Research Article

Essentializing Race

Implications for Bicultural Individuals' Cognition and Physiological Reactivity

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ABSTRACT—*It is a widely held belief that racial groups have underlying essences. We hypothesized that bicultural individuals who hold this essentialist belief about race are oriented to perceive rigid interracial boundaries and experience difficulty passing between their ethnic culture and the host culture. As predicted, we found that the more strongly Chinese American participants endorsed an essentialist belief about race, the less effective they were in switching rapidly between Chinese and American cultural frames in a reaction time task (Study 1), and the greater emotional reactivity they exhibited (reflected in heightened skin conductance) while they talked about their Chinese and American cultural experiences (Study 2). Taken together, these findings suggest that essentialist beliefs about race set up a mind-set that influences how bicultural individuals navigate between their ethnic and host cultures.*

The belief that realities—essences—underlie socially constructed categories such as races is widely held (Tate & Audette, 2001). How do such essentialist beliefs about race influence laypeople's psychological functioning? Previous research (e.g., Haslam & Levy, 2006; Jayaratne et al., 2006; Keller, 2005) has shown that essentialist beliefs about social groups influence perceptions of out-group members (particularly dominant-group members' perceptions of minorities). Little is known, however, about the psychological implications of such beliefs for individuals (e.g., members of ethnic minorities) who must negotiate between their native and host culture (Tsai, Mortensen, Wong, & Hess, 2002; Tsai, Ying, & Lee, 2000). Toward that end, the current investigation examined cognitive (Study 1) and physiological (Study 2) effects of racial essentialism among bicultural individuals.[1]

Prejudice may stem from the lay belief that there are underlying essentialist dispositions that give rise to the personality and behavioral characteristics of out-groups (Allport, 1954). Recent research has examined the nature of essentialist beliefs about social groups and their psychological consequences (e.g., Haslam, Bastian, Bain, & Kashima, 2006; Yzerbyt, Rogier, & Fiske, 1998). Researchers have shown that essentialist beliefs regarding social groups defined by gender, race, and sexual orientation are prevalent (e.g., Jayaratne et al., 2006; Prentice & Miller, 2006) and that holding an essentialist belief is generally associated with increased dispositional attributions to particular social groups (see Haslam et al., 2006), justification of social inequalities (Verkuyten, 2003), and endorsement of stereotypes, prejudice, and discrimination against racial minority groups (Jayaratne et al., 2006; Keller, 2005). For example, Germans who believe that race is genetically determined have more prejudice against Turkish immigrants than Germans who do not hold this belief (Keller, 2005), and White Americans who endorse a genetic lay theory of race have more prejudiced attitudes toward Blacks than White Americans who do not endorse this theory (Jayaratne et al., 2006).

Despite abundant research demonstrating a link between essentialist beliefs and prejudice (see Levy, Chiu, & Hong, 2006), little is known about how holding an essentialist belief about race influences self-processes. One intriguing question is how an essentialist belief about race may affect bicultural individuals' integration of personal experiences within their ethnic culture and the mainstream culture.

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[1]We defined "bicultural individuals" as individuals who possess knowledge of two distinct social groups, such as racial-ethnic groups (cf. Barth, 2002). As language is an important carrier of knowledge (Chiu & Chen, 2004), bilinguals tend to be biculturals (LaFromboise, Coleman, & Gerton, 1993). Accordingly, in the present research, we assumed that Chinese Americans who showed adequate Chinese and English proficiency were bicultural.

OVERVIEW

Much research has shown that the lay theories people hold about human attributes set up mind-sets within which people interpret and respond to social situations (e.g., Dweck, Chiu, & Hong, 1995). For example, it has been shown that when facing academic setbacks, people who believe that intelligence is fixed are more likely than those who believe that intelligence is malleable to show deterioration in performance and negative emotional responses (e.g., Hong, Chiu, Dweck, Lin, & Wan, 1999). Similarly, in the domain of social identity, people who believe that human character is fixed are more likely than people who believe that human character is malleable to be guided by their social identities in representing themselves and interacting with an out-group (Hong et al., 2003).

Given that an essentialist belief about race has been shown to predict intergroup perceptions, it may also set up a mind-set within which bicultural individuals interpret their bicultural experiences. Specifically, we reasoned that bicultural individuals holding an essentialist belief about race (i.e., the belief that race reflects deep biological essence, is fixed, and is indicative of abilities and traits) view their ethnic and host cultures as discrete entities and the boundary between the two as impermeable. Consequently, we expected that bicultural individuals endorsing stronger essentialist beliefs about race would experience more difficulty in passing between cultures, which in turn could be manifest in greater cognitive effort when switching rapidly between cultural frames and greater emotional reactivity when describing personal experiences with both cultures.

Study 1 investigated the effect of Chinese American participants' essentialist belief about race on their cognitive performance by using a sequential priming task (Fazio, Jackson, Dunton, & Williams, 1995). Chinese and American cultural icons served as primes to activate participants' cultural knowledge systems, and we examined how these primes affected lexical decision performance for words representing Chinese and American cultural values. We predicted that the more participants endorsed an essentialist belief of race, the greater difficulty (longer reaction time) they would display in trials that required rapid switching between Chinese and American cultural frames. Study 2 investigated the effect of Chinese American participants' essentialist belief about race on their physiological reactivity during an interview in which they were asked to talk about their personal experiences with Chinese and American cultures. We predicted that the more strongly participants endorsed racial essentialism, the more difficult it would be for them to discuss their bicultural experiences, and thus the greater electrodermal reactivity they would display (electrodermal reactivity is a measure of arousal of the sympathetic nervous system and signals increases in preparation for action in response to perceived threat; Fowles, 1988).

STUDY 1

Hong and her colleagues contend that bicultural individuals possess knowledge systems of both cultures and are capable of using one or the other system depending on their relative accessibility at the moment (Hong, Morris, Chiu, & Benet-Martinez, 2000). After priming with Chinese or American icons, Chinese American biculturals display judgments or behaviors that are typical of the activated cultural knowledge system (e.g., Hong, Chiu, & Kung, 1997; Wong & Hong, 2005), and this effect has been conceptually replicated among other bicultural groups (Ross, Xun, & Wilson, 2002; Verkuyten & Pouliasi, 2002).

In Study 1, we sought to demonstrate how essentialist beliefs about race are linked to bicultural individuals' frame-switching processes. We adopted a within-subjects design, presenting participants with Chinese, American, or neutral icons as primes on different trials, and assessed the extent to which the Chinese and American icons facilitated or inhibited (using the neutral icons as baseline) subsequent identification of words representing core Chinese and American cultural values. We predicted that the more participants believed in racial essentialism, the more they would represent the Chinese and American cultures as incompatible, discrete entities. Therefore, in trials that required rapid switching between cultural frames (American-prime/Chinese-word trials and Chinese-prime/American-word trials), stronger belief in racial essentialism would be associated with greater difficulty in identifying the target words and thus longer reaction times.

Method

Participants

Forty-seven Chinese American undergraduates at University of Illinois participated in the study to receive course credit (55% female; 43% born in the United States; mean age = 18.53). Length of residence in the United States ranged from 1 to 20 years (M = 12.24 years, SD = 6.83).

Design and Measures

Assessing Essentialist Belief About Race. To assess laypeople's essentialist belief about race, No and Hong (2005) developed a four-item measure that captures the defining features of essentialism: the belief that race reflects a deep biological essence, is unchangeable, and is indicative of abilities and traits (Haslam et al., 2006). Participants indicate on a Likert scale the extent to which they endorse each statement (1 = *strongly agree*; 6 = *strongly disagree*). Items are averaged to assess participants' endorsement of an essentialist belief about race.

We used this scale in Studies 1 and 2. In these studies, it showed high internal reliability (α = .88 in both studies). In addition, the scale was previously validated with three Asian American samples (Ns = 72, 137, and 109; No & Hong, 2005). Its convergent validity was demonstrated in studies showing that it was significantly correlated with the inherence component of essentialist beliefs (Haslam, Bastian, & Bissett, 2004; rs = .22 and .28, ps $<$ .05) and moderately correlated with endorsement of the entity theory of moral character (Dweck et al., 1995; rs from .27 to .32, ps $<$ .01) and endorsement of the entity theory of the social world (Dweck et al., 1995; r = .24, p $<$ .05). The scale's discriminant validity was demonstrated in studies showing that it was not correlated with social-dominance orientation (Sidanius & Pratto, 1999; r = .18, n.s.),[2] symbolic racism (Henry & Sears, 2002; r = −.11, n.s.), or need for cognition (Cacioppo & Petty, 1982; r = −.07, n.s.). In Studies 1 and 2 of the present research, participants' scores on the scale were not correlated with their length of residence in the United States (rs = −.06, n.s.) or with their strength of ethnic identification (rs = .02, n.s.).

Sequential Priming Task. In each trial of the sequential priming task, participants were presented with a prime followed by a string of letters and were asked to judge whether the letters were real words (Fazio et al., 1995). The experiment had a 3 (prime: Chinese, American, or neutral) × 2 (target: Chinese or American cultural value) within-subjects design.

The primes consisted of 10 pictures of Chinese and American cultural icons and 5 neutral images, most of which were used in previous studies of cultural priming (e.g., Hong et al., 2000; see Fig. 1). All the pictures were digitized at 230 × 350 pixels. Half of the target stimuli were words; half were nonwords. The 12 target words referred to core Chinese and American values and were selected on the basis of a survey of the literature (e.g., Ho & Chiu, 1994; Schwartz, 1994; Triandis, 1993). The Chinese target words were *collective*, *obligation*, *obedient*, *dutiful*, *harmony*, and *modesty*. The American target words were *individuality*, *unique*, *assertive*, *autonomy*, *freedom*, and *independent*. The nonwords were letter strings formed by scrambling the letters of the target words.

The priming task was conducted on a 300-MHz Pentium IV computer using DirectRT (2004). Stimuli were presented on a 15-in. Dell Flat Panel Monitor (E153FP). Each prime was presented for 250 ms, followed by a 100-ms interstimulus interval and then the target stimulus (i.e., stimulus onset asynchrony was 350 ms). The intertrial interval was set at 1,500 ms to prevent carryover priming effects from one trial to another.

The stimuli were presented to the participants in three blocks, for a total of 360 trials. Each of the 15 primes (5 Chinese, 5 American, and 5 neutral primes) was paired with each of the 12 target words (6 Chinese target words and 6 American target words) and the 12 nonwords once. Trials were presented to the

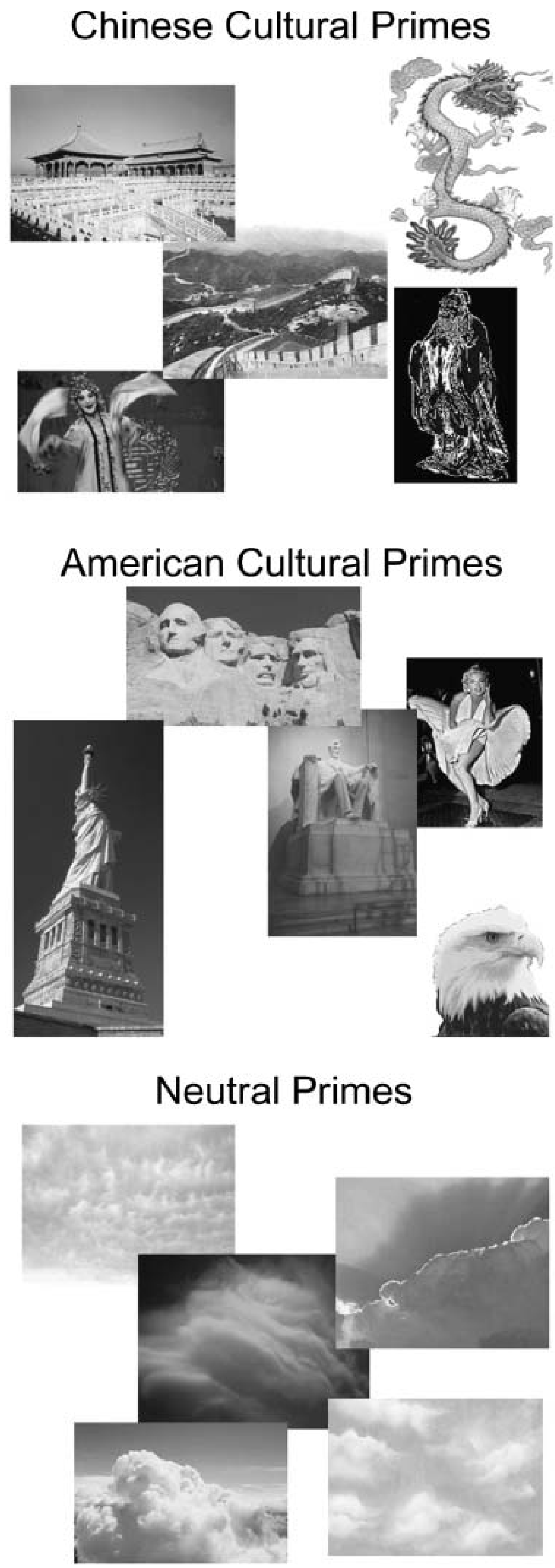

Fig. 1. **The cultural icons and neutral primes used in Study 1.**

[2]Correlations between an essentialist belief about race and social-domination orientation were significant in samples of White Americans (Ns = 109, 127, and 91; rs from .25 to .42, ps $<$ .01), suggesting that essentializing race could be a way for the majority group to justify their dominant status (Verkuyten, 2003). Thus, essentialist belief about race could lead to different outcomes for majority and minority group members.

participants in a quasi-random order (the same order was used for all participants). A 30-s break was given between blocks. Four practice trials with neutral primes and neutral targets preceded the experimental trials. None of the stimuli from the practice trials were used in the experimental trials.

Procedure

Upon arrival, each participant was seated in front of a computer in a separate cubicle. Participants were told that the experiment concerned perceptual performance and that a series of pictures would appear on the screen, each picture followed by a string of letters. Participants were instructed to identify whether each string of letters was a real word as quickly and accurately as possible, using the index and middle fingers of their dominant hand to press "1" for "yes" or "2" for "no" on a keypad. Participants' response latency between the onset of the target word and the key press was recorded. Finally, participants were asked to complete a questionnaire package in which the measure of essentialist belief about race and demographic questions were embedded.

Results and Discussion

Data Processing and Reduction

Only correct responses to words were included in the analyses (i.e., 97.98% of "yes" responses were included). Responses that were 3 standard deviations above or below the mean for each trial type (i.e., combination of prime type and target type) were also omitted (4.04%). Responses from 3 participants were excluded because of their great abnormality (more than 10% of responses were wrong or more than 10% of response latencies were greater than 3 standard deviations from the means), which suggested that the participants had not followed the instructions.

The American cultural words had much higher word frequencies than the Chinese cultural words (Leech, Rayson, & Wilson, 2001). We controlled for these initial word-frequency differences by using as the baseline participants' own response latencies for the target words when preceded by neutral primes. Baseline scores were calculated for the Chinese and American target words by taking the average response latency for each set of words across the five neutral primes. Next, we obtained priming facilitation scores by subtracting the average response latency for each set of target words after each prime type from the baseline score; thus, more positive scores indicate more facilitation, and more negative scores indicate more inhibition.[3]

Effects of Essentialist Belief About Race

The effect of endorsing essentialist beliefs about race was examined by submitting participants' facilitation scores to a Prime (Chinese or American) × Target (Chinese or American) × Essentialist Belief About Race × Length of U.S. residence repeated measure general linear model (GLM) with the last two (continuous) variables centered at the mean. Length of residence in the United States was included to rule out the alternative explanation that priming effects were due to participants' experience with American (vs. Chinese) culture. The analysis revealed a significant Prime × Target interaction, $F(1, 40) = 5.07$, $p < .05$, $\eta^2 = .11$. Responses toward American values were facilitated more when preceded by American primes ($M = 1.97$, $SE = 3.19$) than when preceded by Chinese primes ($M = -0.42$, $SE = 3.21$), $t(43) = 2.19$, $p < .05$. Similarly, responses toward Chinese values showed a trend to be facilitated more when preceded by Chinese primes ($M = 5.44$, $SE = 3.67$) than when preceded by American primes ($M = 0.79$, $SE = 3.23$), $t(43) = -1.32$, n.s.

As expected, this Prime × Target interaction was qualified by a Prime × Target × Essentialist Belief interaction, $F(1, 40) = 4.94$, $p < .05$, $\eta^2 = .11$.[4] The more strongly participants endorsed an essentialist belief about race, the longer it took (i.e., smaller facilitation scores) to respond to trials that required rapid switching of cultural frames (American-prime/Chinese-word and Chinese-prime/American-word trials), $r(44) = -.35$, $p < .05$, but essentialist belief about race was not related to reaction time for trials that did not require rapid switching of cultural frames (American-prime/American-word and Chinese-prime/Chinese-word trials), $r(44) = -.04$, n.s. (Fisher's z between the two correlations $= -2.08$, $p < .05$). This pattern of findings suggests, as predicted, that an essentialist belief about race is associated with increased difficulty in switching rapidly between cultural frames.

STUDY 2

For individuals who endorse an essentialist belief about race, discussing personal experiences in the two cultures may be highly stressful and threatening because it requires integrating the two apparently discrete cultures and reconciling some seemingly competing cultural attributes (e.g., cultural values). As a result, participants who essentialize race might be expected to show threat-related physiological responses when discussing their bicultural experiences. To test this hypothesis, we acquired data on changes in electrodermal activity (an indication of preparation for action in response to perceived threat) during an interview focused on Chinese American bicultural individuals' experiences.[5]

[3]We also conducted analyses of covariance with the baseline scores as covariates. The results were identical to those obtained using the difference scores.

[4]The significant Prime × Target and Prime × Target × Essentialist Belief About Race effects were consistent across the first- and later-generation participants (i.e., there was no interaction with length of U.S. residence).

[5]In Study 2, we also measured heart rate, which is influenced by both the sympathetic and the parasympathetic systems. An association between essentialist belief and electrodermal activity in the absence of an association between essentialist belief and heart rate would suggest that an essentialist belief about race is specifically associated with physiological preparation for action in response to anxiety or stress, rather than with other physiological changes (see Roisman, Tsai, & Chiang, 2004). As predicted, no significant heart rate effects emerged in Study 2 (mean $\beta = .02$, n.s.).

TABLE 1

Beta Weights of Essentialist Belief About Race in Predicting Increases in Skin Conductance Levels During and After the Cultural Attachment Interview (CAI)

Period	β
CAI warm-up questions ("Could you please tell me how long you have been in the United States? At what age did you come to the United States? Where did you come from? . . . Did you come to the United States with your family members? . . . Did you come to the United States to study or work? What is your major/job?")	.15
CAI content questions	
1. How do you feel about Chinese culture generally?	.22
2. Please generate five words to characterize your experiences with Chinese culture and substantiate each word with your personal stories.	.34*
3. How do you feel about American culture generally?	.34*
4. Please generate five words to characterize your experiences with American culture and substantiate each word with your personal stories.	.30*
5. Have you ever felt close to Chinese culture emotionally?	.29*
6. Have you ever felt discriminated within or rejected from Chinese culture?	.30*
7. Have you ever felt close to American culture emotionally?	.29*
8. Have you ever felt discriminated within or rejected from American culture?	.28*
9. If you were born again, would you choose to be a Chinese or an American? Why?	.30*
10. How have your experiences with the Chinese and American cultures affected your personality or the person you are now?	.30*
11. Do you have moments when you don't know whether you are a Chinese or an American?	.32*
12. Is there anything else that you would like to add?	.34*
Final resting period (during which participants were left alone in the room to relax for 3 min)	.24

Note. Participants' age, years of residence in the United States, and baseline skin conductance levels were controlled in the multiple regressions. The beta weights reflect the power of essentialist belief in predicting increases in skin conductance level relative to its level during the baseline period before the CAI. Before the first content question, participants received the following introductory instruction: ''In the following, we would like to get your view about Chinese and American cultures. We are interested especially in your personal experiences with the two cultures. We will first talk about Chinese culture and then move on to American culture.''
$^{*}p < .05$.

Method

Participants

Sixty Chinese Americans (63.5% females; 19% born in the United States; mean age = 25.84, SD = 6.97, range: 18–59) were recruited from several Asian American e-mail listings at the University of Illinois. Only participants who reported above-average fluency in reading and speaking English were included in the study. The length of residence in the United States ranged from 1 to 21 years (M = 8.26, SD = 6.82). Participants received $20 for their participation.

Measures

Essentialist Belief About Race. The four-item measure used to assess essentialist belief about race in Study 1 was used in Study 2 as well.

Cultural Attachment Interview (CAI). For the interview, we used the CAI, which examines the degree to which bicultural individuals have developed coherent narratives about their experiences in Chinese and American cultures (Hong, Roisman, & Chen, 2006). It is approximately 45 min in duration and is composed of several warm-up questions and 12 content questions (see Table 1).

Physiological Response. Pentium computers, Snapmaster Data Acquisition System (2000), and James Long, Inc. (Caroga Lake, NY), bioamplifiers were used to sample participants' electrodermal responses during a 3-min baseline, the CAI, and the 3-min final resting period. Electrodermal response was measured by skin conductance level (SCL) in microsiemens. A constant-voltage device was used to pass a small voltage between electrodes attached to the palmar surface of the last phalanxes of the second and fourth fingers of the nondominant hand.

Change in electrodermal activity was calculated by subtracting mean levels of responding during the 3-min baseline period that preceded the CAI from mean levels during each interview question. Change scores are commonly used in physiological research, and this practice has been defended conceptually and statistically (Rogosa, 1995). Nonetheless, in our analyses, we controlled for baseline levels of physiological response.

Procedure

About a week before the interviews, participants completed the measure of essentialist beliefs about race and provided demographic information. The interviews were conducted in individual sessions by a female, ethnic-Chinese interviewer and were recorded using microphones clipped on participants' clothing. At the beginning of each session, the interviewer attached surface sensors measuring skin conductance to the participant's fingers. The participant was then asked to empty his or her mind and left alone in the room for 3 min. After this baseline period, the interviewer returned to administer the CAI. Instructions about physiological measurement and the interview were administered in English.

Results and Discussion

SCL

Scores on the measure of essentialist belief about race were not correlated with SCLs during the initial baseline period, $r = .06$, n.s. For each question of the CAI, we performed a multiple regression analysis with essentialist belief about race as the independent variable and change in SCL as the dependent variable. We controlled for age, years of residence in the United States, and baseline SCL in these analyses.[6] As expected, essentialist belief about race predicted significantly heightened SCL shortly after the participants began to talk about their personal cultural experiences, an effect that was consistent from the second content question to the last question of the CAI (see Table 1). Interestingly, an essentialist belief about race did not predict SCL change during the warm-up questions or during the final rest period; this result suggests that, as predicted, an essentialist belief was linked to heightened skin conductance specifically when the participants talked about their bicultural experiences.

Correlations between essentialist belief and SCL change showed almost identical effects. We conducted Fisher's z tests to determine whether the association between essentialist belief and SCL change for each content question was significantly different from the correlation between essentialist belief and SCL at baseline ($r = .06$). Results revealed that the correlations for five content questions (2, 3, 6, 11, and 12) were significantly different from the baseline correlation (zs > 1.96, ps $< .05$), whereas the correlations for five other content questions (4, 5, 7, 9, and 10) were marginally different from the baseline correlation (zs between 1.8 and 1.9, ps $< .07$). Taken together, these findings are consistent with our prediction that the more strongly participants endorsed essentialist belief about race, the more they would show increased electrodermal response when talking about their bicultural experiences.

English Proficiency

To examine if English proficiency mediated the relation between essentialist belief about race and heightened SCL, we trained two native English speakers blind to the hypotheses to code participants' English proficiency on a scale from 1 (*not understandable*) to 7 (*sounds native*). Interrater reliability was high (intraclass correlation = .87, $p < .01$).

Correlation analyses revealed that participants' English proficiency was significantly correlated with neither their endorsement of essentialist belief about race ($r = -.20$, n.s) nor their SCL changes throughout the interview (mean $r = -.14$, range $= -.21$ to .03, all ps n.s.), suggesting that the heightened SCL for participants with an essentialist belief about race was not due to their deficiency in speaking English. Also, the findings from multiple regression analyses were essentially identical after English proficiency was statistically controlled.

GENERAL DISCUSSION

In these two studies, we investigated the implications of Chinese Americans' essentialist belief about race at two levels: cognitive responses in cultural frame switching (Study 1) and emotional reactivity when talking about bicultural experiences (Study 2). We found that the more strongly bicultural individuals endorsed an essentialist belief about race, the more likely they were to show cognitive difficulty when they had to switch rapidly between different cultural frames, and the more likely they were to show emotional reactivity when discussing matters that reminded them of their bicultural identity—that is, when its dual nature was under consideration. These results support our predictions that bicultural individuals' racial beliefs set up a framework of meaning within which they relate to their ethnic and host cultures.

In both studies, we focused on an ethnic minority group in the United States (Chinese Americans) because, given their minority status, the rigidity with which they perceived the racial boundary would influence how they negotiated their identities between the host culture and their native culture. Unlike members of the mainstream culture, individuals from ethnic minority groups are faced with the challenge of being accepted into the mainstream culture. In this context, essentializing race appears to undermine cultural frame switching and integration of bicultural experience, processes that are arguably crucial for relating to the ethnic and host cultures successfully.

That said, we are not advocating an assimilationist perspective that ethnic-minority individuals who consider racial boundaries as rigid are maladjusted in American society as a result of their failure to assimilate into the host culture. In fact, it has been suggested that essentialist discourse of race can have progressive implications for minority groups facing pressure to assimilate (Verkuyten, 2003). What we *do* posit, however, is that individuals' essentialist beliefs about race can influence how they structure their experiences in a multicultural society, and that such beliefs influence psychological processes when individuals have to deal with two apparently discrete cultures.

Although essentialism was the core of some of the pioneering theories in the field of intergroup relations (Allport, 1954), this concept has not been given the attention it deserves until recently (e.g., Gelman, 2003; Haslam et al., 2004; Prentice & Miller, 2006; Yzerbyt et al., 1998). Adding to this literature, the present research demonstrates that essentializing race hinders

[6]We also examined if participants' generational status moderated the link between essentialist belief about race and SCL change. None of the analyses showed any significant effects of generational status.

bicultural individuals' navigation between cultures. This new discovery is timely as many societies are undergoing rapid globalization and their people are being exposed to multiple cultural traditions. A critical examination of lay essentialist beliefs about social groups is crucial in understanding how such transitions can be most successfully accomplished.

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