initial questionnaire and (b) the diary data collection period. Demographics and RB were assessed during the initial questionnaire. We collected the diary data using the ESP (Barrett & Feldman-Barrett, 2000). We provided participants with Palm Pilots that administered brief 5-min questionnaires at random time points for each participant throughout the day between 10 a.m. and 10 p.m. Using a signal contingent method (Bolger, Davis, & Rafaeli, 2003; Reis & Gable, 2000), we programmed the Palm Pilots to beep seven times per day for 7 days. On average, participants completed a total of 37.70 reports during their participation; some participants completed more reports than necessary because of late scheduling of Palm Pilot returns, and some completed less than necessary because they ended early or missed beeps over the course of the week. On average, people participated for 8.03 days with a range of 4-12 days. Three participants' data were not included in these analyses because of incomplete pretest data. One additional participant dropped out of the study without completing any daily reports because of a malfunctioning Palm Pilot. Alphas for all within-person questions were computed across both participants and contexts.

Pretest Measures

Viewing race as biological. We measured RB beliefs with five items based on Shih et al. (2007) administered during the initial survey in the lab setting on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale.[1] Example items include "Race biologically determines ability" and "Race biologically determines personality" (α = .82).

Importance of multiracial identity. We measured importance with the four-item importance subscale from the Collective Self-Esteem Scale (CSE-R; Luhtanen & Crocker, 1992). Example items include "Overall, my multiracial identity has very little to do with how I feel about myself" (reverse scored) and "In general, belonging to my multiracial identity is an important part of my self image" (α = .78). We included the importance subscale in post hoc analyses to rule out identification as an alternative explanation of the results for viewing race as biological.

Daily Report Measures

Psychological well-being. We assessed well-being with three measures: autonomy, relatedness, and self-esteem. We measured state autonomy using two items from previous work assessing autonomy (e.g., Deci et al., 2001; Gagné, 2003; La Guardia, Ryan, Couchman, & Deci, 2000): "Right now, I feel that I have a say in what happens and I can voice my own opinion" and "Right now, I feel free to be who I am." We assessed state relatedness using two items from previous work assessing relatedness (e.g., Deci et al., 2001; La Guardia et al., 2000): "Right now, I feel that people care about me" and "Right now, I feel that people don't seem to like me very much" (reverse scored). Finally, we measured state self-esteem using three items from the Rosenberg Self-Esteem Scale (Rosenberg, 1965): "At this moment, I feel that I have a number of good qualities," "Right now, I am satisfied with myself," and "Right now, I am inclined to think I am a failure" (reverse scored). The overall well-being measure, which was a composite of the three measures, had good internal reliability (α = .85)

Presence of Racially Similar Others and State Public Regard

Because participants had different minority backgrounds and we used the same ESP program for each participant, we branched race-related questions by assessing whether the participant was of Asian, Latino, and/or Black background.[2] For example, the prompt would read, "Is one of your biological parents of Asian descent?" If participants indicated "yes," they were asked Asian racial identity and context questions based on Yip (2005). For example, we asked participants, "Right now, how many people of Asian descent are around you (excluding yourself)? Please give your best approximation." Participants responded on a 6-point scale: 1 = *alone or none (0%)*, 2 = *almost none (1-25%)*, 3 = *less than half (25-50%)*, 4 = *about half (50%)*, 5 = *more than half (50-75%)*, 6 = *almost all (75-100%)*. Participants also indicated their public regard for their minority identity by answering the following question: "Right now, I feel that my Asian background is valued by others." We adapted this item from the public regard subscale of the CSE-R (Luhtanen & Crocker, 1992). If participants answered "no" to indicate that they were not of Asian descent, we branched them to the next racial identity question, "Is one of your biological parents of Black descent?" After participants completed questions about their minority identity, we asked them the context and identity questions about their multiracial background. Furthermore, following Yip, we included filler questions that asked participants about their gender identity, work identity, and so on to reduce demand characteristics.

Results

Descriptive Statistics

Participants completed a total of 2,943 reports indicating whether they were alone (38%), with multiracial

TABLE 1: Means and Standard Deviations of Pretest and State Variables

Variable	*M*	*SD*	*n*	*Range*
Pretest measure				
Race as biological	2.19	1.22	76	1-7
State measure				
Psychological well-being	4.05	0.72	2,821	1-5
Multiracial public regard	3.50	1.01	2,821	1-5
Minority public regard	3.59	0.96	2,758	1-5
Multiracial percentage	1.73	1.40	2,821	1-6
Minority percentage	2.13	1.80	2,758	1-6

TABLE 2: Correlations Between Pretest and State Variables

Variable	*1*	*2*	*3*	*4*	*5*	*6*
1. Race as biological	—					
2. Minority public regard	.04	—				
3. Multiracial public regard	–.01	.86**	—			
4. Minority percentage	.15	.21	.05	—		
5. Multiracial percentage	.06	.22	.20	.34**	—	
6. Psychological well-being	–.28*	.40**	.45**	.15	.20	—

**$p < .01$.

people (30%), and with people with same-component minority identity (37%). Table 1 presents the means and standard deviations for RB beliefs, psychological well-being, minority public regard, multiracial public regard, percentage of minorities, and percentage of multiracial people. Table 2 presents the correlations between these variables. Psychological well-being, all public regard variables, and all percentage variables were measured at the level of the situation rather than as individual difference variables; thus, means were estimated across individuals and across situations. Consistent with our hypotheses, RB was negatively correlated with psychological well-being. All public regard variables were positively correlated to each other and psychological well-being. Percentage multiracial was positively correlated with percentage minority present.

Analysis Plan

We used hierarchical linear modeling (Bryk & Raudenbush, 1992) to examine our nested and repeated measures design. Hierarchical linear modeling (HLM) enabled us to examine effects due to individual differences (i.e., between-person assessments measured at pretest) and situation differences (i.e., within-person fluctuations measured in daily Palm Pilot reports) simultaneously. That is, we can assess whether characteristics of the person, the context, and/or an interaction between the two influence situational-level processes.

For all HLM analyses, we used restricted maximum likelihood models. All between-person variables were *z* scored before conducting HLM analyses. Within-person variables were group mean centered (i.e., deviations from participants' own baseline) within HLM. Thus, significant within-person effects indicate differences from participants' own baselines. To control for potential demand characteristics caused by answering similar questions multiple times a day over 1 week, we controlled for order of the beep (e.g., 1st beep or 49th beep), day of the study (e.g., 1st day or 7th day), and day of the week (0 = *weekend*, 1 = *weekday*) in our analysis and in all HLM analyses (Yip, 2005). In addition, we controlled for whether the participant was alone by adding the alone variable (1 = *alone*, 0 = *not alone*); however, this variable was dropped from the analyses because it was not significant. We also controlled for the state (New Jersey, California) in which the study took place. Although participants from New Jersey interacted with greater percentages of Black ($t = 6.46$, $p < .001$), multiracial ($t = 8.85$, $p < .001$), and Latino ($t = 3.40$, $p < .01$) individuals during the duration of the study, location of the study was not a significant predictor or moderator so we dropped location of the study from the model. We also controlled for race differences and order effects by adding dummy-coded variables representing each biracial background. Both order and participant's race did not reliably predict outcomes so we dropped them from the model in all of HLM analyses.

We conducted the analyses in three steps. First, we examined the within- and between-person variance for psychological well-being to examine the degree to which it fluctuates in people's daily lives as is standard reporting procedures for HLM. To test Hypothesis 1, we examined the within-person (Level 1) effects of participants' perception of people who share one of their minority monoracial identities or multiracial identity in the context of state psychological well-being. In the same analysis, we tested Hypotheses 2 and 3 by examining whether the within-person (Level 1) effects of percentage of similarly racially stigmatized on state psychological well-being depended on between-person (Level 2) differences in RB. To test Hypothesis 4, we examined the remaining steps of mediation to examine whether public regard mediated the link between the presence of racially similar others and well-being for those higher in RB. Finally, we conducted analyses to test whether overall identity importance could alternatively explain the results found for RB by adding identification to the equations.

Preliminary Analyses: Between-Person and Within-Person Variance for Psychological Well-Being

We conducted HLM analysis without any predictors at either Level 1 or Level 2 (i.e., fully unconditional

model) to determine the within- and between-person variance for autonomy, self-esteem, autonomy, and relatedness. We used the output from these HLM analyses to compute the interclass correlation (ICC) to determine the between-person variance. The ICC is computed as $\tau/(\tau + \sigma^2)$, where τ is the variance for the intercept and σ^2 is the within-person variance. For psychological well-being, τ = .30 and σ^2 = .19, indicating that the between-person variance accounted for 61% of the total variance in psychological well-being and the within-person variance accounted for the remaining 39%. For minority public regard, τ = .45 and σ^2 = .47, indicating that the between-person variance accounted for 49% of the total variance in minority public regard and the within-person variance accounted for the remaining 51%. For White public regard, τ = .50 and σ^2 = .43, indicating that the between-person variance accounted for 54% of the total variance in White public regard and the within-person variance accounted for the remaining 46%. For multiracial public regard, τ = .55 and σ^2 = .47, indicating that the between-person variance accounted for 54% of the total variance in multiracial public regard, and the within-person variance accounted for the remaining 46%. Thus, for all of our dependent variables, a portion of the variance occurred within persons, suggesting that situational factors may influence daily variation in these constructs.

Hypotheses 1-3: RB Beliefs as a Predictor of Well-Being and Moderator of the Effect of Percentage on Psychological Well-Being

To examine both the within-person (Level 1) effect of the percentage of minority and multiracial people on psychological well-being and the potential moderation of RB (Level 2), we created an HLM model using the following equations:

Level 1 Model

$$Y = P0 + P1*(\text{Minority percentage}) + P2*(\text{Multiracial percentage}) + E$$

Level 2 Model

$$P0 = B00 + B01*(\text{Race as biological}) + R0$$
$$P1 = B10 + B11*(\text{Race as biological})$$
$$P2 = B20 + B21*(\text{Race as biological})$$

The level 2 model indicates the slopes and intercepts from the Level 1 model as outcomes. P0 refers to the effect of the between-person (Level 2) variables and their interaction on the Level 1 intercept. R0 represents the random component of the situation-level coefficient. P1 indicates the effect of the Level 2 variables and their interaction on the within-person (Level 1) slope of minority percentage. P2 refers to the effect of the Level 2 variables and their interaction on the within-person (Level 1) slope of multiracial percentage.

TABLE 3: Final Estimation of Fixed Effects From Hierarchical Linear Modeling Analyses Predicting Psychological Well-Being With Percentage of Minority Component and Multiracial Identities as Level 1 Predictors and Race as Biological as the Level 2 Predictor

		Psychological Well-Being	
Situation Level	*Individual Level*	*b*	*(SE)*
Intercept (average situation level; B00)		4.06	(0.06)***
	Race as biological (B01)	–0.17	(0.07)*
Minority percentage (B10)		0.01	(0.01)
	Race as a biological (B11)	0.02	(0.01)*
Multiracial percentage (B20)		0.02	(0.01)**
	Race as a biological (B21)	0.02	(0.01)*

NOTE: The estimates for the situational-level predictors represent the effects of those predictors across the entire sample, and the estimates for the individual-level predictors represent the effects of those predictors on the associated situation-level predictors. N = 75.
*p < .05. **p < .01. ***p < .001.

Table 3 displays the effect of the within-person changes of the percentage of people who share one's minority or multiracial identities on psychological well-being and the cross-level moderation of these effects. Consistent with Hypothesis 1, greater presence of people from their shared minority background was associated with greater well-being. Consistent with Hypothesis 2, greater RB beliefs were associated with significantly lower levels of psychological well-being across contexts. Consistent with Hypothesis 3, RB beliefs significantly moderated the effect of minority percentage on psychological well-being. Figure 1 depicts the cross-level interaction for participants at 1 *SD* above and below the mean of RB beliefs on psychological well-being. An analysis of the simple effects (Aiken & West, 1991) revealed that for participants higher in RB beliefs, the percentage of people who shared their minority component identity in the context (i.e., minority percentage) predicted greater psychological well-being (B = 0.04), $t(2,752) = 4.70$, p = .001, whereas for those lower in RB beliefs, the percentage of people who shared their minority component identity in the context did not significantly predict psychological well-being (B = –0.00), $t(2,701) = -0.02$, *ns*.

RB also significantly moderated the effect of multiracial percentage on psychological well-being. An analysis

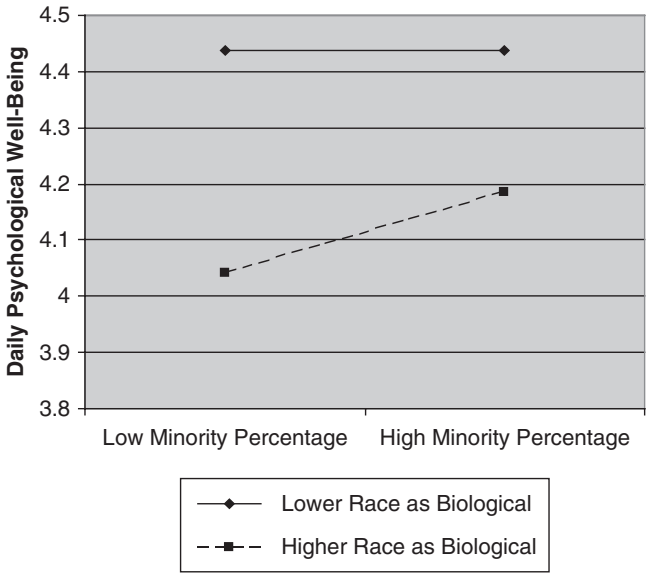

Figure 1 Effect of minority percentage on state psychological well-being by level of beliefs that race is biological.

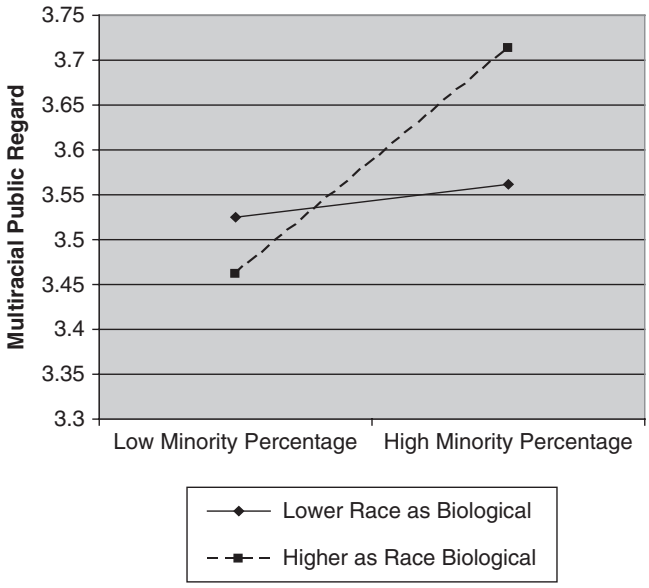

Figure 2 Effect of minority percentage on multiracial public regard by beliefs that race is biological.

of the simple effects (Aiken & West, 1991) unexpectedly revealed that for participants lower in RB beliefs, the percentage of people who shared their multiracial identity in the context (i.e., multiracial percentage) predicted greater psychological well-being (B = 0.04), $t(2,752)$ = 4.70, $p < .02$, whereas for those higher in RB beliefs, the percentage of people who shared their multiracial identity in the context did not significantly predict psychological well-being (B = –0.01), $t(2,752)$ = –0.69, *ns*.

Hypothesis 4: RB Beliefs as a Moderator of the Effect of Racially Similar Others on Public Regard

To test whether RB interacted with percentage of racially similar others to predict daily public regard (minority public regard and multiracial public regard), we used an equation similar to that for the previous analysis with each public regard variable as a separate dependent variable.

Minority public regard. Only the percentage of people who shared the participant's minority component identity in a context significantly predicted greater minority public regard (B = 0.07), $t(2,752)$ = 3.49, $p < .01$.

Multiracial public regard. Percentage of people who shared the participant's minority component identity in a context predicted greater multiracial public regard (B = 0.04), $t(2,752)$ = 2.94, $p < .01$. Consistent with Hypothesis 4, viewing race as biological significantly moderated the effect of minority percentage on multiracial public regard (B = 0.03), $t(2,752)$ = 2.28, $p < .03$. Figure 2 depicts the cross-level interaction for participants at 1 *SD* above and below the mean of RB on multiracial public regard. An analysis of the simple effects revealed that for participants higher in RB beliefs, the percentage of people who shared their minority component identity in the context significantly predicted greater multiracial public regard (B = 0.07), $t(2,752)$ = 3.07, $p < .01$. For those lower in RB beliefs, the percentage of people who shared their minority component identity in the context did not significantly predict greater multiracial public regard (B = 0.00), $t(2,752)$ = 0.07, *ns*.

Hypothesis 5: Perceptions of Multiracial Public Regard as a Mediator of the Association Between Minority Percentage and Daily Well-Being for Those Higher in RB Beliefs

Previous research indicates that perceptions of public regard may underlie comfort with similar others (and discomfort with dissimilar others; Murphy et al., 2007). Thus, we tested whether multiracial public regard mediated the relationship between greater minority percentage and greater well-being. However, we found this effect only for those who were higher in RB beliefs; thus, we expected multiracial public regard to explain the link between minority percentage only for those higher in RB. Thus, we used an integrated moderation and mediation path analysis approach (Edwards & Lambert, 2007) for investigating the relationships between RB, multiracial public regard, minority percentage, and psychological well-being. Edwards and

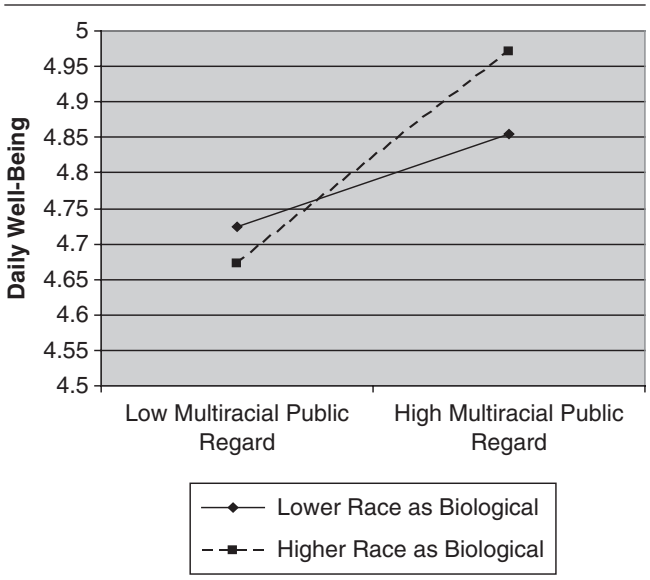

Figure 3 Effect of multiracial public regard on psychological well-being by belief that race is biological.

Lambert (2007) argue that combining moderation and mediation yield a set of path models that indicate direct, indirect, and total effects at a particular level of the moderator variable. In our case, our results suggest a direct effect and a first-stage moderation model because RB moderated both the direct effect of minority percentage on psychological well-being and the first stage of the mediation model (the effect of minority percentage on multiracial public regard). We demonstrated that the link between minority percentage and well-being was moderated by RB in the test of Hypothesis 3. We also demonstrate the moderation of the link between minority percentage and multiracial public regard by RB in the test of Hypothesis 4. In addition, in separate equations with both the interaction of minority percentage and RB and the interaction of multiracial public regard and RB as predictors of daily well-being, results indicate that the interaction of minority percentage and RB was no longer significant ($B = 0.02$, *ns*) when multiracial public regard ($B = 0.10$, $p = .001$) and the interaction between multiracial public regard and RB were included in the equation ($B = 0.04$, $p < .04$; see Figure 3). Thus, in addition to demonstrating overall mediation, we report the mediated effect of multiracial public regard on the effect of minority percentage and well-being for participants high in RB via simple slope analyses. An analysis of the simple effects revealed that multiracial public regard was a stronger predictor of well-being for those higher in RB ($B = 0.15$), $t(2,748) = 4.89$, $p < .001$, compared to those lower in RB ($B = .06$), $t(2,748) = 2.32$, $p = .02$; see Figure 3). More important, these simple slopes also suggest that for those high in RB, the link between minority percentage and well-being became nonsignificant when multiracial public regard was included.

Ruling Out Identification as an Alternative Explanation of the Results

Viewing race as biological may overlap to some degree with the extent to which individuals view their racial background as important. In support of the independence of these constructs, however, RB was not correlated with multiracial importance ($r = .03$, $p = .83$, *ns*) or minority importance ($r = -.16$, $p = .18$, *ns*). Despite these nonsignificant correlations, we tested whether the moderating role of RB in the relation between the percentage of minorities and well-being was independent of the role of identification. Level of identification, for example, could also influence the relationship between percentage of minorities in the context of well-being (Yip, 2005). Thus, we retested the HLM model to examine whether the within-person (Level 1) effect of the percentage of minority people on psychological well-being was still dependent on level of RB (Level 2) when main effects and interactions with multiracial identification (Level 2) were included. The results for RB remained unchanged. RB still predicted lower overall well-being whereas multiracial identification did not. Moreover, RB still moderated the link between minority percentage and well-being whereas multiracial identification did not. The same analysis was conducted with minority importance. The results for RB were the same. Thus, although RB and identification may both contribute to the meaning of one's identity in racial contexts, RB had an independent effect in the association between minority percentages and well-being in the daily context.

DISCUSSION

Consistent with our hypotheses, multiracial people who are high in RB beliefs have lower daily psychological well-being. Also consistent with our hypotheses, multiracial people high in RB beliefs tend to show greater well-being in the presence of others who share their minority identity, which is explained by their greater feeling that their multiracial identity is valued in these contexts. For both those higher and lower in RB beliefs, however, the presence of minorities sharing their ethnicity was associated with greater minority regard.

The finding that the presence of other minorities (e.g., Asians for Asian/White people) was associated with daily minority public regard regardless of level of RB beliefs supports our prediction that seeing other minorities makes associated minority identities feel more

publicly valued. Perceiving less value of one's minority identity in the absence of minorities may be an important mechanism in understanding why solo-status contexts and less diverse contexts are threatening and affect feelings of belonging for stigmatized group members (Inzlicht & Ben-Zeev, 2000, 2003; Murphy et al., 2007; Purdie-Vaughns et al., 2008; Sekaquaptewa & Thompson, 2003). Future research should examine the role of public regard in solo-status effects and in the daily experiences of racial minorities who do not identify as multiracial.

It is important to note that those higher in RB beliefs tend to respond more to the presence of minority monoracial individuals than do those lower in RB beliefs. For example, multiracial individuals who are high in RB beliefs tend to feel better about themselves and perceive that others value their multiracial background more when they are around more minorities that share their background. This finding builds on previous work by Williams and Eberhardt (2008) suggesting that viewing race as biological makes individuals perceive outgroups as more dissimilar. The present study suggests that multiracial people who are higher in RB beliefs may also view minority members in their ingroup as similar, and thus, presence of ingroup minority members makes them feel as though their multiracial background is valued and unthreatened. Moreover, the current findings may explain why those who are higher in RB beliefs have less diverse friendships and less comfort with those of races that are different from their own (Bonam & Shih, 2009; Williams & Eberhardt, 2008). People who are higher in RB beliefs may feel as though their racial identity is more valued and unthreatened with those of similar minority backgrounds and thus are drawn to similar others as opposed to diverse groups. The belief that racial categories and racial differences are rooted in biology may be yet another barrier to interracial contact with those who do not share similar racial backgrounds insofar as the absence of similar others implies that one's racial background is not valued.

The current study showed that RB was associated with lower daily well-being. RB may relate to negative well-being for a plethora of reasons. For example, multiracial people who have lower RB beliefs may have greater lower well-being because they feel more interracial discomfort, perceive more barriers between themselves and those of other races, and may have more pessimistic views about the future of race relations. Given that biracial people are often in interracial contexts with others who do not share their exact biracial background (Harris, 2002), having lower RB beliefs may be particularly important in navigating what are often interracial contexts.

Finally, we would be remiss if we did not discuss the unexpected finding that the percentage of multiracial people in their daily context was associated with greater well-being for those who were lower in RB. This was the only finding that suggested that those lower in RB beliefs were more affectively responsive to the presence of multiracial people compared to those higher in RB beliefs. This finding could not be explained by greater public regard for either one's minority or multiracial identity in the presence of other multiracial people because the interaction of multiracial percentage and RB did not significantly predict daily public regard. People lower in RB tend to have more interest in promoting diversity and more openness about diversity experiences (Bonam & Shih, 2009; Shih et al., 2007). Consequently, the presence of multiracial people may be "social proof" of a changing racial climate. In other words, for our multiracial participants who are lower in RB, merely seeing other multiracial people may signify that racial tensions have subsided because people are not restricting romantic partners to those of their own racial group. Thus, having more multiracial people around may be associated with more optimism about race relations and thus more positive psychological health for those lower in RB beliefs. Alternatively, these findings may also be the result of our broad definition of *multiracial*, which may have included people of completely different races and ethnicities from the participants. Participants who are lower in RB are likely to feel more comfortable in diverse environments because they are less likely to see outgroup members as dissimilar (Williams & Eberhardt, 2008). Thus, being in more diverse environments with diverse groups of multiracial individuals may have related to greater daily well-being.

Limitations and Future Directions

Important questions remain about the generalizability of the results. For example, it is unclear whether these results would apply to those who do not have a part White background or biracial heritage. Previous work, however, has demonstrated the benefits of RB beliefs for monoracial individuals (Shih et al., 2007; Williams & Eberhardt, 2008), suggesting that these findings are not likely to be unique to biracial participants.

In addition, the findings reported are correlational and therefore cannot determine causality. Thus, it is unclear, for example, whether RB beliefs caused the racial composition of the context to affect well-being. Given the previous success with altering RB in experimental designs (see Shih et al., 2007; Williams & Eberhardt, 2008), an important next step would be to experimentally manipulate RB to see whether increasing RB changes the perceived value of stigmatized identities depending on the diversity of the context. Moreover, future research should examine whether changes in RB

beliefs over time cause increases in well-being and individuals' comfort with and desire to seek out interracial contexts.

Although examining beliefs about the foundation of racial categories is important, attitudes about the categorization of race may be conflated with individual differences in the personal value and importance placed on racial categories. In the present study, we did measure importance of the participants' multiracial and minority identities. These analyses suggested that the significant results for RB persisted when controlling for these variables. These findings provide discriminant validity for the role of RB because the results found for RB cannot be otherwise explained by differences in the personal value and importance placed on one's multiracial or minority backgrounds.

In this study, we examined the effect of racial composition as perceived by the participants. This aspect of the design represents an important limitation. It is unclear from the present study whether the actual or perceived presence of minorities and multiracial individuals predicts well-being and public regard. It is possible, for example, that participants in the study erroneously categorized some individuals as multiracial or minority when in fact they were not. In particular, multiracial individuals are difficult for perceivers to categorize because they often have ambiguous physical appearances.

Research that has examined the categorization of, and memory for, multiracial faces suggests that the categorization of mixed-raced people depends on the race and age of perceivers, identity labels attached to the faces, and individual difference variables such as incremental/entity theory beliefs and levels of prejudice (Eberhardt, Dasgupta, & Banaszynski, 2003; Hirschfeld, 1995; Hugenberg & Bodenhausen, 2004; Pauker & Ambady, 2009; Willadsen-Jensen & Ito, 2006). Thus, these variables may be important moderators that can explain when and why some people perceive their racial contexts differently. Specifically, biracial perceivers tend to have more inclusive and flexible perceptions of race (Pauker & Ambady, 2009), which may have made them likely to overestimate the racial diversity of their contexts in the present study. Future studies should manipulate the diversity of the contexts to compare the effect of actual versus perceived racial composition on well-being and public regard for biracial individuals.

Finally, it is important to note that we did not distinguish between the presence of other multiracial individuals and individuals who had a multiracial background identical to the participant. We intentionally used a broader category to determine whether the presence of other multiracial people would affect biracial people regardless of the specific multiracial background. However, this may have made it more difficult to obtain effects for the percentage of multiracial individuals in the context. For example, multiracial percentage was unrelated to multiracial public regard whereas minority percentage was related to multiracial public regard. When multiracial people were asked to rate the perceived public value of their multiracial group, they may have thought specifically about their multiracial group (e.g., Black/White), but when asked how many multiracial people were present, they may have included other multiracial groups (e.g., Native American/Asian). Thus, the public value of one's Black/White identity may not correspond to the presence of, for example, people who have Native American and Asian American multiracial backgrounds. In the future research, the presence of those who specifically share their exact background should be assessed separately as well as the nature of one's relationship with these individuals (e.g., was this a family member, friend, or stranger?).

Conclusion

The present study suggests that believing that race is biologically constructed rather than, for example, believing that race is socially constructed predicts the perceived public value of race and thus the daily well-being of biracial people. As Pinker's (2002) quote suggests, racial categories persist because we consensually act as if they exist. This may be particularly true of those who have RB beliefs. Those who are higher in RB beliefs may not only act as if racial categories exist but they have more positive affective reactions toward racially similar others. In other words, people who have RB beliefs have constructed social realities that make them experience race as *real* to a greater degree than others. The belief that race is biologically rather than socially constructed appears to have costs for daily well-being and affects the meaning of racial identities in daily contexts.

NOTES

1. Although other measures were administered at the initial survey, we only report on data concerning the belief that race is biologically constructed, identification, and demographics for the present study.

2. Before conducting any analyses, the racial identity questions were cleaned to ensure that participants did not accidentally indicate responses for an identity they did not have.

REFERENCES

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.

Barrett, D. J., & Feldman-Barrett, L. (2000). *The Experience-Sampling Program (ESP)*. Retrieved July 1, 2007 from http://www.experience-sampling.org/ from

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117,* 497-529.
Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology, 54,* 579-616.
Bonam, C. M., & Shih, M. (2009). Exploring multiracial individuals' comfort with intimate interracial relationships. *Journal of Social Issues, 65,* 87-103.
Bryk, A. S., & Raudenbush, S. W. (1992). *Hierarchical linear models: Applications and data analysis methods*. Newbury Park, CA: Sage.
Chavous, T. M., Bernat, D. H., Schmeelk-Cone, K. H., Caldwell, C. H., Kohn-Wood, L. P., & Zimmerman, M. A. (2003). Racial identity and academic attainment among African American adolescents. *Child Development, 74,* 1076-1090.
Crocker, J., Luhtanen, R., Blaine, B., & Broadnax, S. (1994). Collective self-esteem and psychological well-being among White, Black, and Asian college students. *Personality and Social Psychology Bulletin, 20,* 503-513.
Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11,* 227-268.
Deci, E. L., Ryan, R. M., Gagné, M., Leone, D. R., Usunov, J., & Kornazheva, B. P. (2001). Need satisfaction, motivation, and well-being in the work organizations of a former Eastern Bloc country. *Personality and Social Psychology Bulletin, 27,* 930-942.
Eberhardt, J. L., Dasgupta, N., & Banaszynski, T. L. (2003). Believing is seeing: The effects of racial labels and implicit beliefs on face perception. *Personality and Social Psychology Bulletin, 29,* 360-370.
Edwards, J. R., & Lambert, L. S. (2007). Methods for integrating moderation and mediation: A general analytic framework using moderated path analysis. *Psychological Methods, 12,* 1-22.
Frable, D. E., Pratt, L., & Hoey, S. (1998). Concealable stigmas and positive self-perceptions: Feeling better around similar others. *Journal of Personality and Social Psychology, 74,* 909-922.
Gagné, M. (2003). The role of autonomy support and autonomy orientation in prosocial behavior engagement. *Motivation and Emotion, 27,* 199-223
Goodman, A. H. (2000). Why genes don't count (for racial differences in health). *American Journal of Public Health, 90,* 1699-1702.
Harris, D. R. (2002). *In the eye of the beholder: Observed race and observer characteristics*. Population Studies Center Research Report 02-522.
Hirschfeld, L. A. (1995). The inheritability of identity: Children's understanding of the cultural biology of race. *Child Development, 66,* 1418-1437.
Hugenberg, K., & Bodenhausen, G. V. (2004). Ambiguity in social categorization: The role of prejudice and facial affect in race categorization. *Psychological Science, 15,* 342-345.
Inzlicht, M., & Ben-Zeev, T. (2000). A threatening intellectual environment: Why females are susceptible to experiencing problem-solving deficits in the presence of males. *Psychological Science, 11,* 365-371.
Inzlicht, M., & Ben-Zeev, T. (2003). Do high-achieving female students underperform in private? The implications of threatening environments on intellectual processing. *Journal of Educational Psychology, 95,* 796-805
La Guardia, J. G., Ryan, R. M., Couchman, C. E., & Deci, E. L. (2000). Within-person variation in security of attachment: A self-determination theory perspective on attachment, need fulfillment, and well-being. *Journal of Personality and Social Psychology, 79,* 367-384.
Luhtanen, R., & Crocker, J. (1992). A collective self-esteem scale: Self-evaluation of one's social identity. *Personality and Social Psychology Bulletin, 18,* 302-318.
Murphy, M. C., Steele, C. M., & Gross, J. J. (2007). Signaling threat: How situational cues affect women in math, science, and engineering settings. *Psychological Science, 18,* 879-885.
Pauker, K., & Ambady, N. (2009). Multiracial faces: How categorization affects memory at the boundaries of race. *Journal of Social Issues, 65,* 69-86.
Pinker, S. (2002). *The blank slate: The modern denial of human nature*. New York: Viking.
Postmes, T., & Branscombe, N. R. (2002). Influence of long-term racial environmental composition on subjective well-being in African Americans. *Journal of Personality and Social Psychology, 83,* 735-751.
Purdie-Vaughns, V., Steele, C. M., Davies, P. G., Ditlmann, R., & Crosby, J. R. (2008). Social identity contingencies: How diversity cues signal threat or safety for African Americans in mainstream institutions. *Journal of Personality and Social Psychology, 94,* 615-630.
Reis, H. T., & Gable, S. L. (2000). Event-sampling and other methods for studying everyday experience. In H. R. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (pp. 190-222). New York: Cambridge University Press.
Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
Sekaquaptewa, D., & Thompson, M. (2003). Solo status, stereotype threat, and performance expectancies: Their effects on women's performance. *Journal of Experimental Social Psychology, 39,* 68-74.
Sellers, R. M., Caldwell, C. H., Schmeelk-Cone, K. H., & Zimmerman, M. A. (2003). Racial identity, racial discrimination, perceived stress, and psychological distress among African American young adults. Journal of Health & Social Behavior, 44, 302-317.
Shih, M., & Sanchez, D. T. (2005). Perspectives and research on the positive and negative implications of having multiple racial identities. *Psychological Bulletin, 131,* 569-591.
Shih, M., & Sanchez, D. T. (2009). When race becomes more complex: Towards understanding the landscape of multiracial identity and experiences. *Journal of Social Issues, 65,* 1-11.
Shih, M. J., Bonam, C., Sanchez, D. T., & Peck, C. (2007). The social construction of race: Biracial identity and vulnerability to stereotypes. *Cultural Diversity and Ethnic Minority Psychology, 13,* 125-133.
Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). Rediscovering the social group: A self-categorization theory. Oxford: Blackwell.
Turner, J. C., Oakes, P. J., Haslam, S. A., & McGarty, C. (1994). Self and collective: Cognition and social context. Personality and Social Psychology Bulletin, 20, 454-63.
Willadsen-Jensen, E. C., & Ito, T. A. (2006). Ambiguity and the time-course of racial perception. *Social Cognition, 24,* 580-606.
Williams, M., & Eberhardt, J. (2008). Biological conceptions of race and the motivation to cross racial boundaries. *Journal of Personality and Social Psychology, 94,* 1033-1047.
Yip, T. (2005). Sources of situational variation in ethnic identity and psychological well-being: A Palm Pilot study of Chinese American students. *Personality and Social Psychology Bulletin, 31,* 1603-1616.
Zack, N. (Ed.). (1995). *American mixed race: The culture of microdiversity*. Lanham, MD: Rowman & Littlefield.

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