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“Prejudiced” Behavior Without Prejudice? Beliefs About the Malleability of Prejudice Affect Interracial Interactions

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Prejudiced behavior is typically seen as emanating from prejudiced attitudes. Eight studies showed that majority-group members' beliefs about prejudice can create seemingly “prejudiced” behaviors above and beyond prejudice measured explicitly (Study 1b) and implicitly (Study 2). Those who believed prejudice was relatively fixed, rather than malleable, were less interested in interracial interactions (Studies 1a–1d), race- or diversity-related activities (Study 1a), and activities to reduce their prejudice (Study 3). They were also more uncomfortable in interracial, but not same-race, interactions (Study 2). Study 4 manipulated beliefs about prejudice and found that a fixed belief, by heightening concerns about revealing prejudice to oneself and others, depressed interest in interracial interactions. Further, though Whites who were taught a fixed belief were more anxious and unfriendly in an interaction with a Black compared with a White individual, Whites who were taught a malleable belief were not (Study 5). Implications for reducing prejudice and improving intergroup relations are discussed.

Keywords: prejudice beliefs, beliefs about malleability, interracial interactions, intergroup relations, prejudice

As egalitarian values became normative in mainstream America, overt displays of racial prejudice declined. However, racially prejudiced behaviors persist in subtler forms (e.g., Dovidio, 2001; Dovidio & Gaertner, 2004; Gaertner & Dovidio, 1986; McConahay, 1986). Interactions with members of different races are still avoided and are awkward and stressful experiences for many White Americans (e.g., Mendes, Blascovich, Lickel, & Hunter, 2002; Richeson & Trawalter, 2005; Shelton, 2003; Trawalter & Richeson, 2008; Vorauer, Main, & O'Connell, 1998; for reviews, see Shelton & Richeson, 2006; Trawalter, Richeson, & Shelton, 2009). Even discussing topics related to race remains taboo for many White Americans (e.g., Apfelbaum, Sommers, & Norton, 2008; Norton, Sommers, Apfelbaum, Pura, & Ariely, 2006).

What leads many majority-group members to behave in ways that might appear prejudiced—that is, what leads them to avoid contact with members of other races, to avoid even topics like race

and diversity, or to become tense and aloof in interracial interactions? Reasonably, the standard answer is that people's racial attitudes—their underlying prejudices—fuel such behaviors (e.g., Dovidio, Kawakami, & Gaertner, 2002; McConnell & Leibold, 2001; Richeson & Shelton, 2003). In fact, majority-group members' discomfort and anxiety in interracial interactions can even be taken as a sign of their implicit prejudice (see Dovidio et al., 2002). The present research, however, tests the hypothesis that a previously unexplored factor—people's lay beliefs about the malleability of prejudice—may also powerfully shape White individuals' behaviors in these contexts, independent of the effects of their prejudice, creating behaviors that appear prejudiced even among those low in prejudicial attitudes. Specifically, we predicted that those who cast prejudice as immutable (a fixed belief), compared with those who cast it as malleable and changeable with effort (a malleable belief), would be less interested in engaging in interracial interactions (or any activities related to race and diversity) and would be more anxious before and during interracial interactions.

Beliefs About the Malleability of Attributes

Though no research to date has examined beliefs about the malleability of prejudice, our hypotheses draw support from much past research examining people's lay theories about the malleability of other dimensions of the self, such as intelligence (e.g., Dweck & Leggett, 1988) and personality (e.g., Chiu, Hong, & Dweck, 1997). This research has found that those who believe that attributes like intelligence are more fixed rather than malleable tend to focus relatively more on performance rather than learning, seeking to engage in activities that help confirm their ability. For those with a fixed (entity) belief, understandably, the possibility of discovering or demonstrating that they do not possess the valuable and unchangeable trait is stressful and aversive. In contrast, those with a more malleable (incremental) belief tend to focus relatively

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more on learning and are less worried about having or proving a trait (e.g., Blackwell, Trzesniewski, & Dweck, 2007; Mangels, Butterfield, Lamb, Good, & Dweck, 2006; Robins & Pals, 2002).

Reflecting these different motivational foci, beliefs about malleability have been found to influence interest in, reactions to, and anxiety in various situations, especially those that may lead to a diagnosis of ability. For instance, research has found that those with fixed views of attributes avoid challenging tasks—tasks that carry the potential of poor performance and a diagnosis of one’s abilities. In one study, while 61% of children who thought intelligence was malleable preferred a challenging task (“problems that are hard, new, and different”), only 18% of those with a fixed view of intelligence preferred such a task, choosing instead easily manageable tasks (Dweck & Leggett, 1988; see also Beer, 2002; Mueller & Dweck, 1998). In addition, research has found that viewing personality as fixed rather than malleable leads to more avoidance rather than engagement strategies in challenging social situations (Chiu, Dweck, Tong, & Fu, 1997; Kammrath & Dweck, 2006; Loeb & Dweck, 1994; Rattan & Dweck, 2010).

Beyond simply avoiding challenging situations, individuals with fixed beliefs about attributes also decline learning and improvement opportunities that are more readily undertaken by those with more malleable beliefs. For example, those with a fixed view of intelligence compared with those with a malleable view are less interested in remedial tasks that can help them improve after an unsatisfactory performance (Hong, Chiu, Lin, Wan, & Dweck, 1999; see also Nussbaum & Dweck, 2008) and are less cognitively attuned to and less likely to deeply process learning information (e.g., correct answers to questions they got wrong; Mangels et al., 2006).

Although people who believe attributes are fixed often avoid situations that may call their ability into question, not every such situation can be avoided. When it cannot, the belief that attributes are fixed makes these situations uncomfortable and anxiety provoking. For example, those who see intelligence as fixed rather than malleable worry more about an upcoming diagnostic situation like an IQ test (Cury, Da Fonseca, Zahn, & Elliot, 2008), are more anxious about challenging schoolwork (Henderson & Dweck, 1990), and are more likely to anxiously self-handicap before entering a performance situation (Rhodewalt, 1994).

In line with the idea that a fixed theory heightens concern about one’s ability being diagnosed, research has found that stereotype threat—an anxiety-inducing threat, marked by worry that one’s performance on diagnostic tests may confirm negative stereotypes about one’s group (Steele & Aronson, 1995)—is intensified by holding a belief that ability is fixed. Believing that intelligence can’t be changed makes situations in which it could be diagnosed even more threatening for those faced with negative intellectual stereotypes, while believing it is malleable can relieve stereotype threat (Aronson, 2000; Aronson, Fried, & Good, 2002; Darnimrod & Heine, 2006; Good, Aronson, & Inzlicht, 2003). Moreover, even in the absence of stereotype threat, the heightened anxiety engendered by more fixed beliefs about intelligence has been found to interfere with individuals’ intellectual performance, for instance, leading those with a more fixed view of intelligence to perform worse than those with a malleable view on intellectual performance tests (Cury et al., 2008; see also Blackwell et al., 2007; Mueller & Dweck, 1998), even though their level of intelligence does not differ from those with more malleable views (e.g., Blackwell et al., 2007; Cury, Elliot, Da Fonseca, & Moller, 2006).

Thus, compared with malleable views, fixed views of attributes, which put proving traits to oneself and others center-stage, lead individuals to avoid potentially challenging situations in which their ability could be evaluated, to fail to take action to improve their ability, and to become anxious in situations that involve performance or diagnosis of ability, even heightening effects of stereotype threat. Ironically, such avoidance and anxiety lead those with more fixed beliefs about attributes like intelligence to perform worse and appear less intelligent.

We suggest that more fixed views of prejudice can produce analogous effects. Indeed, there are many parallels between the dimension of intelligence and the dimension of prejudice (especially for majority-group members). Just as intelligence is generally valued, not having prejudice or not appearing prejudiced is a highly desirable quality for many majority-group individuals living in a culture (like parts of the United States) in which there is normative pressure to not be racist (Crandall, Eshleman, & O’Brien, 2002). In addition, as many stigmatized minority-group members encounter stereotype threat in intelligence-diagnostic situations, majority-group members often experience stereotype threat in situations in which prejudice may be evaluated (e.g., Frantz, Cuddy, Burnett, Ray, & Hart, 2004; Goff, Steele, & Davies, 2008). Thus, majority-group individuals who believe that prejudice, once acquired, is relatively unchangeable may be worried about discovering in themselves and/or revealing to others the undesirable and unchangeable trait of prejudice. These individuals may shy away from—avoid and be less interested in—“challenging” situations in which prejudiced thoughts or behaviors may surface. When such situations cannot be avoided, they may experience heightened threat and anxiety. Moreover, believing prejudice to be unalterable, they may, relative to those with a malleable view, reject activities aimed at reducing prejudice, for these activities may not only seem fruitless but may also hold the danger of revealing prejudiced thoughts or actions. Fixed views of prejudice may thus cause majority-group individuals to behave in ways that are negative and seem prejudiced even if they do not possess more prejudiced attitudes.

Though beliefs about the malleability of prejudice may also affect minority-group individuals’ reactions to cross-race encounters (for instance by affecting concerns about being the target of unalterable prejudice; see the General Discussion section), we focus in this initial research on majority-group individuals because of the parallels with past research described above.

Beliefs About the Malleability of Prejudice

People’s beliefs about the malleability of prejudice may legitimately vary. The psychological literature provides evidence for both the fixedness and malleability of prejudice, with different research findings placing prejudice at different points on the spectrum of malleability, from hard-wired (e.g., Cottrell & Neuberg, 2005; Fishbein, 1996) to partially malleable (e.g., Devine, 1989) to almost entirely changeable (e.g., Barden, Maddux, Petty, & Brewer, 2004; Sinclair, Lowery, Hardin, & Colangelo, 2005; Wittenbrink, Judd, & Park, 2001). In addition, such discussions about the nature of prejudice are not restricted to the academic world. They seep into the world of lay individuals, inspiring, for instance, a *Newsweek* cover that asks, “Is Your Baby Racist?” (Bronson & Merryman, 2009).

We have suggested that holding a fixed view of prejudice may lead to decreased interest and increased discomfort and anxiety in challenging situations. However, what are challenging situations in the domain of prejudice? In the domain of intelligence, these are situations in which one could reveal low levels of intelligence (e.g., a test). Analogously, in the domain of prejudice, situations in which prejudice may surface or be evaluated (e.g., an interaction with a person of another race) might be considered challenging. Further, given the lack of experience of many White individuals with interracial interactions or discussions about race or diversity (Apfelbaum et al., 2008; Shelton & Richeson, 2006; Vittrup & Holden, 2007), given the lack of clarity about what constitutes prejudice (Sommers & Norton, 2006), and given the aversiveness of being thought of as (or potentially even feeling) prejudiced (Crandall et al., 2002; Vorauer et al., 1998), a vast majority of situations connected to race or diversity may be challenging in that they are fraught with the possibility of uncovering prejudice and revealing it to oneself or others. This may apply to even seemingly benign situations, such as a lesson on African American history, as even in such situations prejudiced thoughts may come to mind.

Certainly, a fixed belief about prejudice may not affect reactions in situations that carry no possibility of revealing prejudice to oneself or others, or might not have negative effects among those who are absolutely convinced that they have no prejudice (or believe they have no potential of being judged as having prejudice). However, given the ambiguity present in situations connected to race and diversity as described above, we expect a great number of people, regardless of their actual prejudice, to be uncertain about their prejudice status. In fact, in a survey of 32 White individuals drawn from our research sample, only 1 agreed with the statement “I know for certain that I have absolutely no racial prejudice,” and none disagreed with the statement that “Sometimes I worry that I may have some racial prejudice.” Thus, fixed beliefs about prejudice may have pervasive effects in the race-related interactions of majority-group individuals.

In sum, we expect that White individuals who view prejudice as more immutable or are (temporarily) taught that prejudice is fixed, relative to those who see it as more malleable or are taught that it is changeable, will look more prejudiced, even though they do not actually harbor more prejudice. Experiencing heightened worries about revealing prejudice to themselves and others in intergroup encounters, they may avoid interracial interactions (e.g., Gaertner & Dovidio, 1977; Towles-Schwen & Fazio, 2006; Word, Zanna, & Cooper, 1974), exhibit great discomfort in interracial interactions (e.g., Dovidio et al., 2002; Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997; Kawakami, Phillips, Steele, & Dovidio, 2007; McConnell & Leibold, 2001), and have little interest in discussing race or diversity (e.g., Apfelbaum et al., 2008; Norton et al., 2006). Moreover, believing prejudice to be unchangeable, they may show less interest in engaging in activities that could reduce any prejudice they have.

Concerns About Prejudice in Interracial Interactions

Aside from the parallels with research on other fixed versus malleable theories, there is reason to think that fixed versus malleable theories of prejudice will predict prejudice-like behaviors, especially in the context of interracial interactions. We have suggested that a fixed belief about prejudice may increase worries and

concerns about discovering prejudice in oneself and/or revealing it to others and so affect interracial interactions. In support of this hypothesis, recent research has shown that White individuals’ concerns about their prejudice are associated with the quality of their interracial interactions. The more Whites are concerned about being seen as prejudiced by minority-group members, the less enjoyment they anticipate in cross-race interactions (Vorauer et al., 1998). Such concerns may even make some people (particularly those low in prejudice) more likely to “choke” in an interracial interaction—to appear colder, more distant, and less responsive (Vorauer & Turpie, 2004). Similarly, Richeson and Trawalter (2005) have found that heightening White participants’ fears about having or being evaluated as having prejudice (e.g., by telling them “most people are more prejudiced than they think they are”) increases their anxious self-regulation in an interracial interaction, causing them to become more cognitively depleted. In addition, research has found that a focus on learning rather than the evaluation of prejudice can alleviate the stereotype threat-related anxiety experienced by majority-group members in interracial interactions (Goff et al., 2008, Study 3).

Though this research does not typically tend to examine why some individuals might be more worried about finding prejudice in themselves or being seen as having prejudice (for examples of exceptions, see Goff et al., 2008; Vorauer et al., 1998), fixed beliefs about prejudice may well be a reason.

Research Overview

Eight studies tested the influence of majority-group members’ beliefs about the malleability of prejudice—both measured and manipulated. In Studies 1a–1d, we examined whether White individuals’ measured beliefs about the malleability of prejudice predict their desire to engage in interracial interactions and their interest in activities related to race and diversity. In Study 2, we explored whether fixed beliefs about prejudice are associated with greater avoidance and discomfort in anticipation of an interracial (but not same-race) interaction. To test whether a fixed theory of prejudice predicts not only less interest in challenging situations but also less interest in learning, Study 3 examined whether fixed beliefs are associated with less interest in undertaking efforts to reduce prejudice. Studies 4 and 5 manipulated beliefs about the malleability of prejudice. Study 4 tested whether fixed beliefs about prejudice, mediated by increased concerns about revealing prejudice to oneself and others, cause decreased interest in interracial interactions. Study 5 examined whether fixed beliefs cause increased physiological and behavioral anxiety, as well as decreased friendliness, during the course of an interracial (but not same-race) interaction. Along the way, we tested whether the effects of beliefs about prejudice emerge above and beyond those of general beliefs about the malleability of personality (Study 1b), motivation to respond without prejudice (Study 1c), explicit racial attitudes (Study 1b), and implicit racial attitudes (Study 2). We also distinguished between people’s own beliefs and their perceptions of others’ beliefs (Study 1c) and tested whether fixed beliefs about prejudice produce their effects because people believe that their own racial group’s prejudice is unalterable or because they believe that another group’s (e.g., Black individuals’) prejudice is unalterable (Study 1d).

Results supporting our hypotheses would indicate that behavior that might seem “prejudiced” may not be so and might emanate from people who are relatively low in attitudinal prejudice. Such results would also suggest that to increase the frequency and quality of intergroup interactions, to increase engagement with topics related to race and diversity, and to increase willingness to correct prejudice, not only people’s prejudice toward other racial groups but also their beliefs about the malleability of prejudice may need to be addressed.

Studies 1a–1d: Beliefs About Prejudice and Interest in Interracial Interactions, Interest in Race-Related Activities, Racial Attitudes, and Motivation to Respond Without Prejudice

We developed a scale measuring participants’ beliefs about the malleability of prejudice (the Theories of Prejudice Scale; see Appendix), adapted from scales designed to measure beliefs about the malleability of personality in general (Dweck, Chiu, & Hong, 1995). With this scale, we tested the hypothesis that a more fixed view of prejudice is associated with less interest in interracial interactions (Studies 1a–1d) and in activities related to race or diversity (but not in race-unrelated activities; Study 1a). We have suggested that, because a large number of activities relating to race and diversity have the potential to elicit prejudiced thoughts or feelings, the relative reluctance of individuals with fixed views of prejudice to engage in activities related to race and diversity might extend not only to highly threatening activities but also to activities that at first glance may not appear very threatening, such as learning facts about African American history. Thus, we examined interest in highly threatening and relatively safer race-related activities in Study 1a.

These studies also explored relationships between beliefs about prejudice and other constructs. In Study 1b, we measured racial attitudes and people’s theories about the malleability of personality in general to examine whether more fixed prejudice beliefs predict lower interest in interracial interactions, above and beyond these variables. Study 1c examined motivation to respond with the Internal Motivation to Respond Without Prejudice Scale ([IMS]; because of personal values that prejudice is wrong; e.g., “Because of my personal values, I believe that using stereotypes about Black people is wrong”) and with the External Motivation to Respond Without Prejudice Scale ([EMS]; because of self-presentational pressure from others; e.g., “I try to hide any negative thoughts about Black people in order to avoid negative reactions from others”; Plant & Devine, 1998). People’s responses on the IMS and EMS have been found to have important implications in the domain of intergroup relations and interracial interactions (Butz & Plant, 2009; Plant & Devine, 1998): For example, higher EMS scores predict greater avoidance of race-related topics (Apfelbaum et al., 2008). We tested whether prejudice beliefs predict interest in interracial interactions, above and beyond these useful constructs. We did not expect beliefs about prejudice to be redundant with IMS and EMS responses. Just as we did not expect beliefs about the malleability of prejudice to be associated with people’s prejudice, we also did not expect them to be associated with the belief that prejudice is wrong (as assessed by IMS): Both those who do and do not believe prejudice is unchangeable may believe it is wrong. In addition, as we noted, a fixed belief about prejudice should heighten concerns about revealing prejudice to oneself and others (a mechanism we explore in Study 4). If one believes prejudice

cannot be changed, not only acting in a way that could be labeled as prejudiced but also having a thought that reflects “unchangeable” prejudice may be worrisome. Thus, fixed prejudice beliefs may not necessarily correspond with higher EMS scores, because expressing agreement with EMS items can involve admitting (to oneself and perhaps the experimenter) that one possesses prejudice or harbors negative thoughts about certain racial groups (e.g., “I try to hide any negative thoughts about Black people”)—an act that may be aversive to those with fixed prejudice beliefs. Further, EMS taps felt self-presentational pressure from others to behave in unprejudiced ways and does not capture worries about revealing prejudice to oneself. Thus, we did not expect a fixed belief about prejudice to be redundant with external motivation to respond without prejudice.

We also sought to further clarify beliefs about the malleability of prejudice. One possibility is that those who express more agreement with fixed views of prejudice aren’t expressing their own beliefs about prejudice but just perceptions of most people’s beliefs. Those who endorse a fixed view of prejudice may thus be less interested in interracial interactions chiefly because they believe others hold a fixed view of prejudice and might judge them as permanently prejudiced. Study 1c tested whether people’s own beliefs—rather than their perception of most people’s beliefs—predict interest in interracial interactions. In addition, it is possible that White Americans hold different views about the malleability of their own versus other racial groups’ prejudice and avoid interracial interactions chiefly because they believe others’ prejudice against them cannot be changed. Study 1d explored relationships between beliefs about one’s own group’s and other groups’ prejudice and interest in interracial interactions.

Studies 1a–1d thus seek to establish a new measure of beliefs about the malleability of prejudice, examine its relationships with interest in interracial interactions and race-related activities, and distinguish it from previously researched variables.

Method

Participants. Forty-three (26 female, 17 male), 25 (13 female, 12 male), 33 (22 female, 11 male), and 28 (17 female, 11 male) White individuals (ages 18–26 years) participated in Studies 1a, 1b, 1c, and 1d, respectively. They received either partial course credit or a \$5 gift card.

Procedure. In all studies, participants participated in two sessions. First, in a mass survey session, participants completed the Theories of Prejudice Scale (described in detail below; Studies 1a–1d), measures of racial attitudes (Study 1b), measures of the malleability of personality in general (Study 1b), measures of conceptions of most people’s beliefs about prejudice (Study 1c), IMS and EMS scales (Study 1c), and measures of beliefs about their own group’s and other groups’ prejudice (Study 1d). Participants also reported demographic information (age and gender). One to 4 weeks later, participants completed another set of surveys, which contained our target dependent measures—interest in interracial interactions (Studies 1a–1d) and interest in activities related to race and diversity (Study 1a)—randomly embedded among a number of unrelated surveys.

Predictor measures.

Theories of Prejudice Scale. We assessed participants’ views about the malleability and fixedness of prejudice in Studies 1a–1d with a six-item measure that we developed—the Theories of Preju-

dice Scale (see Appendix). Participants rated their agreement on a 6-point scale (ranging from *very strongly disagree* to *very strongly agree*) with six statements, four of which expressed a fixed view of prejudice (e.g., “People have a certain amount of prejudice and they can’t really change that”) and two of which (reverse-coded) expressed a malleable view of prejudice (e.g., “No matter who somebody is, they can always become a lot less prejudiced”). We included more fixed than malleable items in the scale as the malleable view may be seen as more socially desirable and may bias individuals to respond in more malleable terms, suppressing variability in the measure (Dweck, 1999). A pilot study with 40 White students confirmed the scale was internally reliable ($\alpha = .94$; $M = 3.01$; $SD = 0.89$). All six items loaded onto a single factor (which explained 76.6% of the variance), and removal of any item from the scale did not improve internal reliability.

Other measures. In Study 1b, we assessed racial attitudes with two different measures: the Modern Racism Scale (MRS; McConahay, 1986; e.g., “Discrimination against Blacks is no longer a problem in the United States”; $\alpha = .81$)¹ and the Symbolic Racism 2000 Scale (SR2K; Henry & Sears, 2002; summed as described in Sears & Henry, 2005; e.g., “Irish, Italian, Jewish and many other minorities overcame prejudice and worked their way up. Blacks should do the same”; $\alpha = .86$). We selected these measures because they are commonly used to assess racial attitudes (Olson, 2009). We also measured beliefs about the malleability of personality in general in Study 1b with the Implicit Person Theories Scale (Dweck et al., 1995; e.g., “People can do things differently, but the important parts of who they are can’t really be changed”; $\alpha = .92$).

In Study 1c, we modified the Theories of Prejudice Scale to tap participants’ perceptions of most people’s beliefs about prejudice (e.g., “Most people believe that people have a certain amount of prejudice and that people can’t really change that”; $\alpha = .89$). We also administered measures of internal and external motivation to respond without prejudice (IMS and EMS; Plant & Devine, 1998; α s = .80 and .82, respectively).

In Study 1d, we modified the Theories of Prejudice Scale to assess beliefs about the malleability of prejudice held by members of participants’ own racial group and by members of other racial groups, such as African Americans (e.g., “People of my/another racial group have a certain amount of prejudice and they can’t really change that”; α s = .89 and .90, respectively).

Dependent measures.

Interest in interracial interactions. In Studies 1a–1d, we assessed interest in interracial interactions with the six-item Out-group Orientation Scale (Phinney, 1992; $\alpha = .78$). Participants rated their agreement on a 7-point scale (ranging from *strongly disagree* to *strongly agree*) with statements like “I like meeting and getting to know people from ethnic groups other than my own.” *Ethnic groups* was defined to participants as “groups such as African Americans.”

Interest in activities related to race and diversity. In Study 1a, we gauged participants’ interest on a 7-point scale (ranging from *not at all interested* to *very interested*) in participating in 12 psychology studies. Participants were informed that they would be offered the opportunity to participate in the studies in which they had indicated interest during the next quarter.

Of the 12 studies, six were race-related and six were race-unrelated. Three of the race-related studies were more threatening

in that they could easily diagnose prejudice (e.g., “You will take the Implicit Association Test which will assess your unconscious racial prejudices and will learn about your unconscious prejudice”; $\alpha = .78$), while three were less threatening (e.g., “You will be presented facts about the history of African Americans and be tested on your memory for these historical facts”; $\alpha = .79$). As with the race-related studies, three of the race-unrelated studies were more threatening (e.g., “Your ability on a difficult math test like the SAT or GRE will be assessed and you will receive feedback on your weaknesses”; $\alpha = .80$) and three were less so (e.g., “You will be presented with several faces of other people and your memory for these faces will be assessed”; $\alpha = .78$). The latter studies were included to clarify that those with fixed views of prejudice were not less interested in all activities (including threatening ones) in general.

A pilot study with 22 participants drawn from the same sample as was used in Study 1a confirmed our classification of studies as relatively more and less threatening. Participants were given the same list of studies that participants in Study 1a received, and they rated on a 7-point scale how “stressful and anxiety-provoking” they would find each to be. For both the race-related and race-unrelated studies, participants reported finding the more threatening studies more stressful and anxiety-provoking ($M_{\text{race-related}} = 4.64$; $M_{\text{race-unrelated}} = 4.50$) than were the less threatening studies ($M_{\text{race-related}} = 2.30$; $M_{\text{race-unrelated}} = 2.19$; paired-samples t s > 10.42 , p s $< .001$). The ratings of the race-related and race-unrelated studies did not differ (t s < 1).

Results

Preliminary analyses. In Studies 1a–1d and all following studies, regressions revealed that scores on predictors and dependent measures did not vary by gender and that gender did not moderate any of the reported associations between predictors and dependent measures (t s < 1.20).

Interest in interracial interactions. As hypothesized, those with a more fixed rather than malleable view of prejudice were less interested in engaging in interracial interactions ($M_{\text{range}} = 5.24$ – 5.87 , $SD_{\text{range}} = 0.67$ – 0.81), an effect that consistently emerged in Studies 1a–1d (r s = $-.35$ to $-.46$, p s $< .048$; see Table 1). This association persisted while controlling for participants’ beliefs about the malleability of personality ($M = 3.12$, $SD = 0.92$), $r(22) = -.47$, $p = .021$; their racial attitudes assessed by the MRS ($M = 2.12$, $SD = 0.66$), $r(22) = -.47$, $p = .020$, and SR2K ($M = 17.21$, $SD = 3.68$), $r(16) = -.50$, $p = .034$; and their motivation to respond without prejudice for internal reasons (IMS; $M = 4.42$, $SD = 1.31$), $r(29) = -.37$, $p = .041$, and external reasons (EMS; $M = 3.85$, $SD = 1.29$), $r(29) = -.36$, $p = .050$.²

In Study 1c, conceptions of most people’s beliefs about the malleability of prejudice ($M = 3.63$, $SD = 0.78$), though associated with participants’ own beliefs about the malleability of prejudice, $r(31) = .40$, $p = .020$, did not predict interest in interracial

¹ One item from the original MRS pertaining to attitudes toward school desegregation was excluded as it was likely not meaningful to our participants.

² In Study 1a, two participants did not complete the interest in interracial interactions measure. In Study 1b, four participants did not receive the SR2K due to a printing error.

Table 1
Studies 1a–1d: Correlation Between Beliefs About the Malleability of Prejudice and Dependent Measures Assessing Interest in Interracial Interactions and Race-Related Activities

Measure	Study	Fixed prejudice beliefs
Interest in interracial interactions	Study 1a	-.37*
	Study 1b	-.46*
	Study 1c	-.35*
	Study 1d	-.39*
Interest in race-related activities	Study 1a	-.37*

Note. Higher numbers indicate more fixed prejudice beliefs. Beliefs about the malleability of prejudice were uncorrelated with racial attitudes as measured by the Modern Racism Scale and the Symbolic Racism 2000 Scale and with motivation to respond without prejudice as measured by the Internal Motivation to Respond Without Prejudice Scale and External Motivation to Respond Without Prejudice Scale.

* $p < .05$.

interactions, $r(31) = -.18, p = .33$. Thus it seems that people's own beliefs about the malleability of prejudice and not their perceptions of others' beliefs are importantly linked to interest in interracial interactions.³ In Study 1d, beliefs about the fixedness of one's own racial group's prejudice ($M = 3.04, SD = 0.79$) and other racial groups' prejudice ($M = 3.07, SD = 0.76$) were highly correlated, $r(26) = .91, p < .001$, and each scale correlated highly with the general Theories of Prejudice Scale ($r_s > .86, p_s < .002$). In this study, more fixed beliefs about the malleability of one's own group's prejudice predicted significantly less interest in interracial interactions, $r(26) = -.40, p = .033$. More fixed beliefs about the malleability of other groups' prejudice also tended to predict less interest in these interactions, though this effect was only marginally significant, $r(26) = -.32, p = .094$. These results further clarify that for White individuals the effects of beliefs about prejudice may importantly be due to beliefs about the self and one's own group's racial prejudice and not simply due to beliefs about others' prejudice against them.

Did the other measured predictor variables predict interest in interracial interactions? In Study 1b, participants' more general theories about the malleability of personality were unassociated with interest in interracial interactions, $r(23) = -.15, p = .49$. Increased prejudice as measured by the MRS and SR2K tended to be associated with less interest in interracial interactions, though these effects were not significant, $r(23) = -.33, p = .11$, and, $r(17) = -.34, p = .16$, respectively. In Study 1c, IMS and EMS scores were not associated with interest in interracial interactions ($r_s = -.10$ and $-.14, p_s = .57$ and $.43$, respectively). In addition, regressions revealed that none of the other predictor variables—beliefs about the malleability of personality, MRS, SR2K, IMS, and EMS—moderated the relationship between beliefs about the malleability of prejudice and interest in interracial interactions ($t_s < 1$).⁴

Interest in race-related activities. In Study 1a, we also examined interest in more threatening and less threatening race-related activities. Lending further support to our classification of activities as relatively high or low threat, a repeated-measures analysis of variance (ANOVA) revealed that participants were more interested in the less threatening studies (race-related: $M =$

4.53, $SD = 0.59$; race-unrelated: $M = 4.58, SD = 0.71$) than the more threatening ones (race-related: $M = 4.04, SD = 0.60$; race-unrelated: $M = 3.53, SD = 0.70$), $F(1, 42) = 52.00, p < .001$. This effect held for both the race-related and the race-unrelated studies ($t_s > 3.60, p_s < .001$).

As predicted, a more fixed view of prejudice was associated with less interest in race-related activities, for both the highly threatening ones, $r(41) = -.36, p = .018$, and the less threatening ones, $r(41) = -.31, p = .044$. Beliefs about prejudice were uncorrelated with interest in either the high- or low-threat race-unrelated studies, $r(41) = -.21, p = .16$, and, $r(41) = .11, p = .50$, respectively. Since the correlation patterns did not differ by level of threat, we calculated participants' interest in all race-related studies ($\alpha = .79$) and all race-unrelated studies ($\alpha = .80$). Again, prejudice beliefs were uncorrelated with interest in race-unrelated studies but correlated with interest in race-related studies (see Table 1), even after controlling for interest in race-unrelated studies, $r(40) = -.31, p = .045$.

Other relevant associations. Beliefs about prejudice were positively associated with beliefs about the malleability of personality in general, $r(23) = .65, p < .001$, and unassociated with MRS, SR2K, IMS, and EMS scores ($r_s = -.11$ to $.16, p_s > .35$).

Discussion

The findings of Studies 1a–1d are the first to show that people's beliefs about the malleability of prejudice can have important implications for intergroup relations. A more fixed belief about prejudice was associated with less interest in engaging in interactions across racial lines and less interest in studies that touched on race, diversity, or learning about prejudice. The effects on interracial interactions emerged even while controlling for racial attitudes (Study 1b), motivation to respond without prejudice (Study 1c), and beliefs about the malleability of personality in general (Study 1b). These studies also reveal the importance of the self—of one's own beliefs about the malleability of prejudice and beliefs about one's own groups' prejudice—in the effects of the beliefs about prejudice (Studies 1c and 1d). Further, Study 1b also found that beliefs about prejudice were uncorrelated with racial attitudes, highlighting that a fixed view of prejudice may lead people to behave in seemingly prejudiced ways—to avoid contact with members of other races—even in the absence of racial animus.

³ That conceptions of most people's beliefs about prejudice do not seem to drive the association of prejudice beliefs with interest in interracial interactions is consistent with the hypothesis that prejudice beliefs would not be redundant with EMS—which assesses motivation to suppress prejudice for self-presentational reasons.

⁴ Some of these associations might have reached statistical significance with a larger sample. In addition, a larger sample with more variability in measures like IMS and EMS may find that these variables moderate the effects of beliefs about the malleability of prejudice on interracial interactions. Future research with larger and more variable samples might explore whether those who are unworried about revealing prejudice to others (low EMS) and do not subscribe to a belief that prejudice is wrong (low IMS) are unworried about interracial interactions even when they believe prejudice is fixed. Nonetheless, the key finding of this series of studies is that, in these samples, beliefs about prejudice predict interest in interracial interactions, above and beyond these other measured variables.

Interestingly, in Study 1a, more fixed beliefs about prejudice were associated with less interest in race- and diversity-related studies, even when such studies were not apparently highly threatening. We were not surprised by this pattern of results, because even less threatening situations that involve race or diversity are not risk free and can carry the possibility of revealing prejudice to oneself or others. For instance, a prejudiced thought may come to one's mind even while one is engaged in an activity that at first glance may not seem very threatening, such as reading about African American history. Of course, in situations that involve almost no possibility of uncovering prejudice, those with more fixed versus malleable beliefs about prejudice may not differ. Nonetheless, this study demonstrates the potentially pervasive effects of beliefs about the malleability of prejudice across a variety of intergroup situations.

Study 2: Do Beliefs About Prejudice Predict Negative Reactions to Upcoming Interracial Interactions?

Studies 1a–1d investigated self-reported interest in interracial interactions and race-related activities. However, given that self-reported intent does not always map onto behavior (e.g., LaPiere, 1934), it is important to examine behavior when people are actually faced with an interracial interaction. In Study 2, White participants expected to interact with either a Black or a White individual. We examined the effects of beliefs about prejudice on participants' behavioral avoidance of (i.e., their desire to shorten the interaction) and their physical distancing in interracial versus same-race interactions. Increased interpersonal distancing from cross-race partners is a behavioral outcome that has been used to index discomfort and anxiety about interracial interactions in recent research (e.g., Goff et al., 2008), but that is also a negative behavior that is often seen as reflecting prejudice (e.g., Dovidio et al., 2002; Word et al., 1974).

To further support the hypothesis that the effects are driven by beliefs about prejudice, independent of underlying prejudice, we also assessed participants' implicit attitudes toward Black individuals with the Race Implicit Association Test (IAT-Race; Greenwald, McGhee, & Schwartz, 1998). Though Study 1b found that prejudice beliefs do not correlate with racial prejudice as assessed by the MRS and SR2K, it is possible that those with more fixed beliefs about prejudice intentionally portrayed themselves as unbiased on these explicit measures. Thus, Study 2 used an implicit measure of racial bias to examine whether the effects of prejudice beliefs would arise above and beyond the effects of implicit racial associations.

Method

Participants. Eighty-seven White individuals (55 female, 32 male; ages 18–24) participated. They received either partial course credit or \$10.

Procedure and manipulation of race of the interaction partner. One participant arrived for each experimental session and met another individual (actually a confederate), purportedly participating in the same session. Participants were randomly assigned to participate with either a Black or a White female confederate, who were matched, through pretesting of their photographs with 25 students, for perceived attractiveness ($M_{\text{Black}} = 7.30$ and $M_{\text{White}} = 7.12$ on a 10-point scale). The participant and confederate signed consent forms in the same room and were told by the

experimenter (who was Asian) that they would be completing several measures and tasks related to attitudes and cognitions. They were then told that each of them would complete the first few tasks in separate rooms, and the experimenter escorted the confederate to a neighboring room to complete her tasks. Participants did not encounter the confederate again.

Participants were asked to fill out questionnaires of “demographic information we collect for all research in our lab.” They received a packet of seven questionnaires, including the Theories of Prejudice Scale. Next, they completed the IAT-Race (described below), a measure of implicit racial associations. Then, participants were escorted into a new room for an interaction with the confederate, in which we measured interpersonal distancing (described below). Last, they were given a final questionnaire that assessed avoidance by asking them how much time they would like to spend in their upcoming interaction and were probed for suspicion. No participant suspected the purpose of the study in this study or any following studies. The experimenters and confederates were blind to hypotheses in this study and all following studies.

Measures.

Measure of implicit racial attitudes. The IAT-Race is a measure of automatic associations between Black and White faces and positive and negative words (Nosek, Banaji, & Greenwald, 2002). The task was described to participants as a task “assessing your cognitions about various concepts” and was administered on a computer through DirectRT (Jarvis, 2008). For 160 trials (including practice and test trials), participants categorized Black faces, White faces, positive words, and negative words by pressing one of two marked keys as quickly and as accurately as possible. In one test block, White faces and positive words shared a key, and Black faces and negative words shared a key. In another, the opposite pairings shared a key. The order of these blocks was counterbalanced across participants. Time taken to categorize the words and faces was recorded, and the difference in reaction times to these blocks served as an index of implicit racial attitudes: Taking longer to categorize in the Black-Positive/White-Negative block as compared to the Black-Negative/White-Positive block indicates increased implicit bias against Black targets relative to White targets (Greenwald, Nosek, & Banaji, 2003).

Dependent measures. After completing the IAT-Race, participants proceeded to the “attitudes part of the study,” which involved conversing with the other participant about their thoughts and attitudes about diversity, “including racial, age, political, income, or gender diversity, or diversity of majors” at their school. We described the conversation as involving race-unrelated and race-related topics, because past work on interracial interactions typically involved such conversations (e.g., Richeson & Trawalter, 2005). After being escorted to a new room, participants were asked to pull up two chairs (which were positioned against the far wall in the room) and arrange them facing each other for their interaction while the experimenter checked on the other participant. The experimenter left, returned 1 min later, and informed the participant that the “other participant was still finishing up.” In the meantime, the participant was asked to return to the first room to fill out “some questions I forgot to give you earlier.” Participants were given a final questionnaire that assessed the time they desired to spend in the interaction. They indicated in minutes how much time they would want to spend in their upcoming conversation

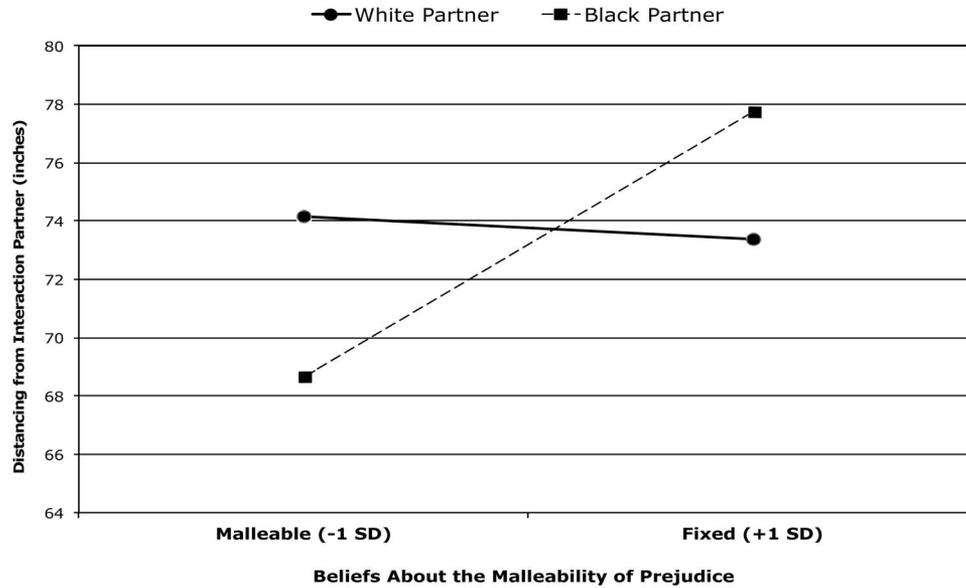


Figure 1. Study 2: Participants' interpersonal distancing from the interaction partner (in inches) as a function of beliefs about the malleability of prejudice (at ± 1 *SD*) and race of the interaction partner.

if they had unlimited free time that day. While participants did so, the experimenter measured the distance between the two chairs (placed by the participant) to arrive at participants' interpersonal distancing from the interaction partner.

Results

Preliminary analyses. Beliefs about the malleability of prejudice did not differ by the race of the confederate that participants expected to interact with ($t < 1.37$).

Interpersonal distancing from the interaction partner. We hypothesized that believing prejudice is fixed would be associated with increased distancing from a Black but not White interaction partner. In a regression analyzing interpersonal distancing from the interaction partner, only a significant interaction between prejudice beliefs and race of the confederate (coded White = 0, Black = 1) emerged ($\beta = .31$), $t(83) = 2.06$, $p = .042$. As predicted, simple slope analyses (estimated with prejudice beliefs at -1 *SD* and $+1$ *SD* from the mean, representing a more malleable and fixed belief about prejudice, respectively) revealed that believing prejudice is relatively fixed was associated with increased distancing from the Black interaction partner ($\beta = .40$), $t(83) = 2.70$, $p = .009$, but beliefs about prejudice were unassociated with distancing from the White interaction partner ($t < 1$). As shown in Figure 1, those with a more fixed belief about prejudice (at 1 *SD* above the mean) sat about 9 in. further away from the black interaction partner than did those with a more malleable belief (at 1 *SD* below the mean).

IAT-Race scores were calculated using established procedures and a 600-ms penalty for incorrect categorizations (Greenwald et al., 2003). Higher scores indicate greater preference for White over Black individuals. Consistent with the findings of Study 1b, IAT-Race scores ($M = 0.54$, $SD = 0.65$) were uncorrelated with people's beliefs about prejudice, $r(84) = -.07$, $p = .52$.⁵ Importantly, in a regression the Prejudice Beliefs \times Confederate Race

interaction was significant even while controlling for IAT-Race scores ($\beta = .35$), $t(81) = 2.35$, $p = .021$. Additionally, even with IAT-Race scores as a covariate, believing prejudice is relatively fixed rather than malleable predicted increased physical distancing from the Black interaction partner, $t(81) = 2.75$, $p = .007$, but not from the White interaction partner ($t < 1$). A regression revealed that IAT-Race scores did not moderate effects ($ts < 1$).

Time desired in the interaction. We predicted that a more fixed view of prejudice would be associated with decreased time desired in an interaction with a Black but not White interaction partner. The responses for time desired in interaction with the partner were positively skewed ($z = 2.62$, $p < .05$). A square-root transformation reduced the skew to nonsignificance ($z < 1$). A regression revealed a significant interaction of only beliefs about the malleability of prejudice with the race of the confederate on desired time in the interaction ($\beta = -.12$), $t(83) = 2.11$, $p = .038$. As predicted, a more fixed view of prejudice was linked with wanting to spend less time with a Black interaction partner ($\beta = -.50$), $t(83) = 3.46$, $p = .001$, but was unassociated with time desired with a White partner ($t < 1$). As shown in Figure 2 (with the untransformed variable for intuitive clarity), those with a more fixed belief about prejudice (at 1 *SD* above the mean) wanted almost 25 min less face time with a Black individual than did those with a more malleable belief (at 1 *SD* below the mean).

Controlling for IAT-Race scores, the reported interaction remained significant ($\beta = -.33$), $t(80) = 2.27$, $p = .026$, and prejudice beliefs remained associated with time desired in an interaction with a Black interaction partner, $t(80) = 3.46$, $p = .011$, and unassociated with time desired in an interaction with a

⁵ Degrees of freedom vary slightly, as some participants did not complete all measures and the IAT-Race data of one participant was lost due to a technical error.

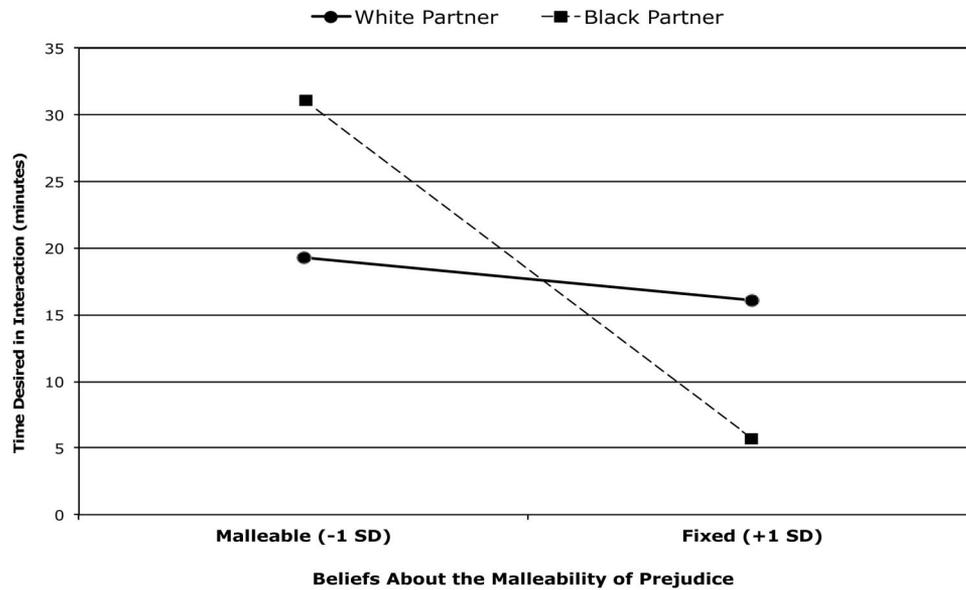


Figure 2. Study 2: Participants' reported time desired in the interaction (in minutes) as a function of beliefs about the malleability of prejudice (at ± 1 SD) and race of the interaction partner. Though the time desired in the interaction was skewed and statistical analyses use a transformed variable, desired time is represented in the original metric in this figure for intuitive clarity.

White partner ($t < 1$). IAT-Race scores did not moderate effects ($t_s < 1$).⁶

Discussion

Study 2 extends our findings in important ways. It takes them beyond self-reported interest in future interactions to behavioral outcomes and to imminent interactions. Those with a more fixed rather than malleable view of prejudice placed their seats farther away from their partner and desired shorter interactions when expecting to interact with a Black individual. Demonstrating that the effects are not due to increased social anxiety or general avoidance of others among those with a fixed view of prejudice, beliefs about the malleability of prejudice were unassociated with distancing from and desired interaction time with a White individual.

Study 2, consistent with the findings of Study 1b, also demonstrates that beliefs about prejudice are distinct from and independent of attitudinal prejudice—even implicit prejudice. Those with a more fixed rather than malleable belief about prejudice were no more implicitly prejudiced. In addition, the effects of prejudice beliefs on behavior emerged above and beyond the effects of participants' level of implicit racial bias. Thus, it appears that, regardless of people's actual level of prejudice, a fixed view of prejudice may lead people to act in more avoidant, uncomfortable, and seemingly prejudiced ways—to distance themselves from and seek to end interactions with a member of a different race. Study 2 suggests that negative intergroup behaviors may not always arise from negative intergroup attitudes but arise instead from cognitions and beliefs about prejudice.

The reader may also notice in Figures 1 and 2 an interesting pattern among those with more malleable views about prejudice: Those who believe prejudice is malleable tended to sit closer to and desired more time in an interaction with a Black than a White partner ($p_s = .140$ and $.032$, respectively). While these findings

are not conclusive and warrant further investigation, it is interesting to consider why such effects may emerge. Interracial interactions provide an important opportunity to learn—about oneself, about other groups, and about prejudice. Those who believe prejudice is malleable, given their increased focus on learning, may therefore be more interested and engaged in interracial interactions compared with same-race ones, which might not provide as rich a learning opportunity. We further explore the effects of beliefs about the malleability of prejudice on interest in learning in Study 3.

Study 3: Do Beliefs About Prejudice Predict Interest in Reducing One's Prejudice?

Past work investigating fixed and malleable theories of intelligence has found that individuals with a fixed view not only avoid situations and experience anxiety in settings in which their intelligence could be challenged but also may not even take advantage of relatively unchallenging learning opportunities that, though they might involve confronting their weaknesses, could help them improve their ability (e.g., Hong et al., 1999; Nussbaum & Dweck, 2008). In Study 3, we investigated whether people's beliefs about prejudice similarly influence their interest in participating in activities designed to reduce their prejudice.

⁶ IAT-Race scores were uncorrelated with distancing from the Black partner, $r(40) = -.14$, $p = .38$ (see also Goff et al., 2008), but were correlated with distancing from the White partner, $r(42) = -.32$, $p = .04$. Those with increased preference for White over Black individuals wished to sit closer to the White partner. IAT-Race scores were also uncorrelated with time desired in an interaction with the Black partner, $r(42) = .15$, $p = .35$, and White partner, $r(43) = .19$, $p = .22$.

In this experiment, we manipulated feedback given to participants about their level of prejudice by telling them that they were either relatively low in prejudice or moderately high in prejudice. We then offered them potentially nonchallenging ways to understand and lower their prejudice via information or a tutorial, neither of which involved interacting with anyone of a different race. It is possible that those with a more fixed view of prejudice might not be interested in reducing their prejudice after they've been told they are relatively high in prejudice (a highly threatening situation since they must confront their high level of prejudice) but might work toward reducing their prejudice when told their prejudice was relatively low (a less threatening situation that might alleviate their concerns about having prejudice). This would be similar to findings by Nussbaum and Dweck (2008), in which those taught that intelligence is fixed examined problem-solving strategies of better performing students only when told that they themselves had already done well and not when told they had done poorly.

However, there is another possibility. We already found in Study 1a that more fixed beliefs about prejudice are associated with people's choices in both threatening and seemingly safe situations. In the present experiment as well, it may be that those with a more fixed view of prejudice, compared with those with a more malleable view, would be less interested in activities designed to help them reduce their prejudice, even when given feedback that they have low prejudice. Even when prejudice is low, participants may have to encounter some of their prejudice, which may still be distressing when it is seen as unchangeable. Results consistent with this possibility would indicate that fixed beliefs about prejudice may suppress desire to engage in prejudice reduction across a variety of situations—threatening and safer—and that beliefs about prejudice may need to be addressed to effectively increase motivation to reduce prejudice.

Method

Participants. Forty-nine White individuals (28 female, 21 male; ages 18–34) participated. They received either partial course credit or \$7.

Procedure. Participants arrived for a study on “attitudes and interests.” They first completed a packet of seven questionnaires that they were told we collected for all studies in our lab. This packet contained the Theories of Prejudice Scale. Next, participants completed a shortened IAT-Race task (designed solely as a basis for giving them feedback about their prejudice), received feedback about their level of prejudice, and completed a final questionnaire assessing interest in reducing prejudice. When probed for suspicion, one participant suspected the prejudice feedback he received was false and was excluded from analysis.

Measures.

Prejudice feedback manipulation. The shortened IAT-Race was presented to participants as a task that examined “their attitudes and their unconscious racial biases.” It was identical to the full IAT-Race described above in what it required participants to do (categorize Black faces, White faces, positive words, and negative words) but presented them with fewer trials (60 instead of 160). At the end of this task, the computer spent 1 min “processing” the data and then presented participants with “personalized” feedback about their prejudice.

Through random assignment, participants were told that they scored either “low in prejudice” compared with their peers (scoring at the 9th percentile) or “moderate to moderately high in prejudice” compared with their peers (scoring at the 61st percentile). Participants saw an image of a scale labeled *YOUR LEVEL OF ANTI-BLACK PREJUDICE*, which extended from the 1st percentile (labeled *very low*) to the 100th percentile (labeled *very high*). A red arrow indicated participants' purported percentile. The feedback explained that the test had been administered to over 1,000 students at their university and that their score indicated that they had either “less prejudice than 91%” or “more prejudice than 61%” of people at their university. We chose these points—9th percentile and 61st percentile—to increase plausibility for participants: If we chose more extreme points (e.g., telling participants their prejudice was at the 1st percentile or the 99th percentile), we risked arousing suspicion, especially because participants have some access to the level of difficulty they experience on the IAT-Race (Brendl, Markman, & Messner, 2001).

To confirm that the *low-prejudice feedback* condition was less threatening than the *high-prejudice feedback* condition, in a pilot study we asked 44 White students to imagine participating in either the *low-* or *high-prejudice feedback* condition in Study 3. They read detailed descriptions of the procedure of Study 3 (through the point of receiving feedback about their prejudice) and saw images of the feedback given in the *low-* or *high-prejudice feedback* condition. Confirming the validity of our manipulation, those who imagined participating in the *low-prejudice feedback* condition reported that they would feel less threatened, less worried, less nervous, less concerned, safer, more comfortable, more secure, and more relaxed following the feedback than would those who imagined participating in the *high-prejudice feedback* condition ($t_s > 2.75, p_s < .01$).

Dependent measures. After they received feedback, participants were asked to rate their interest on a 7-point scale (ranging from *not at all interested* to *very interested*) in various tasks that were available for them to engage in for the remainder of the study. All tasks were presented as taking 15–20 min to complete, and participants were told that they would be assigned a task they found interesting. Two of these tasks involved working toward reducing their prejudice. One consisted of going through a “specialized computer analysis of your IAT score” and then learning about the “nature and source of your prejudice and strategies to reduce it.” The other involved engaging in a computer-administered tutorial that had been shown to “help some individuals reduce their unconscious racial biases.” Four other tasks were completely unrelated to prejudice, diversity, or race (e.g., reporting attitudes on academic programs).

Results

The two items assessing interest in undertaking efforts to reduce prejudice correlated, $r(46) = .32, p = .029$, and were averaged. A regression revealed that those with a more fixed belief about prejudice were less interested in undertaking efforts to reduce their prejudice ($\beta = -.50, t(47) = 3.97, p = .011$). Interestingly, this effect of prejudice beliefs on interest in prejudice-reducing activities was not moderated by the feedback participants received about their level of prejudice ($t < 1$) and was significant in both prejudice feedback conditions ($\beta_s = -.55$ to $-.46, t_s > 2.66, p_s <$

.02). In fact, there was no effect of the prejudice feedback manipulation on interest in reducing prejudice ($t < 1$). In addition, neither beliefs about prejudice, nor the prejudice feedback, nor their interaction affected interest in activities unrelated to race, prejudice, or diversity ($ts < 1$). Controlling for interest in these unrelated tasks, none of the reported relationships changed.

Discussion

Who is willing to work toward reducing his or her prejudice? Study 3 finds that those who hold more fixed views of prejudice are less interested than those with more malleable views in activities designed to help them reduce their prejudice. This was true both when participants were told they had moderately high levels of prejudice—and therefore much room for improvement—and when participants were reassured they had low levels of prejudice—and were thus in a relatively safer situation. Because of the ambiguity surrounding the topic of prejudice and strong cultural pressure for many White individuals to be or appear nonprejudiced (e.g., Crandall et al., 2002), even seemingly safe situations might not be safe enough for those with fixed theories of prejudice. One might imagine that if participants could be convinced that they had no prejudice at all and no risk of uncovering prejudice, effects of prejudice beliefs might weaken. Nonetheless, the present results again highlight the powerful effects of beliefs about prejudice across widely varying situations. They suggest that to drive people to take action to reduce their prejudice it might be necessary to address their beliefs about the malleability of prejudice.

Study 4: Does Changing Beliefs About Prejudice Change Concerns About Revealing Prejudice and Interest in Interracial Interactions?

Studies 1–3 have demonstrated that people’s measured beliefs about prejudice—above and beyond the effects of people’s prejudice (Studies 1b and 2), their beliefs about the malleability of personality (Study 1b), and their internal and external motivation to respond without prejudice (Study 1c)—are linked to important variables that may shape intergroup relations. Nonetheless, because we have focused on measured beliefs about prejudice thus far, these effects remain correlational. An open and important question is whether people’s beliefs about prejudice can be changed and how such manipulated beliefs may shape reactions to interracial interactions. In Study 4, we developed a method to change people’s beliefs about the malleability of prejudice and measured its effects on interest in interracial interactions.

In addition, we examined how beliefs about prejudice have their effects. We have suggested that those who believe prejudice is unchangeable should experience heightened worries about revealing “fixed” prejudice to themselves or others. For these individuals, the prospect of having a prejudiced thought come to mind or of doing something that might seem racist as they interact with someone of another race may be quite worrisome. They might therefore avoid situations—such as interracial interactions—that carry the risk of evoking such thoughts or behaviors. Study 4 examines whether concerns about revealing prejudice to oneself and others mediate the relationship between a fixed belief about prejudice and decreased interest in interracial interactions.

Results from this experiment could indicate that theories of prejudice play a causal role in shaping the nature of intergroup relations. They could also suggest a new pathway—changing beliefs about the malleability of prejudice and worries about prejudice—to improving interracial interactions and relations.

Method

Participants. Thirty-nine White individuals (23 female, 16 male; ages 18–26) participated. They received \$10.

Procedure. Participants were told that they would be participating in two separate experiments (run by different researchers). They were informed that the first experiment examined coverage of psychological findings by the news media. Participants then read three news articles. The second of these articles (described in detail below) contained our manipulation of beliefs about the malleability of prejudice. The other two articles were adapted from real news articles about research on sleep deprivation and language’s influence on thought. After reading each article, participants summarized it in one to three sentences and rated how interesting, useful, and easy to understand they found it on a 7-point scale (ranging from *not at all* to *very much*).

Participants then proceeded to the second study, described to them as a study validating “several psychological measures.” They completed 16 brief surveys, 14 of which were on various unrelated topics (e.g., need for cognition; Cacioppo & Petty, 1982). The sixth survey assessed participants’ concerns about revealing prejudice to themselves and others (described below). The 13th survey contained our target dependent measure assessing interest in interracial interactions, as in Studies 1a–1d. To confirm that our manipulation was effective, participants’ beliefs about the malleability of prejudice were assessed after they completed the surveys using the Theories of Prejudice Scale. Finally, participants reported demographic information (age and gender) and were probed for suspicion.

Measure.

Manipulation of beliefs about prejudice. Past research has used articles presenting scientific evidence to change people’s beliefs about the malleability of personality (e.g., Chiu, Dweck, et al., 1997; Rattan & Dweck, 2010). We modeled our articles about the nature of prejudice on these articles. The articles we used to manipulate malleability beliefs did not mention interracial interactions and made no claims about the importance of such interactions.

In the *fixed* condition, participants were presented with an article ostensibly from *Psychology Today* entitled “Prejudice, Like Plaster, Is Pretty Stable Over Time.” This article began with an anecdotal story about a person whose prejudice “had not much changed” over 10 years. It then described a 10-year longitudinal study conducted at a prestigious university, whose authors found that though “some people did change in their prejudice . . . prejudice, once acquired, is relatively fixed and stable over time.” Last, the article presented some findings highlighting the difficulty of changing some people’s prejudice even with training.

In the *malleable* condition, the article was entitled “Prejudice Is Changeable and Can Be Reduced.” The article was similar to the article in the *fixed* condition and presented the same research but differed in the key results presented and conclusions reached. The anecdote described a man whose prejudice had changed over a

10-year period. The longitudinal study concluded that “many people’s prejudice changed” over time and that prejudice “can be unlearned.” Finally, the article reported findings that “with effort and the right experiences” prejudice can be reduced. (Materials are available upon request.)

Measure of concerns about revealing prejudice to oneself and others. To measure these concerns, we developed a 10-item scale (modeled in part on Dunton and Fazio’s, 1997, scale assessing motivation to control prejudiced reactions) that tapped individuals’ worries about having prejudiced thoughts and acting in ways that could be judged as prejudiced in intergroup situations. This scale simultaneously assessed worries about revealing prejudice to oneself (by having prejudiced thoughts and feelings come to mind) and worries about revealing prejudice to others (by behaving in ways that could be seen as prejudiced).

Participants rated their agreement on a 7-point scale (ranging from *strongly disagree* to *strongly agree*) with five statements that assessed their worries about having private prejudiced thoughts (e.g., “I am concerned that I might find myself thinking or feeling in a racially prejudiced way around people of other races” and “When I think about things like race and diversity, I am worried that I might have inappropriate thoughts or feelings”) and five statements about acting in ways that might be seen as prejudiced by others (e.g., “When talking about things like race and diversity, I am worried that I might say something that would make me look prejudiced” and “I am very concerned that something I say or do while interacting with a person of another race might be considered prejudiced”). All items loaded onto a single factor (which explained 63.41% of the variance), and the scale had good reliability ($\alpha = .93$). Items were combined and averaged to create a measure assessing concerns about revealing prejudice to oneself and others.

Results

Preliminary analyses. Participants in the *fixed* and *malleable* conditions did not differ in how interesting, useful, and easy to understand they found the articles that contained the manipulation ($t_s < 1$).

Manipulation check. The manipulation successfully changed people’s beliefs about the malleability of prejudice. Those in the *fixed* condition endorsed a more fixed view of prejudice ($M = 3.62$) than did those in the *malleable* condition ($M = 2.54$), $t(37) = 4.50, p < .001, d = 1.49$.

Interest in interracial interactions. As predicted, participants in the *fixed* condition were significantly less interested in engaging in interracial interactions ($M = 5.38$) than were those in the *malleable* condition ($M = 6.21$), $t(37) = 3.79, p = .001, d = 1.26$.

Concerns about revealing prejudice to oneself and others. As hypothesized, participants in the *fixed* condition were more worried about revealing prejudice to themselves and others ($M = 3.41$) than were those in the *malleable* condition ($M = 2.41$), $t(37) = 2.91, p = .006, d = 0.96$.

Though all items assessing concerns about revealing prejudice loaded onto a single factor and are combined for primary analyses, for further insight, we also examined the items that assessed concerns about revealing prejudice to the self and the items that assessed concerns about revealing prejudice to others in separate

analyses. Compared with those in the *malleable* condition, participants in the *fixed* condition were more concerned about revealing prejudice to themselves ($M_{\text{fixed}} = 3.30$ and $M_{\text{malleable}} = 2.24$), $t(37) = 2.90, p = .006, d = 0.96$, and also tended to be more concerned about revealing prejudice to others ($M_{\text{fixed}} = 3.42$ and $M_{\text{malleable}} = 2.74$), $t(37) = 1.83, p = .076, d = 0.61$.

Mediation. The effect of prejudice belief condition on interest in interracial interactions was significantly mediated by concerns about revealing prejudice. As described above, those in the *fixed* condition (coded as 1) compared with those in the *malleable* condition (coded as 0) were less interested in interracial interactions ($\beta = -.53$), $t(37) = 3.79, p = .001$, and more worried about revealing prejudice ($\beta = .43$), $t(37) = 2.91, p = .006$. In a simultaneous regression, increased concerns about revealing prejudice predicted decreased interest in interracial interactions ($\beta = -.39$), $t(36) = 2.69, p = .011$, and so did prejudice belief condition ($\beta = -.36$), $t(36) = 2.53, p = .016$ (see Figure 3). The reduction of the effect of condition on interest in interracial interactions was significant as assessed by the asymmetric distribution of products test (95% confidence interval [0.13, 0.39], $p < .05$; MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). Thus, heightened worries about revealing prejudice to oneself or others created by fixed prejudice beliefs partially but significantly mediated the effect of the manipulation of beliefs about prejudice on interest in interracial interactions.⁷

Discussion

Study 4 demonstrates that people’s theories of prejudice are changeable. In addition, this experiment supports a causal pathway between beliefs about the malleability of prejudice and interest in engaging in interracial interactions. White individuals who were led to hold a more malleable view of prejudice were more interested in engaging in interactions with members of other races than were those who were led to see prejudice as something they could not change. The manipulation of beliefs about prejudice, which did not target people’s prejudice or racial attitudes, nonetheless created changes in self-reported intergroup behaviors—interest in having contact with members of other racial groups. It did so, in part, by influencing majority-group members’ worries about revealing prejudice to themselves and others. A belief that prejudice is unchangeable depressed interest in engaging in intergroup encounters by increasing worries about having prejudiced thoughts or behaving in potentially prejudiced ways in those encounters. As discussed earlier, such concerns about prejudice fueled by a fixed view of prejudice are similar to the focus on and worry about performance fostered by a belief that intelligence is fixed.

While Study 4 examines interest in interracial interactions, we acknowledge that for improved intergroup relations there must be not only increased interest in and frequency of contact but also high-quality and positive contact (Tropp & Pettigrew, 2005). Study 5 addresses the quality of contact, examining how manipulated beliefs about prejudice affect behavioral and physiological indices of anxiety during an interracial interaction.

⁷ Mediation analyses with only the items assessing concerns about revealing prejudice to oneself and those with only the items assessing concerns about revealing prejudice to others showed the same pattern of relationships and effects as did those using the composite measure.

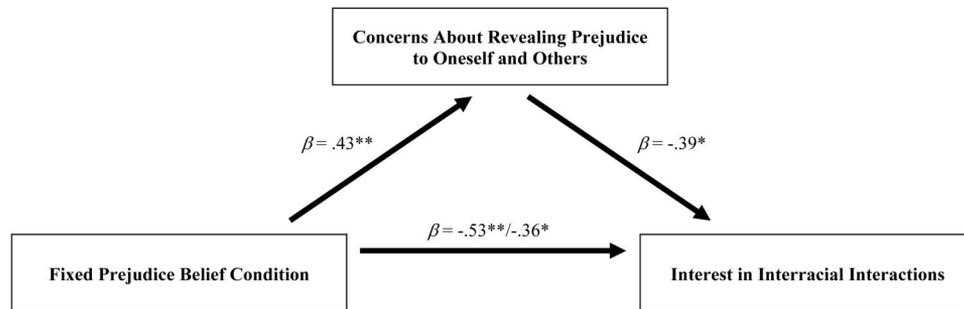


Figure 3. Study 4: The effect of the *fixed* prejudice belief condition on interest in interracial interactions, mediated by concerns about revealing prejudice to oneself and others. * $p < .05$. ** $p < .01$.

Study 5: Does Changing Beliefs About Prejudice Change Behavioral and Physiological Anxiety and Friendliness in Interracial Interactions?

Much past research has found that interracial interactions (compared with same-race ones) are stressful and negative experiences for many White Americans, producing increased cardiovascular and physiological reactivity, behavioral anxiety, and unfriendliness during the course of the interaction (e.g., Dovidio et al., 2002; Mendes et al., 2002; Vorauer & Turpie, 2004). In addition, it has been suggested and found that such anxiety and negative outcomes can arise from individuals' prejudice (e.g., Dovidio et al., 2002; McConnell & Leibold, 2001).

The results of Studies 1b and 2 have indicated that those with a more fixed view of prejudice are no more prejudiced (explicitly or implicitly) than those with a more malleable view. Thus, it is possible that those with a fixed compared with malleable view of prejudice (though they might be apprehensive about future interactions) would be no more anxious and unfriendly in the midst of an interaction. The question of whether beliefs about prejudice influence anxiety and behavior during the course of an interracial interaction remains unexplored. Study 5 addresses this question by manipulating prejudice beliefs and examining White individuals' anxiety—expressed behaviorally and physiologically—as they engage in an interaction with a different-race or same-race individual. It also examines whether those taught a more fixed rather than malleable belief about prejudice act in a way that appears more prejudiced, communicating more unfriendliness, while in an interracial as opposed to same-race interaction.

Method

Participants. Sixty-three White individuals (40 female, 23 male; ages 18–23) participated. They received either partial course credit or \$10.

Procedure. Participants came in individually and were led to believe they were participating in two separate experiments—one on “psychology in the news” and one on “personal communications.” The psychology in the news study contained the manipulation of beliefs about prejudice, and the personal communications study allowed us to measure anxiety and friendliness in an interaction with a same-race or different-race partner.

Measures.

Manipulation of beliefs about prejudice: Psychology in the news study. Participants were randomly assigned to be in either the *fixed* or the *malleable* condition as in Study 4. When partici-

pants arrived, they were met and greeted by an experimenter (E1) and signed a consent form for the psychology in the news study. One of two female researchers—one White and one Asian—served as E1. (The race of E1 did not moderate any of the reported effects, $F_s < 1$.) As in Study 4, participants were informed that the study investigated media coverage of psychological findings. They were also told that the experimenters were interested in their thoughts about the article findings after “you’ve had some time away from them,” and so they would go on to a second study after reading the articles. Participants read two news articles: The first reported on the effects of sleep deprivation (as in Study 4), and the second contained the manipulation of beliefs about prejudice (also as in Study 4). Participants summarized each article and rated how interesting, useful, and easy to understand they found it on 7-point scales (ranging from *not at all* to *very much*). They also reported demographic information (gender and age).

Next, E1 informed the participant that the other experimenter was still setting up the next experiment and that she would be “helping her out” by taking an initial “baseline physiological reading” that was needed in that experiment. E1 attached a cuff (Omron HEM-712C) to the participant’s arm and recorded his or her heart rate. This measure was taken to give us a baseline measure of heart rate and to ensure that the prejudice beliefs manipulation did not differentially impact heart rate. E1 then escorted the participant to a new room for the next experiment.

Interaction: Personal communications study. Participants were randomly assigned to interact with either a Black or a White female experimenter (equated for attractiveness as in Study 2; $M_{\text{Black}} = 7.42$ and $M_{\text{White}} = 7.36$) who would interview them for this second study.⁸ E2 greeted the participant. Participants signed a new consent form and were informed that the second study investigated “spontaneous and unprepared conversations people have about personal and self-relevant topics.” They were told that the experimenter would ask them four questions about themselves and that they would respond to these questions for a set period of time. They were also informed that their physiological data would be recorded occasionally to see how they were “feeling about these conversations.” The interaction was videotaped from the perspective of E2.

⁸ Though we matched experimenters on attractiveness and trained them to act equally friendly, future research might use multiple experimenters of each race to ensure generalizability.

E2 and the participant sat facing each other, and E2 asked participants four questions. She asked them to (1) introduce themselves—who they were and where they were from—for 30 s, (2) describe a few of their friends in detail for 2 min, (3) share what would be important for her to know about the participant if they were to become close friends (Aron, Melinat, Aron, Vallone, & Bator, 1997) for 2 min, and (4) give their thoughts on the state of and efforts to improve diversity at their university for 2 min. To assess physiological reactivity during the interaction, participants' heart rate was taken at two midpoints in the interaction—after they had finished responding to Question 2 and to Question 3.

Experimenters serving as E2 were extensively trained to react to participants in a highly standardized but mildly friendly manner that minimized their input to the conversation and maintained consistency regardless of the participant's response. Specifically, E2 behaved in a "natural" and slightly affirming manner during the interaction: She responded to the participant by nodding and slightly smiling as the participant spoke. When the participant stopped speaking before the allotted time was up, E2 said, "You can continue. We have X minutes left." E2 did not otherwise verbally or nonverbally respond to participants' answers.

At the end of the interview interaction, participants completed the Theories of Prejudice Scale and were probed for suspicion. Our primary dependent measures were the expression of behavioral anxiety, the friendliness of behavior, and physiological reactivity during the interaction. The first two measures were coded by trained observers (described below).

Coding of the interaction. Past research has identified several markers of behavioral anxiety in interactions, such as lowered eye contact, decreased smiling, increased nervous laughter (i.e., laughter without a joke or appropriate funny prompt), body rigidity/frozenness, and increased speech dysfluency (i.e., speech hesitations, speech errors, and long pauses; e.g., Dovidio et al., 2002; McConnell & Leibold, 2001; Scherer, 1986; Shelton, 2003).

Observers were trained to code participants' answers to each question on each of these dimensions on a scale of 1 (*none/very low*) to 3 (*high/very high*). In addition, observers made global judgments of level of behavioral anxiety expressed in the answer to each question on a scale of 1 (*very low*) to 4 (*very high*) and of how friendly they thought the participant had been on a scale of 1 (*not friendly*) to 3 (*very friendly*). On all dimensions, observers could use half-point ratings (e.g., 1.5). Two observers watched the videos without sound and made judgments about nonverbal behavior—eye contact, body rigidity, and smiling—and their overall impression of participants' anxiety. Another two observers watched the videos with sound and made judgments about speech dysfluency, nervous laughter, and their overall impression of the friendliness of the participant. The videos showed only the participants and not E2.

Observers were blind to hypotheses, participants' condition, and race of E2. For all dimensions, the observers reached good reliability ($\alpha > .84$), and their ratings were averaged.

Results

Preliminary analyses. Participants in the *fixed* and *malleable* conditions did not differ in how interesting, useful, and easy to understand they found the manipulation-containing articles ($t <$

1). In addition, those in the *fixed* and *malleable* conditions did not differ on the baseline heart-rate measure taken right after they read the articles but before meeting E2 ($t < 1$).

Manipulation check. As in Study 4, those in the *fixed* condition endorsed a more fixed theory of prejudice ($M = 3.45$) than did those in the *malleable* condition ($M = 2.75$), $t(61) = 3.10$, $p = .003$, $d = 0.79$. This effect did not interact with the race of E2 ($F < 1$).

Behavioral anxiety and friendliness during the interaction. None of the effects on the global ratings of participants' behavior or the ratings of particular behaviors (e.g., eye contact) were moderated by the questions participants answered ($F < 1$). This was also true when comparing just the fourth question (which involved discussing diversity) to the first three questions (which involved no such discussion, $F < 1$). Thus, we collapsed and averaged observers' ratings on each dimension across the four questions participants answered.

First, coders' overall ratings of participants' behavioral anxiety were examined. A 2 (prejudice belief condition: *malleable* or *fixed*) \times 2 (race of interviewer: White or Black) ANOVA revealed main effects of prejudice belief condition, $F(1, 59) = 13.76$, $p < .001$, and race of the interviewer, $F(1, 59) = 12.49$, $p < .001$, which were qualified by the predicted interaction, $F(1, 59) = 20.28$, $p < .001$, $\eta_p^2 = .26$ (see Figure 4a).

When interacting with a Black interviewer, participants who had been taught a fixed view of prejudice were more anxious ($M = 2.44$ on a 4-point scale) than were those taught a malleable view ($M = 1.46$), $t(59) = 5.86$, $p < .001$. Indeed, those in the *fixed* condition who interacted with a Black individual were perceived to be the most anxious. In addition to the findings reported above, they were more anxious than those who interacted with a White individual in the *fixed* or *malleable* conditions (M s = 1.48 and 1.57, respectively), $t(59) = 5.73$, $p < .001$, and, $t(59) = 5.08$, $p < .001$, respectively. Meanwhile, those in the *malleable* condition who interacted with a Black individual were no more anxious than were participants who interacted with White individuals ($t < 1$). And, when interacting with a White interviewer, those in the *fixed* and *malleable* conditions did not differ ($t < 1$).

The same pattern of statistical interaction emerged for all the specific anxious behaviors that were coded (F s > 17.40 , p s $< .001$, η_p^2 s $> .23$). Participants who had been taught that prejudice is fixed and interacted with a Black individual made less eye contact, smiled less, nervously laughed more, sat in a more rigid or frozen manner, and exhibited more speech dysfluency than did participants in any other condition (t s > 3.15 , p s $< .003$). In contrast, those who had been given a malleable view and interacted with a Black individual did not differ from those who interacted with a White individual in any condition (t s < 1.50 ; see Table 2 for means).

In parallel, on overall ratings of participants' friendliness, the ANOVA revealed main effects of prejudice belief condition, $F(1, 59) = 14.73$, $p < .001$, and race of the interviewer, $F(1, 59) = 23.75$, $p = .001$, which were qualified by the hypothesized interaction, $F(1, 59) = 35.52$, $p < .001$, $\eta_p^2 = .38$ (see Figure 4b). In interactions with a Black interviewer, participants in the *fixed* condition were judged to be less friendly ($M = 2.04$ on a 3-point scale) than were those in the *malleable* condition ($M = 2.74$), $t(59) = 7.03$, $p < .001$. Further, participants in the *fixed* condition interacting with a Black interviewer were perceived to be less

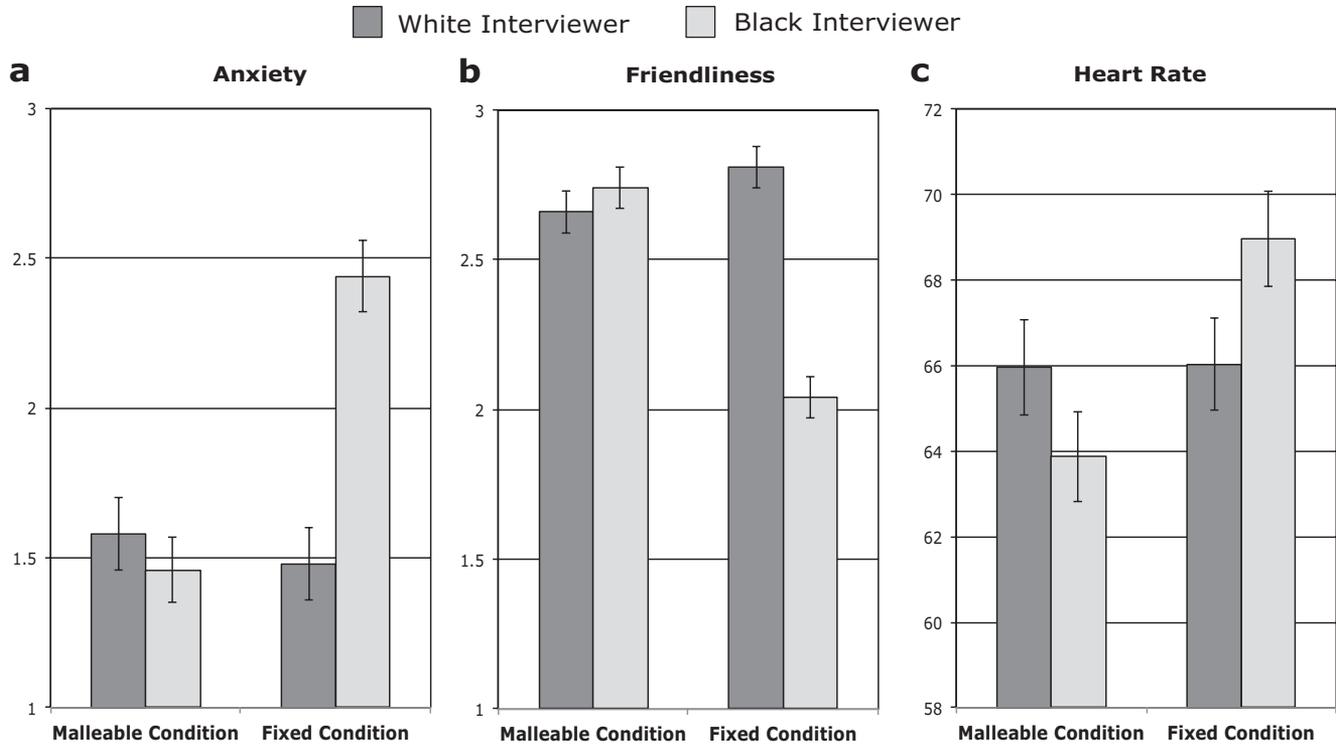


Figure 4. Study 5: (a) Trained observers' ratings of participants' behavioral anxiety, (b) trained observers' ratings of participants' friendliness, and (c) participants' physiological anxiety (indexed by their heart rate in beats per minute [bpm] during the interaction, controlling for their baseline heart rate [bpm]) in the *malleable* and *fixed* prejudice belief conditions as a function of the race of the interviewer participants interacted with. Error bars represent ± 1 SE.

friendly than were those who interacted with a White interviewer in either the *fixed* or *malleable* conditions ($M_s = 2.81$ and 2.67 , respectively), $t(59) = 6.02, p < .001$. The other groups of participants did not significantly differ from each other in friendliness ($t_s < 1$).

Table 2
Study 5: Mean Levels of Behavioral Anxiety Indicators as a Function of Prejudice Beliefs Condition and Race of the Interviewer Participants Interacted With

Behavioral anxiety indicator	White interviewer		Black interviewer	
	Malleable condition	Fixed condition	Malleable condition	Fixed condition
Eye contact	2.48 _a	2.65 _a	2.63 _a	1.97 _b
Smiling	2.47 _a	2.55 _a	2.62 _a	1.92 _b
Nervous laughter	1.18 _a	1.08 _a	1.06 _a	1.43 _b
Body rigidity	1.29 _a	1.20 _a	1.19 _a	1.88 _b
Speech dysfluency	1.45 _a	1.34 _a	1.38 _a	1.99 _b

Note. All behavioral anxiety indicators were rated on 3-point scales. For each behavioral anxiety indicator, means marked with different subscripts are significantly different from each other at the $p < .05$ level. Means marked with the same subscript are not significantly different from each other. Analyses do not compare means across indicators.

Physiological reactivity during the interaction. Participants' heart-rate measurements taken after they answered Question 2 and Question 3 were highly correlated, $r(61) = .95, p < .001$, and were averaged to form a composite measure of physiological reactivity during the course of the interaction. Suggesting that the heart-rate measure was in fact indexing stress and anxiety, participants' heart rate during the interaction was positively correlated with the observers' ratings of overall behavioral anxiety, $r(61) = .42, p = .001$.

A 2 (prejudice belief condition: malleable or fixed) \times 2 (race of interviewer: White or Black) analysis of covariance, controlling for participants' baseline heart rate, found a main effect of prejudice belief condition, $F(1, 58) = 5.58, p = .022$, and the predicted interaction, $F(1, 58) = 5.29, p = .025, \eta_p^2 = .08$ (see Figure 4c). While interacting with a Black individual, participants in the *fixed* condition had a higher heart rate ($M_{adj} = 68.97$ beats per minute [bpm]) than did those in the *malleable* condition ($M_{adj} = 63.87$ bpm), $t(58) = 3.33, p < .002$. In interactions with a White individual, heart rate did not differ between the *fixed* ($M_{adj} = 66.02$ bpm) and *malleable* ($M_{adj} = 65.96$ bpm) conditions ($t < 1$). In addition, while participants in the *fixed* condition who interacted with a Black individual tended to show more physiological reactivity than did those interacting with White individuals in the *fixed* and *malleable* conditions, $t(58) = 1.89, p = .065$, and, $t(58) = 1.94, p = .058$, respectively, those in the *malleable* condition who interacted with a Black individual did not exhibit more physiolog-

ical reactivity than did those who interacted with White individuals (in fact, they tended to have less reactivity; $t_s < 1.38$).

Discussion

Study 5 examined whether beliefs about the malleability of prejudice can shape anxiety and friendliness during the course of an interracial interaction. Fixed beliefs about prejudice, compared with malleable ones, caused individuals to exhibit more behavioral and physiological anxiety—to make less eye contact, to smile less, to laugh nervously, to take on a rigid and tense body posture, to speak less fluidly, and to have an increased heart rate—when interacting with a Black (but not White) individual. Importantly, those taught that prejudice is immutable, compared with those taught it is changeable, were perceived to behave in a more anxious and much less friendly manner toward a Black compared with a White interaction partner. This means not just that they were personally less comfortable but also that their personal discomfort communicated less friendliness. This is a powerful demonstration that believing in fixed prejudice can translate directly into the traditional hallmarks of prejudiced behavior—more negative and less friendly interracial interactions. Notably, those who had been taught that prejudice is malleable were equally relaxed and friendly in interactions with a Black or a White individual.

General Discussion

Across eight studies, we found that majority-group members' beliefs about the malleability of prejudice are an important force in shaping behaviors that can appear prejudiced, even among those who do not possess attitudinal prejudice. White Americans who viewed prejudice in relatively more fixed terms were less interested in engaging in interactions with members of other racial groups (Studies 1a–1d) and in activities that dealt with race, diversity, or prejudice—even when they were seemingly safe and involved tasks such as learning about African American history (Study 1a). In addition, a fixed theory of prejudice was associated with greater discomfort and avoidance in interracial interactions: Those with a more fixed view of prejudice put more distance between themselves and a Black (but not White) interaction partner and wanted to spend less time interacting with a Black (but not White) interaction partner (Study 2). Further, a more fixed view of prejudice was linked with lower interest in working to reduce one's prejudice, regardless of how much prejudice participants had been led to believe they had (Study 3). We also manipulated people's beliefs about the malleability of prejudice and found that those led to have more of a fixed as opposed to a malleable view of prejudice were less interested in engaging in interracial interactions (Study 4), became more anxious when interacting with a Black (compared with White) individual—as evidenced by their behavioral and physiological reactions—(Study 5), and behaved in a more unfriendly manner when interacting with a Black (compared with White) individual (Study 5). The data show that the effects of beliefs about the malleability of prejudice are powerful, spanning both highly threatening and relatively safe situations (Studies 1a and 3, respectively) and arising above and beyond the effects of people's beliefs about the malleability of personality in general (Study 1b), their motivation to respond without prejudice (Study 1c), and their prejudicial attitudes, measured explicitly

(Study 1b) and implicitly (Study 2). The studies also importantly highlight that White individuals with a more fixed rather than malleable view of prejudice acted in such negative ways in intergroup situations not because they were more prejudiced (Studies 1b and 2). Instead, a fixed view of prejudice produced behavior that on the surface may appear prejudiced by heightening individuals' concerns about revealing prejudice—to themselves and others (Study 4).

This research has important theoretical implications. It identifies a new, previously unexplored variable—beliefs about the malleability of prejudice—that can act to shape White Americans' intergroup behaviors. Importantly, it dovetails with recent research that finds that to understand people's behaviors in a domain, one must expand one's focus beyond people's traits or qualities, to people's beliefs and theories about traits or qualities. For example, research on the beliefs about the malleability of intelligence has found that these beliefs can predict individuals' learning behaviors and academic performance, even among those who are at the same level of intelligence or prior academic achievement (Blackwell et al., 2007; Cury et al., 2006). In addition, research has found that whether people become ego-depleted by arduous work is shaped by their theory of ego depletion, by whether they believe willpower is a scarce or abundant resource (Job, Dweck, & Walton, 2010). Similarly, the present research finds that seemingly prejudiced behaviors—behaviors that may have many negative consequences for members of minority groups and be detrimental to intergroup relations—can arise from people's beliefs about the malleability of prejudice, above and beyond the effects of racial attitudes. Our findings suggest that to understand behavior that appears prejudiced, looking beyond people's traits and qualities—their attitudinal prejudice—to people's beliefs and concerns about prejudice may yield important insights (e.g., Butz & Plant, 2009; Richeson & Trawalter, 2005; Shelton, 2003; Vorauer et al., 1998).

The current findings also have important implications for efforts to improve intergroup relations and reduce White Americans' prejudiced behavior. Research has found that a pathway to improving intergroup relations is through increased positive intergroup contact (e.g., Page-Gould, Mendoza-Denton, & Tropp, 2008; Pettigrew & Tropp, 2006; Tropp & Pettigrew, 2005). However, our findings indicate that fixed beliefs about prejudice, by heightening White individuals' worries about uncovering and revealing their prejudice, may deter people from having those contacts or may mar intergroup contacts when they occur. In a similar vein, though methods have been developed to reduce majority-group members' prejudiced attitudes and behavior (e.g., Kawakami, Dovidio, & van Kamp, 2007; Kawakami, Phillips, et al., 2007; Olson & Fazio, 2006), fixed beliefs about prejudice may lower people's motivation to engage in these efforts. Thus, interventions designed to improve intergroup relations or reduce prejudice may not be maximally effective if they address only prejudice without also addressing beliefs about the malleability of prejudice. Moreover, our current findings suggest that even if these interventions succeed in fostering more positive racial attitudes, they may not increase desired interracial behaviors for people who hold a more fixed theory of prejudice. For this reason, as well, addressing beliefs about the malleability of prejudice should be part of any intervention. Indeed, it would be interesting to test whether adding a prejudice beliefs component to existing interventions aimed at improving intergroup relations would boost their effectiveness.

How might one go about changing beliefs about the malleability of prejudice? Of course, it would be problematic to teach people prejudice is malleable if in fact it were not. However, much research has found that racial prejudice—both explicit and implicit—is amenable to change (e.g., Blair, 2002; Kawakami, Dovidio, & van Kamp, 2007; Olson & Fazio, 2006; Page-Gould, Mendoza-Denton, Alegre, & Siy, 2010; Wittenbrink et al., 2001). In the present research, we temporarily changed people's views about prejudice with an article presenting scientific evidence about the malleability of prejudice (Studies 4 and 5). To create lasting change in beliefs about the malleability of prejudice, interventions can be modeled on past interventions that have had long-term impact on beliefs about the malleability of intelligence (e.g., Aronson et al., 2002; Blackwell et al., 2007). Such interventions may present scientific evidence over several sessions highlighting the malleability of prejudice, use impressive exemplars of people who changed, and ask participants to tutor others in a malleable theory of prejudice. Future research might assess the impact of such interventions on people's interest in and behavior in interracial interactions over the long term.

Although in this research we have focused on majority-group members, interracial interactions do not involve solely majority-group members. The present research opens the door to considering the influence prejudice beliefs may have on minority-group members' interest in and experiences in interracial interactions. Past research has found that these interactions can be negative experiences for members of minority groups (Crocker, Major, & Steele, 1998; Mendoza-Denton, Downey, Purdie, Davis, & Pietrzak, 2002). However, given the history of race relations in the United States, there is not as strong a normative imperative for racial minorities to be unprejudiced against White individuals. So, if members of minority groups do not have the same concern about being prejudiced or revealing prejudice, would beliefs about the malleability of prejudice still affect their interracial contact? We think they might. Concerns about being the target of prejudice are salient for many members of minority groups (Mendoza-Denton et al., 2002; Pinel, 1999; Shelton, 2003; Shelton & Richeson, 2006). For this reason, minority individuals' prejudice beliefs, especially their beliefs about the malleability of other groups' racial prejudice, may shape their experiences in intergroup situations (see Rattan & Dweck, 2010). Members of a stereotyped minority group who think that prejudice (especially others' prejudice against them) is relatively unchangeable may avoid interactions with majority-group members because they have had past negative interactions and believe future ones will also be negative. In addition, some might be more anxious in interracial interactions, especially in important and ongoing situations such as workplaces, because of worries that they will be subjected to unchangeable prejudice. Thus, beliefs about the malleability of prejudice may shape people's experiences on both sides of an interracial interaction. As this research continues, it will be important to investigate how both majority-group and minority-group members' beliefs interact to influence the outcome of interracial interactions.

Conclusion

Majority-group members' fixed beliefs about prejudice can have many negative consequences for minority-group members. If bosses avoid and become anxious in interactions with minority employees, they may unfairly rob them of opportunities afforded

to White employees. If teachers are anxious and seem unfriendly when interacting with minority students and are hesitant to discuss their group's history, these students may reasonably come to feel a lack of belonging and perform more poorly in school (Walton & Cohen, 2007). Our research shows that such seemingly prejudiced behavior may arise even among White Americans low in prejudice. It highlights the need to alter the public discourse about the nature of prejudice and suggests that to eradicate prejudiced behavior, to increase equity, and to create a more positive climate for intergroup relations, one must look not just to changing White individuals' prejudice but also to changing their understanding of prejudice as fixed rather than malleable.

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(Appendix follows)

Appendix

Theories of Prejudice Scale

The following questions ask you about prejudice, for example racial prejudice. How much do you agree or disagree with the following thoughts? Please circle your response.

1. People have a certain amount of prejudice and they can't really change that.

1	2	3	4	5	6
very strongly disagree	strongly disagree	disagree	disagree	strongly disagree	very strongly disagree

2. People's level of prejudice is something very basic about them that they can't change very much.

1	2	3	4	5	6
very strongly disagree	strongly disagree	disagree	disagree	strongly disagree	very strongly disagree

3. No matter who somebody is, they can always become a lot less prejudiced.

1	2	3	4	5	6
very strongly disagree	strongly disagree	disagree	disagree	strongly disagree	very strongly disagree

4. People can change their level of prejudice a great deal.

1	2	3	4	5	6
very strongly disagree	strongly disagree	disagree	disagree	strongly disagree	very strongly disagree

5. People can learn how to act like they're not prejudiced, but they can't really change their prejudice deep down.

1	2	3	4	5	6
very strongly disagree	strongly disagree	disagree	disagree	strongly disagree	very strongly disagree

6. As much as I hate to admit it, you can't teach an old dog new tricks. People can't really change how prejudiced they are.

1	2	3	4	5	6
very strongly disagree	strongly disagree	disagree	disagree	strongly disagree	very strongly disagree

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