

Multicultural Experiences Reduce Intergroup Bias Through Epistemic Unfreezing

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In 6 studies, we systematically explored for the 1st time the ameliorative effects of multicultural experience on intergroup bias and investigated the role of epistemic unfreezing as the motivational mechanism underlying these effects. We found that multicultural exposure led to a reduction in stereotype endorsement (Studies 1, 4, and 6), symbolic racism (Study 5), and discriminatory hiring decisions (Study 2). We further demonstrated that experimental exposure to multicultural experience caused a reduction in need for cognitive closure (NFCC; Studies 3 and 6) and that the ameliorative effects of multiculturalism experience on intergroup bias were fully mediated by lower levels of NFCC (Studies 4, 5, and 6). The beneficial effects of multiculturalism were found regardless of the targeted stereotype group (African Americans, Ethiopians, homosexuals, and native Israelis), regardless of whether multicultural experience was measured or manipulated, and regardless of the population sampled (Caucasian Americans or native Israelis), demonstrating the robustness of this phenomenon. Overall, these results demonstrate that multicultural experience plays a critical role in increasing social tolerance through its relationship to motivated cognitive processes.

Keywords: multicultural experience, stereotypes, discrimination, need for cognitive closure, motivated cognition

According to the Book of Genesis, God scattered mankind upon the face of the Earth and confused their languages. As a result, a

multitude of new cultures developed, each with different customs, beliefs, languages, foods, and music. Although such diversity was intended as a punishment, recent research has begun to illuminate the potential creative, cognitive, and performance advantages of immersing oneself in other cultures (e.g., Leung & Chiu, 2010; Leung, Maddux, Galinsky, & Chiu, 2008; Maddux, Adam, & Galinsky, 2010; Maddux & Galinsky, 2009; Tadmor, Galinsky, & Maddux, 2012; Tadmor, Satterstrom, Jang, & Polzer, 2012; Tadmor & Tetlock, 2006; Tadmor, Tetlock, & Peng, 2009). For example, Leung and Chiu (2010) found that experimental exposure to multicultural experience produced enduring changes in creativity when exposure to and juxtaposition of new and old cultures occurred simultaneously. Furthermore, Tadmor, Galinsky, and Maddux (2012) demonstrated that individuals who simultaneously identify with both their home and host cultures were more creative, innovative, and professionally successful than those who identified with only one culture.

This research has greatly expanded our understanding of the significance of multicultural experiences, defined as “all direct and indirect experiences of encountering or interacting with the elements and/or members of foreign cultures” (Leung et al., 2008, p. 169). Yet, since the Tower of Babel, one of the greatest and oldest challenges plaguing mankind is how to foster social tolerance and promote mutual acceptance of diverse cultural and ethnic groups. Multicultural experience research, however, has yet to investigate whether and how these experiences may mitigate intergroup bias or people’s propensity

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to stereotype, be prejudiced, and discriminate against people from other cultural backgrounds (Hewstone, Rubin, & Willis, 2002).

The current research sheds light on these questions. In six studies, we demonstrate how greater multicultural experiences lead to lower levels of stereotype endorsement, symbolic racism, and discriminatory decision making. We further highlight the causal role of multicultural experience and investigate a mechanism—need for cognitive closure (NFCC)—through which multicultural experience leads to these consequential outcomes. As such, we contribute to the literature by showing an unexplored path to reduction of intergroup biases—multicultural exposure changes individuals' epistemic motive to a lower level of need for cognitive closure, thereby “unfreezing” people's shared biases toward maligned groups.

Intergroup Contact and Diversity Experiences: What Is Missing?

Although multicultural research has yet to explore the potential benefits of such experiences on the reduction of intergroup bias, two related lines of research—intergroup contact and diversity experiences in higher education—have provided some insights into this issue. However, review of these research streams reveals several gaps in the literature.

Specifically, research on intergroup contact (Allport, 1954; Williams, 1947) has demonstrated it is one of the most influential interventions for prejudice reduction. Indeed, meta-analytic reviews by Pettigrew and his colleagues (e.g., Pettigrew, 1997, 2008, 2009; Pettigrew & Tropp, 2000, 2006) have shown that contact leads to lower prejudice not only toward the entire group but also toward outgroups not involved in the contact, that the contact conditions originally envisioned by Allport (1954) increase contact's effects though they are not necessary, and that the direction of causality from contact to reduced prejudice is stronger than the reverse (also see Van Laar, Levin, Sinclair, & Sidanius, 2005).

Nonetheless, these reviews have also demonstrated that the beneficial effect of such personal and face-to-face interaction with members of another cultural group appears to be mostly limited to the realm of *affective* indicators of intergroup bias such as feelings and emotional responses to a group. It has a much smaller impact on indicators which also have a *cognitive* component, including stereotypes which are considered purely cognitive constructs, and measures such as symbolic racism and discriminatory judgments, which are considered to include both cognitive and affective components (Pettigrew, 1997, 2008; Pettigrew & Tropp, 2008; Tropp & Pettigrew, 2005; also see Brigham, 1993; Dovidio, Esses, Beach, & Gaertner, 2002; Van Laar et al., 2005).¹ It has further been demonstrated that contact reduces intergroup bias primarily through emotional factors such as greater liking, reduced anxiety, and increased empathy while cognitive mechanisms such as increased knowledge of the outgroup play only a minor mediational role (Binder et al., 2009; Pettigrew & Tropp, 2006, 2008). Noticeably missing from the intergroup contact literature are investigations of motivational factors as potential mediators. Finally, this research has mainly focused on personal contact experiences with outgroup members. It does not take into account other forms of non-interpersonal contact experiences such as eating the cuisine, watching movies or television dramas, or listening to the music of a foreign culture (cf. Leung et al., 2008). These additional avenues

to multicultural exposure, in which individuals learn about outgroup members through secondary sources, may also have important consequences for intergroup bias.

Research on diversity experiences in higher education has relied on a broader definition of multicultural experience, including things such as racial diversity in student body, enrollment in racial diversity courses, and interpersonal engagement in racial activities. This research has utilized large-scale field-study and quasi-experimental designs to demonstrate that greater educational diversity experience is associated with things such as greater commitment to promoting racial understanding, greater academic self-confidence, increased cognitive growth, improved critical thinking skills, and greater commitment to civic participation (e.g., Antonio, 2004; Astin, 1993; Bowman, 2010; Chang, Astin, & Kim, 2004; Denson & Chang, 2009; Gurin, Dey, Hurtado, & Gurin, 2002; Gurin, Nagda, & Lopez, 2004; Laird, 2005). However, this research has also been criticized on methodological and theoretical grounds, including lack of definitive tests of causality, vulnerability to self-selection bias, reliance on measures that lack conceptual clarity and rigor, lack of controls for confounding variables such as openness and social desirability, and no exploration of potential underlying mechanisms that can explain why diversity experiences reduce racial bias (e.g., Aberson, 2010; Antonio, 2004; Bigler, 1999; Denson & Chang, 2009; Engberg, 2004; Paluck & Green, 2009).

In the current article, we address these knowledge gaps and seek to make three novel contributions. First, robust effects of multicultural experience on dimensions of intergroup bias that include a cognitive component still need to be demonstrated. Recent theorizing differentiates between affectively- and cognitively-based attitudes and behaviors (Dovidio et al., 2002). According to this conceptualization, the finding that the ameliorative effects of intergroup contact have been largely confined to affective indicators of bias makes sense given that most of the research on the intergroup contact hypothesis has solely focused on *personal* contact experiences with outgroup members which are inherently emotional in nature (e.g., Dovidio, Brigham, Johnson, & Gaertner, 1996; Dovidio et al., 2002; Dovidio & Gaertner, 1993; Esses & Dovidio, 2002; Pettigrew & Tropp, 2000; Tropp & Pettigrew, 2005). Thus, the match between the emotional component of the experience and the emotional component of the attitudes measured increases the likelihood of finding a strong effect (Millar & Tesser, 1986). Conversely, effects on attitudes which also have a cognitive element are more likely to occur when they are matched with experiences of contact that are also cognitively based. In the

¹ Some have argued that symbolic racism and discriminatory judgments are measures that focus primarily on the cognitive components of intergroup relations (e.g., Dovidio et al., 1996, 2002). For example, Dovidio et al. (2002) suggested that “the Symbolic Racism Scale . . . emphasize[s] cognitive factors more than affective components of prejudice” (p. 155). They further suggested that behaviors which require a greater degree of cognitive analysis and decision making should also be conceptualized as cognitively-based. Nonetheless, unlike the concept of stereotypes which represents a purely cognitive schema (Hamilton & Sherman, 1994), both symbolic racism and discriminatory judgments also include an affective component of negative feelings toward Blacks and other minorities (e.g., Dovidio et al., 1996; Esses, Haddock, & Zanna, 1993; Gaertner & Dovidio, 2005).

current research, we expanded the definition of contact to include also *non-interpersonal* contact experiences in addition to the personal experiences of face-to-face contact (Leung et al., 2008). Scholars have suggested that such non-interpersonal contact experiences evoke weaker emotions and make the cognitive aspects of the contact experience more accessible, leading to a greater degree of cognitive analysis (e.g., Dovidio et al., 2002; Millar & Tesser, 1986; Paolini, Hewstone, & Cairns, 2007; Stangor, Sullivan, & Ford, 1991; Wright, Aron, McLaughlin-Volpe, & Ropp, 1997). Consequently, we expected that when multicultural experience is broadly defined, it will also lead to reductions in dimensions of intergroup bias that have a cognitive component, including the tendency to endorse stereotypes, to hold symbolically racist beliefs, and to reach discriminatory decisions.

Second, given the correlational design of past research on educational diversity experiences and intergroup bias reduction, the causal role of multicultural experiences remains unclear (Aberson, 2010; Paluck, & Green, 2009). Although research on intergroup contact has provided more definitive support for the direction of causality (e.g., Van Laar et al., 2005), this research has focused mainly on personal contact experiences with outgroup members. Thus, although it is plausible that multicultural experiences broadly defined reduce outgroup bias, there is also evidence that less biased individuals are more likely to seek multicultural experiences (e.g., Nagda, Gurin, & Johnson, 2005). In the present article, we address this gap by utilizing a controlled experimental design in which we randomly assign participants to conditions that manipulate their multicultural experiences and then measure their bias.

Finally, neither intergroup contact research nor educational diversity research has explored the potential mediating role of motivated cognition in explaining the relationship between multicultural experiences and reductions in intergroup bias. This omission is somewhat surprising given that it is now widely conceded that whereas people's tendency to rely on simplified and biased cognitions does not require a motivational explanation, their willingness to entertain alternative hypotheses, to rely on individuating information, and to acknowledge that not all individuals within a social group are the same does require a motivational explanation (Allport, 1954; Fiske, 2000; Fox & Elraz-Shapira, 2005; Hilton & von Hippel, 1996; Kruglanski & Webster, 1996; Stangor & Lange, 1994). To fill this gap, the current research investigates whether a common motivational process—need for cognitive closure (NFCC)—underlies and drives the link between multicultural experience and cognitive dimensions of intergroup bias.

Past research has already demonstrated a relationship between motivated cognition and dimensions of intergroup bias that include a cognitive component. Specifically, according to Kruglanski (1989), a heightened need to achieve closure refers to “a desire for a firm answer to a question; any firm answer as compared to confusion and uncertainty” (p. 13). It is a motivational variable that has an inhibiting or freezing effect on the hypothesis-generation process: It shortens the epistemic sequence of hypothesis generation and testing such that individuals high on this dimension exhibit rigidity of thought and a reluctance to entertain views that are different from their existing preconceptions (e.g., Kruglanski, 1989; Kruglanski, Dechesne, Orehek, & Pierro, 2009; Kruglanski & Freund, 1983; Kruglanski & Webster, 1996; Webster & Kruglanski, 1997). As such, research has shown that these

individuals will be more prone to rely on stereotypes (e.g., Dijksterhuis, van Knippenberg, Kruglanski, & Schaper, 1996; Kruglanski & Freund, 1983; Kruglanski & Webster, 1996; Neuberg & Newsom, 1993; Schaller, Boyd, Johannes, & O'Brien, 1995), cognitively-based prejudiced beliefs (Cunningham, Nezlek, & Banaji, 2004), and discriminatory judgments (Jamieson & Zanna, 1989; Shah, Kruglanski, & Thompson, 1998). In contrast, the findings also imply that individuals low on NFCC—those who are motivated to entertain alternative hypotheses and to question existing assumptions—will exhibit less intergroup bias across all these dimensions. In the current article, we suggest that multicultural experience will lead to a reduction in epistemic freezing and that it is this process that links multiculturalism with reduced bias. We turn to our model next.

A Model of the Effects of Multicultural Experience on Reduction in Intergroup Bias via NFCC

When operating in familiar situations, people mindlessly navigate their social worlds, automatically processing information based on existing perceptual schemas that efficiently guide interpretation and responses (e.g., Langer, 1989; Louis & Sutton, 1991). Stereotypes, overgeneralized beliefs about members of a group, are also part of such automatic processing and are thought to emerge from common socialization experiences. As such, all individuals within a cultural group are assumed to have the same stereotypes stored in memory (Allport, 1954; Devine, 1989; Dijksterhuis & van Knippenberg, 1999; Dovidio, Evans, & Tyler, 1986). These stereotypes are functionally invaluable because they provide individuals with “quick judgments about members of a stereotyped category” that will not delay closure (Kruglanski et al., 2009, p. 153). They provide an affordance of predictability and guidance for action.

Stereotypes further provide a foundation for people's prejudices, defined as the negative attitudes that result from a “faulty generalization from a group characterization (stereotype)” (Jones, 1986, p. 288; also see Hilton & Von Hippel, 1996). Indeed, as noted by Brigham (1971),

in order to feel [and think] negatively toward a group, one must be able to perceive the different individuals of the given ethnic group as having certain constant characteristics, as being similar to other individuals in the same group, and as being different from individuals not of that ethnic group. (p. 26)

Furthermore, given that stereotypes are cognitive structures that influence the way people perceive, process, store, and retrieve information, they are also expected to impact people's decision-making processes, increasing the probability that they will reach discriminatory decisions and treat individuals inappropriately based on their group membership (Dovidio et al., 1996; Jamieson & Zanna, 1989; Pittinsky, Shih, & Trahan, 2006). Such stereotypes, attitudes, and judgments will likely persist so long as the individual continues to perceive targets in a relatively stable frame of reference (Newcomb, 1950).

However, when the unexpected occurs or when exposed to unfamiliar contexts such as exposure to a new cultural world, reliance on automatic processing becomes insufficient (e.g., Louis & Sutton, 1991). To make sense of their new experiences, people have to switch from automatic to conscious attention. By switching

to a conscious attention mode, individuals can continue to view the world through their existing perceptual schemas, but they also begin to notice things they would normally have filtered out (Louis & Sutton, 1991). With each new cultural experience, people become exposed to more information—including behaviors, values, and norms—that is distinct from, inconsistent with, and even contradictory to their internalized representations of the related cultural group. As multicultural experiences accumulate, existing scripts and knowledge structures no longer provide guidance on how to act nor do they afford a sense of predictability (Ruble, 1994). The accuracy of preconceived notions in terms of how well they describe the entire group is called into question.²

The disconnect between internalized preconceptions and reality invokes a sense of cognitive disequilibrium and dissonance which must be resolved (Festinger, 1957; Gurin et al., 2002; McGregor, Newby-Clark, & Zanna, 1999; Ruble, 1994; Tadmor & Tetlock, 2006). In these circumstances, armed with little knowledge and much uncertainty, individuals become “epistemically unfrozen” (Kruglanski, 1989, 2004; Kruglanski et al., 2009; Kruglanski & Freund, 1983; Kruglanski & Webster, 1996; Webster & Kruglanski, 1997). To regain equilibrium and resolve the dissonance, individuals become motivated to reexamine existing assumptions, seek out additional information, and revise their expectations. Hence, reliance on existing knowledge structures, including stereotypes and prejudiced perception, will be reduced.

More importantly, individuals are unlikely to experience only a single instance of disequilibrium or dissonance. As they become more immersed in multicultural experiences, they are likely to experience repeated encounters of discrepancy between prior expectations and current actualities, across multiple domains. We hypothesize this will lead individuals to become *habitually* motivated by a lower need for closure as a way of making sense of the world. Rather than “seize” and “freeze” on preexisting information accessible in memory, individuals will be motivated to seek new knowledge, to generate and test new hypotheses, and to deeply process case-specific information (e.g., Dijksterhuis et al., 1996; Fox & Elraz-Shapira, 2005). Consequently, this motivational un-freezing will apply even to cultural groups not involved in the initial exposure. Thus, as individuals become sensitized to the fact that existing stereotypes and attitudes of one group may provide a too homogeneous a picture of that group, generalized motivational un-freezing will lead to a reduction in intergroup bias held against other groups as well.³

Of course, it is also possible that individuals who are dispositionally high in NFCC will avoid exposure to multicultural experience in an effort to preserve their sense of consensual validation (Chirumbolo, Areni, & Sensales, 2004; Crockett, 1965; Dechesne, Schultz, Kruglanski, Orehek, & Fishman, 2008; Hogg, 2007; Neuberg & Newsom, 1993). Moreover, NFCC, manipulated experimentally as time pressure, has been shown to moderate the effects of multiculturalism on creativity (Leung & Chiu, 2010, Study 4). Nonetheless, Webster and Kruglanski (1997) have suggested that repeated cultural learning experiences can lead to stable differences in NFCC. Preliminary support for this prediction comes from a recent study which has shown that Asian Americans primed to simultaneously think about both their Asian and American cultures rated significantly lower on personal need for structure, a strong correlate of NFCC, than did individuals primed with only a single culture or individuals in a control group (Tadmor et al.,

2009, Study 3). This finding is consistent with recent neurological research that suggests that cultural learning experiences can be powerful enough to even alter how the brain is wired (Hedden, Ketay, Aron, Markus, & Gabrieli, 2008).

Taken together, we propose that multicultural exposure will lead to a reduction in bias toward outgroups that are not even involved in the initial exposure experience. Specifically, we predicted that greater exposure would reduce (1) stereotype endorsement, (2) symbolic racism, and (3) discriminatory decision making. We further predicted that these relationships would be mediated by lower levels of NFCC, with lower levels of NFCC resulting from multicultural exposure.

Overview of Studies

In Studies 1–3, we experimentally manipulated multicultural exposure to test whether multicultural experience can reduce stereotype endorsement (Study 1) and discriminatory judgments in hiring decisions (Study 2) as well as to test the causal effect of multicultural experience on NFCC (Study 3). In Studies 4–6, we investigated the full mediation model. In Study 4, we tested

² Our use of the term *automatic* is taken from Louis and Sutton (1991) to denote habits of mind or the cognitive shorthands people use to guide their interpretation and behavior. It refers to people’s mental maps, scripts, and schemas, and it captures people’s generic beliefs and expectancies about the world. Although we suggest that, as schemas, stereotypes are a part of people’s automatic cognitive mode, we do not mean to imply that stereotypic thinking is necessarily inevitable, spontaneous, uncontrollable, unconscious or without awareness. Although several researchers have argued this to be the case (e.g., Allport, 1954; Chen & Bargh, 1997; Devine, 1989; Dovidio et al., 1986; Fiske & Neuberg, 1990), other research has shown that the automaticity of stereotypes is conditional on a variety of factors including the availability of sufficient cognitive resources (Blair & Banaji, 1996; Gilbert & Hixon, 1991; Spencer, Fein, Wolfe, Fong, & Dunn, 1998). In addition, reliance on stereotypes can be explicit, non-automatic, and deliberate.

³ In line with the original formulations of cognitive dissonance theory (e.g., Aronson, 1969; Festinger, 1957), our model stipulates that it is the simultaneous exposure to the inconsistencies between prior expectations and current actualities that creates dissonance. In contrast, some revisions of dissonance theory have questioned whether inconsistent cognitions are sufficient or even necessary to produce discomfort and attitude change. For example, Cooper and Fazio’s (1984) new look perspective suggests that the psychological discomfort experienced in dissonance experiments occurs because people feel personally responsible for producing foreseeable aversive consequences. Similarly, Steele (1988) has posited that it is not cognitive inconsistency but the threat to one’s sense of moral and adaptive integrity that causes the discomfort in dissonance experiments. Both these perspectives suggest that people seek to rationalize their behaviors when these imply their incompetence or immorality. And yet, other researchers have maintained that the original version of dissonance theory continues to be viable and that it can explain the evidence generated by the revisions. Most prominently, McGregor et al. (1999) have attempted to reconcile the new look and self-affirmation perspectives with that of the original conceptualizations of cognitive dissonance theory by highlighting the role of simultaneous accessibility. Specifically, they argue that neither negative consequences nor threats to self-esteem are necessary conditions. Rather, they demonstrate that it is only when inconsistent cognitions are simultaneously accessible that dissonance discomfort will be maximized and subsequent attitude change will occur. Our model builds on this framework.

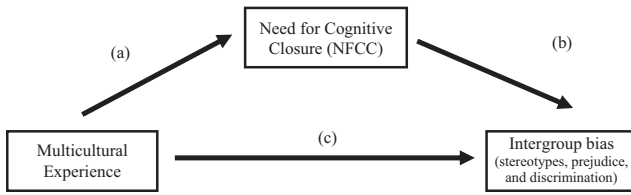


Figure 1. A model of the effects of multicultural experience on reduction in intergroup bias via need for cognitive closure (NFCC). Previous studies have shown the causal link between NFCC and intergroup bias (Path b). In this article, we tested the causal link between multicultural experience and intergroup bias (Path c) in Studies 1 and 2, and that between multicultural experience and NFCC (Path a) in Study 3. We tested the entire mediational model correlationally in Studies 4 and 5 and experimentally in Study 6.

whether NFCC mediates the link between existing levels of multiculturalism and stereotype endorsement of racial groups. We further tested whether these results generalize to other maligned groups (i.e., homosexuals) as well as to perceptions of one's own ingroup. In Study 5, we replicated the mediation test in a different country and tested whether results extend to symbolically racist attitudes. Finally, in Study 6, we used an experimental manipulation of multicultural experience to demonstrate the full mediation model. These hypotheses are illustrated in Figure 1.

Study 1: Multicultural Experience Manipulation and Stereotype Endorsement

Using multiculturalism exposure techniques developed by Leung and Chiu (2010), Study 1 experimentally explored whether multicultural experience reduces Caucasian Americans' tendency to endorse stereotypes. We predicted that Caucasian Americans who are exposed to a multicultural experience (American–Chinese culture) would endorse less stereotypes related to African Americans than would individuals exposed to a monocultural experience (American culture or Chinese culture) or individuals in a control condition (geometrical figures).

Three features of the experimental design are noteworthy. First, past research has demonstrated that individuals who share a similar cultural background are equally knowledgeable about societal stereotypes (e.g., Devine, 1989; Lepore & Brown, 1997; Levy, Strossner, & Dweck, 1998). Therefore, we expected that if multicultural experience leads to less stereotyping, this should be manifested in a lower tendency to believe the stereotypes are true. Second, we predicted that if the effect of multicultural experience occurs through a generalized motivation to process information more deeply rather than because of greater levels of specific knowledge obtained (e.g., knowledge of Chinese culture), stereotype endorsement would be reduced when judging a group not involved in the initial manipulation (e.g., African Americans).

Finally, our model stipulates that in order to observe the beneficial effects of multiculturalism on stereotype reduction, individuals must be aware of their existing cultural schemas while being exposed to a new culture. This assumption dovetails with recent research which suggests that mere exposure to a second culture and its knowledge is insufficient to bring about the benefits associated with multiculturalism. Indeed, exposure to only a foreign culture failed to yield either creative or motivational benefits

(Leung & Chiu, 2010; Tadmor, Galinsky, & Maddux, 2012; Tadmor et al., 2009). Rather, it appears it is the *simultaneous* juxtaposition of existing and new knowledge and the resulting dissonance that is created that are particularly critical (e.g., Leung & Chiu, 2010; Leung et al., 2008; Tadmor, Galinsky, & Maddux, 2012; Tadmor & Tetlock, 2006; Tadmor et al., 2009; cf. McGregor et al., 1999). Therefore, we compared the stereotype tendencies of individuals exposed to either only an American culture presentation or only a Chinese culture presentation with those of participants who were exposed to a presentation involving both American and Chinese cultures. We also included a “pure” control group in which participants viewed pictures of geometrical figures in lieu of a cultural presentation.

Although multicultural experiences will produce chronic changes in people's tendency to endorse stereotypes, we predicted that even temporary yet consistent exposure would make people aware of the incompleteness of their internalized representations of the new culture. By creating the necessary tension between prior expectations and current actualities, a motivation for cognitive unfreezing will develop: Information about the new culture will call into question existing thinking and will make individuals more receptive to search for more information about this and other cultural groups as well. Thus, we predicted that such exposure would produce concomitant reduction in stereotype endorsement in the moment.

Method

Participants. Eighty Caucasian American undergraduate students participated in exchange for course credit. To safeguard data quality, we excluded participants who showed problematic responses, including those who (1) failed to pay attention or to fill out the study materials, (2) gave extreme responses (i.e., three standard deviations above or below the rest of the sample), and (3) failed to follow manipulation instructions. As a result, eight participants whose pattern of responses suggested that they did not pay attention to the rating task (e.g., answering 1 to all questions) were dropped from the analysis. The final sample included 72 students (37 women; mean age = 19.18 years, $SE = 1.02$).

Materials and procedure. The experimenter informed participants that they would be participating in two unrelated research projects: the first would assess their perception, and the second would investigate their beliefs and attitudes toward other people. The multicultural experience manipulations were introduced during the first project. The stereotype measure was assessed as part of the second project. At the end of the experiment, participants provided additional demographic information. They were debriefed, thanked, and dismissed.

Multicultural experience manipulation. We randomly assigned participants to one of three conditions: American culture only, American–Chinese culture, or a control group, which viewed a presentation of geometrical figures. In order to rule out the alternative explanation that mere exposure to a foreign culture could be sufficient to produce the beneficial effects of multiculturalism on stereotype reduction, we then ran an additional condition in which participants from the same subject pool were exposed to Chinese culture only. The experimental manipulations were adopted from Leung and Chiu (2010) and included a 20-min multimedia PowerPoint presentation with pictures, music, and

movie trailers that depicted different aspects of either American culture, Chinese culture, or American and Chinese cultures in multiple domains, including architecture, home decorations, apparel, cuisine, entertainment, recreation, music, movies, arts, and literature. To reinforce participants' experience, they were also asked to write a 5-min essay describing their impressions from the presentation.

Manipulation check. To ensure that relative to the other conditions, the multicultural exposure manipulation was effective in eliciting thought of both American and Chinese cultures, participants were asked at the end of the second study to think about the video and describe the extent to which they thought about the following items as they were viewing the presentation: (1) the differences between American culture and Chinese culture and (2) similarities between the American culture and Chinese culture ($\alpha = .86$). Participants rated their responses on a scale ranging from 1 (*I did not think about it at all*) to 5 (*I thought about it a lot*). The two items were averaged to create a single American–Chinese experience score. In addition, to verify the effectiveness of the American culture condition relative to the Chinese culture condition and the control condition, participants were also asked to indicate the extent to which they thought about (1) learning from American culture and (2) learning more about American culture ($\alpha = .72$). These two items were averaged to create a single American experience score. To check the effectiveness of the Chinese culture condition, participants were also asked to indicate the extent to which they thought about (1) learning from Chinese culture and (2) learning more about Chinese culture ($\alpha = .88$). These two items were averaged to create a single Chinese experience score. Finally, participants were asked to indicate whether they knew what was manipulated in the study and if so, to explain what it was.

Endorsement of negative stereotypes of African Americans. Following Levy et al. (1998), participants were asked to rate the extent to which they thought the following six beliefs were true descriptions of African Americans in general: uneducated, violent, irresponsible, lazy, loud, and undisciplined. All items were rated on a scale ranging from 1 (*not at all true*) to 5 (*extremely true*). Internal reliability was high ($\alpha = .87$).

Results

Manipulation check. As expected, a one-way analysis of variance (ANOVA) revealed a significant main effect for cultural experience condition on the American–Chinese experience score, $F(3, 68) = 73.17, p = .0001$. As seen in Table 1, participants in the American–Chinese culture condition were more likely to have thought extensively about both Chinese and American cultures than those in the American culture only, Chinese culture only, or control conditions. The cultural experience condition also significantly affected the extent of thinking about American culture, $F(3, 68) = 6.61, p = .001$. Participants in the American-only condition were significantly more likely to have thought extensively about American culture than participants in the control condition, the Chinese-only condition, and the American–Chinese culture condition. The cultural experience condition also significantly affected the extent of thinking about Chinese culture, $F(3, 68) = 31.12, p = .0001$. Participants in the Chinese-only condition were significantly more likely to have thought extensively about Chinese culture than were participants in the American-only and the control conditions, although they did not significantly differ from participants in the American–Chinese culture

condition. Finally, none of the participants was able to guess correctly what the study was about.

Effects of multicultural experience on stereotype endorsement. A one-way, between-group analysis of covariance (ANCOVA) assessed the effects of the cultural experience condition (American–Chinese, American, Chinese, and control) on agreement with negative stereotypes of African Americans.⁴ As predicted, the analysis revealed a significant main effect for cultural experience condition, $F(3, 65) = 3.97, p = .012$, partial $\eta^2 = .16$. Consistent with our prediction, planned contrasts showed that participants in the American–Chinese culture condition ($M = 1.90, SE = 0.13$) were significantly less likely to endorse negative stereotypes of African Americans than were either participants in the American culture condition ($M = 2.31, SE = 0.15, p = .044$), participants in the Chinese condition ($M = 2.52, SE = 0.14, p = .002$), or participants in the control condition ($M = 2.36, SE = 0.14, p = .019$). None of the other contrasts were significant (all $ps > .310$).

Discussion

Study 1 confirmed our prediction that individuals who were exposed to a multicultural experience would be less likely to endorse stereotypes than would participants who viewed a monocultural presentation (American culture or Chinese culture) or participants in the control group. Through experimental manipulation, the current study is the first to provide evidence of the causal role of multicultural experiences in reducing stereotype endorsement. These findings increase confidence that alternative explanations for the potential relationship between multicultural experience and stereotyping, including individual differences, are less plausible. Thus, the results are not likely due to biased individuals being less likely to seek out multicultural experiences. In addition, the finding that the Chinese culture condition was not sufficient to reduce stereotyping underscores the idea that mere exposure to a new culture is insufficient to bring about increased social tolerance; rather, it appears it is the simultaneous juxtaposition of new and old cultures that is critical (cf. Leung & Chiu, 2010; Tadmor, Galinsky, & Maddux, 2012; Tadmor et al., 2009). A key question remains, however, as to whether exposure to multicultural experiences would be strong enough to eliminate discriminatory decisions and behaviors. As Fiske (2000) noted, “thoughts and feelings do not exclude, oppress, and kill people; behavior does” (p. 312). Therefore, in Study 2 we tested whether multicultural experience can also reduce tendencies for actual discrimination in hiring decisions.

Study 2: Multicultural Experience Manipulation and Discrimination in Hiring Decisions

Researchers have argued that because stereotypes form the basis for expectations about a group member, they are likely to influence

⁴ We controlled for grade-point average (GPA) in this analysis because preliminary analysis revealed that participants in the American–Chinese condition happened to have significantly lower GPAs ($M = 3.03, SD = 0.50$) than did those who were in the American condition ($M = 3.44, SD = 0.29, p = .005$). They also had marginally lower GPAs than those who were in the Chinese condition ($M = 3.30, SD = 0.51, p = .061$).

Table 1
Mean Manipulation Check Scores as a Function of Experimental Conditions, Study 1

Measure	American–Chinese condition <i>M (SD)</i>	American-only condition <i>M (SD)</i>	Chinese-only condition <i>M (SD)</i>	Control condition <i>M (SD)</i>
American–Chinese experience score	4.05 _{a,b} (0.82)	1.18 _a (0.53)	3.00 _{a,b} (1.02)	1.13 _b (0.29)
American experience score	1.89 _{a,c} (0.99)	2.71 _{a,b,c} (1.08)	1.82 _b (1.00)	1.28 _c (0.52)
Chinese experience score	3.32 _{a,b} (1.11)	1.27 _{a,c} (0.47)	3.59 _{c,d} (1.24)	1.28 _{b,d} (0.71)

Note. Means that are denoted by the same subscripts on the same row are significantly different at $p < .05$.

both the perceptions we form of others and the inferences and decisions we make about them, including in hiring and promotional decisions, legal judgments, and school performance (e.g., Bertrand & Mullainathan, 2004; Dovidio et al., 1996; Dovidio & Gaertner, 2000; Hodson, Hooper, Dovidio, & Gaertner, 2005; Jamieson & Zanna, 1989; Pittinsky et al., 2006; Stangor & Lange, 1994). This is especially likely to be true in ambiguous situations, as is often the case in hiring decisions, where a clear right answer is unavailable (Gaertner & Dovidio, 2005). In these contexts, “stereotypes and prejudices are more likely to color judgments and guide actions” (Uhlmann & Cohen, 2007, p. 208).

A growing body of research has also demonstrated that the mere mention of a person’s name—given the cultural and semantic attributes associated with it—is powerful enough to activate stereotypes and the resulting tendency to treat the person in a discriminatory manner. This effect has been demonstrated in a wide range of contexts, including discrimination against women and minorities in hiring decisions (e.g., Bertrand & Mullainathan, 2004; Jamieson & Zanna, 1989; Uhlmann & Cohen, 2007), housing opportunities (Carpusor & Loges, 2006), school performance (Kruglanski & Freund, 1983), resource allocations (Ball, Eckel, & Ferguson, 2004), and even in the likelihood of whether a lost letter would be returned to the sender (Ahmed, 2010). A classic example is Bertrand and Mullainathan’s (2004) fictitious resume study which demonstrated that while higher-quality resumes received more callbacks than did low-quality resumes, resumes containing White-sounding names elicited close to 50% more callbacks than equivalent resumes containing Black-sounding names.

The factors that may override such hiring discrimination are not yet fully understood (Uhlmann & Cohen, 2007). In Experiment 2, we sought to explore the debiasing effect of multicultural experience on hiring decisions of a sales manager using a similar method to the one that Bertrand and Mullainathan (2004) used. As in Study 1, we experimentally manipulated Caucasian American participants’ level of multicultural experience (American only vs. Chinese only vs. American–Chinese) and predicted that this would differentially affect their propensity to discriminate. Resumes were rigged to vary in applicant name (White/Black) and in quality (low/high). Low-quality resumes were constructed so that they were clearly unqualified for the high-skill position of a sales manager. In contrast, high-quality resumes were constructed so that they were higher quality than the low-quality resumes but were not unequivocally qualified for the position. According to aversive racism theory (cf. Gaertner & Dovidio, 2005), no discrimination should occur in the low-quality resume condition because both White and Black candidates would be equally unqualified, and thus the normatively appropriate response would be clear. In contrast, if discrimination exists, it should be manifested

in a greater tendency to provide the high-quality White resumes with more positive evaluations relative to high-quality Black resumes. This is because people can justify their discriminatory responses on the basis of some factor other than race.

Taken together, we predicted that all participants would give more positive ratings to high-quality resumes than to low-quality resumes. We further predicted that participants in the American-only condition and the Chinese-only condition would demonstrate the classic pattern of aversive racism: showing no discrimination in the low-quality resume condition but would evaluate higher-quality White candidates significantly more positively than they would rate equally high-quality Black candidates. In contrast, based on the hypothesis that multicultural experience reduces discrimination, we predicted that participants in the American–Chinese condition would judge candidates on the basis of their merit rather than on their group membership. As such, they should rely on case-specific information when making hiring decisions and their ratings should be based solely on the quality of the resume.

Finally, we expected that when it came down to actually selecting the top candidate for the position, the majority of participants would accurately select a high-quality candidate. However, we predicted that of the high-quality candidates selected, participants in the American-only condition and participants in the Chinese-only condition would be much more likely to select a White candidate than a Black candidate. In contrast, because both the White and Black high-quality candidates do not differ in their objective qualifications, participants in the multicultural experience condition would be just as likely to select a White candidate as they would to select a Black candidate as their top choice.

Method

Participants. Seventy-nine Caucasian Americans from an East-Coast university participated in the study for \$20. Using the same exclusion criteria outlined in Study 1, we dropped four participants because they either did not complete the evaluation of the resumes or tended to give extreme scores that were 3 standard deviations above or below the rest. The final sample included 75 students (35 women; mean age = 26.78 years, $SD = 12.17$).

Materials and procedure.

Multicultural experience manipulation. Using the same materials as in Study 1, participants were randomly assigned to American–Chinese culture condition or American-only culture condition. To rule out the alternative explanation that mere exposure to a new culture would be enough to alleviate discrimination, we then ran an additional condition in which participants from the same subject pool were exposed to Chinese culture only. To

reinforce their experience, we also asked all participants to write a 10-min essay describing their impressions from the presentation.

After completing this assignment, we asked participants to assume the role of a Vice President of Sales in a company and to select the best candidate for a Sales Manager position out of a series of candidates. Participants were given a description of the responsibilities entailed in the job and were told the person hired would report directly to them and that he would be heavily responsible for the growth and profitability of the participant's division. They were provided with six resumes of potential hires to rate: three with White-sounding names and three with African-American-sounding names. Only one of each trio of resumes demonstrated high qualifications in the applicant. These were our target resumes. After rating all candidates, participants provided some demographic information, were debriefed, were thanked, and were dismissed.

Resume construction. Past research suggests that discrimination is most likely to occur in ambiguous situations (e.g., Gaertner & Dovidio, 2005; Uhlmann & Cohen, 2007). Therefore, it was important that the resumes be constructed in a way that high-quality resumes would be judged more positively than the low-quality resumes but that they would not be unequivocally qualified. Otherwise, hiring decisions would have a clear right answer. Thus, to select the six resumes for the main study, 12 fictitious resumes were pilot tested. Of the 12, eight were intended to represent a relatively low-quality candidate, and four were constructed to represent a higher-quality candidate. Each of the 12 resumes included background on the applicant's labor market experience, career profile, work achievements, and undergraduate degree. Low-quality resumes included gaps in employment history. In contrast, high-quality resumes had no gap years and also included information about volunteer experiences, foreign language skills, and/or honors awarded.

Once constructed, 41 Caucasian American participants evaluated the resumes' quality on a scale from 0 to 100 in an online study in exchange for a \$5 Amazon gift card. To avoid fatigue, each participant was asked to rate only six randomly selected resumes. In order for the evaluation to be based solely on objective qualities, the resumes did not contain the candidates' names or gender information. Of the 12 resumes piloted, we selected six resumes that met our inclusion criteria: Four resumes that were rated as relatively low (mean rating ranging from 50.76 to 61.95) were used as "low-quality" resumes, and two resumes which were rated higher (mean ratings of 73.24 and 74.10) were used as "high-quality" resumes.

For the main study, all six hypothetical candidates were given male names so the difference in participants' ratings could not be attributed to differences in gender. Three applicants (one high-quality and two low-quality) were given White-sounding names, and the other three (one high-quality and two low-quality) were assigned Black-sounding names. Names were selected from Bertrand and Mullainathan's (2004) list and were randomized across resumes with the provision that one high-quality resume received a Black-sounding name, and one high-quality resume received a White-sounding name. Consequently, the same resume was sometimes associated with a White name and sometimes with a Black name, guaranteeing that only the race manipulation could cause any differences we would find. The resumes appeared in four different name order sequences with participants randomly as-

signed to one of the four sequences. Because the order did not affect the ratings, we do not discuss this further.

Rating the applicants. After reading each resume, participants were asked to indicate to what extent the candidate would be a good choice for Sales Manager for their company on a scale from 0 to 100 (Overall Evaluation). Participants rated the resumes one by one. To preclude the possibility of a demand effect, once participants moved on to the next resume they could not go back to change the scores they had given to the previous resumes. Scores given to the two low-quality Black-sounding resumes were averaged to create a single score. Similarly, scores given to the two low-quality White-sounding resumes were averaged. Separate analyses for each score yielded a similar pattern of results.

Hiring decision. After participants finished rating all six resumes, they were asked to rank the six candidates and to circle the name of the one candidate they thought would make the best Sales Manager. The top candidate selected formed our measure for hiring decision.

Results

Effects of multicultural experience on applicant ratings.

Our primary predictions were that for *low*-quality candidates, all participants would rate candidates the same, regardless of whether their names sounded Black or White. In contrast, for *high*-quality resumes, we expected that participants in the American culture only condition or in the Chinese culture only condition would rate White candidates as significantly better qualified than they would rate Black candidates but that participants in the multicultural condition would rate high-quality Black candidates the same as they would rate high-quality White candidates. Hence, we predicted that participants exposed to the multicultural experience would not show discrimination because their decisions would be based solely on the quality of the resume. More formally, we predicted a significant Race \times Quality interaction for participants in the American-only condition and for participants in the Chinese-only condition but expected no such interaction for participants in the multicultural condition.

First, we conducted a 3 (cultural experience: American vs. Chinese vs. American-Chinese; between-subjects) \times 2 (resume quality: high vs. low; within-subjects) \times 2 (race: Black vs. White; within-subjects) repeated-measure ANOVA. As predicted, there was a main effect for resume quality, Wilks's $\lambda = .27$, $F(1, 72) = 195.45$, $p = .0001$, partial $\eta^2 = .73$. Low-quality resumes were evaluated less favorably ($M = 59.02$, $SE = 1.59$) than were high-quality resumes ($M = 77.87$, $SE = 1.12$). There was also a main effect for race, Wilks's $\lambda = .86$, $F(1, 72) = 11.62$, $p = .001$, partial $\eta^2 = .14$. Black resumes were evaluated less favorably ($M = 66.44$, $SE = 1.37$) than were White resumes ($M = 70.45$, $SE = 1.30$). The Cultural Experience \times Race interaction and the Race \times Resume Quality interaction were also significant: Wilks's $\lambda = .82$, $F(2, 72) = 7.84$, $p = .001$, partial $\eta^2 = .18$, and Wilks's $\lambda = .82$, $F(1, 72) = 15.95$, $p = .0001$, partial $\eta^2 = .18$, respectively. These effects were qualified by the predicted though marginally significant three-way Cultural Experience \times Resume Quality \times Race interaction, Wilks's $\lambda = .93$, $F(2, 72) = 2.64$, $p = .078$, partial $\eta^2 = .07$. None of the other interactions was significant. To interpret the three-way interaction, we examined the

Race \times Quality effect by each cultural experience condition separately.

American-only experience condition. There was a significant main effect for resume quality, Wilks's $\lambda = .26$, $F(1, 22) = 62.71$, $p = .0001$, partial $\eta^2 = .74$, and for race, Wilks's $\lambda = .65$, $F(1, 22) = 11.88$, $p = .002$, partial $\eta^2 = .35$. Further, in accordance with our hypothesis, these main effects were qualified by the significant Race \times Resume Quality interaction, Wilks's $\lambda = .56$, $F(1, 22) = 17.55$, $p = .0001$, partial $\eta^2 = .44$. As expected, follow-up analyses revealed that participants did not significantly differ in their evaluations of the low-quality Black candidates ($M = 60.22$, $SE = 3.43$) and the low-quality White candidates ($M = 59.46$, $SE = 3.07$), Wilks's $\lambda = .995$, $F(1, 22) = 0.12$, $p = .74$, partial $\eta^2 = .01$. However, as predicted, they evaluated the high-quality Black candidate significantly lower ($M = 72.65$, $SE = 2.79$) than the high-quality White candidate ($M = 86.17$, $SE = 1.87$), Wilks's $\lambda = .48$, $F(1, 22) = 23.68$, $p = .0001$, partial $\eta^2 = .52$. These results are illustrated in Figure 2, Panel 1.

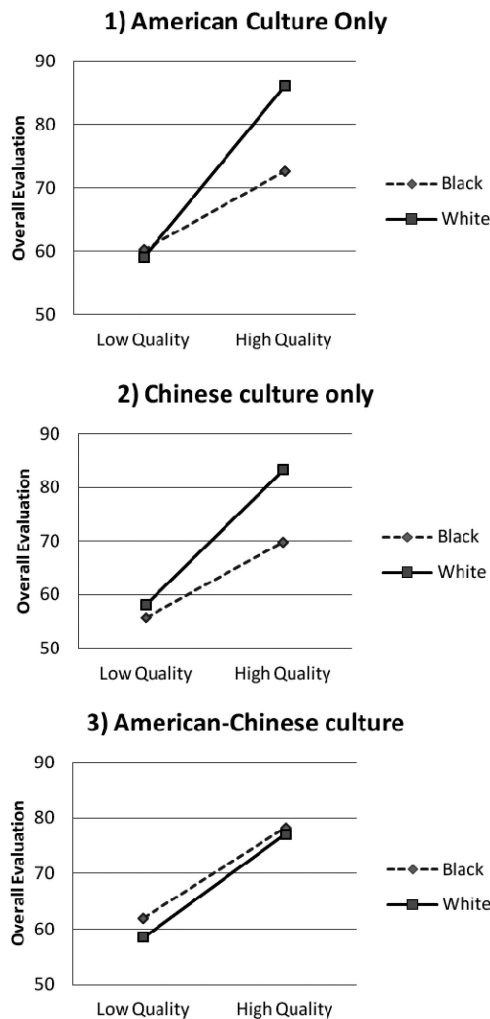


Figure 2. Race (Black/White) \times Quality (low/high) interaction plots for overall evaluation by cultural experience condition (1 = American culture only, 2 = Chinese culture only, 3 = American-Chinese culture), Study 2.

Chinese-only experience condition. There was a significant main effect for resume quality, Wilks's $\lambda = .24$, $F(1, 22) = 70.06$, $p = .0001$, partial $\eta^2 = .76$, and for race, Wilks's $\lambda = .62$, $F(1, 22) = 13.36$, $p = .001$, partial $\eta^2 = .38$. Further, in line with our prediction, these main effects were qualified by the significant Race \times Resume Quality interaction, Wilks's $\lambda = .65$, $F(1, 22) = 11.75$, $p = .002$, partial $\eta^2 = .35$. As expected, participants did not significantly differ in their evaluations of the low-quality Black candidates ($M = 55.78$, $SE = 2.25$) and the low-quality White candidates ($M = 58.17$, $SE = 2.68$), Wilks's $\lambda = .96$, $F(1, 22) = .97$, $p = .34$, partial $\eta^2 = .04$. However, they gave the high-quality Black candidate significantly lower ratings ($M = 69.82$, $SE = 3.05$) than they did the high-quality White candidate ($M = 83.30$, $SE = 1.96$), Wilks's $\lambda = .52$, $F(1, 22) = 20.75$, $p = .0001$, partial $\eta^2 = .49$. These results are illustrated in Figure 2, Panel 2.

American-Chinese experience condition. As predicted, for participants in the multicultural experience condition, there was only a significant main effect for quality, Wilks's $\lambda = .31$, $F(1, 28) = 63.92$, $p = .0001$, partial $\eta^2 = .70$. Low-quality resumes ($M = 60.26$, $SE = 2.81$) received significantly lower ratings than did high-quality resumes ($M = 77.62$, $SE = 1.78$). Neither the Race \times Resume Quality interaction, Wilks's $\lambda = .99$, $F(1, 28) = 0.23$, $p = .63$, partial $\eta^2 = .01$, nor the main effect for race, Wilks's $\lambda = .96$, $F(1, 28) = 1.28$, $p = .27$, partial $\eta^2 = .04$, was significant.

Follow-up analyses revealed that, as hypothesized, participants in the multicultural experience condition did not differ in their evaluations of the low-quality Black candidates ($M = 61.95$, $SE = 3.17$) and the low-quality White candidates ($M = 58.57$, $SE = 3.08$), Wilks's $\lambda = .95$, $F(1, 28) = 1.52$, $p = .23$, partial $\eta^2 = .05$. Moreover, in line with our predictions, these participants also did not differ in their evaluations of the high-quality Black candidate ($M = 78.21$, $SE = 1.82$) and the high-quality White candidate ($M = 77.03$, $SE = 2.93$), Wilks's $\lambda = .996$, $F(1, 28) = 0.12$, $p = .73$, partial $\eta^2 = .004$. These results are displayed in Figure 2, Panel 3.

Effects of multicultural experience on hiring decisions. We hypothesized that the majority of our participants would be able to accurately select a high-quality candidate as their top choice for the position. As predicted, 91.3% of participants in the American-only condition, 91.3% of participants in the Chinese-only condition, and 89.3% of participants in the multicultural condition accurately selected a candidate with a high-quality resume as their top choice for the job. The difference between the three groups in their ability to accurately select the best qualified candidate for the job was not significant, $\chi^2(2, N = 74) = 0.08$, $p = .96$.

We further predicted that of these high-quality candidates, participants exposed to either American culture or Chinese culture would be much more likely to select the White high-quality candidate than to select the Black high-quality candidate as their top choice. In contrast, because the White high-quality resume did not significantly differ in quality from the Black high-quality resume, we predicted that if participants exposed to multiculturalism do not discriminate they would be just as likely to select the high-quality Black candidate as their top choice as they would be likely to select the high-quality White candidate.

A chi-square test for independence revealed a significant association between the cultural experience conditions and the selection of a high-quality Black candidate as the top choice for the job,

$\chi^2(2, N = 67) = 6.08, p = .048$. To test our hypotheses related to differential effects of hiring decisions, we conducted separate chi-square goodness-of-fit tests for each cultural experience condition (American-only vs. Chinese-only vs. American-Chinese).

American-only experience condition. As predicted, participants in this condition were much more likely to select the high-quality White candidate (80.95%) than to select the high-quality Black candidate (19.05%) as their top choice. A chi-square goodness-of-fit test indicated that the difference in the proportion of White candidates selected as the top choice for the job was significantly different from the expected 50% if no discrimination was present, $\chi^2(1, N = 21) = 8.05, p = .005$.

Chinese-only experience condition. As expected, participants in the Chinese-only condition were much more likely to select the high-quality White candidate (85.71%) than to select the high-quality Black candidate (14.29%) as their top choice. A chi-square goodness-of-fit test indicated a significant difference in the proportion of White candidates selected as the top choice for the job relative to the expected 50% if no discrimination was present, $\chi^2(1, N = 21) = 10.71, p = .001$.

American-Chinese experience condition. As predicted, participants in this condition were just as likely to select a high-quality White candidate (56%) as they were to select a high-quality Black candidate (44%) as their top choice. A chi-square goodness-of-fit test indicated that indeed there was no significant difference in the proportion of White candidates selected as the top choice for the job compared to the expected 50% if no discrimination was present, $\chi^2(1, N = 25) = 0.36, p = .55$.

Discussion

The findings from Study 2 conceptually replicate and extend those reported in Study 1 by demonstrating that the effect of multicultural experience on the reduction in intergroup bias is not limited to stereotyping but also extends to discrimination in hiring decisions.

As in Study 1, participants were asked to provide evaluations related to African Americans, a group not mentioned in the cultural presentation. Consequently, our results could not be interpreted as due to an increase in specific cultural knowledge (i.e., Chinese culture). Instead, in line with our model, the evidence suggests that multicultural experiences may activate a mindset of epistemic unfreezing—individuals under the influence of this mindset will be generally more motivated to search and process information more deeply. Nonetheless, we had yet to explore NFCC as a potential mediating mechanism. As a first step, in Experiment 3 we sought to establish the causal relationship between multicultural experience and NFCC.

Study 3: Multicultural Experience Manipulation and NFCC

Research has provided some support for the causal impact of multiculturalism on cognitive style (e.g., Antonio et al., 2004; Fee, Lu, & Gray, 2010; Tadmor et al., 2009). Only one study has looked directly at the effects of multicultural experience on motivated cognition (Tadmor et al., 2009, Study 3). However, that study was conducted on a sample of minority cultural members who had been living in the United States for a long time. It is unclear if similar

results would be obtained for mainstream cultural members who may not be exposed to multicultural experiences to the same extent as sojourners and immigrants. Notably, our model proposes that with exposure to each multicultural experience, the experienced disconnect between prior expectations and current actualities will lead to at least a temporary reduction in NFCC which will eventually accumulate to chronic changes in NFCC. Thus, in this study we tested whether momentary exposure to a multicultural experience can be powerful enough to create concomitant shifts in people's epistemic motivation in the moment.

Method

Participants. Eighty-Seven Israeli undergraduate students (39 women; mean age = 23.20 years, $SD = 3.15$) participated in exchange for course credit. Using the exclusion criteria outlined in Study 1, no participants needed to be dropped from the analysis. All participants were Jews born in Israel.

Materials and procedure. We invited students to participate in two unrelated research projects conducted online. They were told the first study was intended to explore the memory and recall of experiences and that the second study would investigate attitudes and problem solving abilities. We introduced the multicultural experience manipulations during the first project and administered the NFCC measure as part of the second project. At the end of the study, we asked the participants to provide additional demographic information and then thanked, debriefed, and dismissed them. Notably, none of the participants was able to accurately guess what the study was about.

Multicultural experience manipulation. In this experiment, we manipulated multicultural experience by asking participants to recall and write about a personal experience. This method of using personal recollections to elicit multicultural thoughts has been found to be effective in previous research (e.g., Hong et al., 2004; Tadmor et al., 2009). We randomly assigned participants to one of three essay conditions: multicultural essay, Israeli essay, and beach essay. In the *multicultural essay* condition, participants were asked to write about an experience in which they were exposed to a culture *other* than Israeli culture. Following the content of the items from Leung and Chiu's (2010) Multicultural Experience Survey, we told them they could, for example, think about a time they lived abroad, had culinary or musical experiences in other cultures, or met with friends from different cultures. In the *Israeli essay* condition, participants were asked to write about an experience in which they were exposed to Israeli culture. They were told they could, for example, think about where they live, Israeli culinary or musical experiences, or meeting with Israeli friends. In the *beach essay* condition, participants were asked to write about the last time they went to the beach. They were told they could, for example, think about what they saw. All participants were asked to relive the experience again in their imagination. We asked them to describe the experience with as much detail as possible, taking into account the following questions: How did they feel? What did they think about? How similar or different was the experience from what they expected? How similar and different was the experience from what they are familiar with? The latter two questions were asked with the intention that participants in the multicultural experience condition would compare their foreign culture experi-

ence with that of Israeli culture. Participants were asked to write at least 2–3 paragraphs and to devote at least 10 min to this task.

Task equivalence across conditions. To ensure that participants experienced the essay-writing task similarly across conditions, after the task was completed, we asked them to indicate (1) how hard was the task on a scale ranging from 1 (*very difficult*) to 5 (*very easy*), (2) how much effort they put into the task on a scale ranging from 1 (*very little effort*) to 5 (*a lot of effort*), and (3) how much they liked the task on a scale ranging from 1 (*did not like it at all*) to 5 (*liked it very much*). They also rated how happy they felt on a scale ranging from 1 (*not happy at all*) to 5 (*very happy*). Given that participants filled out the survey online, we also measured the amount of time participants spent writing the essay.

Manipulation check. A “blind” coder read each essay and coded whether participants described experiences about personal encounters in which (1) no culture was discussed, (2) only Israeli culture was discussed, (3) Israeli culture and at least one other culture were discussed, or (4) only cultures other than Israeli culture were discussed.

Need for cognitive closure. Need for cognitive closure was assessed using Roets and Van Hiel’s (2011) brief NFCC scale, which is based on Webster and Kruglanski’s (1994) classic scale. The scale consists of a selection of 15 items taken from the original scale, with three items selected from each of the five facets of the construct: a desire for predictability, a preference for order and structure, discomfort with ambiguity, decisiveness, and closed mindedness. Roets and Van Hiel have provided extensive evidence for the validity of the shorter scale. Participants were asked to indicate their level of agreement with each item on a scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). Higher scores indicate a higher need for closure ($\alpha = .76$).⁵

Results

Task equivalence. As expected, one-way ANOVAs revealed no systematic differences across conditions in task difficulty, $F(2, 84) = 0.29, p = .75$; task effort, $F(2, 84) = 0.13, p = .88$; task liking, $F(2, 84) = 0.66, p = .52$; or happiness, $F(2, 84) = 1.30, p = .28$.⁶ Participants also did not significantly differ in the amount of time they spent writing the essays, $F(2, 84) = 0.73, p = .49$.

Manipulation check. As expected, all but one of the participants in the multicultural experience essay condition described personal experiences about both Israeli and non-Israeli cultures. The remaining one participant described a personal experience with a non-Israeli culture but did not mention Israeli culture specifically. Nonetheless, closer inspection of the essay revealed that Israeli experiences served as a basis for his comparison. Likewise, except for one participant, all participants in the Israeli-only condition described only an Israeli experience. The remaining one participant did not discuss Israeli culture specifically but he did refer to it indirectly. Finally, as expected, none of the participants in the beach essay mentioned a specific culture in their essays. Thus, it appears the manipulation was effective and all participants were retained in the analysis.

Effects of multicultural experience on NFCC. A one-way ANOVA assessed the effects of the cultural experience condition (multicultural essay, Israeli essay, and beach essay) on NFCC. As expected, the main effect of cultural experience condition was

significant, $F(2, 84) = 4.23, p = .018$, partial $\eta^2 = .09$. Consistent with our prediction, planned contrasts showed that participants in the multicultural essay condition ($M = 3.75, SD = 0.44$) scored significantly lower on NFCC than did participants in the Israeli essay condition ($M = 4.06, SD = 0.57, p = .028$) and participants in the beach essay condition ($M = 4.16, SD = 0.67, p = .009$). Participants in the Israeli essay condition did not significantly differ from participants in the beach essay condition in NFCC ($p = .51$).⁷

Discussion

Overall, these results suggest that even something as subtle as the reliving of a multicultural experience in the lab can lead to at least temporary reductions in participants’ need for closure. Over time, with repeated exposure to such multicultural experience, we expect such temporary shifts will accumulate and will lead to chronically lower levels of NFCC as a basic mechanism through which people make sense of their world. If this is the case, we should expect that the greater people’s existing levels of multicultural experiences, the lower their levels of NFCC, and consequently, the lower their levels of intergroup biases. In the next two studies, we test this possibility.

Study 4: Multicultural Experience and Stereotyping: The Mediating Role of NFCC

In line with our model, results from Studies 1 and 2 consistently demonstrated that multicultural experience plays a causal role in the reduction of intergroup bias. Study 3 further demonstrated that multicultural experiences reduce NFCC. In Study 4, we tested the full mediation model and examined whether NFCC mediates the

⁵ Although the NFCC scale is composed of five different subscales, our theoretical point of departure is that it is the broad construct of NFCC that is driving the debiasing effects of multicultural experiences. In addition, Roets and Van Hiel (2011) specifically stated that it is inappropriate to use the abridged version of the NFCC scale to assess the individual NFCC facets. Thus, we only analyzed results for the total NFCC score.

⁶ Notably, across conditions, participants reported feeling moderately happy (multiculturalism essay: $M = 3.35, SD = 0.78$; Israeli essay: $M = 3.09, SD = 0.91$; beach essay: $M = 3.43, SD = 0.89$), indicating that the essays did not induce a negative mood or distress in the participants.

⁷ Given that the multicultural experience manipulation in Study 3 involved an essay writing task, we wanted to demonstrate that the multicultural experience manipulation used in Studies 1 and 2 was also effective in reducing NFCC levels. Therefore, using the same procedure used in Studies 1 and 2, we randomly assigned 92 Caucasian Americans (mean age = 25.50 years, $SD = 10.20$) to one of four conditions: American culture only, Chinese culture only, American–Chinese culture, or a control group. NFCC was measured using Roets and Van Hiel’s (2011) brief NFCC scale ($\alpha = .83$). Results from a one-way, between-group ANOVA revealed a significant main effect for cultural experience condition, $F(3, 88) = 4.29, p = .007$, partial $\eta^2 = .13$. Consistent with our prediction, planned contrasts showed that participants in the American–Chinese culture condition ($M = 3.20, SE = 0.14$) scored significantly lower on the NFCC scale than did participants in the American culture condition ($M = 3.71, SE = 0.13, p = .008$), participants in the Chinese condition ($M = 3.59, SE = 0.14, p = .051$), or participants in the control condition ($M = 3.85, SE = 0.13, p = .001$). None of the other contrasts were significant (all $ps > .181$).

relationship between people's chronic levels of multicultural experience and their tendency to endorse stereotypes.

We further hypothesized that if NFCC represents the underlying motivational mechanism responsible for the debiasing effects of multiculturalism, then results should not be limited only to cultural groups. Rather, a generalized tendency for epistemic unfreezing should also lead to reduced stereotype endorsement of other maligned groups such as homosexuals and even to reduced endorsement of stereotypes related to one's ingroup. Indeed, although each of these groups differ in sources of stigmatization, if multicultural experience reduces bias through a generalized motivational mechanism, we should observe a reduction in stereotyping of these other groups as well.

Study 4 was also conducted on an Israeli sample. This allowed us to replicate our results showing a direct relationship between multicultural experience and stereotyping in a different population than the Caucasian American participants studied in Studies 1 and 2. We predicted that native Israelis with greater levels of multicultural experience would be less likely to endorse stereotypes associated with (1) Ethiopians, a major minority group in Israel; (2) homosexuals; and (3) native Israelis (i.e., Sabras). We expected each of these relationships to be mediated by NFCC.

Method

Participants. Eighty-nine Israeli undergraduate students participated in the study in exchange for course credit (42 women; mean age = 23.43 years, $SD = 1.68$). Using the exclusion criteria outlined in Study 1, no participants needed to be dropped from the analysis. All participants were Jews born in Israel.

Materials and procedure. Participants were asked to fill out a battery of questionnaires including the measures described below. All questionnaires were completed in Hebrew. The questionnaires were translated into Hebrew by an Israeli-American bilingual. The Hebrew version was then back-translated into English by another bilingual individual. The few inconsistencies found in the translation were resolved through discussion between the bilinguals.

Multicultural experience measure. Multicultural experience was assessed using the Multicultural Experience Survey (MES; Leung & Chiu, 2010), which measures length of time lived in Israel and other countries (Item 1); level of exposure to non-Israeli cultures on a 10-point scale (Item 2); number of foreign languages spoken (Item 3; participants could list up to three languages); parents' places of birth (Items 4 and 5); and the nationality of participants' five favorite cuisines (Item 6), friends (Item 7), and musicians (Item 8). Following Leung and Chiu (2010), all items were given equal weight.

To create the multicultural experience measure, we rescaled the eight items so that each ranged from 0 to 1. Specifically, we estimated the amount of time lived *outside* Israel as a proportion of a person's age (Item 1), divided the level of exposure by 10, the maximum scale response (Item 2), tallied the number of foreign languages spoken and divided by the maximum of three (Item 3), and coded whether the participant's father and mother were born outside of Israel (Items 4 and 5) and divided the sum by 2. We further counted the number of listed restaurants that served non-Israeli cuisines (Item 6), the number of close foreign friends (Item 7), and the number of foreign musicians (Item 8), and we divided

each count by the maximum of five. The sum of the rescaled items forms our measure of multicultural experience.

Endorsement of Ethiopian, homosexual, and native Israeli stereotypes (Sabras). To assess degree of stereotype endorsement, we relied on the same measure used in Study 1, except that rather than only focusing on the degree of endorsement of negative stereotypes, we also included positive stereotypes for each group. Specifically, for the Ethiopian group, participants were asked to rate their agreement with eight stereotypes, including cooperative and gentle as examples of positive stereotypes and uneducated and submissive as examples of negative stereotypes (overall $\alpha = .80$; Shabtai, 2001). For the homosexual group, participants were asked to rate their agreement with eight stereotypes, including articulate and well-dressed as examples of positive stereotypes and melodramatic and emotional as examples of negative stereotypes (overall $\alpha = .86$; Sakalh, 2003). For the native Israeli (Sabras) group, participants were asked to rate their agreement with 12 stereotypes, including creative and friendly as examples of positive stereotypes and abrasive and rude as examples of negative stereotypes (overall $\alpha = .85$; Bar-Tal & Teichman, 2005). All items were rated on a scale ranging from 1 (*not at all true*) to 5 (*extremely true*).

Need for cognitive closure. As in Study 3, need for cognitive closure was assessed using Roets and Van Hiel's (2011) brief NFCC scale ($\alpha = .76$).

Individual differences. Previous research has suggested that a variety of individual difference factors are associated with stereotyping (e.g., Engberg, 2004; Hewstone et al., 2002). By measuring and subsequently controlling for these variables, we minimized the possibility that they could provide rival explanations of our results. Controls included gender (1 = male), openness to experience (Gosling, Rentfrow, & Swann, 2003; two items), social desirability (Crowne & Marlowe, 1960; 11 items with higher scores indicating greater honesty, $\alpha = .65$), and undergraduate major (1 = social sciences). In addition, to demonstrate that the benefits of multicultural experience are not due to enhanced cultural knowledge of outgroups, we also included a measure of cognitive cultural intelligence (Ang et al., 2007; six items, $\alpha = .83$).

Results

Analyses overview. We conducted multiple regressions to test whether multicultural experience significantly predicted endorsement of stereotypes related to (1) Ethiopians, (2) homosexuals, and (3) native Israelis (Sabras), beyond what could be predicted from the control variables. We then conducted hierarchical regressions and a model-based bootstrap to explore whether NFCC mediates the effect of multicultural experience on stereotype endorsement (Baron & Kenny, 1986; Preacher & Hayes, 2008).

Effects of multicultural experience on stereotype endorsement. As shown in Table 2, multicultural experience was a significant predictor of the degree of stereotype endorsement related to Ethiopians ($\beta = -.244$, $p = .027$), homosexuals ($\beta = -.228$, $p = .029$), and Sabras ($\beta = -.234$, $p = .042$). The negative beta weights suggest that the greater individuals' level of multi-

Table 2
Multiple Regressions for Stereotype Endorsement of (a) Ethiopians, (b) Homosexuals, and (c) Sabras, Study 4

Predictor	(a) Ethiopians	(b) Homosexuals	(c) Sabras
	β	β	β
Gender (1 = male)	.51**	.44**	.29*
Social desirability	-.12	-.05	-.02
Openness	.04	.12	-.00
Major (1 = social sciences)	.08	-.13	-.09
Cognitive cultural intelligence	.08	-.02	-.00
Multicultural experience	-.24*	-.23*	-.23*
R^2	.24	.31	.14

Note. β = standardized coefficient.

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

culturalism, the lower their tendency to accept existing stereotypes as true.⁸

Effects of multicultural experience on NFCC. As expected, greater levels of multiculturalism were associated with lower levels of NFCC ($\beta = -.273, p = .011$).

NFCC as a mediator. For our measure of Ethiopian stereotype endorsement, multicultural experience and the controls were entered in the first step of the analysis. In the second step, NFCC was also included in the analysis. As predicted, NFCC emerged as a significant predictor of stereotype endorsement ($\beta = .328, p = .003$) and the effect of multicultural experience became nonsignificant ($\beta = -.154, p = .154$), demonstrating that NFCC did in fact mediate the effect between multicultural experience and stereotype endorsement. The positive beta weight for NFCC suggests that the greater individuals' need for closure, the greater their tendency to endorse existing stereotypes about Ethiopians as true. A Sobel test provided further support for the mediation effect ($z = -1.977, p = .048$; see Figure 3, Panel a). Similarly, a model-based bootstrap (Preacher & Hayes, 2008), using 5,000 samples from the original data, revealed a mean indirect effect of $-.049$ ($SE = .035$), with a 95% confidence interval that did not include zero (95% CI [-.158, -.005]), suggesting that the indirect effect was significant.

Similarly, for our measures of homosexual and Sabra stereotype endorsement, when NFCC levels were taken into account, NFCC positively predicted stereotype endorsement ($\beta = .291, p = .007$; $\beta = .368, p = .002$, respectively), and the multicultural experience effect on stereotype endorsement became nonsignificant ($\beta = -.150, p = .147$; $\beta = -.134, p = .234$, respectively). As expected, Sobel tests ($z = -1.900, p = .057$; $z = -2.031, p = .042$, respectively; see Figure 3, Panels b and c) and Preacher and Hayes's (2008) bootstrapping-based tests were also consistent with our mediation hypothesis (homosexual stereotype: indirect effect = $-.071, SE = .048, 95\% CI [-.213, -.006]$, 5,000 bootstrap samples; Sabra stereotype: indirect effect = $-.078, SE = .048, 95\% CI [-.212, -.013]$, 5,000 bootstrap samples).

Discussion

The findings from Study 4 demonstrate that existing levels of multicultural experience are significantly related to a lower tendency to endorse stereotypes of not only Ethiopians but also of other maligned groups such as homosexuals and even lower en-

dorsement of stereotypes related to one's ingroup. Moreover, the results show that the reduced tendency to endorse existing stereotypes found among individuals with greater levels of multicultural experience was mediated by NFCC. This is the first time this effect has been demonstrated. Thus, Study 4 established that multicultural experience is related to lower levels of NFCC and this drove their lower tendency to stereotype.

Study 5: Multicultural Experience and Prejudice: The Mediating Role of NFCC

Although Study 4 provided support for our model's predictions that greater levels of multicultural exposure can lead to lower stereotyping by reducing the need for closure, the sample involved native Israelis. Thus, it remains to be seen whether the mediation will generalize to other cultural groups. In addition, we also speculated that the same mediated relationship will be found for prejudiced attitudes. In Study 5, we address these issues. First, utilizing a different measure of stereotype endorsement than the one used in Studies 1 and 4, we tested whether Caucasian Americans with greater levels of multicultural experiences would be more likely to support arguments suggesting that stereotypes of African Americans are socially constructed and do not reflect a true characterization of the group. Second, we further explored whether multicultural experiences would be negatively associated with prejudiced attitudes against African Americans. Finally, we assessed whether NFCC mediates these relationships.

Method

Participants. Sixty-nine Caucasian American undergraduate students participated in the study for course credit (55 women; mean age = 19.03 years, $SD = 1.33$). Using the exclusion criteria outlined in Study 1, no participants needed to be dropped from the analysis.

Materials and procedure.

Multicultural experience measure. Multicultural experiences were measured and coded using the same scale described in Study

⁸ Separate analyses for positive and negative stereotypes of each group yielded a similar though not always significant pattern of results.

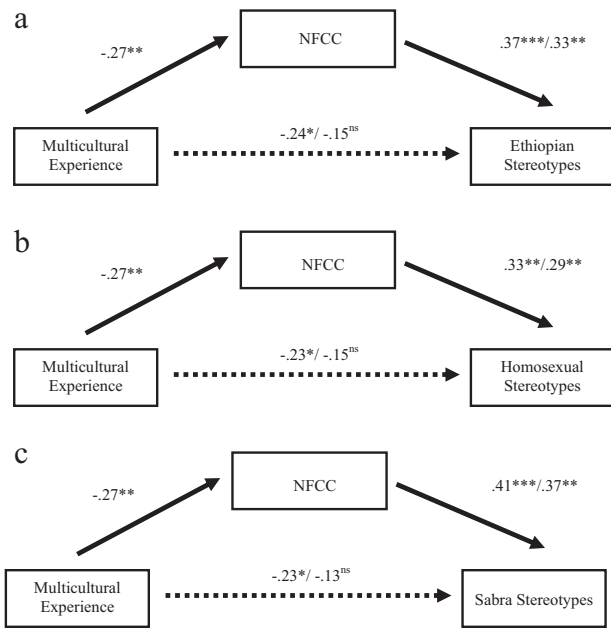


Figure 3. Mediation analyses for (a) Ethiopian stereotypes, (b) homosexual stereotypes, and (c) Sabra stereotypes, Study 4. Numbers represent standardized regression coefficients. NFCC = need for cognitive closure. * $p < .05$. ** $p < .01$. *** $p < .001$.

4 except that the participant's country of origin was replaced with United States instead of Israel in the relevant items.

Images of Blacks as Social Construction Scale. We developed the Images of Blacks as Social Construction Scale specifically for the current research. We presented participants with a list of 13 beliefs that Caucasian Americans have of African Americans. The list included the negative stereotypes used in Study 1 (e.g., uneducated) as well as a set of positive stereotypes (musical). They were then asked to think about these images of Blacks/African Americans and indicate whether they (1) reflect the truth in the social reality (reversed coded); (2) are not true at all; (3) do not have any real basis; they are socially constructed; (4) would change, depending on the social situations; (5) are constructed by the ruling class to maintain existing social structure; (6) are used by the ruling class to oppress minority groups; and (7) are used by the ruling class to create animosity/hostility between racial groups. All items were rated on a scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). Internal reliability was acceptable ($\alpha = .80$). Scores were significantly negatively correlated with scores on the Symbolic Racism Scale (Henry & Sears, 2002) described below ($r = -.53, p = .0001$), providing some evidence for the validity of this measure.

Symbolic Racism Scale. We used the Symbolic Racism Scale (Henry & Sears, 2002) to assess prejudice toward African Americans. It consists of eight statements, which together convey a coherent set of beliefs. Namely, that

racial discrimination is no longer a serious obstacle to Blacks' prospect for a good life; that Blacks' continuing disadvantages are due to their own unwillingness to take responsibility for their lives; and that, as a result, Blacks' continuing anger about their own treatment, their demands for better treatment, and the various kinds of special atten-

tion given to them are not truly justified. (Henry & Sears, 2002, p. 254; see also Sears, van Laar, Carrillo, & Kosterman, 1997)⁹

Respondents report the extent of their agreement with most items using a scale ranging between 1 (*strongly disagree*) and 4 (*strongly agree*). One item uses a 3-point rating scale, which was recoded into a 4-point scale in the analysis. Higher scores indicate higher levels of prejudice. Henry and Sears (2002) found the scale to have high internal reliability, discriminant validity, and predictive validity among college students and general adult samples. In the present study, $\alpha = .79$.

Need for cognitive closure. Need for cognitive closure was measured using Webster and Kruglanski's (1994) full 42-item scale. Participants were asked to indicate their agreement or disagreement with each item on a 6-point scale. Higher scores indicate a higher need for closure ($\alpha = .81$).

Individual differences. As in Study 4, we controlled for gender (1 = male), openness to experience (12-items, $\alpha = .71$; Costa & McCrae, 1992), social desirability (Crowne & Marlowe, 1960; 11 items, $\alpha = .67$), undergraduate major (1 = social sciences), and cognitive cultural intelligence (Ang et al., 2007; six items, $\alpha = .83$). To demonstrate that the benefits of multicultural experience are not simply due to increased emotional closeness to outgroup members, we controlled for participants' ratings on Aron, Aron, and Smollan's (1992) Inclusion of Other in Self Scale (also see Galinsky, Ku, & Wang, 2005; Galinsky & Moskowitz, 2000). Participants were asked to think about Black/African Americans they have been in contact with and to circle the picture that best describes their relationship. Higher scores indicate a greater degree of emotional closeness. Finally, in order to demonstrate that the benefits of multicultural experience are not due to a reduced sense of competition with outgroups, we also controlled for level of agreement with the statement "It is a zero sum game in this society, you either win or lose."

Results and Discussion

Effects of multicultural experience on stereotypes as social construction and symbolic racism. We conducted multiple regressions to test whether multicultural experience was related to (1) African American stereotypes as socially constructed and (2) symbolic racism. Table 3 shows a similar pattern of results for both variables. Specifically, multicultural experience was a significant predictor of beliefs of African American stereotypes as social construction ($\beta = .275, p = .035$) and of their level of symbolic racism ($\beta = -.280, p = .035$). The beta weights show that multiculturalism is associated positively with the degree to which participants believed stereotypes were socially constructed and negatively with their level of racism.

Effects of multicultural experience on NFCC. As predicted, greater levels of multiculturalism were associated with lower levels of NFCC ($\beta = -.369, p = .004$).

NFCC as a mediator. When NFCC levels were taken into account, NFCC was negatively related to stereotypes as socially

⁹ The controversial status of symbolic racism as a measure of prejudice must be acknowledged. Specifically, some researchers have suggested it is not necessarily different from old-fashioned racism and that because symbolic racism links prejudice to politics, it is possible the measure taps political conservatism and not prejudice (Sniderman & Tetlock, 1986).

Table 3
Multiple Regressions for (A) Stereotypes as Social Construction
and (B) Symbolic Racism, Study 5

Predictor	(A) Stereotypes as social construction	(B) Symbolic racism
	β	β
Gender (1 = male)	-.27*	.08
Social desirability	.22	-.09
Openness	.36**	.06
Major (1 = social sciences)	.11	-.26*
Cognitive cultural intelligence	-.18	.20
Closeness to African Americans	.13	-.23
Zero sum	.12	.28*
Multicultural experience	.28*	-.28*
R^2	.32	.30

Note. β = standardized coefficient.
* $p < .05$. ** $p < .01$.

constructed ($\beta = -.356, p = .008$), and the effect of multicultural experience became nonsignificant ($\beta = .144, p = .273$). The negative beta weight for NFCC suggests that the greater individuals' level of need for closure, the lower their tendency to view stereotypes as socially constructed. Results from both the Sobel test ($z = 2.020, p = .043$; see Figure 4, Panel a) and Preacher and Hayes's (2008) bootstrapping method (indirect effect = .118, $SE = .069$, 95% CI [.014, .302], 5,000 bootstrap samples) were consistent with our mediation hypothesis.

Similarly, for our measure of symbolic racism, we found that when NFCC levels were taken into account, multicultural experience effect was no longer significant ($\beta = -.157, p = .244$), but NFCC positively predicted racism ($\beta = .332, p = .016$). The positive beta weight for NFCC suggests that the greater individuals' level of need for closure, the greater their tendency to endorse symbolically racist beliefs. Both the Sobel test ($z = -1.916, p = .055$; see Figure 4, Panel b) and Preacher and Hayes's (2008) bootstrapping method (indirect effect = -.051, $SE = .034$, 95% CI [-.147, -.002], 5,000 bootstrap samples) provided additional evidence for the mediation hypothesis.

Taken together, these results replicate and extend those of Study 4 by demonstrating that multicultural experience was negatively related to stereotyping as well as to prejudiced attitudes in a sample of Caucasian Americans. Moreover, replicating results from Study 4, we show that both of these relationships were mediated by NFCC.

Study 6: Multicultural Experience Manipulation → NFCC → Stereotype Endorsement

Studies 4 and 5 provided convincing evidence for the existence of a relationship between multicultural experience, epistemic un-freezing, and intergroup bias. However, the correlational nature of these studies leaves open the possibility of a reversed directionality. Thus, it remains to be seen whether the full mediation model can be replicated using experimental exposure to multicultural experience. In addition, although Studies 1 and 2 consistently demonstrated the causal effect of multiculturalism on reduced bias, it is possible that the ameliorative effects of multicultural experi-

ence resulted from differential pressure to appear nonprejudiced. This explanation appears less likely given the finding that mere exposure to a foreign culture was insufficient to reduce bias. Nonetheless, the issue of demand characteristics warrants empirical attention. Finally, given recent findings suggesting a connection between epistemic un-freezing, right-wing ideology, and intergroup bias (Cunningham et al., 2004), it is also important to investigate whether multiculturalism impacts right-wing authoritarianism (RWA) or political conservatism and to test whether this could pose an alternative explanation for the results (cf. Bullock, Green, & Ha, 2010). Study 6 was conducted with these goals in mind.

Method

Participants. Eighty-six Israeli undergraduate students participated in exchange for course credit. Using the same exclusion criteria outlined in Study 1, we removed 11 participants from the analysis because they either did not follow the essay-writing instructions in their assigned condition or they indicated that they never had experiences that were relevant to the essay topic. The number of participants excluded was roughly uniform across all the conditions. The final sample included 75 students (34 women; mean age = 23.57 years, $SD = 2.47$). All participants were Jews born in Israel.

Materials and procedure. Following the same procedure used in Study 3, we invited students to participate in two unrelated research projects conducted online. We introduced the multicultural experience manipulations during the first project and administered the NFCC and stereotype measure as part of the second project.

Multicultural experience manipulation. The essay-question methodology used in Study 3 proved successful, but two issues remain unresolved. First, although all participants in the multicultural experience condition of Study 3 successfully described both Israeli and foreign culture experiences, their instructions were relatively implicit, asking them to compare their experiences in the foreign culture with what they were familiar with instead of

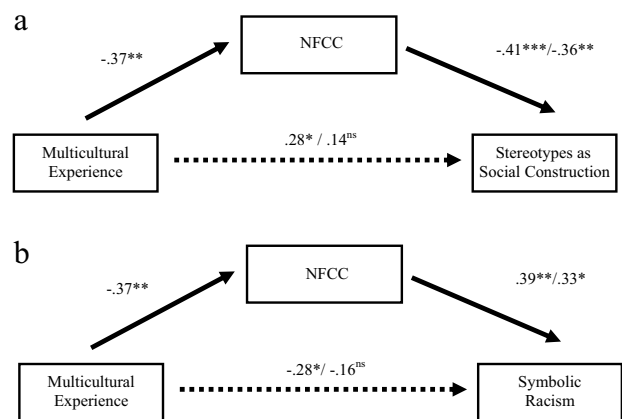


Figure 4. Mediation analyses for (a) stereotypes as social construction and (b) symbolic racism, Study 5. Numbers represent standardized regression coefficients. NFCC = need for cognitive closure. * $p < .05$. ** $p < .01$. *** $p < .001$.

specifically asking about Israeli culture. Second, although we hypothesize that mere exposure to a new culture is not sufficient to produce either epistemic unfreezing or reduced bias, Study 3 did not include a pure foreign-culture condition. To address these issues, we build off the essay question stems we used in Study 3 and randomly assigned participants to one of four essay conditions: multicultural essay, Israeli essay, foreign-culture essay, and travel abroad essay. In the *multicultural essay* condition, participants were asked to write about an experience in which they were exposed to a culture other than Israeli culture and to compare how similar or different was the foreign culture experience from what they are familiar with in Israeli culture. In the *Israeli essay* condition, participants were asked to write about an experience in which they were exposed to Israeli culture and to describe how they felt and what they thought about. In the *foreign-culture essay* condition, participants were asked to write about an experience in which they were exposed to a foreign culture and to describe how they felt and what they thought about. Finally, in the *travel abroad essay* condition, participants were asked to write about an experience in which they traveled abroad and to describe how they felt and what they thought about. All participants were asked to write at least 2–3 paragraphs and to devote at least 10 min to this task.

Task equivalence across conditions. To ensure that participants experienced the essay-writing task similarly across conditions, after the task was completed, we asked them to indicate (1) how much effort they put into the task on a scale ranging from 1 (*very little effort*) to 5 (*a lot of effort*), (2) how much they liked the task on a scale ranging from 1 (*did not like it at all*) to 5 (*liked it very much*), and (3) how happy they felt on a scale ranging from 1 (*not happy at all*) to 5 (*very happy*).

Need for cognitive closure. Need for cognitive closure was assessed using Roets and Van Hiel's (2011) brief NFCC scale ($\alpha = .78$).

Endorsement of Ethiopian stereotypes. Participants were given a short four-item version of the Ethiopian stereotype measure used in Study 4 ($\alpha = .66$). The measure included both positive (e.g., gentle) and negative (e.g., submissive) stereotypes.

Additional measures. After filling out the NFCC scale and the stereotype measure, we also asked participants to fill out several additional measures to help address the issues of demand characteristics and right-wing ideology. First, to ensure that participants did not feel differential pressure to appear nonprejudiced in some of the conditions, we asked participants to fill out Plant and Devine's (1998) measure of motives to appear nonprejudiced. This measure is composed of two subscales: an internal motivation to respond without prejudice scale (Internal Motivation Scale [IMS]; $\alpha = .89$) and an external motivation to respond without prejudice scale (External Motivation Scale [EMS]; $\alpha = .87$). We also asked participants about feeling a sense of pressure from the experimenter to appear nonprejudiced using the following four items: (1) If I showed prejudice toward some groups, I would be concerned that the experimenter would be angry with me; (2) I tried to hide any negative thoughts about some groups in order to avoid negative reactions from the experimenter; (3) I tried to act nonprejudiced toward some groups because of pressure from the experimenter; and (4) I worried that the experimenter would show disapproval toward me if I showed prejudice against some groups ($\alpha = .89$). On all three measures, participants rated their responses on a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

In addition, we gave participants Altemeyer's (1988) 30-item right-wing authoritarianism scale ($\alpha = .85$). Finally, to assess participants' political conservatism, we asked participants to indicate their political orientation on (1) foreign policy issues, (2) economic issues, and (3) social policy issues ($\alpha = .74$). Participants rated their response on each of these three items on a scale ranging from 1 (*very left-winged*) to 7 (*very right-winged*).

Results and Discussion

Task equivalence. As expected, one-way ANOVAs revealed no systematic differences across conditions in task effort, $F(3, 71) = 0.78, p = .51$; task liking, $F(3, 71) = 1.21, p = .31$; or happiness, $F(3, 71) = 1.47, p = .23$.¹⁰

Effects of multicultural experience on stereotype endorsement. A one-way ANOVA assessed the effects of the cultural experience condition (multicultural essay, Israeli essay, foreign-culture essay, and travel abroad essay) on agreement with Ethiopian stereotypes. As expected, the main effect of cultural experience condition was significant, $F(3, 71) = 2.97, p = .037$, partial $\eta^2 = .11$. Consistent with our prediction, planned contrasts revealed that participants in the multicultural essay condition ($M = 2.59, SD = 0.88$) were less likely to endorse Ethiopian stereotypes than were participants in either the Israeli essay condition ($M = 3.09, SD = 0.80, p = .026$), the foreign-culture essay condition ($M = 3.08, SD = 0.39, p = .040$), or the travel abroad essay condition ($M = 3.18, SD = 0.55, p = .008$). Participants in the Israeli essay condition did not significantly differ from participants in either the foreign-culture essay condition or the travel abroad essay condition ($p > .696$).¹¹

Effects of multicultural experience on NFCC. A one-way ANOVA assessed the effects of the cultural experience condition (multicultural essay, Israeli essay, foreign essay, and travel abroad essay) on NFCC. As expected, the main effect of cultural experience condition was significant, $F(1, 71) = 6.50, p = .001$, partial $\eta^2 = .21$. Planned contrasts showed that participants in the multicultural essay condition ($M = 3.67, SD = 0.57$) scored significantly lower on NFCC than did participants in the Israeli essay condition ($M = 4.33, SD = 0.53, p = .0001$), participants in the foreign-culture essay condition ($M = 4.33, SD = 0.54, p = .001$), and participants in the travel abroad essay condition ($M = 4.29, SD = 0.58, p = .001$). Participants in the Israeli essay condition did not significantly differ from participants in either the foreign-culture essay condition or the travel abroad essay condition ($p > .802$).

NFCC as a mediator. ANCOVA results revealed that when NFCC levels were included as a covariate in the analysis of the effects of multicultural exposure on stereotype endorsement, NFCC was a significant predictor of Ethiopian stereotypes, $F(1, 71) = 4.49, p = .038$, partial $\eta^2 = .06$, and the effect of multicultural experience became nonsignificant, $F(3, 71) = 1.07, p = .367$, partial $\eta^2 = .04$. Results from a Sobel test ($z = 1.91, p =$

¹⁰ Importantly, participants in all four conditions reported feeling relatively happy (multiculturalism essay: $M = 3.60, SD = 1.10$; Israeli essay: $M = 3.00, SD = 1.11$; foreign essay: $M = 3.33, SD = 0.82$; travel essay: $M = 3.62, SD = 1.12$).

¹¹ Separate analyses for positive and negative stereotypes of each group yielded a similar though not always significant pattern of results.

.056) and from Preacher and Hayes's (2008) bootstrapping method provided additional support for the mediation hypothesis (indirect effect = .065, $SE = .036$, 95% CI [.009, .147], 5,000 bootstrap samples).

Notably, given that our independent variable of multicultural experience manipulation is multicategorical (with four conditions), ANCOVA results can only provide an omnibus test of the mediation hypothesis. In order to uncover the specific between-condition differences accounting for the mediation effect, we also conducted a hierarchical regression analysis, using three orthogonal contrasts which together fully represent the experimental manipulation (Hayes & Preacher, 2011; also see, Cohen, Cohen, West, & Aiken, 2003). As can be seen in Table 4, the first contrast, labeled C1, compared the multicultural essay condition to the other three conditions. The second contrast, labeled C2, compared the foreign essay condition to the travel abroad condition. The third contrast, labeled C3, compared the Israeli essay condition to both the foreign and travel abroad conditions.

In the first step of the analysis, we regressed Ethiopian stereotypes on the three contrasts. As expected, we found that the only significant relative total effect was that of C1 which compared multiculturalism to the other three groups (C1: $\beta = -.327$, $p = .005$; C2: $\beta = .046$, $p = .686$; C3: $\beta = -.022$, $p = .845$). The negative beta weight for C1 suggests that participants in the multicultural essay condition were less stereotypical than were participants in the other three conditions. Participants in the Israeli essay, foreign-culture essay, and travel abroad essay conditions did not differ from each other. More importantly, as demonstrated in Table 4, when NFCC levels were taken into account in the second step of the analysis, NFCC emerged as a significant predictor of stereotype endorsement ($\beta = .261$, $p = .038$), and C1 became nonsignificant ($\beta = -.206$, $p = .101$), demonstrating that NFCC did in fact mediate the effect between multicultural experience and stereotype endorsement. Additional support for the mediation hypothesis comes from Hayes and Preacher's (2011) bootstrapping test for the indirect effects of a multicategorical causal agent which, as predicted, yielded a 95% confidence interval that excluded zero only for the relative indirect effects of C1 (indirect effect = $-.197$, $SE = .110$, 95% CI $[-.4360, -.0023]$, 5,000 bootstrap samples) but not for C2 or for C3 (C2: indirect effect = $-.068$, $SE = .033$, 95% CI $[-.080, .057]$, 5,000 bootstrap samples; C3: indirect effect = $.002$, $SE = .018$, 95% CI $[-.042, .031]$, 5,000 bootstrap samples).

Alternative explanations. Alleviating concerns related to demand characteristics, one-way ANOVA results revealed that participants in the four cultural experience conditions did not differ in their external motivation to appear nonprejudiced, $F(3, 71) = 1.25$, $p = .30$; in their internal motivation to appear nonprejudiced, $F(3, 71) = 0.46$, $p = .71$; or in their sense of experimenter pressure to appear nonprejudiced, $F(3, 71) = 0.50$, $p = .68$. In addition, addressing the issue of right-wing ideology, no differences were found among participants in their levels of RWA, $F(3, 71) = 0.61$, $p = .61$, or political conservatism, $F(3, 71) = 1.27$, $p = .29$.

Overall, these findings provide support for the expected direction of causality. Specifically, the results demonstrate that multicultural experiences lead to a significant reduction in epistemic unfreezing which in turn lead to reduced stereotyping. Moreover, increasing confidence in the viability of our proposed model (Bullock et al., 2010), the differential levels of stereotype endorsement found across conditions could not be attributed to differences in either participants' felt pressure to appear nonprejudiced or their endorsement of a right-wing ideology.

General Discussion

The current research is the first to explore how multicultural experiences can lead to reductions in intergroup bias and to uncover the underlying motivational processes driving these effects. Across five studies, we found that multicultural exposure leads to a reduction in stereotype endorsement (Studies 1, 4, and 6), symbolic racism (Study 5), and discriminatory hiring decisions (Study 2). Using experimental manipulations, we further demonstrated that exposure to multicultural experience leads to a causal reduction in NFCC (Studies 3 and 6) and that the relationship between multiculturalism and intergroup bias were fully mediated by lower levels of NFCC (Studies 4, 5, and 6). These results are the first to demonstrate NFCC as the underlying motivational mechanism that helps explain how the ameliorative effects of multicultural experience on cognitively-infused dimensions of intergroup bias are achieved. Thus, multicultural experience appears to be a crucial contributor to these consequential outcomes through its relationship to motivated cognitive processes.

Notably, the current research relied on a diverse set of samples and measures as well as a variety of both experimental and non-experimental methods to demonstrate both the internal and external validity of our findings: we find the same robust relation-

Table 4
Contrast Coding and Hierarchical Regression for Stereotype Endorsement of Ethiopians, Study 6

Predictor	Coding of multicultural experience manipulation				Regression results:	Regression results:
	Multicultural essay	Israeli essay	Foreign essay	Travel abroad essay	Step 1	Step 2
					β	β
C1: Multicultural versus other	3	-1	-1	-1	-.33**	-.21
C2: Foreign versus travel	0	0	1	-1	.05	.05
C3: Foreign + travel versus Israeli	0	2	-1	-1	-.02	-.03
NFCC						.26*
R^2					.11	.17

Note. β = standardized coefficient; C = Contrast; NFCC = need for cognitive closure.
* $p < .05$. ** $p < .01$.

ships regardless of the targeted stereotype group (African Americans, Ethiopians, homosexuals, native Israelis), regardless of whether multicultural experience was measured or manipulated, and regardless of the population sampled (Caucasian Americans or native Israelis).

Contributions

The findings from the current research contribute to our knowledge about intergroup contact and diversity experiences in education in several ways. First, unlike past research on the contact hypothesis which was uniquely focused on interpersonal contact experiences, the current research highlights the value of extending the definition of contact to also include non-interpersonal contact experiences. By also taking into account cognitive dimensions of multicultural exposure, we were able to demonstrate for the first time a strong link between multiculturalism and dimensions of intergroup bias that include a cognitive component. We have further shown that the beneficial effects of multicultural exposure do not require a one-to-one match between the specific culture individuals are exposed to and the particular target outgroup they are asked to rate. Indeed, our finding that these effects occur through the development of a habitual motivation for epistemic unfreezing underscores the idea that such multicultural experiences cultivate a generalized tendency for a more tolerant mind.

Second, although educational diversity research has relied on broader definitions of multiculturalism than those used in the contact literature, it has been criticized on methodological and theoretical grounds. These shortcomings led Chang, Denson, Saenz, and Misa (2006) to conclude that

it is clear that the controversy regarding claims about the educational benefits of diversity is far from settled, and there continues to be a pressing need to understand empirically how students actually benefit, if at all, from being in more racially/ethnically diverse environments. (p. 431)

Our studies have addressed many of these limitations directly. Most notably, we have demonstrated a robust causal relationship between multicultural experience and reductions in intergroup bias.

Third, the current research is the first to establish that changes in general motivational processes drive many of the benefits of multicultural experiences for social tolerance. While the majority of past research on intergroup contact has focused mainly on emotional and cognitive mechanisms, educational research has not investigated potential mediators. The finding that experimental manipulation of multicultural experiences reduces NFCC further fits well with Webster and Kruglanski's (1997) suggestion that stable differences in NFCC may derive from things such as cultural learning.

Finally, the present research extends our understanding of multiculturalism by demonstrating that the benefits of multicultural experience are not limited to greater achievements in the creative and professional domains (e.g., Leung et al., 2008; Tadmor, Galinsky, & Maddux, 2012) but that they also extend to fostering greater social tolerance and mutual acceptance. It further expands previous findings by showing that the motivational and information processing benefits of multicultural experience are not limited solely to acculturating individuals who have had extended experience

in two cultures (cf. Tadmor, Galinsky, & Maddux, 2012; Tadmor & Tetlock, 2006; Tadmor et al., 2009). We also show that these serendipitous benefits associated with multiculturalism will come to fruition only when both old and new cultures are considered and compared simultaneously; mere exposure to a foreign culture is not sufficient (cf. Leung & Chiu, 2010; Tadmor, Galinsky, & Maddux, 2012). These findings are consistent with conceptualizations of cognitive dissonance theory which suggest that dissonance and the resulting attitude change will only occur when inconsistent cognitions are accessible simultaneously (McGregor et al., 1999).

Limitations and Directions for Future Research

Although the present findings provide strong support for the role of multicultural experiences and need for closure as predictors of social tolerance, there is increased recognition that it is difficult to establish mediation within the confines of a single article (Bullock et al., 2010; Judd & Kenny, 2010). It is, nonetheless, heartening that across studies, we found the same pattern of results regardless of how multicultural experience was manipulated or measured, and that we were able to demonstrate that alternative mechanisms such as demand characteristics, RWA, mood, and effort were less plausible. It is further reassuring that while we have demonstrated the direct effect of experimental manipulation of multiculturalism on NFCC, past research has consistently demonstrated that experimental manipulation of NFCC leads to reduced tolerance (e.g., Kruglanski & Freund, 1983). Taken together, this type of experimental-causal-chain design has been suggested to provide "strong evidence for the theoretically proposed psychological process" (Spencer, Zanna, & Fong, 2005, p. 846). And yet, future research would benefit from replications which employ alternative designs to measure mediation.

Also noteworthy is that although the current research has attempted to address many of the limitations associated with past work on multicultural education, including its lack of experimental tests of causality and nonrandom assignment of participants to experimental conditions (e.g., Paluck & Green, 2009), it has relied on paper-and-pencil type measures (e.g., stereotype endorsement) and low-stake lab-based behavioral abstractions (e.g., hiring-decisions). Therefore, looking forward it would be fruitful for research to also investigate real-world unobtrusive and behavioral manifestations of prejudice-reduction outcomes as well as to test effects on *implicit* bias. Indeed, recent research has demonstrated that conscious and unconscious expressions of bias substantially overlap (Cunningham et al., 2004). Thus, it is possible that interventions aimed at increasing multicultural exposure would also translate to reduced bias in non-deliberative behaviors. In addition, although we have demonstrated that experimentally generated multicultural experience can temporarily reduce bias, future studies should also investigate the long term effects of exposure. It might be possible to construct intervention programs based on the multicultural experience manipulations used in our experiments to investigate whether the evident advantages of such experiences are sustainable.

Finally, research could also explore potential moderators of the multiculturalism–social tolerance relationship. One potentially fruitful area of investigation would be to examine whether existential concerns attenuate this positive association. Indeed, indi-

viduals do not passively receive cultural influences (Chiu & Hong, 2005). Rather, when faced with existential terror, individuals tend to rigidly adhere to known cultural conventions and to display unfavorable responses to outsiders who threaten their cultural worldview (e.g., Greenberg et al., 1990; Schimel et al., 1999; Solomon, Greenberg, Schimel, Arndt, & Pyszczynski, 2004). Notably, research has already demonstrated that exposure to existential terror moderates the link between multiculturalism and creativity (Leung & Chiu, 2010). A similar effect might be found for intergroup biases. This may be especially true for individuals who are dispositionally high on NFCC. Indeed, mortality salience effects on worldview defense have been found to be significantly more pronounced in individuals who display a chronic need for stable and consistent knowledge (Landau et al., 2004; Schimel et al., 1999). For these individuals, reminders of death may be particularly threatening causing them to fervently cling to an unambiguous culturally-sanctioned view of the world.

More broadly, we propose that any experience of self-relevant threat may moderate the multiculturalism-social tolerance link. Specifically, research has demonstrated that when self-relevant cognitions are threatened, individuals experience anxious uncertainty that motivates compensatory conviction responses, including extreme worldview defense, heightened affirmation of personal values, increased religious zeal, and increased intergroup bias (e.g., McGregor, Nash, Mann, & Phills, 2010; McGregor, Nash, & Prentice, 2010; McGregor, Zanna, Holmes, & Spencer, 2001; van den Bos, Poortvliet, Maas, Miedema, & van den Ham, 2005; also see Staw, Sandelands, & Dutton, 1981). This hardening of attitudes and defensive rigidity has been suggested to have a palliative effect by quelling the anxiety and providing epistemic solace (McGregor et al., 1999, 2001; van den Bos, 2009; van den Bos et al., 2005). Thus, we speculate that the effects of multicultural experience on social tolerance may diverge such that relative to baseline, multiculturalism may lead to reduced bias in no-threat conditions, but to increased bias in threat conditions. That is, under threat, individuals will be motivated to turn to emotionally-defensive reactions that will provide them with immediate epistemic relief. In itself, however, exposure to multicultural experiences is not expected to induce such hot-system responses (Hong, 2012; cf. Metcalfe & Mischel, 1999). Taken together, integrating our current research with past findings on self-threat experiences, we believe it might be possible to create an overarching model to explain when multicultural experiences would lead to inclusionary responses and when they would lead to exclusionary responses (cf. Huntington, 1996).

Conclusions

Researchers and practitioners alike have come to recognize the potential value of multicultural exposure for reducing intergroup bias. The current research provides a critical first step toward understanding how multicultural experiences, broadly defined, are associated with reduced racial bias through a process of epistemic unfreezing. As the world becomes more interconnected, experiencing multiculturalism will multiply. However, globalization also brings with it the potential for more social intolerance. Understanding how we can utilize multicultural experiences to increase mutual acceptance is thus an important goal for future research.

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Correction to Levine et al. (2012)

In the article "Accuracy and artifact: Reexamining the intensity bias in affective forecasting" by Linda J. Levine, Heather C. Lench, Robin L. Kaplan, and Martin A. Safer (*Journal of Personality and Social Psychology*, Vol. 103, No. 5, pp. 584–605 doi:10.1037/a0029544), the effect size in Table 4 for Sevdalis, Harvey, & Bell (2009) Study 1 should be -0.32 and the effect size for Study 2 should be -0.36 . These two effect sizes were misreported in Table 4 but entered correctly in the meta-analysis. In online supplemental materials for this article, the Table entry for Wilson et al. (2001) should be: "Wilson et al. (2003), Study 1, Election outcome, General, Delayed (a), pp. 429–430."

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