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When Sociopolitical Events Strike Cultural Beliefs: Divergent Impact of Hurricane Katrina on African Americans' and European Americans' Endorsement of the Protestant Work Ethic

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Can a single, powerful sociopolitical event (government's response to Hurricane Katrina) produce changes in prevalent cultural beliefs such as the Protestant work ethic (PWE)? In a cross-sectional study conducted before, immediately after, and 5 months after Katrina (Study 1: Part a), in a longitudinal study tracking participants immediately after Katrina and 3 months later (Study 1: Part b), and in an experiment that primed thoughts about Katrina (Study 2), thinking about Katrina reduced African Americans' (but not European Americans') endorsement of the PWE. Preliminary evidence suggested that the shift in African Americans' endorsement of the PWE was due to lower trust in the government.

The Protestant work ethic (PWE), the belief that hard work leads to success, is a fundamental belief across many cultures, impacting people's judgments and behaviors across different facets of life (home, work, play), and thus has been of enduring interest in psychology, economics, sociology, and anthropology (e.g., Crandall, 2000; Furnham, 1990; McClelland, 1961; Weber, 1905/1958). Central to the notion of the "American Dream," and captured by the proverb, "Anyone can pull themselves up by their bootstraps," as well as ever-popular "rags to riches" stories, suggesting that hard work is a social equalizer, the PWE is a quintessential American belief (e.g., Katz & Hass, 1988). Differences in PWE endorsement have generally not been found, for example, by gender (e.g., Campbell, Schellenberg, & Senn, 1997; Christopher & Mull, 2006) and race or ethnicity (e.g., Cozzarelli, Wilkinson, & Tagler, 2001; Monteith & Spicer, 2000). Further, people seem to endorse PWE even when it is not beneficial to them (e.g., Quinn & Crocker, 1999). As such, PWE is thought to be a deeply ingrained cultural belief endorsed by Americans of all ages and backgrounds (e.g., Greenberg, 1978; Katz & Hass, 1988; Levy, Freitas, & Salovey, 2002; Levy, West, & Ramirez, 2005; Somerman, 1993). The PWE serves as a motivator of *personal* behavior to the degree that effort yields positive outcomes; however, it is also embedded within the social context in the sense that society's institutions need to be trusted to reward individuals for their efforts and to be equitable in the opportunities awarded to individuals to succeed. What happens when contextual or environmental events expose flaws in the institutional structures that scaffold and support deeply held belief systems such as the PWE? Can a

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sociopolitical event produce shifts (long-lasting or temporary) in the endorsement of the PWE? Moreover, can later references to the event temporarily reinstantiate those shifts?

To address critical gaps in psychological research on the PWE as reflected by these questions, we examine endorsement of the PWE in the aftermath of the federal response to Hurricane Katrina, which in late August 2005 devastated the central Gulf Coast of the United States, creating a humanitarian crisis of a magnitude unmatched in recent U.S. history. Some observers argued that the U.S. federal government's response was slow and ineffective, and, further, that it seemed indicative of racism toward the storm's many poor African American victims (CNN, 2005). According to a Gallup poll taken between September 8 and 11, 2005, a majority of African Americans (60%) felt that the government responded slowly to stranded New Orleans residents because many of them were Black, whereas few European Americans (12.5%) endorsed that view.

Prior research suggests that among African Americans, a history of discrimination has led many to be doubtful about equitable treatment of African Americans (e.g., Mendoza-Denton, Ayduk, Shoda, & Mischel, 1997; Parsons, Simmons, Shinhoster, & Kilburn, 1995). We propose that for African Americans, Katrina provided a dramatic reminder of the social injustices that may occur in the United States, challenging the cherished PWE belief that people will receive fair treatment (success) when they work hard.

Fundamental beliefs such as the PWE serve people's epistemic, social, and psychological needs, and thus people are thought to cling to them across situations and time and are biased toward information compatible with them (e.g., Abelson, 1986; Fletcher, 1995; Heider, 1958; Hong, Levy, & Chiu, 2001; Levy, Chiu, & Hong, 2006; Wegener & Petty, 1998). Yet, at the same time, lay or cultural beliefs are considered to be knowledge structures (e.g., Hong et al., 2001; Levy, Chiu, et al., 2006) which follow basic principles of knowledge activation (e.g., Higgins, 1996) and thus can be deactivated (or activated) in relevant situations. For example, much research in the laboratory has shown that brief articles can be successfully used to make PWE (and other lay beliefs such as entity, incremental, and essentialist beliefs) more or less accessible thereby influencing study participants' subsequent judgments in ways similar to when their lay beliefs were assessed by self-report (e.g., Chiu, Hong, & Dweck, 1997; Haslam & Ernst, 2002; Levy, Stroessner, & Dweck, 1998; Levy, West, Ramirez, & Karafantis, 2006; Plaks, Stroessner, Dweck, & Sherman, 2000). Presumably, study participants are already familiar with the activated lay belief through previous social experiences, and hence a brief activation is sufficient for influencing subsequent judgments (e.g., Hong et al., 2001; Levy, Chiu, et al., 2006). Yet little research has examined whether PWE and other prevalent lay beliefs could be influenced by environmental triggers outside of the laboratory. In a notable exception, Hong, Chiu, Young, and Tong (1999; Hong et al., 2004) showed that as the 1997 political transfer of Hong Kong to the People's Republic of China approached, increasing exposure to mass media that stressed the different characteristics of Hong Kongers and Chinese Mainlanders made the entity lay theory (traits are fixed characteristics that distinguish people) more pervasive than the opposite incremental lay belief.

People maintain their cherished beliefs much as they maintain consistent self-images (e.g., Dunning & Cohen, 1992), but this may be true only when they can "construct seemingly reasonable justifications for these conclusions" (Kunda, 1990, p. 480). It is possible that the PWE could be threatened, even if only temporarily, by contextual or environmental events such as a large-scale sociopolitical event. We propose that a question of vital importance is whether African Americans (as compared to European Americans), having largely perceived that the government's slow response to the most severe national disaster in recent history reflected a pattern of prejudice against African Americans, will lack reasonable justification for maintaining endorsement of a quintessential American belief, the PWE.

In our view, then, a critical test of the impact of sociopolitical events on endorsement of the PWE entails examining whether the same event can differentially impact the PWE beliefs of members of distinct social groups. Accordingly, we tested whether the federal response to Katrina provoked a shift in endorsement of the PWE among African Americans as opposed to European Americans because this event should both be more self-relevant (i.e., most Katrina victims were African Americans) and might provide stronger evidence against the PWE. Of importance, we also tested whether Katrina affected different interpretations of the PWE, given recent evidence that pervasive beliefs may have multiple intergroup interpretations (e.g., Levy, Chiu, et al., 2006; Levy et al., 2005).

Consistent with prior research (e.g., Levy et al., 2005; Levy, West, et al., 2006), we distinguish in this research among different subtypes of the PWE. Two subtypes are the core belief that hard work leads to success (PWE-General), and the belief that hard work is a social equalizer (PWE-Equalizer). Although these two meanings of the PWE have been shown to be similarly endorsed by African Americans and European Americans (Levy et al., 2005; Levy, West, et al., 2006), we expected the federal response to Katrina to challenge African Americans' endorsement of these beliefs by temporarily eroding confidence in the institutional structures (the government) necessary to uphold them. As such, we

expected no group differences in the endorsement of PWE-General and PWE-Equalizer prior to Katrina; however, we expected group differences afterward, with temporarily reduced endorsement of these among African Americans (but not among European Americans) following the disaster, or thereafter when the disaster was made accessible.

Why might a natural disaster such as Katrina reduce endorsement of the PWE-General and PWE-Equalizer among African Americans but not European Americans? Consistent with other researchers (e.g., Adams, O'Brien, & Nelson, 2006; Dach-Gruschow & Hong, 2006; Kaiser, Eccleston, & Hagiwara, 2008), we propose that the inequities in the federal response to Katrina made salient the idea that systemic or institutional discrimination is reflected even at the broadest levels of U.S. institutions. Prior research indicates that many African Americans have a sense of mistrust in government and its institutions due to the long history of abuses that people of color have suffered, such as federally funded forced sterilizations of African American, Latina, and Native American women and unconsented experimentation on African Americans (e.g., Davis, 1981; Washington, 2006). This mistrust in government manifests itself in various ways, such as in the belief that HIV was purposefully created or spread by the government to kill people of color (e.g., Herek & Capitanio, 1994). Thus, it seems that trust in government would play an important role in the relationship between a sociopolitical event like Katrina and the beliefs of African Americans. To the degree that the perceptions of discrimination are likely to reduce trust in the government's likelihood of upholding equality of all its citizens (e.g., Crocker, Luhtanen, & Broadnax, 1999), we expected that (a) Katrina would specifically impact African Americans' trust in the government, and (b) if one is African American and Katrina is salient, perceptions of trust would erode the belief that it is possible to achieve what one deserves by working hard.

A third and final meaning of the PWE (PWE-Justifier) identified in prior research justifies disadvantage by blaming negative outcomes on a lack of effort by disadvantaged group members (e.g., Crandall, 2000; Kinder & Sears, 1981; McConahay & Hough, 1976). Unsurprisingly, this meaning of the PWE is generally more widely endorsed by privileged groups because it legitimizes their high status (Levy et al., 2005; Levy, West, et al., 2006). We did not expect the events surrounding Katrina to reduce endorsement of this belief among European Americans, or its rejection among African Americans. As such, we expected to find group differences in the endorsement of PWE-Justifier prior to Katrina, with European Americans endorsing it more than African Americans, but we did not expect Katrina to impact these pre-existing differences.

We tested our hypotheses among African American and European American college students using cross-sectional, longitudinal, and experimental methods. Study 1 investigated naturalistic changes in PWE in two different ways. First, we employed a cross-sectional design to test PWE in different groups of participants before, immediately after, and 5 months after Katrina (Part a). Second, we employed a longitudinal design to follow a subset of these participants immediately after Katrina and 3 months later (Part b). Finally, Study 2 employed an experimental priming methodology to determine the causal effect of Katina salience on PWE. We also examined whether perceived trust in the government would help explain differential endorsement of the PWE among African Americans and European Americans (Study 1: Part a).

STUDY 1: PART A

Study 1: Part a employed a rolling cross sectional design in which different participants were sampled in exactly the same way but at different points in time (for a similar method, see Verkuyten & Zaremba, 2005). Specifically, different participants were tested before Katrina (Time 1, spring 2005), 3 weeks after Katrina (Time 2, Fall 2005), and the academic semester following Katrina (Time 3, spring 2006). In line with past work (Levy et al., 2005), we expected no racial differences in PWE-General or PWE-Equalizer at Time 1 (spring 2005). At Time 2 (3 weeks after Katrina), we predicted that African Americans would agree less with PWE-General and PWE-Equalizer than would European Americans. At Time 3 (spring 2006), we reasoned the disaster would no longer be chronically accessible and, thus, people's attitudes would again reflect the trends observed in prior research (no racial differences in PWE-General and PWE-Equalizer). Also, consistent with past work, we expected that across all three time points, European Americans would agree more with PWE-Justifier than African Americans (e.g., Levy et al., 2005). We further tested whether, in the aftermath of Katrina, differential trust in the government would help explain African Americans', relative to European Americans', weaker endorsement of the PWE.

Method

Participants. Undergraduate students (202 men, 241 women) at Stony Brook University received course credit in an introductory psychology course for completing surveys (spring 2005: Time 1, 40 African Americans [aged 17–23, $M = 19.55$], 151 European Americans [aged 17–40, $M = 19.50$]; Fall 2005: Time 2, 3 weeks post-Katrina, 64 African Americans [aged 18–43,

$M = 19.77$], 118 European Americans [aged 18–53, $M = 19.04$]; spring 2006: Time 3, 17 African Americans [aged 18–22, $M = 19.18$], 53 European Americans [aged 18–24, $M = 19.00$]).

Procedure. At each of the three time points, participants in large groups in a classroom setting completed a battery of questionnaires during an hour-long session under the supervision of several research assistants. Along with measures contributed by other investigators and unrelated to our investigation, this battery included the measure described next.

PWE (Time 1, 2, and 3). The primary measure in this study is a modified PWE scale developed from Levy, West, et al.'s (2006; see also Levy et al., 2005) work on distinguishing different forms of PWE. Levy et al.'s (2006) work evolved from Katz and Hass's (1988) Protestant Ethic Scale, which has its roots in Mirels and Garrett's (1971) Protestant Work Ethic Scale. Due to space constraints of the mass testing session, the PWE subscales and almost all other measures were forcibly reduced to single-item measures. The current measure is composed of three representative items that assess PWE in its general, justifier, and equalizer forms. Participants rated their agreement, from 1 (*don't agree at all*) to 5 (*agree very, very much*) with the following items: PWE-General ("If people work hard, they can get a very good job"), PWE-Equalizer ("When you say things like people who work hard succeed, tell us how much you mean this: Anyone can work hard and succeed because people in different groups have similar abilities and the potential to do well"), and PWE-Justifier ("When you say things like people who work hard succeed, tell us how much you mean this: Hard work is all that's necessary for success, so it is not fair to give preferences to race-minority groups like Blacks" (see Levy et al., 2005; Levy, West, et al., 2006).

Post-Katrina measures (Time 2 and 3). Participants evaluated the scope of the delayed response to Katrina (1 = part of a larger pattern of treatment of Blacks [poor people], 8 = completely isolated incident (reverse-coded); two items), $r(249) = .78$, $p = .001$. Participants also rated their agreement with the following attributions for delays in assistance, from 1 (*not at all responsible*) to 7 (*very*, *very responsible*): "bad luck or fate"; "unusually severe hurricane"; lack of concern for victims (two items: "Black people," "poor people"), $r(250) = .71$, $p = .001$; incompetent government (two items: "U.S. President," "FEMA director"), $r(249) = .59$, $p = .001$; and poor judgment of the victims (two items: "irresponsibility of the victims to leave their homes," "poor judgment of the victims"), $r(250) = .57$, $p = .001$. Participants' trust in the government was assessed using two items, $r(250) = .73$, $p = .001$, ranging from 1 (*don't agree at all*) to 7 (*completely agree*): "The U.S. government can be trusted to make decisions that are good for all Americans" and "The U.S. government is respectful of the rights and dignity of all Americans" (Tyler & Degoey, 1995). Participants' identification with their race or ethnicity was assessed using this item: "How much do you identify with or feel close to other members of your racial/ethnic group?" from 1 (*not at all*) to 7 (*very*, *very much*).

Results and Discussion

Participants' gender, political affiliation, and degree of racial identification did not influence any effects reported in this article. Thus, they are not discussed further.

Reactions to Katrina. A series of 2 (race: African American, European American) × 2 (time: Time 2 and 3) analyses of variance (ANOVAs) replicated national polls showing a racial divide in reactions to Katrina. As expected, only the race main effects were significant. As shown in Table 1, African Americans were more likely to view inadequacies in the government's response as reflecting a larger pattern of treatment, resulting from a lack of concern for the storm's victims at the hands of an incompetent government. By contrast, European Americans tended to see the response more as an isolated incident, resulting from the storm's unusual strength as well as bad luck and poor judgment on the part of the victims. The pattern of findings suggests that reactions to the federal response were stable construals of the events surrounding Katrina.

Questions about trust in the government at Times 2 and 3 were asked after the Katrina-related questions. As such, we expected and found a race main effect only, with African Americans ($M = 2.44$, $SD = 1.07$), reporting less trust in the government than European Americans ($M = 3.36$, $SD = 1.48$), $F(1, 247) = 18.98$, $p = .001$, $d = .68$.

Endorsement of the PWE. Having established that our college student sample had similar assessments of Katrina to those found in national polls, we then tested our main hypothesis that endorsement of the PWE would vary as a function of race and time. A 2 (race: African American, European American) × 3 (time: Time 1, 2, and 3) multivariate analysis of variance (MANOVA) on the three PWE measures revealed the predicted interaction between race and time, $F(3, 427) = 2.13$, $p = .05$, $\eta_p^2 = .02$. As predicted and as depicted in Figure 1, the Race × Time interaction was

TABLE 1
Racial Differences in Explanations for Delayed Assistance to Katrina Victims, Studies 1a and 2

	M (SD)					
	African Americans	*European Americans*	*F*	*df*	*p*	*d*
Study 1						
Part of broad pattern of treatment	5.88 (1.70)	3.73 (1.79)	67.15	246	.001	1.22
Attributions (MANOVA)			14.33	242	.001	
Incompetent government	5.38 (1.52)	4.48 (1.76)	10.12	246	.002	.53
Lack of concern for victims	5.14 (1.83)	3.16 (1.70)	62.25	246	.001	1.13
Bad luck/fate	2.32 (1.82)	3.06 (1.84)	3.62	246	.06	.40
Unusually severe hurricane	5.11 (1.99)	5.49 (1.68)	3.12	246	.08	.21
Poor judgment of victims	2.85 (1.48)	3.33 (1.63)	3.96	246	.05	.30
Study 2						
Part of broad pattern of treatment	6.46 (1.35)	3.13 (1.55)	133.35	136	.001	2.22
Attributions (MANOVA)			20.73	133	.001	
Incompetent government	5.58 (1.17)	4.27 (1.60)	20.78	133	.001	.87
Lack of concern for victims	5.68 (1.14)	2.85 (1.59)	97.52	133	.001	1.90
Bad luck/fate	2.08 (1.42)	2.84 (1.94)	4.52	133	.04	.42
Unusually severe hurricane	4.03 (1.98)	5.47 (1.55)	19.99	133	.001	.86
Poor judgment of victims	2.73 (1.42)	3.26 (1.72)	2.78	133	.10	.32

Note. Sample size varies slightly across questions because participants skipped some questions. All analyses were conducted as a 2 (time) × 2 (group) interaction and revealed only a main effect (significant or marginally significant) of race. MANOVA = multivariate analysis of variance.

significant for PWE-General, $F(2, 429) = 3.27$, $p = .04$, $\eta_p^2 = .02$. Furthermore, as predicted, the Race × Time interaction was significant for PWE-Equalizer, $F(2, 429) = 4.15$, $p = .02$, $\eta_p^2 = .02$, but not for PWE-Justifier, $F(2, 429) = 1.59$, $p = .21$, $\eta_p^2 = .01$.

Consistent with past work (Levy et al., 2005), African Americans ($M = 3.60$, $SD = 1.15$) and European Americans ($M = 3.47$, $SD = .91$) did not differ in their endorsement of PWE-General at Time 1 (pre-Katrina), $F(1, 188) = 0.54$, $p = .46$. However, African Americans ($M = 3.29$, $SD = 1.06$) endorsed PWE-General less at Time 2 (3 weeks post-Katrina) compared to European Americans ($M = 3.64$, $SD = .85$), $F(1, 177) = 5.82$, $p = .02$, $d = .38$. As expected, no significant differences in PWE-General endorsement were observed between African Americans ($M = 3.71$, $SD = 1.16$) and European Americans ($M = 3.64$, $SD = 0.65$) at Time 3 (23 weeks post-Katrina), $F(1, 68) = 0.08$, $p = .18$.

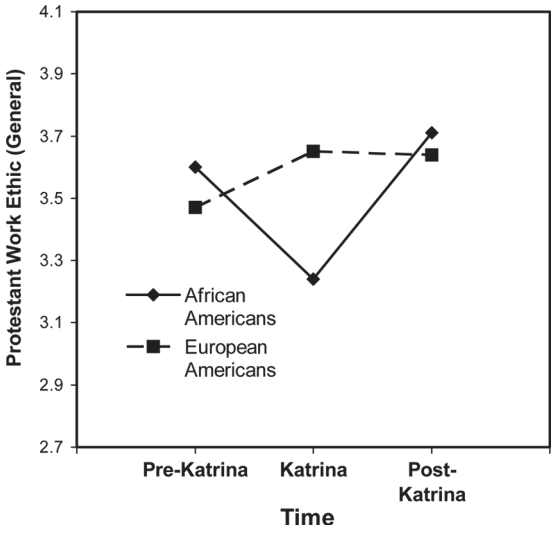

FIGURE 1 Mean Protestant work ethic (PWE-General) levels for African American and European American participants across three time points in Study 1: Part a.

Follow-up analyses of PWE-Equalizer lend support for our hypothesis that although African Americans ($M = 3.78$, $SD = 1.17$) and European Americans ($M = 3.54$, $SD = 1.16$) did not differ in their endorsement of PWE-Equalizer at Time 1, $F(1, 189) = 1.19$, $p = .28$, African Americans ($M = 3.10$, $SD = 1.23$) endorsed PWE-Equalizer at significantly lower levels at Time 2 than did European Americans ($M = 3.56$, $SD = 1.11$), $F(1, 173) = 6.19$, $p = .01$, $d = .40$. As expected, no significant differences in PWE-Equalizer endorsement were observed between African Americans ($M = 3.76$, $SD = 0.97$) and European Americans ($M = 3.47$, $SD = 0.95$) at Time 3, $F(1, 68) = 1.21$, $p = .28$.

Also, as anticipated from past work, there was only a race main effect for PWE-Justifier, $F(1, 429) = 28.15$ $p = .001$, $d = .69$, indicating that across time, European Americans ($M = 2.85$, $SD = 1.32$) agreed more with PWE-Justifier than did African Americans ($M = 1.97$, $SD = 1.21$).

Mediational analysis: Time 2 only. As noted earlier, reduced trust in the government is one possible mediator of reduced PWE beliefs among African Americans.

To test this, we first regressed trust in the government on participants' race, $\beta = .30$, $F(1, 179) = 17.58$, $p = .001$, and then regressed PWE-General on race, $\beta = .17$, $F(1, 179) = 5.07$, $p = .03$ (see Kenny, Kashy, & Bolger, 1998). We next regressed PWE-General on both the hypothesized mediator (trust) and hypothesized cause (race); participants' degree of trust remained significant, $\beta = .17$, $F(1, 177) = 4.84$, $p = .03$. This suggests that trust predicts PWE-General over and above any direct influence of race. Consistent with the hypothesis that trust explains the effect of race on PWE endorsement, the race effect ($\beta = .11$) was no longer significant, $F(1, 177) = 2.19$, $p = .14$.[1] The z-prime Sobel test (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002) showed that this reduction was statistically significant, $Z' = 1.91$, $p < .05$.[2] Thus, impacting expectations of fair treatment appears to be a route through which racial group membership impacted PWE endorsement.

STUDY 1: PART B

In Study 1: Part a, different participants were tested at different time points, raising the concern that spurious sample differences may have somehow led to the different patterns observed at Time 2 in particular. To address this possibility, we employed a longitudinal design by following the participants who partook in Study 1: Part a at Time 2 and retested them 3 months following Katrina. In line with our reasoning and findings from Study 1: Part a, we predicted that racial group differences in endorsement of the PWE in the aftermath of Katrina (i.e., 3 weeks post-Katrina) would attenuate 3 months later due to reduced salience of Katrina.

Method

Participants. Participants who were involved in the Time 2 assessment of Study 1: Part a and who provided contact information (53.10% of original Time 2 participants) were recruited 3 months later via an electronic mail message or telephone call soliciting their participation in a social issues opinion study in exchange for $15. These efforts yielded 27 African Americans (aged 18–24; $M = 18.78$) and 50 European Americans (aged 18–53; $M = 19.44$). It should be emphasized that these participants were not included in the Time 3 cross-sectional assessment of Study 1: Part a; the cross-sectional assessment of Study 1: Part a included different participants at each of the three time points.

Procedure. Upon arrival at the laboratory, each participant completed a consent form and then was seated individually in a small room with a closed door, affording privacy. Participants completed the same PWE measures described in Study 1: Part 1a on a computer. Participants were then fully debriefed, paid for their participation, and thanked.

Results and Discussion

A 2 (race: African American, European American) × 2 (session: Session 1 and 2) MANOVA on the three PWE measures revealed the predicted significant interaction for race and session, $F(1, 71) = 12.75$, $p = .001$, $\eta_p^2 = .15$. As expected, the Race × Session interaction was significant for PWE-General, $F(1, 73) = 4.15$, $p = .05$, $\eta_p^2 = .05$, and PWE-Equalizer, $F(1, 71) = 4.16$, $p = .05$, $\eta_p^2 = .06$, but not for PWE-Justifier, $F(1, 74) = 2.08$, $p = .15$, $\eta_p^2 = .03$. Follow-up univariate analyses showed that African Americans ($M = 3.08$, $SD = 1.13$) agreed less with PWE-General than European Americans ($M = 3.78$, $SD = 0.77$) immediately following Katrina (session 1), $F(1, 73) = 10.02$, $p = .002$, $d = .77$. Three months post-Katrina (Session 2), however, as expected, African Americans' ($M = 3.47$, $SD = 0.98$) and European Americans' ($M = 3.47$, $SD = 0.96$) endorsement of PWE-General did not differ, $F(1, 80) = 0.00$. African Americans ($M = 3.44$, $SD = 1.12$) also endorsed PWE-Equalizer marginally less than European Americans did ($M = 3.88$, $SD = 0.94$) immediately following Katrina (Session 1), $F(1, 71) = 3.09$, $p = .08$, $d = .43$, and African Americans' ($M = 2.83$, $SD = 0.58$) and European Americans' ($M = 2.57$, $SD = 0.92$) endorsement of PWE-Equalizer did not differ, as expected, in Session 2, $F(1, 80) = 1.80$, $p = .18$. Also, as predicted, there was only a race main effect for PWE-Justifier, $F(1, 74) = 15.48$, $p = .001$, $d = .83$, indicating that across sessions, European Americans ($M = 2.13$, $SD = 1.09$) agreed more with PWE-Justifier than did African Americans ($M = 1.31$, $SD = 0.73$).

Thus, in line with the results from the cross-sectional Study 1: Part a, in the longitudinal Study 1: Part b, African Americans agreed less with PWE-General and PWE-Equalizer than European Americans immediately after Katrina, but 3 months after Katrina, these same participants did not differ in their endorsement of PWE-General or PWE-Equalizer.

STUDY 2

In Study 2, we aimed to supplement and expand on the findings from the cross-sectional and longitudinal results by experimentally priming participants with Katrina

[1] Reverse mediation (PWE as the mediator between race and trust) was not supported; the race effect remained significant in the mediated equation, $F(1, 177) = 14.65$, $p = .001$.

[2] Analyses using PWE-Equalizer missed significance levels.

7 months following the disaster. We sought to show that, when made accessible, Katrina would still serve as a powerful catalyst for a racial shift in endorsement of the PWE even 7 months later. African American and European American college students were randomly assigned to receive a Katrina prime or no prime and thus we could test experimentally whether among African Americans, but not European Americans, thoughts related Katrina lead to reduced belief in the PWE.

Method

Participants. Participants were undergraduate students (37 African American, 104 European Americans (aged 18–54; $M = 20.87$), who were enrolled in psychology classes at Stony Brook University and received course credit for their participation.

Procedure. For participants randomly assigned to the control condition, the first page of the survey included measures of the PWE. The subsequent pages included measures of attributions for delayed assistance to Katrina victims from Study 1: Part a and evaluations of the government's response to Katrina ("How was the government's response to Hurricane Katrina?" from 1 [*not at all slow*] to 7 [*very*, *very slow*]; "How do you think Hurricane Katrina victims were treated?" from 1 [*not at all fairly*] to 7 [*very*, *very fairly*]). The first page of the experimental condition survey was a Katrina-thought exercise ("Write down two things you remember about hurricane Katrina, which hit the New Orleans area in the end of August 2005") followed by the measures in the control condition. There were no differences in the number of words African Americans ($M = 24.53$, $SD = 15.03$) and European Americans ($M = 21.13$, $SD = 10.37$) wrote during the thought exercise, $F(1, 63) = 1.10$, $p = .30$. Experienced undergraduate research assistants who had previous training in coding open-ended responses served as the two judges of the open-ended responses of study participants. The reliability of their coding was calculated as the number of agreements divided by the total number agreements and disagreements. The judges agreed on 97.4% of their codings. Discrepancies were resolved by a third judge (one of the authors).

Results and Discussion

Results described next were not altered when knowing Katrina victims was included as a covariate in the analyses.

PWE. In a 2 (race: African American, European American) $\times$ 2 (prime: Katrina-prime, no prime) MANOVA on the three PWE measures, the Race $\times$ Prime Prime interaction was significant, $F(3, 135) = 3.03$, $p = .03$, $\eta_p^2 = .06$. As predicted and as depicted in Figure 2, the Race $\times$ Prime interaction was significant for PWE-General, $F(1, 137) = 6.99$, $p = .009$, $\eta_p^2 = .05$. Also, as predicted, the Race $\times$ Prime interaction was significant for PWE-Equalizer, $F(1, 137) = 4.42$, $p = .04$, $\eta_p^2 = .03$, but not for PWE-Justifier, $F(1, 137) = 0.63$, $p = .43$, $\eta_p^2 = .01$. African Americans ($M = 3.78$, $SD = 0.65$) and European Americans ($M = 3.95$, $SD = 0.70$) did not differ in their endorsement of PWE-General in the control condition, $F(1, 72) = 0.82$, $p = .68$. After being primed with Katrina, however, African Americans ($M = 3.05$, $SD = 0.52$) agreed less with PWE-General than did European Americans ($M = 3.92$, $SD = 0.74$), $F(1, 65) = 21.58$, $p = .001$, $d = 1.26$. Similarly, whereas African Americans ($M = 3.78$, $SD = 1.00$) and European Americans ($M = 3.89$, $SD = 0.89$) did not differ in their endorsement of PWE-Equalizer in the control condition, $F(1, 72) = 0.22$, $p = .64$, following the Katrina prime, African Americans ($M = 2.94$, $SD = 0.71$) agreed significantly less with PWE-Equalizer than did European Americans ($M = 3.81$, $SD = 1.02$), $F(1, 65) = 11.37$, $p = .001$, $d = .91$. Also, as expected, there was only a race main effect for PWE-Justifier in that European Americans ($M = 3.18$, $SD = 1.21$) agreed more with PWE-Justifier than did African Americans ($M = 1.73$, $SD = 1.04$), $F(1, 137) = 41.35$, $p = .001$, $d = .75$.

Analyses of Katrina questions. As expected, significantly more African Americans (61.11% vs. 19.57% of European Americans) wrote that one of the two things they remember most about Katrina was

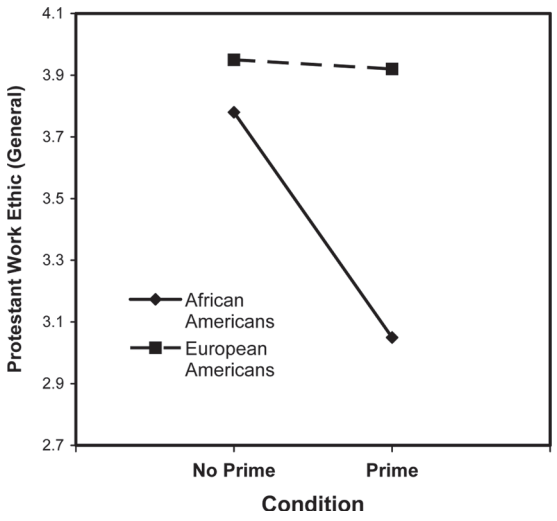

FIGURE 2 Mean Protestant work ethic (PWE-General) levels for African American and European American participants across two experimental conditions in Study 2.

the inadequate treatment of victims (e.g., "A lot of black people were not helped"), $\chi^2(1, N = 64) = 10.39$, $p = .001$. In addition, significantly more African Americans (50.00% vs. 15.22% of European Americans) mentioned that the government was to blame (e.g., "People could have been saved if the proper authorities took actions needed"), $\chi^2(1, N = 64) = 8.35$, $p = .004$. African Americans (61.11%) and European Americans (69.57%) did not differ in reporting the severity of Katrina, $\chi^2(1, N = 64) = 0.42$, $p = .52$.

Given the 7-month period since Katrina, we asked participants about their overall evaluation of the government's response to Katrina. There was one significant effect, a main effect for race, $F(2, 136) = 24.76$, $p = .001$, $\eta_p^2 = .27$, showing that African Americans, compared to European Americans, reported that Katrina victims were treated less fairly, $F(1, 137) = 47.79$, $p = .001$, $d = 1.29$ ($M_{AA} = 1.78$, $SD_{AA} = 1.00$; $M_{EA} = 3.42$, $SD_{EA} = 1.36$) and that the government's response was slower, $F(1, 137) = 27.33$, $p = .001$, $d = .98$; $M_{AA} = 5.68$, $SD_{AA} = 1.58$; $M_{EA} = 4.09$, $SD_{EA} = 1.63$. In addition, as shown in the bottom part of Table 1, racial differences in explanations for delayed assistance to Katrina victims in this study were similar to Study 1: Part a results.

GENERAL DISCUSSION

Many critics argued that the U.S. federal government's delayed response following the Katrina disaster was indicative of racism toward the storm's many African American victims, a perspective crystallized by popular singer Kanye West's impromptu comment on September 3, 2005: "[U.S. president] George Bush doesn't care about black people." If the government cannot be trusted to fairly treat a particular group, why should that group believe in fair treatment (success) from one's society when one works hard?

Taken together, results from a cross-sectional study (Study 1: Part a), a longitudinal study (Study 1: Part b), and an experimental manipulation (Study 2) showed that thinking about this single sociopolitical event, the government's response to Hurricane Katrina, did indeed trigger a racial divide in endorsement of the PWE between African Americans and European Americans. We also found some evidence that perceived trust in the government is a route through which racial group membership impacted PWE endorsement. Study 1: Parts a and b indicate that this group difference faded over time, as might be expected from the hurricane becoming less chronically accessible. Nevertheless, Study 2 shows that repriming this event experimentally was enough to again induce group differences in endorsement of the PWE.

These findings are of significant societal importance. Relative abandonment of the PWE, a core American principle, by any segment of U.S. society would weaken substantially individual efforts to society at large (e.g., see Eccleston & Major, 2008). Moreover, given the increasing racial diversity of the United States, it is particularly timely and important to understand factors, such as agreement on fundamental societal principles, impacting intergroup harmony.

Furthermore, these findings advance theoretical work on cherished, cultural beliefs, particularly, the PWE, in several important ways. Guided by work on knowledge activation (e.g., Higgins, 1996), previous work on PWE in a laboratory setting has shown that brief articles could be used to directly make PWE more or less accessible influencing subsequent judgments in predictable ways (Levy, West, et al., 2006). Yet pervasive cultural beliefs are considered relatively chronically accessible knowledge constructs across time because of their functionality and people's use of confirmatory biases to maintain them (e.g., see Hong et al., 2001). A single, powerful sociopolitical event caused a substantial though temporary decrease in adherence to the quintessential American belief. This investigation also reinforces the notion of the resilience of the PWE; in the absence of an environmental trigger or the reminder thereof, racial differences in endorsement of the PWE dissipated. Indeed, Katrina provided a rare opportunity to measure changes in adherence to a lay theory. Instead of artificially inducing a threat to the belief in PWE, we were able to measure its endorsement directly following a natural occurrence, and then months later. Our findings lend support to the emerging belief that lay beliefs may indeed undergo temporary shifts in response to major sociopolitical events (see Hong et al., 1999).

The current investigation also helps illustrate the process through which shifts in fundamental cultural beliefs might occur. To the degree that members of different social groups approach the same events with different histories and concerns (e.g., Mendoza-Denton et al., 1997), interpretations of the same event are likely to differ as they did after Katrina, leading to group-level differences in how strongly a relevant cultural belief is challenged. Nonetheless, one might have expected that differences in racial identification, for example, among African Americans would have influenced the strength of their response to Katrina. Prior research, however, suggests that Katrina was likely a dramatic reminder of the past social injustices faced by African Americans at the hands of the U.S. government (e.g., Mendoza-Denton et al., 1997; Parsons et al., 1995) and thus Katrina's impact would be experienced by African Americans as a group. Consistent with this assumption are the results from auxiliary analyses of African American participants only in Study 1. We

found that the degree of racial identification of African Americans immediately after Katrina (Time 2) did not significantly relate neither to trust in the government nor to any of the PWE subscales. Hence, our findings do not highlight a crucial role of racial identification; they suggest that Katrina was relevant to African Americans as a group. The present research, then, provides a step forward in our thinking about lay beliefs because it shows that lay beliefs are sensitive not only to contextual influences, but to cultural or group differences as well.

Katrina was racially divisive in a way that is usually only measured in the context of explicitly racial issues such as housing integration and affirmative action. Thus, another remaining issue is whether a prime of issues such as those would have the same effect on PWE endorsement, or whether Katrina was unique as a symbol of discrimination. Although any answer to this question would be speculative at this point, we would conjecture that the government's response to Katrina does not signify a qualitatively different sort of racism or social injustice, but rather a powerful representation of the extreme consequences of governmental neglect on underprivileged minority populations. Unfortunately, then, Katrina represents another social injustice in a long list of social injustices that African Americans have experienced in the United States and, hence, Katrina likely contributes to feelings of doubt about whether African Americans will be treated fairly.

This research additionally illustrates the importance of considering the multiple meanings of core cultural beliefs. Katrina challenged PWE's egalitarian meaning but not its justifier-of-inequality meaning, which maintains the status quo. As noted, Katrina was not expected to reduce endorsement of the justifier of inequality meaning of PWE among European Americans, or its rejection among African Americans. European Americans seem motivated to more strongly endorse PWE-justifier under different circumstances, such as when their group's status is threatened (e.g., by the implementation of affirmative action policies, see Levy et al., 2005). That is, prior work suggests that European Americans have a long history of viewing race-conscious or affirmative action policies as harming their educational and work prospects and, thus, unfairly benefiting members of other groups such as African Americans (e.g., Bobo, 1998). Therefore, sociopolitical triggers of the implementation of affirmative action policies that tap into this historical concern among European Americans that other groups are benefiting in education or work, should promote greater endorsement of the justifier of inequality meaning of PWE (e.g., denying the need for special preferences to disadvantaged groups) among European Americans.

Katrina continues to make U.S. headlines as the rebuilding of the afflicted areas continues alongside discussions of continuing group inequalities. Our results point to the need to focus on the stability and malleability as well as on the multiple meanings of cherished cultural beliefs. In addition, the results highlight the need to seek a greater understanding of how the concerns and construals of members of different cultural groups facilitate experiencing the same environmental event differently.

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