

If He Can Do It, So Can They: Exposure to Counterstereotypically Successful Exemplars Prompts Automatic Inferences

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After incidental exposure to Blacks who succeeded in counterstereotypical domains (e.g., Brown University President Ruth Simmons, Nobel Laureate Toni Morrison), participants drew an automatic inference that race was not a success-inhibiting factor in modern society. Of note, participants' automatic inferences were not simply guided by their explicit reasoning (i.e., their beliefs about what these exemplars signify about the state of race relations). Studies 1–3 demonstrated the basic automatic inference effect and provided evidence that such effects unfolded automatically, without intention or awareness. Study 4 replicated the effect in non-race-related domains. Subsequent studies examined what features of exemplars (Studies 5 and 6) and inference makers (Studies 7 and 8) prompt automatic inferences. Study 5 suggested that counterstereotypically successful exemplars prompt racism-denying inferences because they signal what is possible, even if not typical. Study 6 demonstrated that when these exemplars succeed in a stereotypical domain (e.g., Blacks in athletics), similar automatic inferences are not drawn. Those most likely to draw automatic inferences are people predisposed to approach the world with inferential thinking: participants dispositionally high in need for cognition (Study 7) or experimentally primed to think inferentially (Study 8).

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On the evening of November 5, 2008, as it became clear that then-Senator Barack Obama would achieve a commanding electoral victory, conservative pundit and CNN commentator William Bennett remarked on the election's significance, "I'll tell you one thing it means, as a former Secretary of Education: You don't take any excuses from anybody who says the deck is stacked." But upon reflection, the fact that it is so notable for a Black man to be a mainstream candidate for president could itself symbolize how race continues to be an important and potentially limiting factor in modern society. Consider comedian George Burns, who had a daily cigar habit until his death at 100. Although one might argue that Burns's longevity signifies the exaggerated nature of the danger posed by tobacco, with more thought, one may conclude that Burns stands out as such a notable example because he is such an exception to the rule. Such exemplars have power because, at first glance, they challenge conventional beliefs. Although James

Buchanan was America's first left-handed president, this fact may strike readers as less notable than Obama's political success or Burns's longevity, likely because there is little grounds to even suspect an anti-left-handed social climate.

In the present article, we document and examine how exemplars can change people's beliefs about the context in which those exemplars exist. For most of our studies, we examine the impact of incidental exposure to counterstereotypically successful Black exemplars like Brown University president Ruth Simmons, Fortune 75 CEO Kenneth Frazier, or American President Barack Obama. We ask whether incidental exposure to such exemplars prompts automatic inferences about the state of race relations in modern America.

This article focuses on automatic inferences, the conclusions people draw following incidental exposure to an exemplar. These inferences need not be (and as our data will show, actually are not) connected to explicit beliefs about what conclusions the exemplars should or do inspire. In fact, we will find that these automatic inferences unfold outside of awareness. But first, if people do draw automatic inferences from counterstereotypically successful exemplars, what inferences are those likely to be and who is likely to draw them?

Automatic Inference Despite Explicit Rejection?

Upon exposure to a counterstereotypically successful exemplar, what do people automatically infer? Do Ruth Simmons and Barack Obama stand out because of their race, prompting a reminder of the continued impact of racial prejudice? Or are even single, atypical

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exemplars enough to prompt an inference that Black success is possible, thereby fueling a sense that continuing racial disparities must be due to shortcomings within the Black community rather than due to the persistence of racism? We reason by analogy from previous research in the social comparison literature to predict that the automatic inferences may reflect the latter pattern.

When people are exposed to especially successful others, they observe what is possible (Taylor & Lobel, 1989). Although such exposure is sometimes inspiring for the self (Collins, 1996; Lockwood & Kunda, 1997), these exceptional exemplars can also have a perverse deflating effect because of the information they implicitly communicate (Taylor & Levin, 1976; Wood, Taylor, & Lichtman, 1985). For example, breast cancer patients who are exposed to “supercopers”—women who are portrayed as experiencing a relatively burdenless bout with breast cancer—may see that such successful coping is possible, take into consideration their own inferior coping, and thus question their own personal adequacy (Taylor & Levin, 1976; Wood et al., 1985). That is, exposure to the “supercoper” leads patients to think that coping with breast cancer is not that hard. Might there be an analogous effect with social perception?

To extend the analogy, Black exemplars who are successful in domains that are dominated by White individuals show that such success is possible, which may prompt people to think that constraints created by racial injustices are not that strong. And given the automaticity with which social comparison consequences are known to unfold for the self (Mussweiler, Rüter, & Epstude, 2004) and with which causal inferences are made (Hassin, Bargh, & Uleman, 2002), such inferences might be arrived at automatically—unfolding unintentionally and outside of awareness. Although these exemplars in theory could prompt the opposite inference (e.g., the surprise one experiences at seeing a counterstereotypically successful Black exemplar could highlight racism’s persistence), this complex pathway seemed less likely to be pursued automatically. After all, previous research reinforces a theme that intuitive or automatic judgments are influenced by the content of specific anecdotes instead of deeper information that speaks to the diagnosticity or relevance of such case-based evidence (e.g., Kahneman & Tversky, 1972). If people do consider the opposite inference, it would seem more likely to be done upon explicit reflection, when they can better consider the significance of having experienced surprise at seeing the counterstereotypically successful exemplar.

Whether or how much the presence of one or two counterstereotypical exemplars *should* shift people’s beliefs is a difficult normative question that is beyond the scope of this article. That said, we can ask whether people respond to incidental exposure to such exemplars in a way that is consistent with their explicit inferences on the matter. If automatic inferences diverge from what inferences participants think the exemplars should or do prompt, we can more conclusively identify automatic inference as a distinct, notable, and unintended judgment effect.

Automatic Inference: A Thoughtful Process That Is Rejected Upon Reflection?

If, in general, people deny racial disadvantages when they have been incidentally exposed to counterstereotypically successful Black exemplars, who is most likely to draw these automatic inferences? We predict that those predisposed to spontaneously approach stimuli in a highly thoughtful way—that is, seeing the

exemplar not merely as a person but as a possible source of information or basis for inference—are most likely to draw automatic inferences.

Typically, being thoughtful and deliberate has been assumed to insulate people from cognitive bias, because many errors in judgment are assumed to occur because people are just not thinking hard enough (Strack, Schwarz, Bless, Kubler, & Wänke, 1993). Among many such examples, those high in need for cognition (NFC) make more similar probability estimates in prospect and in hindsight (Verplanken & Pieters, 1988), are less sensitive to some framing effects (Chatterjee, Heath, Milberg, & France, 2000; Smith & Levin, 1996; cf. LeBoeuf & Shafir, 2003), and are less likely to show the fundamental attribution error (D’Agostino & Fincherkiefner, 1992). But thought alone may not immunize people from having their judgments be led astray (Forgas, 1995). Ironically, the same characteristics that push people to engage in effortful thought and successfully recognize salient biasing factors upon reflection can also lead those individuals to be more susceptible to subtle biasing factors (Petty, DeMarree, Briñol, Horcajo & Strathman, 2008; Petty & Jarvis, 1996). “Many such contaminating effects occur under the most thoughtful situations and for the most thoughtful people, because subtle contaminants can influence cognition without awareness, and the more cognitions one has, the more bias that can occur” (Petty, 2001, p. 130). A variety of findings show how added thought can exaggerate bias. Those experimentally prompted or dispositionally inclined to think more are more likely to be influenced by an incidental emotion, a bodily response, a comparison standard, or a subtle prime (Briñol & Petty, 2003; Forgas, 1995; Mussweiler, 2003; Petty et al., 2008; Petty, Schumann, Richman, & Strathman, 1993).

Drawing on this tradition, we suggest that a propensity for added thought can predispose one to an automatic inference. But we also predict that the same NFC that may predispose one to automatic inference-making may also lead one to be more skeptical about the underlying logic of such an inference when reflecting on it explicitly. That is, when asked whether these exemplars provide meaningful information, those high in NFC may, if anything, be most inclined to say no. Such findings would help elucidate who shows automatic inference effects and reinforce that automatic inferences neither stem from nor are justified by explicit reasoning or beliefs.

Available Evidence

Barack Obama offers one recent example of a counterstereotypically successful Black exemplar. Although our focus is not on Barack Obama per se, several recent investigations provide support for our broader hypothesis by examining differences in people’s beliefs before and after Obama’s election. Comparing sentiments just after to just before Obama’s 2008 victory, Kaiser, Drury, Spalding, Cheryan, and O’Brien (2009) found that people saw America as further along the trajectory of racial progress. In a similar pre-election/post-election design, a nationally representative sample of Americans perceived less discrimination against Blacks and became less supportive of some (but not all) racialized political issues (Valentino & Brader, 2011). These declines were more pronounced for conservatives than liberals. Although intriguing, this nonexperimental evidence is unlikely to reflect automatic inferences following incidental exposure to exemplars, but instead to reflect explicit assessments of the election’s significance as

influenced by media narratives, social conversations, and internal dialogue.

Our investigation is most similar to recent research from Lybarger and Monteith (2011). In two experiments, they had participants create race-related taglines for a magazine cover featuring Obama, Oprah Winfrey, or a nature scene. Those who generated a catchy race-related appeal for Obama or Oprah subsequently showed higher scores on a symbolic racism scale than those who created a (non-race-related) tagline for the nature scene. Although we believe Lybarger and Monteith's findings help make our predictions—in particular, the direction of the automatic inference (cf. Bodenhausen, Schwarz, Bless, & Wänke, 1995)—more plausible, there are at least four important differences between their focus and the present one.

First, Lybarger and Monteith (2011) noted that their research does not identify what factors are responsible for their observed shifts. The present article examines hypotheses about the nature of the incidental exemplars, as well as the inference makers themselves, to understand what prompts automatic inferences in whom and exactly when such inferences temporally occur. For instance, whereas Lybarger and Monteith (2011) noted that antigalitarian attitudes may result from priming “highly successful Black exemplars” (p. 651), our account and studies emphasize that only counterstereotypical success should signal reduced racial disadvantage. Second, Lybarger and Monteith's participants were explicitly prompted to include “Black” as well as positive adjectives in their taglines. Thus, after identifying a person by race and generating a positive tagline, participants may have felt morally licensed to express racist sentiments (Effron, Camerson, & Monin, 2009). Third, we generalize our investigation to non-race-related exemplars that achieve in spite of what would seem to be limiting factors. Fourth, we assess whether automatic inferences unfold automatically, without intention or awareness.

Overview of the Present Studies

We offer eight studies that examine how counterstereotypically successful exemplars prompt automatic inferences. In each study, participants were incidentally exposed to exemplars by way of a quiz that was supposedly part of a different study. In Studies 1–3 and 5–8, the exemplars were a collection of relatively famous exemplars that included either only White people or one or two Black counterstereotypically successful individuals as well. We used a variety of measures to test whether this incidental exposure made people less likely to believe that racial disadvantages persist: denial of racism (Studies 1, 3, 5–7), questions used in major public opinion polls (Study 2), a version of McConahay's (1986) Modern Racism Scale (Studies 2, 5, 8), and Kaiser et al.'s (2009) policies that address racial inequality scale (Study 5). To generalize our findings, Study 4 tested whether non-race-related, counterstereotypically successful exemplars prompted analogous automatic inferences. Notably, we hypothesized that automatic inferences would be independent of participants' explicit reasoning about these exemplars (Studies 1–2, 4–5, 7), would occur outside of their awareness (Study 2), and would unfold automatically despite being their being asked to be mindful of the possible influence of the exemplar primes on their stated beliefs (Study 3).

We further tested our theoretical account by examining what features of exemplars (Studies 5 and 6) and inference makers

(Studies 7 and 8) prompt automatic inferences. In Study 5, we tested whether counterstereotypically successful exemplars prompt automatic inferences because they signal what is possible, not what is typical. In Study 6, we tested whether exemplars would no longer prompt automatic inferences when they were stereotypically successful. In Study 7, we tested whether high need for cognition individuals are those most likely to draw automatic inferences. In Study 8, we procedurally primed some participants to think inferentially before they were exposed to the exemplars. We predicted that a propensity for thought—whether chronic or experimentally induced—would encourage automatic inferences.

Study 1

Our primary aim in Study 1 was to test whether incidental exposure to counterstereotypically successful Black exemplars (Oprah Winfrey and Barack Obama), as opposed to matched White controls, would change participants' beliefs about race in America. We hypothesized that after exposure to the Black (vs. White) exemplars, participants would be more likely to deny that racism exists as a source of racial disadvantage in modern America. We varied the tone of these denial of racism measures to be worded *carefully* (i.e., in a way that agreeing with them would not be clearly racist) or *bluntly* (i.e., in a less cautious manner). Although our reasoning does not predict moderation, the manipulation allowed us to assess the robustness of any effect (i.e., to determine whether automatic inferences might only emerge when participants felt particularly comfortable expressing their beliefs).

In addition, we offered a first test of whether automatic inferences are distinct from participants' explicit reasoning about the exemplars' significance by asking participants to explicitly consider what the Black exemplars signified. Several tests assessed whether their explicit reasoning about the exemplars might underlie any automatic inference observed.

Method

Participants and design. Participants were 64 undergraduates at Cornell University. Those who participated in Study 1, as well as all subsequent studies, did not self-identify as Black (even in part). Participants were randomly assigned to one of four conditions in a 2 (prime: Black or White) \times 2 (tone: blunt or careful) between-subjects design.

Procedure and materials. In this study (and all subsequent studies), the priming task and dependent measures were presented as though they were two separate studies. In order to enhance the believability of this cover story, the priming task was completed on a computer, whereas the dependent measures were included in a stapled packet.

Exemplar priming task. Participants were told they were completing a “Celebrity Recognition Task” that was a pretest for another study. On each of six trials, participants were shown two photos. For each of 6 exemplars, participants were asked to indicate (or guess) which photo was a specified celebrity (see Figure 1). In the *Black* condition, two of the exemplars were African Americans who had succeeded in counterstereotypical domains: Barack Obama and Oprah Winfrey. The study was conducted after Obama was the official Democratic presidential nominee but before he was the president-elect. In the *White* condition, these two

Which person is Democratic presidential hopeful Barack Obama?



Figure 1. Example item from the exemplar priming task. The items took this form in Studies 1, 4, and 6–8. These official congressional photographs are in the public domain.

Black exemplars were replaced with Alec Baldwin and Barbara Walters. Obama’s White “match” was a liberal television personality instead of a liberal politician for fear that any mention of a Democratic politician would immediately call to mind Barack Obama. In both conditions, participants saw the other 4 White exemplars: Kyle Busch, John Grisham, Heidi Klum, and Kelly Pavlik. Each question briefly explained who the celebrity was (e.g., “Which person is talk show host Oprah Winfrey?” “. . . Barbara Walters?”). The two options were always of the same race, so even if participants did not know the celebrity, they would know his or her race.

Denial of racism. We created five items that asked people to explain why racial disparities persist. We created two versions. In one, we worded the items in a very careful tone, hoping to minimize self-presentation concerns. We began by including instructions that suggested that African American leaders disagree about whether the gap between Black and White communities is due to problems within the Black community or to continued racism (see Appendix A for the instructions and scale). We hoped these instructions would give participants permission to express their honest responses. Participants then responded to five questions on 1- to 10-point scales (e.g., “Many, if not most, people truly wish that we lived in a world where the color of one’s skin was of no consequence. Clearly there remain disparities between the races in terms of outcomes, but to what extent do you think that we may have achieved the goal of true equality of opportunity among the races? from 1 [*not at all*] to 10 [*completely*].”).

With the carefully toned items, we went to great lengths to ensure that participants would be willing to endorse beliefs that could sound racially insensitive. At the same time, our findings would not be particularly robust if they emerged only in these artificial circumstances. As such, we also created blunt items. We removed the opening passage suggesting that even African American leaders disagreed on these issues and modified each question to remove the language that would help to justify denying racial disadvantage. For example, the blunt item about equality of opportunity omitted the opening statements that expressed a concern for an egalitarian society and removed the noncommittal phrase that we “may have” achieved equality of opportunity. The item simply read, “Do you think we have already achieved the goal of

true equality of opportunity among the races?” The scales were reliable (blunt: $\alpha = .80$; careful: $\alpha = .76$).

Political orientation. In an effort to control for a baseline source of variation in the denial of racism, we included two items that measured participants’ political orientation. Participants responded on two 9-point scales anchored at 1 (*Democrat/liberal*) and 9 (*Republican/conservative*). The items were highly correlated, $r(62) = .79$, $p < .001$, so they were averaged.

Explicit endorsement of exemplars’ significance. At the end of the study, all participants were asked the following question: “To what extent do you believe that the presence of successful African Americans like Barack Obama and Oprah Winfrey helps to support the idea that racism is not what holds Black people back in America?” We labeled both endpoints: 1 (*does not help support this idea*) and 7 (*does help support this idea*). We labeled the midpoint, 4 (*unsure/could go either way*). Note that we decided against measuring this variable in advance (e.g., on a pretest or counterbalanced with our denial of racism scale) so participants would not be alerted to the focus of our study before completing the key denial of racism measure.

Results and Discussion

Automatic inference. We submitted the denial of racism scale to a two-way 2 (prime) \times 2 (tone) analysis of covariance (ANCOVA), with political orientation as a covariate. There was a strong effect of political orientation, $F(1, 59) = 15.72$, $p < .001$, $\eta_p^2 = .21$, such that more conservative participants denied racism more. There was a main effect of tone, $F(1, 59) = 6.58$, $p = .01$, $\eta_p^2 = .10$. This is a manipulation check of sorts, showing that people were more willing to endorse the carefully toned items than the blunt ones. There was also the predicted main effect of prime, $F(1, 59) = 5.87$, $p = .02$, $\eta_p^2 = .09$. Those exposed to Black counterstereotypical exemplars were more likely to deny racism and state that Blacks could pull themselves up by their bootstraps if they tried. The priming effect did not vary with the tone manipulation ($F < 1$; see Figure 2).¹

¹ In five studies (1, 2, 4, 5, and 7), we measured explicit beliefs about the exemplars’ significance. We measured these beliefs toward each study’s end (instead of before the exemplar priming task) to avoid tipping off participants to the purpose of the study, but readers may wonder whether our manipulations contaminated these measures. We submitted the relevant item or composite to the same model used to test for automatic inferences. In four cases the same manipulation that prompted automatic inferences did not affect responses to these items: $F < 1$ (Study 1); $F(1, 163) = 2.15$, $p > .14$ (Study 2); $F < 1$ (Study 4); $F(1, 461) = 1.81$, $p > .17$ (Study 5). In Study 7, the effect was significant, $F(1, 183) = 6.50$, $p = .01$, but in the direction opposite to that of the automatic inference. Given that the explicit beliefs about the exemplars’ significance measure focus everyone—regardless of his or her exemplar priming condition—on the counterstereotypically successful exemplars, it should be no surprise that there were not parallel differences. Stated differently, we had no reason to suspect that recent incidental exposure to counterstereotypically successful exemplars (afforded by one version of the exemplar priming task) would change the way that people subsequently explicitly reason about them. It should be emphasized that these largely null effects do not establish that the explicit analyses of the exemplars’ significance are not what underlay the automatic inference effect. Instead, the tests we report later in the main text—those examining whether people lean on their explicit analyses of the Black primes more after seeing those primes versus not—are the crucial tests.

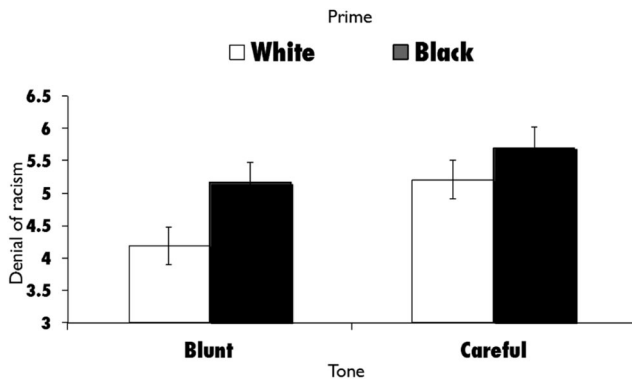


Figure 2. Denial of racism composite as a function of whether the primes included all White exemplars or two counterstereotypically successful Black exemplars and of whether the dependent measures were blunt or more carefully worded in tone (Study 1). Note that the automatic inference is reflected by the increase in denial of racism in the Black (vs. White) condition, not by the denial of racism measure itself. Error bars indicate errors of the mean.

Explicit endorsement of exemplars' significance. We tested in three ways whether the automatic inference effect—that is, the elevation in denial of racism in the Black prime condition—was guided by explicit analysis. First, on average, participants tended to disagree that the presence of African Americans such as Obama and Winfrey lends support to the idea that racism is not what holds Blacks back: The mean response, 3.59 ($SD = 1.54$), was significantly less than the midpoint of 4.00, $t(63) = 2.11, p = .04, d = .27$. Although this is not a necessary condition to establish the distinctness of automatic inferences, this fact alone makes the dissociation likely.

Second, we tested whether the Black exemplar primes caused people to shift their denial of racism to be more in line with their explicit beliefs about the exemplars' significance. Although participants' explicit judgments about the significance of the exemplars for race relations correlated—not surprisingly—with their denial of racism, $r(62) = .55, p < .001$, this correlation was constant across the conditions ($t < 1$). If the explicit analysis of what exemplars signified explained the automatic inference, it would need to more strongly predict denial of racism in the Black (vs. White) priming condition.² Note that one strength of this strong correlation is it helps to speak against an alternative explanation that the explicit endorsement item was too confusing or, as a single item, too unreliable to predict anything.

Third, we found that participants' political orientation predicted their explicit beliefs about the exemplars' significance but did not moderate the automatic inference effect. Participants' conservatism predicted their endorsement of the claim that Obama and Winfrey support the idea that racism is not what holds African Americans back, $r(62) = .36, p = .004$. But political orientation did not moderate the automatic inference effects ($t < 1$). That is, liberal and conservative participants were equally influenced by exposure to the Black primes. (Note that this lack of moderation by political ideology, which will be replicated later, is in contrast with earlier research on Obama's election that we argued was likely not driven by automatic inferences; Valentino & Brader, 2011). In combination, these three analyses suggest that participants' ex-

PLICIT BELIEFS about what Obama and Winfrey symbolize neither supported automatic inferences nor played a role in forming them.

Study 2

Study 2 built on the findings of Study 1 in three ways. First, we aimed to replicate our effect using new counterstereotypically successful Black exemplar primes: Fortune 75 CEO Kenneth Frazier and Brown University president Ruth Simmons. Second, we assessed participants' beliefs about the state of racial progress by relying on previously used measures: polling questions from CNN and Gallup and a modified Modern Racism Scale (McConahay, 1986). Third, we modified the measures of explicit endorsement used to test whether these inferences unfold automatically. Study 1 tested whether automatic inferences complied with participants' own explicit interpretation (i.e., what participants believed the exemplars signified). But perhaps participants rejected the idea that, normatively, the exemplars support the conclusion that there is less racism even as they were well aware that exposure to the exemplars did explicitly remind them of racism's decline. Thus, in Study 2, we asked what conclusions about race relations the exemplars reminded participants of. We also assessed whether participants were aware that exposure to the exemplars affected their perceptions that racism is increasing or declining.

Method

Participants and design. A sample of 166 undergraduates from the University of California, Berkeley, participated in the study. Participants were randomly assigned to one of two exemplar priming conditions: *Black* or *White*.

Procedure and materials. Participants completed one of two exemplar priming tasks before completing two new race-related dependent measures that asked about the existence of continued discrimination against Blacks. We included one of these measures on a web-based pretest that participants completed when signing up for the study, at least 24 hours before coming to the lab. In this way, we could control for baseline variation in item endorsement. At the study's end, participants were asked to report what race-related conclusions the exemplars reminded them of, as well as whether seeing the exemplars influenced their stated beliefs.


² Readers may be more familiar with studies that dissociate implicit and explicit measures. These studies often test whether a given manipulation influences an implicit measure (e.g., the Implicit Association Test) but not an explicit measure (e.g., a feeling thermometer). Although this form of dissociation emerges in our studies (see Footnote 1), it does not test whether the automatic inference process was guided by an explicit inference process. The automatic effect in our studies is captured by the between-condition differences on denial of racism following a Black or White prime (the output of which is measured with an explicit, self-report measure). The explicit inference process is captured by participants' explicit beliefs about the Black exemplars' significance. It is an estimate of how participants believe the automatic inference process does or should unfold. Because denial of racism scores and explicit judgments about the Black exemplars' significance are both explicit measures that relate to participants' beliefs about racism, it is not surprising that the two measures correlate. Our claim that automatic inferences unfold independently of these explicit beliefs is supported by showing that explicit beliefs do not guide the shift in denial of racism more following the Black (vs. White) primes.

Exemplar priming task. Participants completed a modified version of the celebrity recognition task used in Study 1. On each trial, participants were provided with a single exemplar's picture, first name, and one-sentence description of the person. Participants' task was to indicate (or guess) which of two options was the person's last name. In the Black condition, two of the eight exemplars were Kenneth Frazier, the CEO of a Fortune 75 company, and Ruth Simmons, the president of an Ivy League university. In the White condition, Robert Stevens and Amy Gutman were matched controls. The remaining six Caucasian exemplars were equivalent in all conditions: Sofia Coppola, Tom Corbett, Dustin Johnson, Christine Lagarde, Jon Lester, and Gail McGovern. Example items are shown in Figures 3a and 3b.

Race-related dependent measures. We used two dependent measures. First, we looked to public opinion polling that has tried

to capture Americans' beliefs about the status of racial progress in America. We modified three questions—from an August 2011 *USA Today*/Gallup poll and a May 2010 CNN/Opinion Research Corp Poll—for use as Likert-type measures: “Do you think new Civil Rights laws are needed to reduce discrimination against Blacks, or not?” (1 = *are not needed*, 7 = *are needed*); “How much of a role, if any, do you think the government *needs* to have in trying to improve the social and economic position of Blacks and other minority groups in this country?” (1 = *major role*, 4 = *minor role*, 7 = *no role*); and “To what extent do you think we are in a new era of perfect race relations in this country, or do you think that we remain in a time in which the promises of racial progress are far ahead of us?” (1 = *promises of racial progress far ahead of us*, 7 = *new era already*). After reverse-scoring the first item, we averaged the three into a single public opinion polling,

A




Kenneth _____ is the CEO of a Fortune 75 company.

What is Kenneth's last name?

A) Frazier
B) Stevens

B




Robert _____ is the CEO of a Fortune 75 company.

What is Robert's last name?

A) Frazier
B) Stevens

C



Kenneth _____ is the only African American CEO of a Fortune 75 company.

What is Kenneth's last name?

A) Frazier
B) Stevens

Figure 3. Example items from the exemplar priming task in Studies 2, 3, and 5. Participants in the Black prime condition would see (A); those in the White prime condition would see (B); those in the Black-atypical condition would see (C; Study 5 only). The items also took this form (not including condition C) in Studies 2 and 3. Panels A and C: Photograph of Kenneth Frazier: Copyright 2006 by Merck & Co and used under a Creative Commons License. Panel B: Photograph of Robert J. Stevens: Copyright 2013 Lockheed Martin Corporation. Used with permission.

racism-denying composite ($\alpha = .59$). A factor analysis showed that all three items loaded on a single factor ($\lambda_s > .65$), suggesting the moderate-to-low reliability was mostly a function of the short length of the scale instead of a lack of singularity of the measures. When relatively low reliability takes this form, the primary concern is that it makes analyses particularly conservative, given that the impact of random error on individual items is less easily cancelled out by random error from other items.

Second, participants completed a modified version of the seven-item Modern Racism Scale (McConahay, 1986). Although we left some items untouched (e.g., “Discrimination against Blacks is no longer a major problem in the United States”), we reverse-worded or modified some of the items in order to make them less inflammatory or more reasonable by current standards (e.g., “Blacks have more influence upon school desegregation plans than they ought to have” became “Blacks have less influence on national policy than they ought to”). This scale had good reliability ($\alpha = .78$). Modern or symbolic racism scales measure people’s perceptions of the presence and causes of racial disadvantage (McConahay & Hough, 1976). As Tetlock (1994) noted, items on such symbolic racism scales could be endorsed for multiple reasons. As the example items indicate, they could be endorsed because one believes that Blacks no longer face racism (or face less than they used to)—what we hope to measure—or because of anti-Black prejudice. Given that previous research has shown that exposure to liked, successful Black exemplars has a neutral or positive effect on attitudes toward Blacks (Columb & Plant, 2011; Plant et al., 2009), this suggests that any increase in agreement with the modern racism items would most likely reflect the dispassionate belief that race is not a limiting factor in modern America. The two race-related dependent measures were highly correlated, $r(164) = .54, p < .001$. We conduct tests on a composite of the measures as well as each individual measure.

Explicit endorsement of exemplars’ significance. Our measures in Study 2 focused on which ideas about race the exemplars were said to bring to mind. All participants were first told that “Kenneth Frazier is the CEO of an American Fortune 75 company. He is African American. Ruth Simmons is the president of an Ivy League university. She is African American.” Participants were then prompted with “Does learning or being reminded of the existence of Kenneth Frazier and Ruth Simmons . . .” followed by three statements. These appeared in a random order: “. . . not really remind me of any particular conclusion about the discrimination-related experience of Blacks in modern America” (*no race-related reminder*); “. . . remind me that Blacks do not face many hurdles due to discrimination in modern America” (*reminder of denial of racism*); and “. . . remind me that Blacks continue to face substantial hurdles due to discrimination in modern America” (*reminder of presence of racism*). For each item, participants responded on a 7-point scale ranging from 1 (*definitely no*) to 7 (*definitely yes*), with 4 explicitly labeled “neither yes nor no.”

Awareness of the automatic inference. Finally, we directly assessed whether participants were aware of the exemplars’ influence on their subsequently stated beliefs. Participants considered three ways the celebrity recognition task might have changed the subsequently measured beliefs: “A: Felt more strongly that Blacks could get ahead if only they tried harder, that race is not a limiting factor”; “B: Did not change my beliefs. The opinions I expressed about race were those I already had”; or “C: Felt more strongly that

Blacks continue to face discrimination in this country, that equality is a distant hope.” Participants responded on a 9-point scale with labels at 1 (*Purely A*), 5 (*B: Didn’t change my beliefs*), and 9 (*Purely C*).

Results and Discussion

Automatic inference. We submitted our composite of composites to a one-way ANCOVA, with modern racism (as measured on the web-based pretest) as a covariate. There was a strong effect of baseline modern racism, $F(1, 163) = 112.32, p < .001, \eta_p^2 = .41$. As in Study 1, the predicted effect of condition emerged, $F(1, 163) = 5.62, p = .02, \eta_p^2 = .03$. To understand this effect and to make sure it was not driven entirely by one measure, we examined each measure individually. After exposure to the Black (vs. White) exemplars, participants were more likely to deny racism on the public opinion polling measures ($M_s = 4.02$ vs. 3.69), $F(1, 163) = 4.49, p = .03, \eta_p^2 = .03$, and were marginally more likely to do so on the Modern Racism Scale ($M_s = 2.72$ vs. 2.61), $F(1, 163) = 3.01, p = .08, \eta_p^2 = .02$.

Explicit endorsement of exemplars’ significance. Participants explicitly endorsed the notion that the exemplars did not remind them about racism’s presence or absence ($M = 4.39, SD = 1.58$): The endorsement was greater than the neutral midpoint of 4, $t(165) = 3.14, p = .002, d = .25$. Participants neither agreed nor disagreed with the idea that the exemplars reminded them of the continued presence of racism ($M = 3.92, SD = 1.61$), $t < 1$. Last, participants explicitly disagreed with the idea that the exemplars reminded them of a lack of racism ($M = 3.34, SD = 1.67$), $t(165) = -5.11, p < .001, d = .40$. Agreement with each statement significantly differed from agreement with the other two statements ($t_s > 2.35, p_s < .02, d_s > .18$). Thus, even though exposure to these exemplars automatically pushed people to deny racism, participants were most adamant in saying the exemplars did not remind them of that very conclusion.

Next, as in Study 1, we examined whether what participants said the exemplars reminded them of better explained the race-related beliefs of those exposed to the Black, versus the White, exemplars. We subtracted participants’ indication that the exemplars did not remind them of any particular conclusion from the response that the exemplars reminded them about the absence of racism.³ As in Study 1, we then tested for an interaction that would suggest that, after people had been primed with the Black exemplars, their responses to the race-related dependent measures more closely aligned with what participants said the exemplars reminded them of. Just as before, no such interaction emerged ($t < 1$). Thus, not only do automatic inferences not conform to participants’ own explicit analysis of the exemplars (Study 1), but they also fail to conform to what participants say the exemplars explicitly remind them of.

Awareness of the automatic inference. Finally, we found that those in the Black prime condition did not believe that their

³ We formed our composite with these two items because people were more likely to say that the information was nondiagnostic than that the exemplars reminded them of the continuance of racism. The same nonsignificant interaction, in this and future studies, emerges if we create a composite by subtracting participants’ agreement with the item that the exemplars support racism from their agreement with the item that the exemplars counter racism.

beliefs had shifted ($M = 4.87$, $SD = 0.77$): Their endorsement of the awareness item did not differ from the midpoint of 5 that indicated no change, $t(78) = -1.45$, $p > .15$, $d = .16$. Second, those in the Black prime condition did not believe the exemplar priming task had influenced them any differently than did those in the White prime condition ($M = 4.97$, $SD = 0.96$), with or without pretested Modern Racism Scale as a covariate ($F_s < 1$). Third, including awareness as a covariate did not disrupt the focal effect of exemplar priming on the race-related beliefs, $F(1, 161) = 5.04$, $p = .03$, $\eta_p^2 = .03$, nor did the awareness item predict the race-related beliefs, $F(1, 161) = 1.89$, $p > .17$, $\eta_p^2 = .01$.

Study 3

The first two studies showed that automatic inferences did not comply with participants' explicit analyses of the exemplars, were not redundant with the thoughts the exemplars were said to trigger, and occurred outside of awareness. Nonetheless, one may worry that participants actually did draw these inferences with full awareness and intentionality but disguised this on their explicit judgments for fear that they would appear racist in others' eyes. Although we found this possibility unlikely given that participants completed the studies in private, Study 3 was designed to address this possibility as well as test the robustness of automatic inference.

Toward this end, Study 3 added a third condition in which participants were preemptively alerted to the relationship between the celebrity recognition task and the subsequent denial of racism items. In particular, these participants were asked to consider what the exemplars imply about race in America when formulating their answers to the subsequent questions. If the alternative account is right—that is, if what we have called automatic inferences are actually made with awareness and intentionality but not admitted to explicitly for fear of seeming racist—this warning manipulation should ignite similar self-presentational concerns on the denial of racism scale and thus quash the automatic inference effect. If, as we have proposed, people are not aware of the automatic inferences they are drawing, then even warned participants should show the same automatic inference effect as those not warned.

Method

Participants and design. Participants were 64 undergraduates from the University of Chicago. All participants were randomly assigned to one of three priming conditions: *Black prime*, *White prime*, or *warned-Black prime*.

Procedure and materials. As in Study 2, participants completed the adapted version of McConahay's (1986) Modern Racism Scale ($\alpha = .85$) on a web-based pretest. Once in the lab, participants completed the celebrity recognition task and the denial of racism scale.

Exemplar priming task. The instructions to the celebrity recognition task served as our manipulation of warning. Participants in the warned-Black prime condition were told about the upcoming measure about race in America and were asked to consider the relevance of the Black exemplars they would soon see when formulating their responses to those measures. It was stressed to them they might have three different responses to the exemplars. These responses were articulated with the same wording as the

explicit measures in Study 2—that the exemplars could remind participants that racism persists, remind them that racism is on the decline, or not remind them of either conclusion. Participants were encouraged to be mindful of their own reactions to the exemplars in forming answers to the subsequent race-related measures. Recall that in Study 2, participants indicated explicitly that the exemplars did not remind them of any particular racial conclusion, even though their responses on the race-related measures suggested that they had automatically inferred that racism is on the decline. Participants in the (nonwarned) Black and White priming conditions received instructions that were matched in length and style but focused only on the recognition task (e.g., "Viewing them could: 1) Remind you of their last names immediately . . ."). The rest of the task was identical to that outlined in Study 2.

Denial of racism. Given that the tone (blunt vs. careful) did not moderate effects in Study 1, we used only the carefully worded, five-item denial of racism measure from Study 1 ($\alpha = .84$).

Results and Discussion

We submitted our denial of racism index to a one-way ANCOVA, with modern racism scores from the pretest as a covariate (in this and all subsequent analyses). The baseline measure of modern racism predicted a large amount of variance in participants' denial of racism, $F(1, 60) = 66.80$, $p < .001$, $\eta_p^2 = .53$. But crucially, we also found the predicted main effect of priming condition, $F(2, 60) = 4.17$, $p = .02$, $\eta_p^2 = .12$. The predicted linear contrast—Black (+1), warned-Black (+1), White (-2)—was significant, $t(61) = 2.88$, $p = .01$, $d = .74$.

Pairwise comparisons showed that, once again, participants incidentally exposed to Black exemplars were significantly higher on the denial of racism scale ($M = 5.30$, $SE = 0.26$) than those exposed to White exemplars ($M = 4.42$, $SE = 0.27$), $t(61) = 2.32$, $p = .02$, $d = .59$. Of importance, even participants who were warned before exposure to the Black exemplars reported more denial of racism ($M = 5.45$, $SE = 0.27$) than those exposed to White exemplars, $t(61) = 2.66$, $p = .01$, $d = .68$. The warning manipulation did not change responses to the Black primes ($t < 1$).

Considered in combination with Studies 1 and 2, Study 3 helps to refine our understanding of the nature of automatic inferences. Participants in Studies 1 and 2 showed no indication that they explicitly endorsed or were even aware of the automatic inferences that they drew. Consistent with these results, warning participants about the connection between the primes and the denial of racism scale did not disrupt the effect, suggesting that it occurred unintentionally and outside of awareness. These results speak against an alternative explanation that participants intentionally draw automatic inferences but disguise their responses on items that more easily tag them as racists. The warning manipulation should have ignited self-presentational concerns on the denial of racism measure; thus, the alternative account predicts a disruption of the automatic inference effect. Instead, the more parsimonious conclusion is that participants are neither aware of nor intend the inferences (i.e., they are automatic).

Study 4

Despite consistent findings in the first three studies, two questions about the generality of automatic inferences remain. First,

would these effects replicate in a non-race-related domain? Participants in Study 4 were incidentally exposed to exemplars that achieved success in different forms despite having characteristics that might be assumed to hold them back (e.g., a CEO who spent two hours a day on a social networking site). Much as our first three studies tested to what extent being African American was seen as an achievement-inhibiting factor, we assessed participants' beliefs about the extent to which the identified features were similarly inhibiting.

Second, would we continue to see a dissociation between automatic inferences and explicit inferences about what the exemplars imply? Perhaps the domain of race is unique in the amount of caution people exercise in agreeing that an exemplar's success suggests fewer limitations for others. Study 3 addressed this concern in one way. If Study 4 finds an automatic-explicit dissociation in less prickly domains, we would have more confidence that participants were not simply misrepresenting their explicit beliefs about the Black exemplars' significance.

Method

Participants. Participants were 39 students at the University of Chicago who participated in exchange for \$3. Participants were randomly assigned to a *counterstereotypical* or *stereotypical* exemplar priming condition.

Materials and procedure. First, participants completed an exemplar priming task framed as a trivia task. Through it, participants were exposed to three exemplars who succeeded, in some cases despite factors that would be expected to inhibit success. To measure automatic inferences, we asked participants to make judgments related to these potentially success-inhibiting factors. The final measures probed participants' normative beliefs about how learning of the exemplars should influence their beliefs.

Exemplar priming task. Six questions were equivalent for everyone. The remaining three varied by condition. For those in the counterstereotypical exemplar condition, each such question alluded to an exemplar that was meant to be surprising given most people's prior beliefs or stereotypes. The examples conflicted with the broad beliefs that fast food is unhealthy, that social networking sites interfere with productivity, and that China has poor labor practices. More specifically, the fast food item asked participants at which restaurant the oldest living Californian eats every day, McDonald's or Wendy's. The social networking item read, "According to Fortune 500 CEO Ronald N. Turner, he spends two hours a day on what social networking website?" The choices were Facebook and My Space. The factory item asked which factory was rated the most labor-friendly factory in the world. The choices were two factories located in China. Participants randomly assigned to the stereotypical condition were given three matched questions that were not designed to be surprising (e.g., "According to Fortune 500 CEO Ronald N. Turner, he spends two hours a day reading which print publication? *New York Times* or *Wall Street Journal*").

Opinion survey. Participants then completed a supposedly unrelated 18-item opinion survey that asked three questions about each of six different topics. Three topics were fillers (e.g., reality television). Participants' responses on the three critical topics (fast food: $\alpha = .65$, social networking websites: $\alpha = .57$, and China's labor practices: $\alpha = .43$) served as our primary measures of

automatic inferences. For example, one fast food item asked, "To what extent do you believe that the obesity and heart disease epidemic in America is due to fast food restaurants?" One social networking item asked, "Do you think that most people spend too much time on Facebook for their own good?" One China item asked, "To what extent do you think that depressed life-spans in China (more than 5 years less than those in the U.S.) are the fault of poor labor conditions versus poor nutrition?" In this way, much as with our race-related studies, we tested whether participants made inferences that a factor was not success inhibiting following a single example showing the factor did not inevitably thwart "success." Each item was measured on a 10-point scale with different relevant endpoints (see Appendix B for the full set of measures).

Explicit endorsement of exemplars' significance. Finally, we assessed how participants believed they *should* change their beliefs in response to each exemplar. By asking what conclusions participants should draw, we could more conclusively test whether automatic inferences—which we already know occur outside of participants' awareness—are inconsistent with participants' explicit normative standards. Although behavior may depart from people's own prescriptions because such behavior is effortful to carry out (e.g., dieting), such excuses do not readily apply to questions of logical inference. Instead, a dissociation would further support our characterization of automatic inference as unintended and distinct from explicit inference.

All participants saw the counterstereotypical exemplars, some for the first time. Although the wording was specific to each item, participants were to indicate to what extent the exemplar should push them toward (A) the counterstereotypical conclusion (e.g., "push me toward believing that Facebook and other social networking sites do not interfere with worker productivity given that is what the example suggests"), (B) no particular conclusion (e.g., "does not provide information about whether Facebook and other social networking sites interfere with worker productivity"), or (C) the opposite conclusion, given how surprising the example is (e.g., "strengthen my belief that Facebook and other social networking sites interfere with worker productivity given how surprising the example is"). Participants responded on a 1 (*completely A*) to 7 (*completely C*) scale. The midpoint, 4, was labeled *B*.

Results

Automatic inference. We standardized responses, reverse-scored where appropriate, and averaged these scores so that higher scores reflected stronger automatic inferences. As predicted, participants in the counterstereotypical exemplar condition were more likely to state beliefs that served to minimize the concerns to which the examples related ($M = 0.19$, $SD = 0.56$) compared to those in the stereotypical exemplar condition ($M = -0.18$, $SD = 0.48$), $t(37) = 2.26$, $p = .03$, $d = .74$: Following counterstereotypical (vs. stereotypical) exposure, participants reported social networking to be less of a productivity drain, fast food to be less of a health threat, and China's labor practices to be less bad. The inference effect did not vary by exemplar ($F < 1$).

Explicit endorsement of exemplars' significance. Did participants explicitly reason that the exemplars carried this informational value? We examined participants' explicit reports for what information they believed should be taken from each of the three

surprising examples. We reverse-scored participants' responses to the explicit items so responses above 4 would indicate explicit agreement with the automatic inferences; responses below 4 would indicate a belief that the surprising nature of the exemplar should further strengthen one's stereotypical belief.

Next, we averaged participants' responses to form an index reflecting normative endorsement of the automatic inferences' underlying logic. The mean rating for the examples was 3.27, which was significantly lower than the midpoint of 4, $t(37) = -4.67, p < .001, d = .76$. Participants explicitly rejected the logic of the automatic inference in each domain (social networking: $M = 3.55$, fast food: $M = 3.18$, and China: $M = 3.08$; $t_s > 2, p_s < .05, d_s > .32$). Finally, as in Studies 1–2, participants' responses to the opinion survey were no more in line with their explicit analysis of the counterstereotypical exemplars in the counterstereotypical versus the stereotypical exemplar condition ($t < 1$), providing fuller support for the dissociation.

Discussion

Study 4 showed that the automatic inference effect identified in Studies 1–3 replicated in a non-race-related context. In addition to establishing the generality of the automatic effect, the findings are important for two reasons. First, whereas participants may have been exposed to public discussions about whether counterstereotypically successful exemplars such as Barack Obama signaled a post-racial America, participants would not have heard similar discussions about the fictitious exemplars we created. As Kawakami, Dovidio, and Dijksterhuis (2003) noted, mere knowledge of a proposition endorsed by others can contribute to its being activated and affecting cognition, even when it is not explicitly endorsed. Our reliance on fictitious exemplars shows that participants are not merely parroting others' narratives.

Second, the present results give us more confidence that automatic inferences are not justified by explicit reasoning. Although it was possible in Studies 1–2 that participants were reluctant to adopt an explicit stance that might come off as racially insensitive, the same pressures were minimized in the present study.

Study 5

Study 5 extended the previous studies in two ways. First, we used a new dependent measure. In addition to the denial of racism scale and the modified Modern Racism Scale used in previous studies, we added Kaiser et al.'s (2009) policies that address racial inequality scale. Second, Study 5 included a third condition that permitted us to distinguish between two explanations for what counterstereotypically successful exemplars signal. We have argued that counterstereotypically successful exemplars signal that success is possible. An alternative possibility is that such exemplars suggest that there must be many other examples (i.e., that such success is typical). For example, in research on subtyping (Kunda & Oleson, 1995; Maurer, Park, & Rothbart, 1995; Richards & Hewstone, 2001), exemplars judged to be unrepresentative are mentally segregated and are not used to draw inferences about their group (Park, Wolsko, & Judd, 2001).

To distinguish these possibilities, we added a third condition. In this *Black-atypical* condition, Frazier was identified as the only Fortune 75 Black CEO and Simmons was identified as the first Black Ivy League president. If the exemplars prompt automatic inferences be-

cause they show success is possible (even if not typical), the Black-atypical condition should still prompt automatic inferences. If the exemplars prompt automatic inferences because they imply such success is typical, the automatic inference effect should be reduced in the Black-atypical condition. Given it is unlikely that Study 1 participants thought Barack Obama was one of many Black presidents, we expected that atypical Blacks would prompt similar automatic inferences.

Method

Participants and design. Participants were 464 undergraduates at the University of California, Berkeley. All participants were randomly assigned to one of three conditions: *Black*, *White*, or *Black-atypical*.

Procedure and materials. Participants completed tasks in the order listed below.

Exemplar priming task. Participants completed a version of the celebrity recognition task with the same celebrities used in Studies 2 and 3, in which participants were provided with an exemplar's picture, first name, and a one-sentence description of who the exemplar was. The participants had to indicate (or guess) the celebrity's last name.

In the Black and White conditions, the descriptions of the two key exemplars were equivalent, except for the first name (e.g., "[Kenneth/Robert] _____ is the CEO of a Fortune 75 company.") Participants would then have to choose between Frazier and Stevens. In the Black-atypical condition, the description was modified to highlight the unusualness of the exemplar's achievement. For example, Kenneth Frazier was described as "the *only African American* CEO of a Fortune 75 company." The three versions of the CEO question, as seen by participants, are shown in Figure 3.

Race-related dependent measures. We used three different dependent measures. We used the carefully worded, five-item denial of racism measure from Studies 1 and 3 ($\alpha = .61$), the seven-item modified Modern Racism Scale (McConahay, 1986) used in Study 2 ($\alpha = .76$), and the four-item policies that address racial inequality scale (Kaiser et al., 2009). This final measure assesses whether participants think that too much or not enough has been done to address the issue of racial inequality (e.g., "Businesses spend too many resources trying to support diversity in the workplace"). Internal reliability was good ($\alpha = .76$). The three measures were highly correlated ($\alpha = .82$), so we report analyses on a composite of the three (after standardizing each composite to place them on comparable scales) as well as the measures individually.⁴

⁴ Because the studies are not presented in the order they were run but with an eye to presentational clarity, the reader may be given an inaccurate impression that certain features of the studies were arbitrarily added and subtracted. For example, at some point we realized that the Modern Racism Scale is a more effective covariate than political orientation (although at first, as in Study 5, we worried about using the Modern Racism Scale as both a covariate and the dependent measure). Also, we originally used a three-item version of the denial of racism scale, which was used in two studies (only Study 6 remains in this article) that was later extended into the five-item version (used in Studies 1, 3, 5, and 7). Finally, the early studies we ran used the denial of racism measure exclusively, but later we either added a supplementary measure (to show newly introduced measures correlated with our denial of racism scale) or used another measure exclusively.

Political orientation. We added to Study 1's two-item political orientation measure three items that assessed ideological views on three specific dimensions: foreign policy, social issues, and economic issues. Participants responded to each item on a 1 (*liberal/Democrat*) to 9 (*conservative/Republican*) scale. The five-item scale had good internal reliability ($\alpha = .86$).

Explicit endorsement of exemplar's significance. We included three items designed to assess participants' beliefs about the normative significance of the two counterstereotypically successful Black exemplars. All participants were reminded (or, in the case of those in the White condition, told for the first time) that Kenneth Frazier and Ruth Simmons, both African Americans, were CEO of a Fortune 75 company and president of an Ivy League university, respectively. Participants were then asked, "How much would you say that the existence of Kenneth Frazier and Ruth Simmons should lead you to . . ." followed by three statements. The order of these items was randomized for each participant: ". . . not draw any particular conclusion. Those two examples are not necessarily indicative of broader societal trends" (*explicitly nondiagnostic*); ". . . push me toward believing that African Americans do not face much racism in America" (*supports a denial of racism*); or "push me toward believing that African Americans face a lot of racism in America, given how those two are surprising and notable exceptions" (*counters a denial of racism*). For each item, participants responded on a 7-point scale anchored by 1 (*definitely no*) and 7 (*definitely yes*), with the midpoint of 4 labeled "neither yes nor no."

Results

Automatic inference. We submitted our composite of composites to a one-way ANCOVA, with political orientation as a covariate (in this and all subsequent analyses). A main effect of condition emerged, $F(2, 460) = 5.25, p = .01, \eta_p^2 = .02$. There was also a strong effect of political orientation, $F(1, 460) = 131.24, p < .001, \eta_p^2 = .22$. Next, we performed a linear contrast that would more precisely test our predicted pattern of results: Black (+1), Black-atypical (+1), White (-2). On the composite of composites, this pattern was significant, $t(461) = 3.05, p = .002, d = .28$. Compared to those in the White control condition, participants were less sympathetic to Blacks after exposure to Black exemplars, $t(461) = 2.07, p = .04, d = .19$, or after exposure to Black-atypical exemplars, $t(461) = 3.18, p = .002, d = .30$. No support was found for the orthogonal contrast that automatic inferences were reduced when the Black exemplars were identified as atypical: Black (+1), Black-atypical (-1), White (0), $t(461) = -1.02, p > .31, d = .10$. Speaking to the robustness of the predicted effects, the (+1, +1, -2) contrast was significant for each individual composite: the Modern Racism Scale, $t(461) = 2.64, p = .01, d = .25$; the denial of racism composite, $t(461) = 2.63, p = .01, d = .23$; and (depressed) support for policies that address racial inequality, $t(461) = 2.29, p = .02, d = .21$. The means, contrasts, and simple effects by composite and condition are listed in Table 1.

Explicit endorsement of exemplars' significance. Finally, we examined participants' beliefs about what inferences the exemplars should prompt. Participants explicitly endorsed the idea that the exemplars were nondiagnostic ($M = 4.99, SD = 1.53$). This value was significantly greater than the neutral midpoint of 4,

$t(463) = 13.92, p < .001, d = .65$. Participants explicitly rejected drawing inferences in either direction: They rejected the idea that the exemplars suggested it was more reasonable to deny racism ($M = 3.49, SD = 1.51, t(463) = -7.24, p < .001, d = .34$), and the idea that the exemplars suggested it was more reasonable to conclude that disadvantage due to racism continued ($M = 3.80, SD = 1.51, t(463) = -2.92, p = .004, d = .53$). Furthermore, agreement with each statement significantly differed from agreement with the other two statements ($t_s > 2.65, p_s < .01, d_s > .24$). Again, it is notable that the inference participants indicated was least appropriate was precisely the one they had just automatically drawn.

Did participants' explicitly endorsed inferences explain how those primed with the Black exemplars shifted their beliefs? As we had in Study 2, we subtracted participants' explicit belief that the exemplars were nondiagnostic from their explicit belief that the exemplars supported a denial of racism. We found this composite did not interact with priming condition to predict race-related beliefs, $t(432) = -1.39, p > .16, d = .13$. In combination, participants' automatic inferences were neither substantiated nor guided by their explicit normative standards.

As in Study 1, more conservative participants were more likely to explicitly state that the exemplars supported a denial of racism (vs. were nondiagnostic), $r(462) = .33, p < .001$. But participants' political orientation did not moderate the focal contrast that tested our key automatic inference effect ($t < 1$). In other words, although ideology influenced explicit inferences, it did not influence the automatic inference that was prompted by incidental exposure.

Discussion

Study 5 replicated the automatic inference effect with a variety of measures. Participants exposed to counterstereotypically successful Black exemplars were more likely to deny racism, be less supportive of policies that address racial inequality, and give higher responses on a modern racism scale. The same participants, however, indicated that the exemplars should not encourage any particular conclusion about the state of racial progress in America.

In addition, the results supported our account that exemplars prompt automatic inferences because they demonstrate that success is possible, not because those exemplars are assumed to be typical (i.e., one of many Black exemplars) in their category: Counterstereotypically successful Black exemplars prompted automatic inferences regardless of whether those exemplars were explicitly identified as "the first" or "only" African Americans in those positions. Thus, these automatic inference effects seem not to reflect the mere process of induction, by which people attempt to generalize the experience of one to understand the typical experience of many. Mere induction effects are sensitive to typicality manipulations (Heit, 2000; Mastropasqua, Crupi, & Tentori, 2010; Rips, 1975). Instead, the exemplars demonstrate that the deck is not inevitably stacked against these exemplars. Although this "existence proof" is not enough to convince people explicitly that the exemplars reflect meaningful information, the mere demonstration that success is possible—even when it is labeled as atypical—automatically pushes people to be less sympathetic to the idea that Blacks are at a racial disadvantage.

Table 1
Race-Related Dependent Measures by Condition (Study 5)

Measure	White	Black	Black-atypical	Contrast (-2, +1, +1)
Denial of racism	4.89 _a	5.10 _{ab*}	5.38 _{b*}	$t(461) = 2.63, p = .01$
Modern Racism Scale	2.62 _a	2.75 _b	2.79 _b	$t(461) = 2.64, p = .01$
Policies that address racial inequality	4.54 _{a*}	4.31 _{ab*}	4.29 _b	$t(461) = 2.29, p = .02$
Composite (Z-score sum)	-0.19 _a	0.04 _b	0.16 _b	$t(461) = 3.05, p = .002$

Note. For each item, the mean provided is the adjusted mean, predicted at the sample mean of political orientation. Means in the same row that do not share the same subscripted letter differ at the $p < .05$ level. Means in the same row that share the same subscripted letter followed by an asterisk differ at the $p < .08$ level.

Study 6

Study 6 continued our examination of what it is about the exemplars that prompts people to deny racism. The study tested whether only counterstereotypically successful Black exemplars, not Blacks who have succeeded in stereotypical domains, prompt racism-denying automatic inferences. We exposed participants to one of three types of exemplars: counterstereotypically successful Blacks, stereotypically successful Blacks (e.g., athletes or soul singers), or matched White controls. If it is the exemplar's counterstereotypical success—not the exemplar's likeability or success more generally—that prompts people to deny racism, then those in the Black-counterstereotypical condition should deny racism as an explanation for inequity more than those in the Black-stereotypical or White control conditions.

As a secondary aim, we reduced the number of key exemplars to which participants were exposed from two to one. If automatic inferences are drawn only when people are exposed, in close succession, to two Blacks who succeeded in different counterstereotypical domains, automatic inferences may be rare. Showing that automatic inferences persist with single exemplars would offer a more externally valid demonstration. We also included a new (now fifth) counterstereotypically successful Black exemplar, Nobel Laureate Toni Morrison.

Method

Participants and design. Participants were 202 undergraduates at Cornell University. All participants were randomly assigned to see one of nine different exemplars. Three unique exemplars composed each of three conditions: *Black-counterstereotypical*, *Black-stereotypical*, or *White* control.

Procedure and materials. Participants completed tasks in the order listed below.

Exemplar priming task. The exemplar priming task was similar to that used in Study 1. Participants indicated which of two photographed people was the person specified. Unlike in the previous studies, only one of the exemplars varied across conditions. The consistent exemplars were Tom McHale, Phil Parsons, John Updike, Barbara Walters, and Evan Rachel Wood.

A sixth exemplar did vary across condition. Participants in the Black-counterstereotypical condition saw Barack Obama, Toni Morrison, or Ruth Simmons. Those in the Black-stereotypical condition saw LeBron James, Michael Jordan, or

Diana Ross. Those in the White condition instead saw Drew Faust, Keith Olbermann, or Neil Rudenstine. A one-sentence biographical description of each person was included. We used three different exemplars to make sure any exemplar effects appeared generalizable. For the purpose of our main analyses, we collapse across the three exemplars in each category, because the effects of exemplar on denial of racism did not differ by exemplar within each category ($F_s < 1$).

Denial of racism. We used a three-item denial of racism scale, a precursor to the five-item scale used in Studies 1, 3, and 5 ($\alpha = .41$). The three items are those asterisked in Appendix A. We conducted an exploratory factor analysis (as we did in Study 2), given the low-to-moderate reliability. The three items loaded on a single factor, all with factor loadings greater than .52.

Political orientation. We used the two political orientation items used in Study 1. Responses to the conservatism and Republican items were highly correlated, $r(200) = .82$, $p < .001$, so they were averaged to form a conservatism composite.

Results and Discussion

We submitted the denial of racism composite to a one-way ANCOVA, with political orientation as a covariate. Those who were more conservative were more likely to deny racism, $F(1, 198) = 17.02$, $p < .001$, $\eta_p^2 = .08$. But more central to our main hypotheses, the exemplar priming manipulation had a significant influence as well, $F(2, 198) = 6.30$, $p = .002$, $\eta_p^2 = .06$.

We began by testing our predicted contrast on the denial of racism composite: counterstereotypically successful Black (+2), stereotypically successful Black (-1), White control (-1). The predicted contrast was significant, $t(199) = 3.55$, $p < .001$, $d = .50$. The orthogonal contrast (0, +1, -1) was not ($t < 1$). Replicating our earlier findings, those who were exposed to a counterstereotypically successful Black target were more likely to deny racism ($M = 5.73$, $SE = 0.14$) than were those exposed to all White targets ($M = 5.07$, $SE = 0.16$), $t(199) = 3.06$, $p = .003$, $d = .43$. But also, counterstereotypically successful Black targets prompted more denial of racism than did stereotypically successful Black targets ($M = 5.13$, $SE = 0.14$), $t(199) = 3.06$, $p = .003$, $d = .43$. Participants in the Black-stereotypical and White conditions showed no differ-

ences in their responses ($t < 1$).⁵ Figure 4 depicts means by specific exemplar prime.

Study 6 made two primary contributions. First, it showed that successful Black exemplars prompt automatic inferences denying racism only when they show success is possible in a counterstereotypical domain, not when they demonstrate success in a stereotypical one. This finding speaks against an alternative account that emphasizes that it is the exemplars' mere success that prompts automatic inference. Furthermore, Study 6 showed that a single counterstereotypically successful Black exemplar is sufficient to prompt automatic inferences.

Study 7

Whereas Studies 5 and 6 focused on the nature of the exemplars that prompt automatic inferences, the final two studies focused on the nature of the perceiver who draws these inferences. Earlier, we argued that those who are chronically thoughtful, inferential thinkers are most likely to draw automatic inferences. Such individuals may automatically respond to the exemplars in the priming task not merely as people to be identified but as possible sources of information. Guided by related research on conceptual priming, we identified these people with a need for cognition scale (Cacioppo, Petty, & Kao, 1984). Because college students tend to be high in NFC, we worried that we might run up against a ceiling effect by relying on a college student sample. As such, we drew participants from the community. Our main hypothesis was that the automatic inference effect would emerge to the extent that participants were high in their NFC.

An alternative hypothesis is that the automatic inference effects reflect a form of motivated reasoning. That is, perhaps for some individuals—those who have racist inklings—incidental exposure to counterstereotypically successful exemplars gives them permission to express somewhat racist sentiments that they would otherwise hide. It is hard to imagine though that many of the participants had been waiting to support the labor-friendly nature of China but had not felt comfortable doing so (Study 4), or that participants would feel licensed to draw automatic inferences but not shift their explicit beliefs about those exemplars' significance in a parallel way (Studies 1–2, 4–5). Nonetheless, we measured on

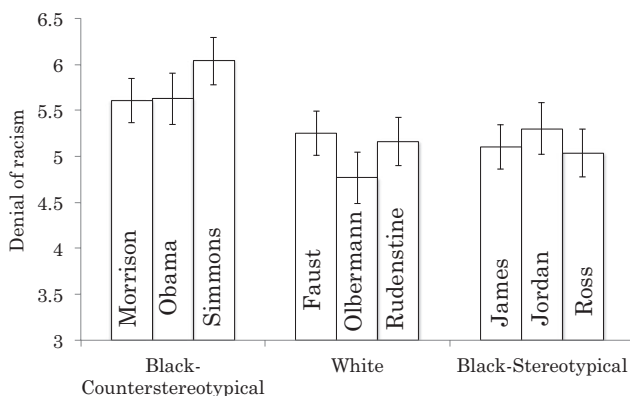


Figure 4. Denial of racism composite by prime condition, decomposed further by individual prime (Study 6). Error bars indicate errors of the mean.

a web-based pretest—in addition to NFC—participants' motivation to avoid prejudice and their responses on the Modern Racism Scale to assess whether they moderated the automatic inference effect.⁶

Method

Participants and design. Participants were 190 residents of the greater Chicago, Illinois, metro area. All participants were randomly assigned to either a *Black* or a *White* prime condition.

Materials and procedure. At least 24 hours before coming to the lab, participants completed three individual difference measures on a web-based pretest. In this way, the experimental manipulation could not contaminate these measures. In the lab, participants completed an exemplar priming task similar to the ones used in Studies 1 and 5–6; the five-item denial of racism scale used in Studies 1, 3, and 5 ($\alpha = .66$); and two items assessing explicit endorsement of the exemplar's significance.

Individual difference measures. The three individual difference measures were administered in a random order: Cacioppo et al.'s (1984) 18-item measure of need for cognition (e.g., "Thinking is not my idea of fun" [reverse scored]); Plant and Devine's (1998) 10-item measure of motivation to avoid prejudice (e.g., "I am personally motivated by my beliefs to be nonprejudiced toward Black people"); and the seven-item modified Modern Racism Scale used as a dependent measure in Studies 2 and 5 and as a baseline covariate in Studies 2 and 3. The reliability (Cronbach's α) of the three scales was .89, .65, and .83, respectively.

Exemplar priming task. Participants saw eight exemplars. Seven of these exemplars were seen by all participants. They were the (Caucasian) presidents of seven prominent universities: Columbia, Cornell, Duke, University of Pennsylvania, Princeton, Stanford, and Yale. Participants in the Black prime condition also saw Brown University president Ruth Simmons. Participants in the White prime condition instead saw Harvard University president Drew Faust.

Explicit endorsement of exemplar's significance. We used a more detailed introduction than in the previous studies to explain how such Black exemplars could be construed:

Some people have argued that the success of African Americans like Barack Obama and Oprah Winfrey implies that racism is not what holds African Americans back in today's world. Others believe that the rarity of African Americans in such positions of power highlights

⁵ The exemplars also differed in terms of whether they had succeeded in the present (Barack Obama, Ruth Simmons, LeBron James, Drew Faust, Keith Olbermann) or the past (Toni Morrison, Michael Jordan, Diana Ross, Neil Rudenstine). Present exemplars were identified in the present tense (e.g., "is MSNBC news anchor"), whereas past exemplars were identified in the past tense or by use of a past-indicating adjective (e.g., "former basketball star"). Given that the exemplars in each category had a similar effect, this suggests that the present/past distinction did not influence the results. Also, an additional analysis in which we tested for the effect of present or past exemplars, regardless of category, showed no effect of this factor ($F < 1$).

⁶ Note that Studies 2 and 3 (which were actually conducted after Study 7) also allow us to test whether the baseline modern racism score moderates the exemplar priming effects. In neither case does it ($ts < 1$). Nonetheless, Study 7 offers a more precise test of the possible moderating impact of the modern racism score, independent of motivation to avoid prejudice or need for cognition.

that these people are the exception rather than the rule, demonstrating the continued presence of racism. Now consider Ruth Simmons, an African American woman who is the president of Brown University. To what extent do you agree or disagree with the following two statements?

One statement articulated explicitly the automatic inference that participants drew in Studies 1–3 and 5–6 and that we thought (at least high NFC) participants would draw automatically in this study: “Her success symbolizes or reflects that racism is not what holds African Americans back in today’s world.” The other statement articulated the opposing perspective: “It is the rarity of such successful African Americans that makes her notable, and this demonstrates the continued presence of racism.” Each was measured on a 9-point scale with 1 (*disagree*), 9 (*agree*), and midpoint 5 (*unsure*) labeled.

Results

Automatic inference. In order to determine whether the influence of the priming depended on the individual difference variables, we regressed the denial of racism composite on the priming manipulation (+1 = Black, –1 = White), the standardized individual difference variables (NFC, motivation to avoid prejudice, and modern racism), as well as the three two-way interaction terms testing for moderation of the priming effect by each of the three individual difference variables. Although the main effect of priming was not significant, $t(182) = 1.19, p = .24$, the predicted priming \times NFC interaction was significant, $\beta = .16, t(182) = 2.35, p = .02, d = .35$.⁷ The other interaction terms were not significant (β s $< .07, t$ s $< 1.03, p$ s $> .30, d$ s $< .16$). To understand the nature of the significant interaction (depicted in Figure 5), we conducted simple slopes analyses that tested for the effect of priming for those high (+1 SD) and low (–1 SD) in NFC. For those high in NFC, the automatic inference effect replicated: The Black prime prompted higher denial of racism than the White prime, $\beta = .24, t(182) = 2.52, p = .01, d = .37$. Those low in NFC were unaffected by the prime, $\beta = -.08, t < 1$.⁸

Explicit endorsement of exemplars’ significance. Once again, participants’ explicit inferences contradicted their automatic ones. Participants explicitly indicated that exemplars such as Ruth Simmons—notable because of their race—reinforce a belief that

racism persists ($M = 5.30, SD = 1.95$), not that racism is on the decline ($M = 4.63, SD = 2.11$), $t(199) = 2.52, p = .01, d = .18$. Comparing each response to the midpoint of 5 showed that participants significantly agreed, $t(199) = 2.17, p = .03, d = .15$, and significantly disagreed, $t(199) = -2.48, p = .01, d = .18$, with the two statements, respectively. Of course, it could be that the two statements were stated in differentially persuasive terms, so it is important to test the automatic-explicit dissociation with additional analyses. And indeed, as found in Studies 1–2 and 4–5, there was no indication that participants’ denial of racism drew on participants’ explicit analysis of the Black exemplars’ significance following incidental exposure to them. That is, we created a difference score that reflected a stronger belief that Ruth Simmons’s existence speaks against the continued presence of racism instead of being a reminder of racism’s persistence. The crucial prime \times NFC interaction predicting denial of racism did not additionally interact with this difference score ($t < 1$).

To further probe the relation between automatic and explicit inference, we tested whether those high in NFC—those most likely to draw an automatic inference denying racism—were also those who agreed that Ruth Simmons carried this significance. To the contrary, individuals high in NFC were most likely to explicitly reject this logic, $r(190) = .19, p = .01$.⁹

Discussion

Study 7 provides insight into the process underlying automatic inferences by examining who draws them. As predicted, those who chronically approach the world with a more thoughtful orientation (high need for cognition) were those most likely to automatically draw inferences from the exemplar. In contrast, it was not the case that either a motivation to avoid prejudice or greater endorsement of items on the Modern Racism Scale produced similar moderation. Thus, it seems not to be the case that our participants’

⁷ We compared the NFC in Study 7’s community sample to the NFC of 100 students at the university where Studies 3 and 4 were conducted. As expected, the community had a lower mean NFC ($d = .36$), $t(288) = 2.91, p = .004$. Extrapolating from Study 7’s results, had the mean NFC been that of the college student sample, the main effect of priming would have been right at the conventional boundary of significance, $t(182) = 1.94, p = .05, d = .28$.

⁸ Although it is meaningful to compare the effects of our experimental priming manipulation at the same level of need for cognition (i.e., high or low), it is less meaningful to compare individuals with high or low need for cognition within each priming condition. That is, we were interested in how need for cognition affected one’s susceptibility to automatic inference-making, not differences in the overall denial-of-racism tendencies of individuals with high versus low need for cognition.

⁹ Even though modern racism and the motivation to avoid prejudice did not moderate the automatic inferences people drew (nor, as follow-up tests showed, did the internal or external motivation to avoid prejudice subscales; t s < 1), we tested whether they were related to people’s explicit beliefs about the significance of the exemplars. Those higher on modern racism showed a stronger explicit belief that the exemplars supported there being less racism in America, $r(189) = .51, p < .001$; there was no such zero-order correlation with motivation to avoid prejudice, $r(189) = .02, ns$. Given that modern racism did not moderate the automatic inference effect, the significant relationship between modern racism and explicit beliefs about the exemplars—analogue to a similar dissociation observed with political orientation in Studies 2 and 5—further reinforces the difference between automatic inference effects and explicit reasoning about the exemplars.

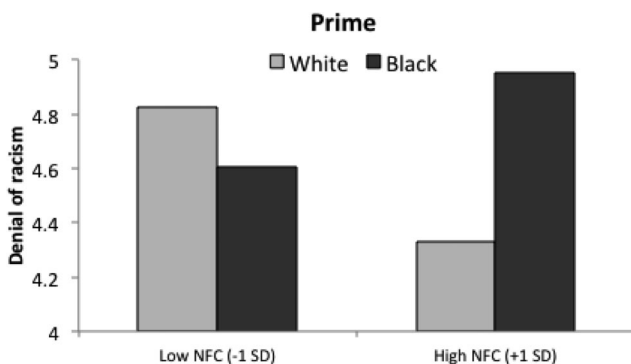


Figure 5. Denial of racism composite by prime condition, as predicted for those who were one standard deviation below (low NFC) or one standard deviation above (high NFC) the sample mean of the need for cognition (Study 7). NFC = need for cognition.

automatic inferences were motivated effects, or conclusions that those with racist tendencies felt licensed to draw.

Once again, there was no evidence that participants' automatic inferences were a product of or justified by their explicit reasoning about the exemplar's significance. In fact, those who were most likely to show the automatic inference effect—those high in NFC—were those most likely to explicitly reject the inference. This dissociation makes an ironic point: The same watchful eye that leads one to be reluctant to embrace the suspect meaning of a single exemplar may also predispose one to be led astray by incidental exposure to the same stimuli. That participants high in NFC were most likely to explicitly reject the automatic inference's logic reinforces our point that such suspicion is appreciated only upon careful explicit reflection. One fruitful avenue for future research would be to probe whether there are circumstances in which people high in NFC automatically detect the folly of automatic inferences and thereby keep themselves from making them. We are not optimistic. Correcting automatic processes frequently requires effortful, controlled processing (Gawronski & Bodenhausen, 2006; Wegener & Petty, 1997), which should be difficult to call upon given that automatic inferences appear to unfold outside of awareness.

Study 8

Instead of relying on preexisting individual differences, Study 8 used an experimental approach that procedurally primed some participants to think inferentially. Individuals with high need for cognition may be different from those with low need for cognition in a number of ways. The procedural priming manipulation permitted us to more precisely prompt the type of thinking style we hypothesized was key to automatic inference: a propensity for inferential thought. Also, because we could vary the timing of the inferential thinking manipulation, we could more precisely understand the time course by which automatic inferences unfold.

Because we predicted that the inferential thinking manipulation would enhance the effect of the exemplar prime, we (as in Study 7) worried about whether we had already run up against a ceiling effect in showing the automatic inference effect. We took two steps to address this issue. First, as in Study 7, we used a community sample (though from a different city than that in Study 7) instead of a college student sample, given the latter's likelihood of being especially high in NFC. Second, we added a 15-minute time delay between the exemplar prime and the dependent measures. We hoped that both features would reduce (if not eliminate) the baseline size of the automatic inference effect, thereby making it easier to see whether the inferential thinking mindset manipulation would enhance automatic inferences.

In order to prime inferential thinking, we had participants complete 10 "inferential thinking" items from the Law School Admissions Test (LSAT). By our account, people draw automatic inferences when exposed to the exemplars: Whereas some people simply see a Black Ivy League president or a Black Nobel laureate, others automatically treat these exemplars as possible pieces of information upon which automatic inferences may be based. Thus, we thought that the inferential thinking mindset would lead people to be influenced by the exemplar prime when the inferential mindset manipulation was positioned prior to the exemplar primes. The mindset manipulation should not exacerbate the exemplar

priming effect, however, if it occurs after exposure to the exemplars but just prior to the dependent measures.

Method

Participants and design. Participants were 111 residents of Berkeley, California, or surrounding communities in the San Francisco Bay area. All participants were randomly assigned to conditions in a 2 (prime: Black or White) \times 3 (inferential mindset: pre-prime, prejudice, control) full-factorial design. Participants were compensated \$15 each.

Procedure. At least a week before coming to the lab, participants completed the same modified version of the Modern Racism Scale used on the pretests of Studies 2–3 and 7. Once in the lab, participants completed the exemplar priming task followed by the same Modern Racism Scale as used on the pretest. For the first time, we introduced a (15-minute) delay between the priming task and the race-related dependent measure, which allowed us to introduce a manipulation (in one condition) between the two tasks. Depending on participants' condition, they completed an inferential thinking mindset manipulation just prior to the exemplar priming task (preprime condition), just prior to the race-related dependent measure (prejudgment condition), or not at all (control condition).

Exemplar priming task. Participants completed a celebrity recognition task, similar to those used in Studies 1 and 6–7. For each of seven questions, participants indicated which of two pictures showed a particular celebrity. Five of the celebrities were White and constant across condition: Tom McHale, Phil Parsons, John Updike, Barbara Walters, and Evan Rachel Wood. In the Black prime condition, participants also saw "president of Brown University Ruth Simmons" and "Nobel Laureate Toni Morrison." In the White prime condition, participants also saw "president of Harvard University Drew Faust" and "Nobel Laureate Nadine Gordimer."

Race-related dependent measure. As in Studies 2 and 5, participants completed a modified version of McConahay's (1986) Modern Racism Scale. The items demonstrated high reliability on the web-based pretest ($\alpha = .80$) and when completed in the lab ($\alpha = .70$).

Inferential thinking mindset manipulation. Procedural "mindsets" can be induced by having people repeatedly perform the same mental operation. Such repetition induces carryover effects, prompting people to approach subsequent tasks with the same processing mindset. This is a basic tenet of processing shift theory (Schooler, 2002) and is a property that has been frequently relied upon in previous research. For example, after repeatedly construing stimuli in abstract or concrete terms, people approach subsequent stimuli in an abstract or concrete manner, respectively (Critcher & Ferguson, 2011; Freitas, Gollwitzer, & Trope, 2004; Fujita, Henderson, Eng, Trope, & Liberman, 2006). Similarly, after reporting their emotional responses to stimuli versus completing math word problems, people approached subsequent stimuli with a tendency to rely on affect-backed or numerical-calculation-backed solutions, respectively (Hsee & Rottenstreich, 2004).

In order to induce an inferential thinking mindset, we had participants complete a task that required them to think inferentially, repeatedly. We selected 10 "inferential thinking" items from

practice copies of the Law School Admissions Test. Each item required participants to consider information and then think inductively to infer what conclusions they would draw. Participants in the preprime and control inferential mindset conditions completed unrelated measures, while those in the prejudgment condition completed the inferential thinking mindset manipulation. In this way, all participants completed a race-unrelated task in between the exemplar priming task and the race-related dependent measure.

Results

We submitted participants' modern racism scores to a 2 (prime: Black or White) \times 3 (inferential mindset: preprime, prejudgment, control) ANCOVA, with baseline modern racism scores entered as a covariate. Replicating our earlier studies, there was a main effect of prime, $F(1, 104) = 5.15, p = .03, \eta_p^2 = .05$. But the size of the priming effect depended on the timing of the inferential mindset prime, $F(2, 104) = 3.25, p = .04, \eta_p^2 = .02$.

Only participants primed to think inferentially just before being exposed to the primes showed our previously observed effect by which exposure to the Black exemplars prompts greater modern racism scores than does exposure to White primes only (Black: $M = 2.78, SE = 0.10$; White: $M = 2.40, SE = 0.10$), $t(104) = 3.10, p = .004, d = .61$. In contrast, participants who were never primed to think inferentially were not influenced by the prime (Black: $M = 2.71, SE = 0.07$; White: $M = 2.65, SE = 0.08$), $t < 1$, perhaps due to the community sample or the 15-minute delay. Similarly, participants who were primed to think inferentially just before completing the denial of racism dependent measures, but after exposure to the exemplars, were not influenced by the prime (Black: $M = 2.58, SE = 0.07$; White: $M = 2.59, SE = 0.08$), $t < 1$.

A series of two-way 2 (prime) \times 2 (inferential mindset) ANCOVAs compared whether the automatic inference effect differed between inferential mindset conditions. Consistent with our hypotheses, those in the preprime inferential mindset condition were more influenced by the exemplar priming task than were either those in the no-mindset control condition, $F(1, 104) = 6.02, p = .02, \eta_p^2 = .07$, or those in the prejudgment inferential mindset condition, $F(1, 104) = 3.85, p = .05, \eta_p^2 = .06$. The prime had a similar (null) effect on the modern racism scores of those in the prejudgment or control conditions, $F < 1$.

Discussion

Study 8 sheds further insight into why and when automatic inferences emerge. Participants primed to think inferentially before being exposed to the exemplar primes showed greater sensitivity to the exemplar primes than did either those who were primed inferentially after exposure to the primes but before the dependent measure, or those who were not primed to think inferentially at all. Such participants showed higher modern racism scores after exposure to counterstereotypically successful African Americans (Ruth Simmons and Toni Morrison) instead of to White controls. These findings support a process by which thoughtful people draw automatic conclusions about exemplars upon incidental exposure to them.

General Discussion

In considering counterstereotypically successful Black exemplars, people show signs of agreeing and disagreeing with William Bennett's CNN Election Night interpretation of such success. After incidental exposure to Blacks who had succeeded in counterstereotypical domains, participants showed a tendency to deny racism (Studies 1, 3, 5–7), to agree with public opinion polling (Study 2) and Modern Racism Scale items (Studies 2, 5, 8) that suggest Blacks are no longer seen to be at a racial disadvantage, and to show reduced support for policies to address racial inequality (Study 5). Several features of the data speak to the robustness of these inferences. Participants drew these automatic inferences to several different counterstereotypically successful African Americans (Frazier, Morrison, Obama, Simmons, and Winfrey). Furthermore, automatic inferences emerged in response to two exemplars (Studies 1–3, 5, 8) or just a single exemplar (Studies 4, 6–7), and were not sensitive to how delicately the dependent measures were worded (Study 1). Finally, Study 4 showed that automatic inferences emerge in response to counterstereotypical success, even outside of a racial context. Thus, participants' automatic inferences match the explicit logic Bennett laid out.

The very same participants, when asked explicitly, however, stated that the exemplars do not reflect the decline of racism (Studies 1, 7), do not even remind participants of racism's decline (Study 2), and certainly should not be taken as evidence that race (Study 5) or the non-race-related factors (Study 4) are not impediments to success. Additional analyses showed that these explicit perspectives on the exemplars did not underlie the automatic inferences. Liberals and individuals high in NFC were most explicitly skeptical of the logic underlying automatic inferences but were no less (and in the latter case, were more) likely to draw automatic inferences. Furthermore, participants' automatic inferences unfolded outside of participants' awareness (Study 2), emerged regardless of whether participants were warned of the connection between the exemplar primes and the key dependent measures (Study 3), and were similarly dissociated from participants' explicit perspective when the exemplars did not speak to sensitive race-related topics (Study 4). In sum, we found no evidence that automatic inferences unfolded with intention or awareness (see Bargh, 1994).

Did exposure to counterstereotypically successful Blacks increase denial of racism, or did exposure to only Whites decrease it as well? We returned to Studies 2 and 8, in which we had pretest and postmanipulation data on the modified Modern Racism Scale. We looked at how modern racism scores changed across time in those Black prime conditions expected to show, versus matched White prime conditions not expected to show, automatic inferences. To maximize power, we meta-analytically combined across the two studies. As expected, the Black primes increased denial of racism (Stouffer's $Z = 4.30, p < .001$). The White primes had no effect (Stouffer's $Z = 0.36, ns$).

The studies distinguished between competing accounts of what it is about the exemplars that trigger these automatic inferences. Study 5 showed that counterstereotypically successful exemplars prompt automatic inferences merely by showing that success is possible, even if the achievement is unique or not typical. Study 6 confirmed that it was the counterstereotypical nature of the exemplars' success, not their status as merely being successful (Lyba-

nger & Monteith, 2011), that prompted automatic inferences. We also explored why people draw automatic inferences. We hypothesized that those who are chronically thoughtful may be those who are most likely to draw automatic inferences from incidental exemplars. This was found in studies that relied on individual differences in thoughtfulness (Study 7) and an experimental manipulation of inferential thought (Study 8). Furthermore, Study 8 clarified that automatic inferences are drawn when people are incidentally exposed to the exemplars, not when participants are later asked to state their race-related beliefs.

Although our findings suggest that automatic inferences are not guided by an explicit reasoning process, the dissociation raises the question of when explicit reasoning might shield people from the influence of incidental exemplars. This question is all the more applicable, given evidence that people will spontaneously discount the influence of biasing single exemplars. For example, Oppenheimer (2004) found that people no longer relied on the fluency of a last name as a cue to its frequency when the name was a famous last name (e.g., Bush). In this case, people spontaneously recognized that “Bush” was a special case and thus were not misled (and in fact, overcorrected). But in our Study 3, we found that even those warned that they should consider what the exemplars signaled about racism still drew automatic inferences.

We note two key differences between the present research and Oppenheimer’s. First, participants drew automatic inferences because they signaled what was possible, not typical (Study 5). Thus, information that noted why a specific counterstereotypically successful exemplar was unusual (like a recognition that “Bush” is an unusual case, given the famousness of the name in American politics) might not provide similar grounds for disrupting the effect. If the exemplar was unusual for reasons that suggested success is not possible for other Blacks in America, however, the information could potentially disrupt the automatic inference effect. In other words, subtyping a person as a unique member of a category need not undermine automatic inferences, but subtyping a person’s experience as unrepresentative may block such inferences. But second, Oppenheimer’s participants presumably were aware that they were relying on the familiarity of a last name when assessing its commonness. Because our participants were unaware of drawing automatic inferences, they were unlikely to try to correct for them.

Relation to Previously Identified Exemplar Effects

Although we find much of the contribution of the present research to lie in our detailed examination of when and why these automatic inferences emerge, it is worth noting how they are similar to and different from other influences of single instances.

Availability heuristic. Research on the availability heuristic suggests that people use the ease of recalling an exemplar as a basis for inferring that the exemplar’s category is relatively common. Even on the surface, the present research differs in that we did not measure the estimated frequency of Black success but instead measured assessments of the racial climate. Of course, the availability heuristic might still underlie the automatic inferences we documented: When asked to state their beliefs about race relations in America, people might recruit to mind salient counterstereotypically successful exemplars, use this ease of recall to infer the commonness of such exemplars, and then conclude that racism is no longer a serious problem.

Three features of our data speak against this. First, participants in Study 5 continued to draw automatic inferences when the counterstereotypically successful Black exemplar was labeled as unique, although such information should have disrupted an availability-heuristic-mediated process. Second, the availability heuristic account suggests that people reflect on and draw inferences from the salient exemplars when asked to state their beliefs about race (Kahneman, 2003; Kahneman & Frederick, 2002; Tversky & Kahneman, 1973). But if so, the inferential priming manipulation in Study 8 should have been as strong (or stronger) when positioned just before the judgment as when positioned just before the exemplar prime. Instead, the inferential thinking prime only heightened automatic inferences when positioned before exemplar primes, suggesting that people draw automatic inferences when they encounter counterstereotypically successful exemplars. Third, people do not rely on the availability heuristic when they see the available exemplar as nondiagnostic of the judgment (Oppenheimer, 2004). In contrast, automatic inferences unfolded despite people explicitly viewing the exemplar as nondiagnostic.

Exemplars shape category knowledge. People lean on single exemplars not merely to estimate the size of a category but to understand what defines it. For example, people will categorize new exemplars based on their similarity to exemplars whose category membership is known (Medin & Schaffer, 1978; Read, 1983). Similarly, when one piece of information is known about a single exemplar, people will readily ascribe that information to other category members, especially if category homogeneity is assumed (López, Gelman, Gutheil, & Smith, 1992; Nisbett, Krantz, Jepson & Kunda, 1983; Osherson, Smith, Wilkie, López, & Shafir, 1990) or the information and group are rare (Risen, Gilovich, & Dunning, 2007). The present research does not examine inferences about an exemplar’s category as much as it does the context in which that exemplar operates. Furthermore, these previously studied examples are more defensible and thus may be consistent with people’s explicit reasoning. That is, although assessing the similarity to a single exemplar may not guarantee that one will categorize a novel exemplar accurately, it seems defensible given the informational impoverishment of the context.

Questions for Future Research

In the present research, participants drew automatic inferences from incidental exposure to specific, identifiable exemplars. According to the inclusion fallacy (Osherson et al., 1990; Shafir, Smith, & Osherson, 1990), people are more willing to generalize from an example to all members of a category (from robins to all birds) than from an example to another example in the category (from robins to ostriches). So, although we repeatedly demonstrated an effect of incidental exposure on broad judgments about the general state of race relations in the United States, it is an open question whether people would make similar inferences when judging a single Black individual. For example, after exposure to President Obama, would people be less likely to claim that a particular Black man was passed over for a job because of his race?

Future research might also test whether exposure to generic Black individuals in business suits, judges’ robes, or medical scrubs produce similar effects. And just as Pachur, Hertwig, and Steinmann (2012) noted that after watching *Jaws* people might see shark attacks as a more widespread problem, it would be interest-

ing to test whether even fictional depictions of counterstereotypically successful Blacks—for example, in television shows that portray underrepresented minorities in high-status roles—might prompt the automatic inferences documented here. This highlights a related research challenge: how best to present counterstereotypically successful minorities in a way that maximizes their potential to be motivating role models while minimizing the negative automatic inferences shown here. In recent work, Eibach and Purdie-Vaughns (2011) showed that people are less complacent about racial inequality if they consider social progress to be a commitment to racial equality instead of evidence of racial progress already made. This occurs because people tend to disengage from goals, including egalitarianism (Mann & Kawakami, 2012), when they believe they have met them but not when they remain committed to them (Carver, 2003; Fishbach, Dhar, & Zhang, 2006). Thus, if people see exemplars of counterstereotypical success as evidence of the importance of egalitarian ideals rather than as evidence of what is already possible, this could help prevent them from drawing the conclusion that Blacks do not face a racial disadvantage. How to prompt people to spontaneously construe exemplars in this manner is an unresolved question.

Relatedly, we intentionally limited our sample to non-Black participants; thus, it remains unclear whether Blacks draw similar conclusions in response to counterstereotypically successful Black exemplars. Eibach and Ehrlinger (2006) found that whereas White Americans assessed racial progress by looking at how much progress has already been made, Black Americans instead focused on how much progress still needed to be made. This suggests the automatic inferences identified here may not emerge in Black participants. That is, individual exemplars that show success is possible may shift Whites' beliefs given their focus on any signs that progress has been made. Blacks' focus on signs that progress still needs to be made may therefore lead them to be less likely to draw the same conclusions from single signs of progress.

The present research has focused on a very specific automatic inference, but there are likely to be other patterns of automatic inference, including other conclusions that people may draw in response to counterstereotypically successful exemplars. Perhaps in addition to inferring a friendlier climate, people also infer more positive attributes (e.g., being intelligent, hardworking) about the exemplars' group. Consistent with this possibility, incidental exposure to Obama increased implicit positivity toward Blacks (Columb & Plant, 2011; Plant et al., 2009; cf. Schmidt & Nosek, 2010). Or, outside the racial context, perhaps people also show a reverse tendency to deny the influence of success-promoting factors when exposed to counterstereotypical failure (e.g., denying the usefulness of exercise after learning about a daily jogger who is diagnosed with diabetes). Just as a large literature has examined the sophistication as well as the shortcomings of people's explicit logical reasoning (e.g., Heit, 2000; Johnson-Laird, 1999; Mastropasqua et al., 2010), we hope, future research will more fully map out the forms that automatic inferences take.

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Appendix A

Carefully Worded Denial of Racism Scale

The following scale was used in Studies 1, 3, 5, and 7. Only the asterisked items were used in Study 6.

Although few would deny that African Americans have been victims of racial discrimination in the workplace for many decades, there is increased debate about whether African Americans are still subject to the type of discrimination that prevents them from succeeding in American society. Some prominent African Americans have argued that continued problems within the Black community are largely to blame for the economically depressed nature of the Black community. Other African American leaders have rejected this proposition, claiming that continued racism mostly explains the continued gap between the White and Black communities.

1. Even once slavery was abolished, the influence of generations of slavery would long remain. Now, over 140 years after the abolition of slavery, to what extent do you believe that African Americans continue to be at a disadvantage, or are today's African Americans able to chart their own destiny, "pulling themselves up by their bootstraps"? from 1 (*slavery's effects remain*) to 10 (*could pull up by bootstraps*).
2. Many, if not most, people truly wish that we lived in a world where the color of one's skin was of no conse-

quence. Clearly there remain disparities between the races in terms of outcomes, but to what extent do you think that we may have achieved the goal of true equality of opportunity among the races? from 1 (*not at all*) to 10 (*completely*).

3. *Even though "racial discrimination" can be an easy explanation for why a Black person was passed over in a hiring decision, my guess is that in modern America a Black person's race is almost never a factor in hiring and promoting decisions, from 1 (*definitely false*) to 10 (*definitely true*).
4. *What is your sense about why disparities between the White and Black communities persist? from 1 (*oppression from White community*) to 10 (*problems within Black community*).
5. *Even though it is not "politically correct" to express racist sentiment, most White people are uncomfortable with the idea of Black people achieving high-status positions, from 1 (*definitely false*) to 10 (*definitely true*). (reverse-scored)

(Appendices continue)

Appendix B

Opinion Survey

Fast Food

If all someone does is remove fast food from his or her diet, how much of an improvement in their general health should he or she expect? 1 (*essentially no effect*) to 10 (*major improvement*).

To what extent do you believe that the obesity and heart disease epidemic in America is due to fast food restaurants? 1 (*fast food is a big/major cause*) to 10 (*fast food is a small/minor cause*).

If schools are allowed to serve fast food (e.g., McDonald's, Pizza Hut) in America's public schools, do you think this will send children down a pathway toward poor health? 1 (*yes, will lead to poor health*) to 10 (*no, not a problem*).

Labor Rights in China

Would you say that China has made a lot of progress when it comes to workers' rights, or do it still has a long way to go? 1 (*a lot of progress*) to 10 (*a long way to go*).

To what extent do you think that depressed life-spans in China (more than 5 years less than those in the U.S.) are the fault of poor labor conditions versus poor nutrition? 1 (*poor labor conditions*) to 10 (*poor nutrition*).

Which is a more pressing concern for China's population—the need to improve labor conditions or the need to liberalize freedoms of expression? 1 (*improve labor conditions*) to 10 (*liberalize freedom of expression*).

Social Networking

Is Facebook a healthy way to stay connected or a drain on one's time and resources? 1 (*drain on time*) to 10 (*healthy way to stay connected*).

Do you think that most people spend too much time on Facebook for their own good? 1 (*no, not at all*) to 10 (*yes, too much time*).

How much of a drain on workplace productivity are social networking websites for modern Americans? 1 (*a very big drain*) to 10 (*not much of a drain*).

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