Manipulating subcategory salience: exploring the link between skin tone and social perception of Blacks

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Abstract

Guided by the model of social category salience proposed by M. Blanz (1999), the present paper explores factors affecting the salience of skin tone-based subcategories among Blacks in the United States. Adapting the group discussion paradigm developed by S.E. Taylor and colleagues (1978), Experiment 1 demonstrated that a manipulation of issue relevance enhanced the category salience of skin tone. Participants made more within- than between-category errors when the topic of conversation was related to perceiver's skin tone-based beliefs. Experiment 2 demonstrated that the influence of the issue relevance manipulation was independent of the presence of structural and/or normative fit. Merely discussing the topic of race relations was sufficient to increase encoding and use of skin tone. These studies provide evidence linking skin tone and social beliefs in memory. In addition, they demonstrate support for a category-based perspective in the study of skin tone bias. Additional factors affecting the salience of skin tone are discussed. Copyright © 2004 John Wiley & Sons, Ltd.

A great deal of social psychological theory and research has focused on the consequences of racial categorization in social perception. It is well known that people vary on numerous dimensions of phenotypic facial appearance. Racial categorization is the process by which social perceivers use these characteristics to parse the continuum of human beings into distinct, socially meaningful categories. For example, individuals categorized as 'Black' typically have dark skin colour, broad noses, full lips, short, tightly curled hair, and dark eye colour (Afrocentric features). Likewise, individuals categorized as 'White' tend to display characteristics on the opposite end of the continuum: light skin colour, narrow noses, thin lips, long, straight hair, and light eye colour (Eurocentric features). However, using these same phenotypic physical features, the social continuum may be further divided into race-related subcategories that also have social meaning and consequences. Within the range of individuals categorized as Black in the United States, darker skin tone is associated with lower levels of

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educational attainment, occupational attainment, socioeconomic status, and physical health outcomes compared to lighter skin tone (Clark, Anderson, Clark, & Williams, 1999; Hughes & Hertel, 1990; Keith & Herring, 1991; Russell, Wilson, & Hall, 1992).[1]

In order to explore these outcome differences among Blacks, we have offered the view that a category-based perspective on skin tone bias may provide a constructive framework, just as this perspective has been informative in examining the antecedents and consequences of racial bias (Maddox & Gray, 2002). The research described in this paper explores the role of skin tone variation in the mental representation of Blacks from the perspective of social psychological research on social categorization and social perception (e.g. Bodenhausen & Macrae, 1998; Brewer, 1988; Fiske & Neuberg, 1990).

SUBCATEGORIES AND BELIEFS BASED ON SKIN TONE

As suggested by the labels of the racial categories 'Black' and 'White', skin colour acts as a proxy for a collection of phenotypic features that signal racial category membership. We assert that skin colour can be used to further delineate subcategory membership within a superordinate racial category. The lightness or darkness of skin colour (tone) acts as a proxy for a configuration of phenotypic features relevant to racial subcategorization.[2] Just as reference to a Black person elicits a different representation from that of someone described as White, reference to a Black person described as having dark skin tone elicits a different mental representation from that of a Black person described as having light skin tone. Maddox and Gray (2002, Study 1) used a variant of the group discussion paradigm (cf. Taylor, Fiske, Etcoff, & Ruderman, 1978) to demonstrate that, like differences in racial category membership, differences in skin tone could be used in the encoding and retrieval of person information. Importantly, the study employed a strategy to isolate variation in skin tone from variation in other phenotypic facial features. In other words, participants were likely to encode and use the skin tone of the discussants apart from other facial features.

We also assert that these skin tone-based subcategories are not simply perceptual categories; they also convey socially meaningful information. Black Americans' social discourse suggests that within-race variation in skin tone is a very important feature, sufficient to elicit various stereotypes and in differential treatment of Blacks (Maddox & Gray, 2002; Russell et al., 1992). Several studies have demonstrated that light- and dark-skinned Blacks differ in their level of racial identity, their experience with discrimination, or their social and political attitudes concerning race relations (Brown, Ward, Lightbourn, & Jackson, 1999; Edwards, 1973; Hughes & Hertel, 1990; Ransford, 1970; Seltzer & Smith, 1991). A second study from Maddox and Gray (2002, Study 2) employed a trait-listing task to demonstrate that participants were aware of cultural stereotypes associated with light and dark skin tone. Trait listings for dark-skinned Blacks were more negative and more consistent with the cultural stereotype of Black Americans than trait listings for light-skinned Blacks. As viewed through the lens of this stereotype, dark-skinned Blacks are more likely to experience negative treatment and outcomes (Blair, Judd, Sadler, & Jenkins, 2002; Livingston & Brewer, 2002; Maddox & Gray, 2002).

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[1] For terminological clarification, we use the term skin tone to refer to within-race variation (dark and light). In contrast, we use the term skin colour to refer to between-race variation (e.g., Black and White).
[2] We do not deny the importance of other phenotypic features, but we believe that skin tone is the most important feature in this phenomenon. For example, hearing a target described as having a broad or narrow nose is unlikely to elicit stereotypic knowledge to the same extent as a target described as having dark or light skin.

Linking Subcategories with Beliefs

This perspective is contingent upon establishing the validity of two hypotheses. First, variation in skin tone represents a meaningful cue distinguishing subcategories of the racial category 'Blacks'. Second, these subcategories are associated with socially meaningful beliefs that guide social perception. Together, the studies reported by Maddox and Gray support a link between subcategories based on skin tone and corresponding beliefs. However, evidence for this relationship remains tenuous due to the fact that it comes from two studies using different paradigms rather than a single study. Evidence for the category salience of skin tone was gained from the group discussion paradigm used in Study 1, but evidence for stereotypic associations was provided by the trait-listing task used in Study 2. Because perceivers are able to report beliefs differentiating light and dark skin tone when asked does not mean that these beliefs are activated in the presence of group members. In addition, while the group discussion task included controls for the role of other phenotypic features, the trait-listing task does not control for the influence of other phenotypic features. The instructions referred only to skin tone (i.e. light-skinned Black males, dark-skinned Black males), but this does not preclude participants from thinking about other physical features that are perceived to vary with skin tone. Therefore, it is unclear whether variation in skin tone alone is sufficient to activate this representation. With these limitations in mind, the current experiments continue to explore skin tone as a cue for within-race categorization. Specifically, they examined the link between skin tone and social beliefs in the mental representations of perceivers.

DETERMINANTS OF CATEGORY SALIENCE

In the current experiments, we employed a group discussion paradigm that has been used to demonstrate the link between categories and category knowledge. A collection of individuals may be categorized on a variety of dimensions. However, some dimensions are more likely to be used than others. Blanz (1999) presented a model of category salience that is helpful for thinking about the link between categories and beliefs in the group discussion paradigm. In this model, he specified person factors (characteristics that a perceiver brings to a context) and situational factors (characteristics that are present in a particular context) that determine the salience of a potential category cue. The model posits that the likelihood of a given categorization being used in a situation is determined by the interaction between the *situational accessibility* of that category and the *perceived fit* of the category to the target (cf. Bruner, 1957; Oakes, 1987).

Factors Affecting Situational Accessibility

The situational accessibility of a category is a function of the chronic or long-term accessibility of the category for the perceiver and any aspects of the immediate situation that affect temporary accessibility. The more accessible a potential categorization is, the more likely it will be used in a given situation. So, if a person has a long history of seeing the world in terms of Blacks and Whites, or if the immediate context supports that particular racial categorization regardless of the individual's long-term tendencies, situations are more likely to be viewed through the lens of race.

Factors Affecting Perceived Fit

Perceived fit is a function of a perceiver's stored category stereotypes (perceived similarities within categories and differences between categories) and the degree to which the observed behaviour

matches this knowledge. As the perceived stereotype differentiating the group members grows stronger, the salience of that category in the social context will increase. A person who sees large differences between Blacks and Whites will be more likely to view a situation as a function of race, particularly if the behaviour conforms to stereotypic knowledge about Blacks and Whites (e.g. Blanz & Aufderheide, 1999).

CATEGORY SALIENCE AND SKIN TONE

The accessibility × fit formulation has implications for the current experimental question by positing that category salience may be enhanced by activating a perceiver's category stereotypes. When a categorization becomes more accessible, or when a target's behaviour is perceived to fit with stereotypes associated with a potential categorization, that categorization becomes more salient and more likely to be used. There is, however, a caveat. Some categorizations, such as race and sex, tend to be used across a variety of contexts (high chronic accessibility), while the use of others is much more dependent on the specific context (low chronic accessibility). Prior research has demonstrated that manipulations designed to activate perceivers' stereotypic knowledge in the context of a group discussion do not affect the salience of categories with high chronic accessibility like race and sex (Hewstone, Hantzi, & Johnston, 1991; Jackson & Hymes, 1985). Unlike race or sex, we suspect that skin tone is a categorization with relatively low chronic accessibility. Thus, a manipulation designed to recruit beliefs about skin tone should increase the category salience of skin tone.[3] Evidence of this nature would provide strong support for a category-based view of skin tone bias by linking category knowledge with skin tone: the proposed basis of categorization.

EXPERIMENT 1

Hypotheses and Predictions

According to the accessibility × fit formulation, if perceivers hold socially meaningful beliefs differentiating light- and dark-skinned Blacks, then a context that makes these beliefs relevant should increase the category salience of skin tone. We used the aforementioned group discussion paradigm to test this hypothesis. Participants watched a simulated discussion among three light-skinned and three dark-skinned Black males. Furthermore, we took steps to isolate skin tone as a causal cue apart from variation in other phenotypic facial characteristics. Later, participants were given a surprise memory task in which they matched the discussants with the statements that each made. Category salience was measured by a comparison of within- versus between-category errors made in the matching task. More within- than between-category errors suggests that perceivers are encoding and using skin tone as an organizing principle in their statement assignments. Thus, we predicted that the difference between within- and between-category errors should be larger when the discussion topic is high relevance as opposed to low relevance. This pattern of data would provide evidence for the category-based perspective presented above.

For the purposes of comparison, we included conditions in which either the race or the skin tone of the discussants was varied. Compared to skin tone, race is a chronically accessible categorization cue

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[3]As noted by Blanz (1999), a number of studies have demonstrated that the salience of categories with relatively lower accessibility may be enhanced through priming manipulations (e.g. van Knippenberg, van Twuyver, & Pepels, 1994; van Twuyver & Van Knippenberg, 1995).

used across a variety of contexts—independent of manipulations designed to increase its accessibility. Therefore, we should not see this pattern of accentuation when the discussants vary in racial category membership. We also made an exceptional effort to recruit Black participants in order to compare their responses to skin tone variation with those of White participants.

Method

Participants

Two hundred thirty-two Tufts University students (152 females and 80 males) participated in an experiment described as examining first impression formation. The sample included 49 African American, 34 Asian American, 119 European American, 12 Hispanic American, one Native American, and 17 multiracial students (self-identified). Most students were recruited from the introductory psychology participant pool and received partial course credit for their participation. The remaining (mostly African American) participants were recruited using flyers placed in African American student housing and requests in courses with higher concentrations of African American students. These participants each received $10.00 compensation.

Design

The experiment used a 2 (Discussion Composition: race or skin tone) × 2 (Issue Relevance: low or high) between-subjects design.

Materials

In total, 15 head-and-neck colour photographs of males were used as stimuli for the discussion composition manipulation (described below). Six of the photographs of Blacks were digitally manipulated to provide a darker or lighter skin tone than that of the original photograph (Maddox & Gray, 2002). This manipulation resulted in 12 photographs of Blacks—six light-skinned and six dark-skinned. These photos were used in the skin tone conditions. Three additional photographs of Whites were used with three of the (unaltered) Black photographs in the race discussion composition condition. As a criterion for inclusion, photographs of Blacks used in the experiment were spontaneously categorized as 'Black' by greater than 90% of a group of pretest participants. Two sets of 24 statements, described below, were used to reflect opinions expressed in the discussion. The length of the statements, ranging from six to 15 words, was loosely matched across issue relevance conditions (described below).

Procedure

The procedure closely followed that of Maddox and Gray (2002). Small groups of one to four participants were greeted by the experimenter and directed to separate computer workstations. After granting consent, participants began the experiment by reading the instructions displayed on the computer screen. The instructions informed the participants that they would be viewing a group discussion simulated on a computer and that their task was to form impressions of the discussants.

The computer simulated a discussion among a group of men by presenting a photograph of one of the discussants above a statement he made. Each photograph/statement pair was presented for 8 s. The computer automatically advanced to the next statement and discussant until all statements were

displayed. Six men took part in the discussion—each made four statements. The pairing of statements with discussants was varied across the different replications.

Discussion Composition Manipulation   Each participant was randomly assigned to one of the four conditions in the study—one race condition and three skin tone conditions (replications). The discussants in the race condition were three Black and three White men. Each of the Black men in this condition had moderately dark skin tone. The discussants in the skin tone condition were all Black men, however three had light skin tone and three had dark skin tone. The skin tone condition included three replications. Each replication consisted of the same six individuals, but differed in terms of which discussants had light or dark skin. For example, if Discussant 1 had light skin in Replication 1, he was displayed with dark skin in at least one of the remaining replications. When collapsing across the three replications, this procedure effectively controls for the influence of variation in other facial features and isolates skin tone as a causal variable (Maddox & Gray, 2002).

Issue Relevance Manipulation   Two sets of 24 statements reflected opinions and ideas expressed in the discussion. Participants were randomly assigned to one of two conditions. In the *low relevance* condition, statements focused on potential activities for a summer day (e.g., 'We should decide what we're going to do today', 'I heard a lot of people are going to the game.'). In the *high relevance* condition, statements focused on the future of Black/White race relations in the United States. This discussion included statements that were optimistic, pessimistic, and neutral concerning this future. (e.g. 'Race relations may improve over time if we're patient', 'There will never be a time when mainstream society views Blacks as equals', 'I have to agree; race relations are not just a 'race thing', it's economic too.'). A similar issue relevance manipulation has been used in prior research to investigate increases in the category salience of race (Hewstone et al., 1991). As described above, prior research suggests that this topic is also related to category knowledge concerning skin tone. Thus, this discussion topic is hypothesized to be relevant to perceived differences between light- and dark-skinned Black males.

Upon completion of the discussion phase, participants completed a 90-s filler task that consisted of listing as many of the 50 United States of America as possible. This task was intended to eliminate potential recency effects in memory. The final phase of the experiment was a surprise memory task. This task required participants to attempt to match each statement with the photograph of the discussant who made the statement. Each statement was presented one at a time below a numbered array of photographs of the six discussants. The participant's task was to type the number corresponding to the photograph of the person who made the statement. The presentation order of the statements during the matching phase was random, continuing to the next statement only after participants had chosen a discussant. After the matching task, participants completed a post-experimental questionnaire that probed for suspicion of the experimental hypotheses and a demographic information sheet including a question about racial category membership. Participants were then debriefed, thanked for their participation, and dismissed.

Dependent Measures

The dependent measures were the number of within- and between-category errors made in the statement-matching task.

Results

Category Salience

Examination of the pattern of within- and between-category errors provided the test of the hypothesis that perceivers represent social targets as a function of category memberships. A correction is

necessary in comparing the number of within- and between-category errors in this paradigm (Taylor et al., 1978). Using this discussion composition (two categories comprised of three individuals each), the baseline likelihood of a between-category error exceeds the likelihood of a within-category error by one-third. To adjust for this baseline imbalance, the raw number of between-category errors was multiplied by two-thirds. Throughout the remainder of this paper, the adjusted between-category errors are referred to as between-category errors.

Our predictions for the effects of issue relevance on category salience were tested with a 2 (Discussion Composition) × 2 (Error Type) analysis of variance (ANOVA) with repeated measures on the last factor.[4] Results revealed the predicted main effect for Error Type, $F(1, 210) = 101.17$, $p < 0.0001$ $\eta^2 = 0.33$. Participants made a greater number of within- than between-category errors when matching statements to discussants ($M_{\text{within}} = 6.74$ vs. $M_{\text{between}} = 4.27$). Also as predicted, there was no significant interaction between Error Type and Discussion Composition ($F < 1$), suggesting that this error difference occurred when the discussants varied by race and by skin tone. With respect to the major hypothesis, the pattern of within- and between-category errors did vary as a function of Issue Relevance, $F(1, 210) = 33.93$, $p < 0.001$ $\eta^2 = 0.14$. We examined this interaction with simple effects tests comparing an index of category salience (within-category errors minus between-category errors) in the low relevance condition to that in the high relevance condition. The means are presented in Table 1. Results confirmed that category salience was greater when the discussion topic concerned race relations ($M_{\text{diff}} = 4.09$) than when the discussion topic concerned activities ($M_{\text{diff}} = 1.16$).

The interaction described above was not qualified by discussion composition, suggesting that increased category salience occurred in both the race and the skin tone composition conditions. To explore this further, we conducted separate planned comparisons examining the influence of the issue relevance manipulation on category salience in both the race and skin tone discussion composition conditions (see Table 1). The results confirm that the issue relevance manipulation increased category salience in the skin tone conditions ($t(142) = 6.10$, $p < 0.0001$) and in the race conditions ($t(86) = 3.09$, $p < 0.01$). Simple effects tests revealed that category salience was evident in all of the conditions (all p's < 0.05).

Finally, a main effect of Issue Relevance ($F(1, 124) = 6.96$, $p < 0.01$, $\eta^2 = 0.05$) indicated that participants made more errors in the high relevance condition (M = 6.11) than in the low relevance condition (M = 4.91).

Table 1. Category salience index (within- minus between-category errors) as a function of discussion composition and issue relevance in Experiments 1 and 2

	Issue Relevance	
Discussion composition	Low	High
Experiment 1 ($N = 232$)		
Race (Black/White)	1.46_a	3.68_b
Skin tone (light/dark)	0.85_a	4.49_b
Total	1.16_a	4.09_b
Experiment 2 ($N = 95$)		
Skin tone (light/dark)	0.22_a	1.39_b

Note: Means in the same row with different subscripts differ at the $p < 0.05$ level.

[4]Initial analyses comparing the responses of African American and European American participants did not reveal any significant interactions involving the race of the participants. Accordingly, this factor was dropped and the data from the remaining participants were included in the analyses.

Discussion

Consistent with the main hypothesis, the pattern of findings suggests that a manipulation of issue relevance made skin tone more accessible when this potential categorization was available. When the topic of the discussion was race relations (as opposed to potential activities), perceivers were more likely to encode and organize the discussants as a function of skin tone. The model of category salience proposed by Blanz (1999) states that a manipulation of issue relevance enhances category salience by activating a perceiver's stored beliefs about a potential basis of categorization. We propose that this occurred in the present experiment because of our participants' beliefs about light- and dark-skinned Blacks. The current study also controls for the role of other phenotypic features of the face. Accordingly, the evidence supports a category-based view of skin tone bias. When considering Blacks, variation in skin tone acts as a proxy for variation in phenotypic appearance. Thus, skin tone variation alone is sufficient to elicit subcategory-based knowledge.

Unexpectedly, we found evidence that the issue relevance manipulation increased the category salience of race. This finding contradicts prior attempts to increase the category salience of race in this paradigm through a manipulation of issue relevance (Hewstone et al., 1991). It is unclear why this may have occurred. According to the model proposed by Blanz, categories like race that have high levels of chronic accessibility should be unaffected by manipulations designed to increase situational accessibility (Blanz, 1999; Hewstone et al., 1991; Stangor, Lynch, Duan, & Glas, 1992). However, some evidence suggests that the accessibility of race can be decreased through experimental manipulations in this paradigm (Kurzban, Tooby, & Cosmides, 2001; Stangor et al., 1992). Based on the current focus on skin tone, we make no strong claims about these data, other than to suggest that future investigations may shed more light on the susceptibility of chronically accessible categories to experimental manipulations.

In addition, the results indicate that the influence of the issue relevance manipulation on the category salience of skin tone and race was evident in this racially and ethnically diverse sample of participants. This is consistent with prior evidence suggesting that both Black and White participants represent Blacks as a function of skin tone and are aware of cultural differences between light- and dark-skinned Blacks (Maddox & Gray, 2002). While not an empirical focus, these data also suggest that participants from other racial and ethnic categories may notice and use skin tone in this discussion context.

Consistent with the model of category salience developed by Blanz (1999), we propose that certain topics may activate category knowledge distinguishing the discussants, thereby increasing the accessibility of the proposed categorization. But how do we know that the high relevance discussion increases category salience by activating category knowledge?[5] Experiment 2 addressed an alternative explanation for the increases in category salience observed in Experiment 1.

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[5]One alternative explanation for the results is the possibility that some characteristic or characteristics of the statements themselves (other than issue relevance) led to the observed increases in the category salience measure. Accordingly, it is possible that the pattern of errors had little to do with the fact that the context was relevant to the category membership of the discussants. Therefore, the same discussion topic manipulation should not impact category salience if it is perceived to be neutral to the available category dimension. In another experiment, we used the potential activities and race relations discussions from Experiment 1 in conjunction with a category distinction that was unrelated to both. The photographs of the six discussants were replaced with letter and number combinations (A1, A2, A3, B1, B2, B3). Results revealed that the salience of the A/B category distinction was not influenced by the discussion topic manipulation. We point to this as evidence that the category salience effects observed in Experiment 1 were not due to characteristics of the discussion statements themselves. Rather, an interaction between the statements in the race relations discussion and our perceivers' distinct expectancies about light- and dark-skinned Blacks accounted for the increased levels in category salience observed.

EXPERIMENT 2

Structural vs. Normative Fit

In her discussion of the accessibility × fit formulation, Oakes (1987) distinguished between various types of target/behaviour fit. *Structural* fit (also referred to as comparative fit) occurs when the available categorization covaries with the target's behaviour. A group of Blacks and Whites expressing opinions about a race-neutral university programme represents structural fit when the members of one group express opinions that contradict the opinions expressed by members of the other group (e.g. a discussion in which Blacks express approval and Whites express disapproval of a university fundraising programme). Structural fit becomes *normative fit* when this covariation also conforms to the content of the perceiver's stereotypes (e.g. a discussion in which Blacks express approval and Whites express disapproval of a university Affirmative Action programme).[6] In the model proposed by Blanz (1999), either type of fit may be sufficient to make a category with low chronic accessibility more salient in the group discussion paradigm. The absence of fit makes the category less accessible. In fact, manipulations of structural and normative fit have demonstrated that increasing levels of either one are associated with higher category salience (e.g. Blanz & Aufderheide, 1999).

Implications of the Accessibility × Fit Formulation

The central argument explored in Experiment 1 is that category-based expectations about skin tone accounted for the increased level of category salience observed when the topic of the discussion was relevant to the skin tone of the discussants. However, the consideration of structural and normative fit poses some problems for this interpretation. In Experiment 1 the activity statements made by the discussants in the low relevance conditions were not created to reflect clear opinions along a single, easily definable dimension. This suggests the absence of both structural and normative fit. For example, the low relevance discussion could have centred on a single issue (e.g. Should we engage in an outdoor activity?). In contrast, the race-relations statements in the high relevance conditions did reflect a single, easily definable dimension (Are race relations going to get better or worse?). In this case, however, the issue of structural and normative fit is unclear. There was no effort to control the number of optimistic and pessimistic statements, nor did we attempt to distribute the proportion of these statements evenly across the six discussants. Because these factors were not controlled experimentally, there may have been greater or lesser degrees of structural and normative fit across different conditions. Consequently, it is possible that the presence or absence of structural or normative fit led to increases in category salience apart from any relationship to perceivers' stereotypic expectancies about light- and dark-skinned Blacks.

To control for this possibility, Experiment 2 replicated the conditions of Experiment 1 in which light- and dark-skinned Black males discussed a high relevance or low relevance topic. This time, however, we exerted greater control over the aspects related to perceived fit. First, both discussions included statements that reflected opinions along a single, easily definable dimension (optimism/pessimism). Second, each discussion included equal numbers of optimistic and pessimistic statements. Third, we insured the absence of structural or normative fit; there was no covariation between category membership and position espoused. Since there is neither structural fit nor normative fit in either

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[6]The model also describes situations of counter-normative fit: when covariation between behaviour and category membership is in the opposite direction to that proscribed by the perceiver's stereotypes (e.g. Blacks expressing disapproval and Whites expressing approval for a university Affirmative Action programme).

condition, we can explore whether a high relevance discussion topic alone is sufficient to enhance the category salience of skin tone.

Method

Participants

Ninety-five Tufts University students (72 females, 23 males) were recruited from the Introductory Psychology participant pool and received partial course credit for their participation. The sample included eight African American, 17 Asian American, 4 European American, 11 Hispanic American, and 11 multiracial students (self-identified).

Design, Materials, and Procedure

The design, materials, and procedure were similar to those implemented in the first experiment, with several differences outlined below.

Discussion Composition   The race composition condition was eliminated, leaving only one discussion composition of six Black males who varied in skin tone. In addition, we used different faces from those used in the first experiment. As in that study, each of the faces was altered digitally with a computer to produce both lighter and darker versions, while still being categorized as 'Black' to a 90% criterion in pretesting. These faces were used in three different replications that, when collapsed, allowed us to examine the role of skin tone variation apart from variation on other phenotypic facial characteristics.

Discussion Topic Manipulation   Two separate discussions were constructed. The high relevance discussion topic was, again, the future of race relations in the United States. A subset of 18 statements was chosen from the set of 24 used in Experiment 1. The low relevance topic—the future of the environment in the United States—differed from that used in Experiment 1. Each discussion consisted of statements that varied in valence (six optimistic, six pessimistic, and six neutral). The statements were edited to make them fairly equal in length both within and between issue relevance conditions. The discussions were constructed so that each discussant made one optimistic, one pessimistic, and one neutral statement concerning the future of race relations (or the environment). Specific pairings of statements and individuals were varied across the three skin tone replications, maintaining the lack of covariation between category and attitude espoused. As a result, there was no structural or normative fit between category membership and the observed behaviour.

   As in the previous experiments, the discussion was presented to participants at a rate of one photograph/statement pairing every 8 s. However, due to the smaller number of statements, the filler task after the presentation stage was lengthened from 90 to 180 s. The nature of the task was changed as well. Rather than spending the time attempting to think of the fifty United States, we asked our participants to spend the time counting backward from 500 by seven. Participants recorded this information by hand on a separate sheet of paper.

Dependent Measures

As in prior studies, participants completed an unexpected matching task where within- and between-category errors were recorded. As manipulation checks on issue relevance and perceived fit,

participants were asked to answer three questions about each discussant using a Likert-type scale. One concerned the level of optimism or pessimism that discussants displayed during the conversation (1—Very optimistic, 5—Very pessimistic). The second examined the participants' beliefs about the discussants' past experiences. In the race relations condition, this question asked about the discussants' experiences with racial discrimination. In the environment condition, the question asked about the discussants' experiences with environmental issues. Both questions measured these assessments using the same scale (1—A lot less than most people, 5—A lot more than most people). A third question asked participants to what extent they believed that the person's statements during the discussion reflected his past experiences (1—Completely, 5—Not at all; reverse scored).

Results and Discussion

Manipulation Checks

Participants' ratings of each discussant's level of pessimism, past experiences, and influence of past experiences on current opinions were aggregated and averaged by skin tone (the latter was reversed scored so that higher ratings indicated greater influence). Average ratings for light- and dark-skinned discussants were analysed using separate 2 (Issue Relevance) × 2 (Skin Tone of Discussant) ANOVAs with repeated measures on the second factor. A main effect for Issue Relevance was revealed in participants' ratings of past experience, $F(1, 93) = 13.40$, $p < 0.001$, $\eta^2 = 0.13$. This suggests that the discussants were perceived to have more experience with racism than environmental issues ($Ms = 3.55$ vs. 3.23, respectively). A main effect for Issue Relevance also surfaced for the influence question, $F(1, 93) = 8.30$, $p < 0.01$, $\eta^2 = 0.08$. Past experiences were seen as more likely to influence statements made in the race relations discussion than those made in the environment discussion ($Ms = 3.24$ vs. 2.96). These effects confirm that participants saw the topic of race relations as more relevant to the discussants than the topic of the environment. There were no significant effects involving skin tone for any of the variables. In terms of optimism/pessimism, this outcome suggests that the absence of normative fit was evident to the participants. With respect to past experience, we might have seen differences based on participants' prior skin tone-based expectancies. However, given the lack of structural and normative fit in the present discussion, it appears that judgments were based on the information presented rather than prior expectancies (e.g. Locksley, Borgida, Brekke, & Hepburn, 1980). Finally, participants saw past experience with discrimination as equally relevant to the statements of light- and dark-skinned Blacks.

Category Salience

We performed the same transformation to the error scores as described in Experiment 1. A 2 (Issue Relevance: low or high) × 2 (Error Type: within and between) ANOVA with repeated measures on the second factor revealed a significant main effect for Error Type, $F(1, 93) = 7.71$, $p < 0.01$, $\eta^2 = 0.08$. This main effect was qualified by an Error Type by Issue Relevance interaction, $F(1, 93) = 4.05$, $p < 0.05$, $\eta^2 = 0.04$. To examine this interaction, we created a category salience index. The means are displayed in the last row of Table 1. This index was not significantly different from zero when the topic of the discussion was the environment; $M_{within} = 5.50$ vs. $M_{between} = 5.28$, t (47) = 0.542, ns. In the absence of structural or/normative fit, there was no evidence that skin tone was encoded and used in matching statements about the environment to discussants. As predicted, the category was salient when matching statements about race relations to discussants; $t(46) = 3.38$, $p < 0.001$. Participants

made a greater number of within-category errors ($M_{within} = 6.26$) than between-category errors ($M_{between} = 4.87$). Thus, even in the absence of structural or normative fit, a topic that recruits perceivers' expectancies associated with the discussants was sufficient to increase the salience of skin tone. The results support the hypothesis that increased category salience in Experiment 1 was due in part to increases in situational accessibility of skin tone rather than increases in perceived structural or normative fit. However, an examination of the means in Table 1 suggests that category salience without structural or normative fit is relatively small compared to that observed in Experiment 1. Procedural differences across the two studies makes this comparison tentative, but the findings are consistent with prior research indicating that the perception of structural or normative fit may augment category salience (Blanz & Aufderheide, 1999).

GENERAL DISCUSSION

These results are consistent with the category-based perspective on skin tone bias adapted from research and theory examining racial categorization (Maddox, in press; Maddox & Gray, 2002). Thus, the present results demonstrate that our tendency to divide the continuum of phenotypic facial variation into distinct racial groups may be complemented by a tendency to make even finer, socially meaningful distinctions within racial categories using the same phenotypic features. Furthermore, category salience of skin tone was enhanced when controlling for variation on other phenotypic facial characteristics believed to vary with skin tone. This suggests that skin tone was a sufficient cue to activate this category knowledge. Finally, this pattern occurred among a racially and ethnically diverse sample of participants suggesting the generality of skin tone-based perceptions (cf. Linville, Fischer, & Salovey, 1989).

The model of category salience proposed by Blanz (1999) provides a useful framework for exploring the role that within-race variation in skin tone occupies in social perception. In particular, the model focuses on the antecedents of social categorization. As a potential cue for categorization, skin tone should be encoded and used to the extent that (1) perceivers differently associate light and dark skin with beliefs about Black Americans, and (2) the situational context is perceived to be relevant to these stereotypes. Our results are consistent with this viewpoint. The beliefs explored in these studies concerned light- and dark-skinned Blacks' experiences with and beliefs about Black/White race relations in the United States. We add that without beliefs based specifically on skin tone, this discussion topic could have easily acted to *increase* perceptions of homogeneity among the Black discussants.

We propose that *any* context that activates beliefs relating to skin tone would result in greater accessibility of skin tone. For example, skin tone may be more likely to be encoded used in those same contexts that racial bias exists, such as education, employment, and income decisions (e.g. Keith & Herring, 1991). When an employer must make a decision between two Black job candidates, her choice may be driven by beliefs associated with skin tone. In addition, skin tone may become more salient in situations where an actor's behaviour is normative, and perhaps even more so when behaviour is counter-normative (Blanz & Aufderheide, 1999; Oakes & Turner, 1986). Another factor is the relative salience of competing bases of categorization. In some situations, the superordinate racial category may override skin tone. Consider the employer who is deciding among a number of applicants from a variety of racial groups. Relative differences in the skin tone of Blacks may become less salient when those Blacks are encountered in the presence of Whites or members of another racial category (Secord, 1959; Secord, Bevan, & Katz, 1956). In other situations, bases of subcategorization such as clothing or speech style may compete with skin tone. We suspect that skin tone interacts with

these subcategories to help to create and reinforce them. For example, a Black female dressed in a white lab coat speaking in a standard English dialect may seem more consistent with a perceiver's mental representation of the group if she has light rather than dark skin tone. Likewise, a Black male dressed in athletic wear or speaking using non-standard Black English would likely be expected to have dark skin tone.

Considering person factors, there may be variation across individuals in the extent to which they distinguish light from dark in their mental representations. According to the model proposed by Blanz, this could occur in two ways. With respect to situational accessibility, skin tone-based distinctions could be more chronically accessible for some individuals. With respect to perceived fit, some individuals may see skin tone as a more sizable distinction compared to others. Anecdotal accounts suggest that this kind of inter-individual variation does exist. Black Americans who display sensitivity to the skin tone of others are sometimes referred to as 'colour struck' or as having a 'colour complex' (Russell et al., 1992). It is likely that these and several other factors contribute to the relative salience of skin tone in social representation and judgment.

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