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HOW DOES BIOLOGICAL BELIEF IN RACE RELATE TO OUR FEELINGS TOWARDS IN-GROUP AND OUT-GROUPS?: A COGNITIVE DISSONANCE FRAMEWORK

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ABSTRACT

This study considered the effect of belief in race as a biological construct (RACEBIO) and inter-group anxiety (IGA) on in-group racial salience (IGRS) and out-group discomfort (OGD). Participants included 66 racially and ethnically diverse high school boarding students. As hypothesized, RACEBIO was positively related to both IGRS and OGD. In addition, the relationship between RACEBIO and IGRS was significantly stronger among participants with high IGA. The findings support a cognitive dissonance model suggesting that people with high IGA might rationalize their in-group racial salience by strengthening their belief that racial groups are biologically distinct and socially incompatible. Implications for integrating cognitive and affective experiences in educational and clinical interventions are discussed.

HOW DOES BIOLOGICAL BELIEF IN RACE RELATE TO OUR FEELINGS TOWARDS IN-GROUP AND OUT-GROUPS?: A COGNITIVE DISSONANCE FRAMEWORK

Students in high schools frequently experience social segregation by race (Halualani et al., 2004; Rosenbloom & Way, 2004). Forming racial in-groups and out-groups may be a part of normative and healthy identity development (Helms, 1995; Tatum, 1997) as the youths develop affinity and shared understanding among same race peers (Turner, Brown, & Tajfel, 1979). However, a recent body of literature suggests that forming racial in-groups and out-groups may also be predicated on the misconstrued belief that races are biologically distinct and socially incompatible (Jayaratne, 2006; Shih, Bonam, Sanchez, & Peck, 2007; Williams & Eberhardt, 2008). Belief in presumed “natural” racial differences may relate to the ways in which people

interact with their own and different races. People who believe that “races” are biologically distinct groups – rather than socially constructed groups – may prioritize racial in-group interactions and experience discomfort in relation to racial out-groups.

Moreover, the extent to which one’s biological perception of race affects one’s social interaction with racial in- and out-group members may depend on the extent to which people are generally anxious in inter-racial group settings. The cognitive dissonance theory (CDT; Festinger, 1954) proposes that if someone has emotions/behaviors and beliefs that are incongruent, this dissonance is most easily resolved by modifying the belief system, rather than the emotion or behavior. If someone feels anxious interacting with members of another racial group, they may reduce this anxiety by “affirming” their belief that racial groups are biologically distinct and thus socially incompatible.

In this study, we examined the effect of belief in race as a biological construct (RACEBIO) on in-group racial salience (IGRS; the extent to which a person makes their race salient to their identity; Luhtanen & Crocker, 1992) and out-group discomfort (OGD; the extent to which a person feels uncomfortable in various social out-group contexts, such as dating, friendships, and social activities). In addition, we explored the effect of inter-group anxiety (IGA; Stephan & Stephan, 1985) on the relationships between RACEBIO and IGRS, and RACEBIO and OGD.

BELIEF IN RACE AS A BIOLOGICAL CONSTRUCT AND IN-GROUP/OUT-GROUP ORIENTATION

Historically, racial groups (e.g., White, Asian, Black, and Native Americans) were assumed to have immutable genetic, physical, intellectual, and moral differences (Omi & Winant, 1994). Contemporary biological and social scientists, however, concur that racial groups are socially, rather than biologically, constructed (Marks, 1996; Tate & Audette, 2001; Omi and Winant, 1994). For instance, an important argument against the biological basis of race is that there is as much genetic variation *within* a single “racial group” as there is *between* any two racial groups (Marks, 1996).

Despite the consensus among scientists that race is socially constructed, many people in our society continue to assume that race is a biological concept. Consequently, people who believe that race is biological are likely to have a greater tendency to prioritize their racial in-group and feel discomfort interacting in out-group settings. Various theories and research findings from social and clinical psychology outlined below support this proposed relationship:

- 1) Belief in race as biological suggests that racial differences are bounded, immutable, and stable across time and situational contexts (Markus, 2009). Traits and dispositions (e.g., aggression, shyness, etc.) are thought to be preserved in “the body and blood of people associated with a particular race” (Markus, 2009, p. 657). As a result, social segregation may be perceived as a “natural” order given the distinctness of racial groups from one another. Efforts to overcome initial discomfort and foster positive inter-racial group relations may be seen as futile, given the assumed lack of compatibility between racial group members. People may choose instead to remain “where they belong” within the confines of their racial in-group.

- 2) Belief in race as biological reflects a rigid, positivist mode of cognition that may provoke social discomfort. According to cognitive theory, the ways in which individuals understand or interpret events and situations “mediate how they subsequently feel and behave” (Reinecke &

Freeman, 2003, p. 229). Research suggests that rigid thinking in general—not just related to race—is related to social discomfort, as the nuances and complexity of real life scenarios require more flexible thinking (Chiarrochi, Said, & Deane, 2005; Dugas, Freeston, & Ladouceur 1997). In race-related situations, the social discomfort might be particularly notable because the variability and complexity in real life out-group settings may discord with the rigid and narrow proscriptions of biological notions of race.

3). Belief in race as biological has been empirically examined and has been found to have significant effects on people's inter-group attitudes and behaviors in general (Jayaratne, 2006; Shih, Bonam, Sanchez, & Peck, 2007; Williams & Eberhardt, 2008). Jayaratne (2006) used a random digit dialing procedure to interview 600 White Americans (participants' race was self-reported) across the U.S. and found that "biological essentialism," which was measured by a 2 item Likert scale developed for this study, was significantly related to increased prejudice towards Blacks. Shih et al. (2007) found that among 129 Non-Asian, primarily White participants, socially constructed views of race – measured by eight items assessing beliefs about race, including reversed scored items referencing the biological conception of race – buffered the negative impact of stereotype threat. Based on a study with 507 high school students, Williams and Eberhardt (2008) reported that belief in race as biological, which was measured by 22-item Likert scale, negatively predicted both willingness to initiate relationships with members of racial out-groups and actual diversity among friends.

These studies suggest that the *cognitive* belief in race as biological does influence inter-group attitudes and behavior (e.g., prejudice, willingness to interact across racial groups). Social and clinical psychology theories suggest, however, that behavior is rarely a function of one's cognition alone; rather, behavior is a result of a complex interaction between cognitions, motivations, and feelings (Aronson, 2007; Festinger, 1954). In inter-racial interactions, people's behavior is not only informed by cognitive beliefs such as racial group distinction, but it is also informed by various affective experiences such as inter-group anxiety (Stephan & Stephan, 1985). Belief in races as biologically distinct and inter-group anxiety may interact to reinforce in-group and out-group behaviors. Our study contributes to the field by exploring the ways in which cognitive belief in race as biological relates to inter-group behavior and affective experiences.

THE MODERATING EFFECT OF INTERGROUP ANXIETY: A COGNITIVE DISSONANCE MODEL

Inter-group anxiety has been defined as affective arousal related to the anticipation of negative experiences in inter-group settings (Stephan & Stephan, 1985). People who experience inter-group anxiety frequently avoid contact with individuals or groups of a different race. Inter-group anxiety may be developed through early prejudicial socialization (e.g., from parents/caretakers) or actual negative encounters with members of another race (Stephan & Stephan, 1985). It is plausible that the relationship between belief in race as biological and in- and out-group orientations is affected by the extent to which people experience inter-group anxiety. Cognitive dissonance theory, one of social psychology's most prominent theories, offers a model for integrating cognition, affect, and behavior. We adopt this theory to understand how the relationship between belief in race as biological (cognition) and in-group and out-group orientations (behaviors) may be affected by the level of one's inter-group anxiety (affect).

According to cognitive dissonance theory (Festinger, 1954), belief systems are often modified or strengthened to become congruent with an individuals' behavior or affect. In the case of our study, we expect that people who have higher levels of inter-group anxiety may rationalize their affective discomfort across groups by modifying or strengthening the belief that races are biologically distinct and socially incompatible. We tested the following hypotheses:

1. Higher levels of RACEBIO will be related to higher levels of IGRS.
2. Higher levels of RACEBIO will be related to higher levels of OGD.
3. Among participants with higher levels of Intergroup Anxiety, the relationship between RACBIO and OGD will be significantly stronger.
4. Among participants with higher levels of Intergroup Anxiety, the relationship between RACBIO and IGRS will be significantly stronger.

METHODS

Participants

Participants included 66 boarding students (26 males, 39 females, 1 unknown) from an independent, private high school in the Northeast. The average age of participants was 16.4 ($SD = 1.49$ years). The boarding student body was racially and ethnically diverse, comprised of Asian (50.8%), White (18.5%), Black (15.4%), Multiracial (12.3%), and Latino/Latina (3.1%). The majority of the Asian participants were international students from Korea and Taiwan. This study is a secondary data analysis of data gathered for a larger study examining boarding students' social/psychological outcomes before and after a mandatory, one-day workshop on race-relations. The first author and a colleague recruited participants during a visit to student dorms two days prior to the workshop.

Measures

RACEBIO was measured by four items developed for an ongoing study in progress inquiring about the biological nature of race (Tawa & Suyemoto, 2007). Items included: 1) Different races are biologically/genetically different from one another; 2) Black and White people basically have the same genetic makeup (reverse coded); 3) There are no biological differences in intelligence among the races (reverse coded); 4) There are genetic differences between the races, resulting in some races being physically stronger than others. In a preliminary analysis of these items with 80 participants, internal reliability for this scale was adequate ($\alpha = .73$).

Out-Group Discomfort was measured by three items in reference to each racial group (i.e., Asian, Black, Latino/a, White, Native American, and Multiracial): 1) I would be comfortable at a party that was at least 75% [insert specific racial group here]; 2) I would be comfortable being friends with members of the following groups; and 3) I would be willing to date a member of the following groups. These items were created specifically for this study. Reported scores were summed for each question in reference to one's out-group (i.e., every racial group *except* the racial group of the participant). For example, for an Asian participant, responses to the three items in reference to Black, Latino/Latina, White, Multiracial, and Native American were summed.

In-Group Racial Salience was measured using the identity subscale of the Collective Self-Esteem scale (Luhtanen & Crocker, 1992), which is comprised of four Likert-scaled items measuring the extent to which various group memberships (e.g., as a male, as an African American, etc.) are important to one's identity. In order to ensure that all participants were referencing their racial group memberships (as opposed to other aspects of identity), we modified the directions by asking participants to first specify their *racial group* membership and then respond to the questions in reference to their group. A sample item from the CSE identity subscale, with our modification is: "In general, belonging to my racial group is an important part of my self image."

Inter-group Anxiety was measured by Intergroup Anxiety scale (IGA; Stephan & Stephan, 1985), which is widely used to assess the level of affective arousal an individual might feel in a cross-racial interaction. On the IGA, participants are asked to rate on a scale of 1 to 10 whether they would feel more or less Comfortable, Awkward, Self-conscious, Happy, Accepted, Confident, Irritated, Impatient, Defensive, Suspicious, and Careful when interacting with members of another racial group compared to their own.

For this sample, internal reliability estimates for RACEBIO, IGRS, and IGA were adequate (see Table 1). Internal reliability for the measure of OGD was not sought because the items used depended on the race of the participant and were not consistent across all participants.

Table 1. Internal Reliability of Variables

Variable	Cronbach's Alpha
RACEBIO	.759 ($n = 60$)
IGA	.751 ($n = 56$)
IGRS	.739 ($n = 66$)

RESULTS

A correlation matrix using Pearson correlations determined primary relations between each of the study variables. Consistent with our first two hypotheses, Pearson correlations indicated that RACEBIO was strongly and positively related to out-group discomfort ($r = .492$; $p < .01$) and in-group racial salience ($r = .360$; $p < .01$).

Table 2. Bivariate Correlations among the Study Variables

	RACEBIO	IGA	IGRS	OGD
RACEBIO		.103	.360**	.492**
IGA			.087	.083
IGRS				.324**
OGD				

** correlations significant at $p < .01$

Two multiple regression analyses were conducted to test the potential moderating effect of Intergroup Anxiety on the primary relations between RACEBIO and OGD, and RACEBIO and IGRS. For these analyses, an interaction term was created by multiplying the standardized variables of RACEBIO and IGA. In both analyses, RACEBIO and IGA were entered in the first step, and RACEBIOxIGA was entered as an interaction term in the second step. In the first

model, OGD was entered as the dependent variable; in the second, IGRS was entered as the dependent variable. The second step showed a trend towards improving the model for the IGRS outcome ($t = 2.09$; $p < .05$) but not the OGD outcome ($t = .238$; $p > .05$), suggesting that IGA may moderate the relationship between RACEBIO and IGRS (see Table 3).

Table 3. Testing the moderating effect of IGA on the relationship between RACEBIO and IGRS

	B	Beta	<i>T</i>	<i>adjR</i> ²	<i>R</i> ² change	<i>F</i> change
<i>Step 1</i>				.175	.208	6.32**
RACEBIO	.458	.451	3.50**			
IGA	.037	.037	.289			
<i>Step 2</i>				.230	.068	4.38*
RACEBIOxIGA	.302	.262	2.09*			

** $p < .01$; * $p < .05$

A split file correlation was used to demonstrate the direction of the effect of intergroup anxiety on the relationship between RACEBIO and IGRS. Participants' scores on intergroup anxiety were standardized. Z-scores were then recoded as 1 (positive scores; high anxiety) and 2 (negative Z scores; low anxiety). Correlations were then run with two separate samples; the high intergroup anxiety and low intergroup anxiety samples. Among the participants with high levels of inter-group anxiety, there was a strong, positive correlation between RACEBIO and IGRS ($r = .66$; $p < .01$); however, this relationship did not exist for participants with low inter-group anxiety.

Table 4: RACEBIO and Group Orientations by Levels of Inter-group Anxiety

	Low Inter-group Anxiety (<i>n</i> = 21)	High Inter-group Anxiety (<i>n</i> = 30)
	IGRS	IGRS
RACEBIO	.005	.656**

** $p < .01$

DISCUSSION

Our study contributes to a growing body of research on the effects of belief in race as biological on various inter-group processes, and to a long tradition of cognitive dissonance research. We found that believing that race is a biological construct was significantly and positively related to discomfort with out-group members and the extent to which race was salient to one's in-group identity. We caution, however, against interpreting increased levels of in-group racial salience and out-group discomfort as necessarily "negative" inter-group outcomes. As we acknowledged at the beginning of this paper, while racism and prejudice are very real threats, creating racial in-groups could be part of a normal process of healthy racial identity development (Helms, 1995; Tatum, 1997). However, our findings do suggest that forming and maintaining a racial in-group also results from misperceptions about the concept of race as biologically determined. Multiple factors, including the related belief that racial groups are "naturally" incompatible (Markus, 2008), and the overall negative effect of rigid thinking on inter-group behavior more generally

(Chiarrochi, Said, & Deane, 2005; Dugas, Freeston, & Ladouceur 1997), could influence people to believe that race is a biological concept and that race is important in one's in-group status.

In our study, inter-group anxiety moderated the relationship between belief in race as a biological construct and in-group racial salience. The cognitive dissonance theory (Festinger, 1954) sheds light on the relationship between inter-group anxiety and in-group racial salience. If someone feels anxious interacting with members of another racial group, they may reduce this anxiety by "affirming" their belief that racial groups are biologically distinct and thus socially incompatible. The findings from this study point to the utility of cognitive dissonance theory for understanding racial and cultural group dynamics, prejudice, and racism because of the ways in which the cognitive dissonance theory integrates thought, feeling and action (Aronson, 1992) in inter-group relationships. With few exceptions (e.g., Eisenstadt et al., 2005) we are not aware of research applying cognitive dissonance theory to these areas. In today's multicultural context, further exploration of the dynamics in inter-group relationships applying the cognitive dissonance theory would be particularly helpful.

It is unclear why intergroup anxiety moderated in-group racial salience, but not out-group discomfort. One possibility might be that out-group discomfort, when compared to in-group racial salience, is more affected by additional social variables such as exclusion from out-groups, and inter-group racism. For instance, different racial groups may experience varying levels of discomfort due to explicit behaviors from out-group members in relation to the majority/minority status and power (e.g., exclusion and racism), regardless of how the individuals themselves feel in inter-group settings. Future research should examine how the intergroup anxiety moderator differently affects different racial groups.

Our findings provide important educational and clinical implications. Cognitive behavioral theories indicate that affecting change in any aspect of the cognition-affect-behavior triad could impact change in other aspects (Persons, Davidson, & Tompkins, 2001). Research suggests that people can change their beliefs about race through education, particularly didactic sessions and experiential workshops (Kahn et al., 2009; Suyemoto et al., 2009). Based on our findings in this research, we would expect that unlearning biological notions of race could contribute to more comfort interacting across racial groups and developing more inclusive in-groups. In clinical settings, cognitive behavioral therapists encourage their clients to explore their anxiety and discomfort rather than avoid such emotions, in order to create new meanings and cognitions about such experiences (e.g., the discomfort will not last forever; engaging anxiety will actually decrease anxiety rather than intensify it; Antony & Roemer, 2003; Reinecke & Freeman, 2003). Over time, this new learning enables the clients to change their behaviors and experience less discomfort.

Finally, this study had some strengths and limitations. Our hypotheses were supported with an ethnically and generationally diverse sample reflecting the increasing multiculturalism among student bodies today (Tatum, 1997). Although highly diverse, the sample was too small to examine the effect of participant differences (e.g., race, gender, generational status) on our findings. Additionally, our study was limited to a sample of adolescents, and may not be generalizable to different age cohorts. Adolescents, more than other developmental age groups, may tend emphasize social abstractions, including "race" differences and to perceive race as

immutable and biological (Quintana, 1998). Future research should examine the interactive affects of a cognitive belief in race as biological and affective inter-group anxiety on specific racial, gender, ethnic/immigrant, and age groups.

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AUTHOR'S NOTE

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