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The world is a scary place: Individual differences in belief in a dangerous world predict specific intergroup prejudices

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Abstract

Research suggests that people chronically concerned with safety, as measured by the Belief in a Dangerous World (BDW) Scale, are prone to intergroup prejudice and likely to endorse negative stereotypes under conditions eliciting concern for safety. Using a sociofunctional, threat-based approach to prejudice, the current research tested whether people with high BDW report increased prejudice specifically toward groups stereotypically associated with safety-related threats compared to groups associated with unrelated threats. Studies 1 and 2 found that higher BDW predicts increased negativity, safety-related concern, and fear toward groups stereotypically associated with threats to safety (e.g., illegal immigrants and Muslims) compared to groups thought to pose unrelated threats (e.g., gay men and obese people). Study 3 activated concern for safety using a news story detailing increased crime (vs. a control story), finding an interaction between safety concern activation, target group, and BDW, such that situational threat concern elicited greater prejudice toward Mexican Americans, but not toward Asian Americans, from those participants with higher BDW. These studies suggest that individual differences in concern for safety predict specific prejudices (e.g., fear and social distancing) toward distinct groups rather than general outgroup negativity.

Keywords

danger, fear, prejudice, safety, threat

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Humans are interdependent social animals. We rely on one another for our most basic social and survival needs, including emotional support, self-protection, finding romantic partners, making friends, and raising children (Boehm, 2012; Kenrick, Griskevicius, Neuberg, & Schaller, 2010; Kenrick, Neuberg, Griskevicius, Becker, & Schaller, 2010; Tomasello, 2014). Though the benefits of group living are abundant, such ultra-sociality also comes at potential costs. Close encounters with others put one at risk of

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interpersonal harm—from those looking to exploit your efforts (i.e., free riders), those who might get you sick, and those who might harm you to gain your physical possessions or other resources (Cosmides & Tooby, 2005, 2008; Neuberg & Cottrell, 2008; Neuberg, Kenrick, & Schaller, 2011; Tomasello, 2014).

To navigate the potential threats prompted by interdependency, humans possess cognitive tools attuned to threat-related cues presented by others (Cottrell & Neuberg, 2005; Kurzban & Leary, 2001; Neuberg, Kenrick, & Schaller, 2010, 2011; Schaller & Neuberg, 2012; Schaller & Park, 2011). Once detected, threat perceptions elicit emotional responses to facilitate behavior aimed at mitigating the perceived threat (Cottrell & Neubuerg, 2005; Neuberg & Cottrell, 2008; Neuberg et al., 2011; Schaller, Faulkner, Park, Neuberg, & Kenrick, 2004; Schaller & Neuberg, 2012). For example, perception of cues connoting physical harm elicits feelings of fear that facilitate avoidance or escape from the perceived danger. Cottrell and Neuberg (2005) proposed a sociofunctional, or threat-based, approach to understanding prejudice, noting that cultural stereotypes are a primary source from which people gain heuristic information about the potential threats posed by members of social groups. For example, in the United States, Black men are often stereotyped as more likely to be violent or to be criminals (Correll, Park, Judd, & Wittenbrink, 2007; Devine & Elliot, 1995; Schaller, Park, & Mueller, 2003). Likewise, White participants in Cottrell and Neuberg's (2005) study perceived Black men as posing threats to safety and reported greater feelings of fear toward Black men compared to various other social groups not associated with safety threats, such as gay men and fundamentalist Christians.

Safety Threats and Belief in a Dangerous World

Of the varied social goals individuals possess, self-protection is paramount. As such, people possess cognitive tools to protect themselves from potentially dangerous others. Research suggests that people possess two psychologically distinct self-protective systems—one focused on threats to personal safety (i.e., protective against interpersonal violence) and one focused on disease avoidance (Neuberg et al., 2011; Schaller & Neuberg, 2012). Each of these systems is attuned to different environmental cues (and activate distinct neurological pathways) to facilitate specific emotional and behavioral responses aimed at self-protection. When it comes to self-protection, people are naturally risk-averse, and will be more likely to commit Type I errors and falsely recognize a nonexistent threat as a potential threat rather than fail to recognize an existing threat (Haselton & Funder, 2006). However, like other personality attributes, dispositional threat sensitivity exists on a continuum, and some people are chronically vigilant for particular threats in the environment (Neuberg et al., 2011; Schaller & Park, 2011). Increased threat concern elicits a range of self-protective behaviors in response to perceived threat cues. For example, people chronically concerned with pathogenic infection—an individual difference measured by the Perceived Vulnerability to Disease (PVD) Scale (Duncan, Schaller, & Park, 2009)—display increased prejudice toward a wide range of others who display cues heuristically associated with disease, including people with disabilities, obese people, and elderly people (Schaller & Park, 2011). Likewise, inducing concern for pathogenic infection, even among those not high on PVD, results in decreased extraversion and openness to experience, thereby protecting one from potential infection (Mortensen, Becker, Ackerman, Neuberg, & Kenrick, 2010).

In the current research, we specifically examine responses toward safety threats. According to the sociofunctional approach, safety threat is elicited by perceptions of immediate threat of physical harm, engages motivations to protect the self and valued others, and activates the primary emotional reaction of fear (Cottrell & Neuberg, 2005). Previous research finds that certain groups are heuristically associated with safety threat due to their perceived ability to exert physical harm,

including Arabs, Black men, and Mexican American men (Ackerman et al., 2006; Cottrell & Neuberg, 2005; Neuberg et al., 2011). Dispositional concern for personal harm or attack, like disease threat sensitivity, exists on a continuum. Altemeyer (1988) developed a scale to capture individual differences in chronic beliefs about the safety-relevant dangers present in the world. People with high *belief in a dangerous world* (BDW) perceive life as a fiercely competitive and violent struggle, and ultimately believe that others are constantly threatening to harm them (Duckitt, Wagner, du Plessis, & Birum, 2002; Weber & Federico, 2007). Scores on the BDW scale are a component of right-wing authoritarian attitudes and are predictive of general intergroup prejudice and ethnocentrism (Altemeyer, 1988; Duckitt et al., 2002; Weber & Federico, 2007). Duckitt et al. (2002) argued that right-wing authoritarianism (RWA) is an ideology (rather than a personality factor) that is driven by individual differences in chronic BDW coupled with social conformity. As such, research on the dual-process motivational model—contrasting the predictive ability of RWA and social dominance orientation (SDO)—consistently finds that RWA is predictive of prejudices against groups perceived to threaten social order and stability (Duckitt & Sibley, 2007, 2010). Such research typically focuses on generalized social threats, such as those against conventional social and religious values, thus capturing the social conformity component of RWA. BDW, on the other hand, focuses specifically on the safety-based component of RWA.

Galperin, Fessler, Johnson, and Haselton (2013) found that people with high BDW were more likely to perceive others as angry, and therefore threatening. Schaller et al. (2003) tested the interaction of environmental threat cues and chronic concern for danger by having participants complete an implicit association test in either a well-lit or dimly lit room. Under conditions of ambient darkness (which cues safety threats), participants with high BDW more strongly endorsed stereotypes toward Black men—a group stereotypically associated with danger. The effect was not found among participants with low BDW.

Belief in a Dangerous World, Threat Perception, and Prejudice

Importantly, a sociofunctional account of prejudice suggests that cultural stereotypes of outgroups provide information on the threats associated with members of those groups, and when those threats are of concern, stereotypes should guide vigilance for threat-related cues. Thus, individuals with higher BDW are likely more vigilant for groups stereotypically perceived as threatening harm through interpersonal violence, attributing additional weight to stereotypic group-based threat cues. From this, we predicted that people with high BDW should be especially negative toward members of groups stereotypically perceived to pose threats to safety (defined as concern for harm through physical violence), and should likewise exhibit functionally relevant emotional and behavioral responses (i.e., feelings of fear and behavioral avoidance). Unlike previous research on outgroup prejudices associated with RWA (Altemeyer, 1988; Duckitt & Sibley, 2007, 2010; Duckitt et al., 2002), we do not predict individuals with high BDW to exhibit this bias toward outgroups that do not stereotypically pose a safety threat.

Our research extends the extant literature on BDW and threat perceptions in several ways. Previous work assessed only stereotypes as an outcome, while we examine effects of BDW on social distancing and specific emotions (e.g., fear). Further, previous research measured stereotypes only of the focal group; thus, it is not clear whether similar reactions would have been elicited toward groups not associated with safety threats. In sum, our research conceptually replicates and extends previous work using groups both associated and unassociated with safety threat, and comprehensively tests a conceptual framework derived from the sociofunctional approach.

We tested our hypotheses across three studies. In Study 1 we tested general negativity

toward various groups. In Study 2 we tested specific threat perceptions, emotional reactions, and behavioral avoidance toward various groups. In both studies we included groups stereotypically associated and unassociated with safety-related threats and predicted that BDW would predict greater negativity and increased self-protective reactions toward safety-related groups compared to the non-safety-relevant groups. In Study 3 we activated safety-related concerns through manipulation of a news story and measured reactions toward different outgroups (Asian Americans and Mexican Americans), predicting that participants with high BDW would show an increase in prejudice specifically toward Mexican Americans, a group associated with safety-relevant stereotypes, following activation of safety-related concerns. Taken together, these studies are the first to test specific intergroup emotional reactions in relation to chronic safety-related concerns, and provide evidence that belief in a dangerous world—a specific safety-related component of a more global RWA ideology—drives prejudice toward groups stereotypically perceived to threaten personal safety.

Study 1

Previous research suggests that BDW predicts general prejudice (Altemeyer, 1988; Duckitt et al., 2002) and moderates prejudice toward threat-related groups following activation of safety concerns (Schaller et al., 2003). Study 1 tested whether individual differences in BDW predict general negativity toward groups stereotypically associated with threats to safety compared to groups associated with unrelated threats (e.g., health or no specific threat) even in the absence of salient safety-related concerns. We predicted that BDW would predict general negative attitudes toward groups associated with safety threats (i.e., stereotyped as threatening physical harm through violence) but not toward control groups and those associated with health threats (i.e., stereotyped as threatening pathogenic infection).

Participants and Procedure

One hundred twenty-six White participants (62 women, 64 men) were recruited from Amazon's Mechanical Turk (MTurk) website to participate in a study on "personality and attitudes." Participants averaged 36.08 years of age (SD = 12.64), and ranged from 18 to 66 years.

Using a feeling thermometer—a common measure of general social attitudes (Nelson, 2008)—participants were asked to indicate their feelings (0 = *very cool*, 100 = *very warm*) toward randomly ordered groups, including groups stereotypically perceived to pose threats to safety (African American men, Hispanic men, illegal immigrants, and Muslims), health (physically disabled people, gay men, obese people, and people with HIV), and control groups posing neither threat (African American women, Asian Americans, elderly people, and fundamentalist Christians).[1] Following attitude ratings participants completed the 12-item Belief in a Dangerous World (BDW) Scale (Altemeyer, 1988) by indicating their agreement (1 = *strongly disagree*, 7 = *strongly agree*) to items such as "Any day now chaos and anarchy could erupt around us" and "There are many dangerous people in our society who will attack someone out of pure meanness, for no reason at all."

Results and Discussion

The 12 BDW items indicated good reliability, α = .94, and were averaged into one total score. We next tested reliability of attitudes toward groups proposed to be associated with respective threats. We observed adequate reliability for groups associated with safety threats, α = .80; health threats, α = .74; and control groups, α = .67; and therefore averaged attitude scores across groups for each respective threat type.

A within-subjects analysis of variance (ANOVA) on feeling thermometer scores indicated that participants reported differences in attitudes toward threat-related groups, $F(2, 250)$ = 54.28, $p < .001$, $\eta^2 = .30$. Participants reported the least positivity toward groups representing safety

threats (M = 55.98, SD = 21.58)—significantly less than those representing health threats (M = 64.38, SD = 20.12), $t(125) = 5.08$, $p < .001$, $d = .45$, and control groups (M = 72.87, SD = 19.15), $t(125) = 10.11$, $p < .001$, $d = .91$. Participants also rated groups representing health threats less positively than control groups, $t(125) = 5.62$, $p < .001$, $d = .50$.

Within-person regression methods (Judd, McClelland, & Ryan, 2009) indicated a significant interaction between BDW (centered) and group, $\beta = .34$, $t(377) = 2.11$, $p = .04$.

Simultaneous regression analyses were then conducted with BDW as a predictor of attitudes toward groups. Supporting our hypotheses, BDW significantly predicted negative attitudes toward groups associated with safety threats, $\beta = -.31$, $t(125) = -3.68$, $p < .001$, but not toward groups associated with threats to health, $\beta = -.06$, $t(125) = -0.71$, $p = .48$, or control groups, $\beta = .03$, $t(125) = 0.35$, $p = .73$. These results support our predictions and are the first to test the relationship between BDW and explicit attitudes toward specific, threat-relevant outgroups (compared to threat-irrelevant outgroups) rather than general outgroup prejudice.

Study 2

Study 1 established a relationship between BDW and attitudes toward groups perceived to pose threats to safety. Study 2 extended these findings by measuring *specific* prejudicial emotions and responses toward groups posing safety or other threats. According to the sociofunctional approach to prejudice (Cottrell & Neuberg, 2005), specific threat perceptions will predict specific emotional reactions toward groups, moving beyond general attitudes. In Study 2 we measured social distancing, perceptions of safety threat, and an associated affective response, fear. To ensure that specific emotions are elicited above and beyond the general negativity captured in Study 1 (and the focus of much of the previous prejudice literature), we used a threat activation procedure from previous research (Eagly, Mladinic, & Otto, 1994). This procedure helps ensure reported outcomes can be attributed to group stereotypes.

Participants and Procedure

Eighty-one White participants (47 women, 34 men) were recruited from MTurk. Participants ranged from 18 to 74 years of age, averaging 35.68 years (SD = 14.85).

Participants were presented with randomly ordered groups stereotypically associated with threats to safety (illegal immigrants and Muslims), threats to health (obese people and bisexuals[2]), and no particular threats (Americans and Europeans). Only two groups were used to represent each threat in Study 2 because of the lengthier measures employed. For each group, participants were asked to first take a moment and "list five things that immediately come to mind when thinking about" members of the respective group—this task was used to activate participants' existing stereotypes about target groups. After listing their thoughts about a group, participants indicated on a 6-point scale (1 = *strongly disagree*, 6 = *strongly agree*) their agreement toward three face-valid items from Crandall's (1991) adapted Social Distancing Scale (SDS): "They appear to be likeable people" (reverse coded), "I would like to have them marry into my family" (reverse coded), and "They are the kind of people I tend to avoid." Participants also reported perceptions of threats to safety by indicating their agreement with items asking whether this group "threatens my physical safety" and are "physically dangerous" (1 = *strongly disagree*, 6 = *strongly agree*). Using the same scale, participants next reported affective fear toward the group by indicating their agreement that they are "afraid" and "nervous" about group members. Finally, participants completed the 12-item BDW scale and demographic information.[3]

Results and Discussion

BDW items indicated good reliability, $\alpha = .92$, and were averaged into one total score. Three-item measures of social distancing indicated

good reliability for each group (αs > .80), and were therefore averaged into one measure of prejudice for each respective group. The two-item measures of safety threat also demonstrated good reliability (mean $r = .85$) and were averaged to a single measure for each group. Finally, the two-item measures of reported fear toward each group also demonstrated adequate reliability (mean $r = .75$) and were averaged for each group.

We first tested for overall differences in participant responses toward groups. A one-way ANOVA on social distancing reported toward groups was significant, $F(5, 395) = 34.27$, $p < .001$, $\eta^2 = .30$, with participants indicating the greatest prejudice toward illegal immigrants, followed by Muslims (see Table 1 for means). A one-way ANOVA also indicated a significant difference on perceived safety threats posed by groups, $F(5, 395) = 17.48$, $p < .001$, $\eta^2 = .18$, with participants rating Muslims as posing the greatest levels of safety threat, followed by illegal immigrants (Table 1). Finally, a one-way ANOVA indicated significant differences in reported fear felt toward target groups, $F(5, 395) = 19.71$, $p < .001$, $\eta^2 = .20$, with Muslims and illegal immigrants producing the greatest levels of fear (Table 1).

Within-person regression analyses (Judd et al., 2009) were used to test whether BDW (centered) interacted with target group to predict each outcome variable, indicating that BDW and target group interacted to predict reported social distancing, $\beta = .65$, $t(480) = 6.21$, $p < .001$; perceptions of safety threat, $\beta = .49$, $t(482) = 7.13$, $p < .001$; and fear, $\beta = .39$, $t(481) = 5.33$, $p < .001$.[4]

Using bootstrapping methods (Preacher & Hayes, 2008) we tested a path model of the effects of BDW on social distancing toward groups, mediated through fear and perceived safety threats. As expected, BDW did not predict social distancing toward Americans, $\beta = .02$, $t(81) = 0.26$, $p = .79$. BDW did, however, unexpectedly predict social distancing toward Europeans, $\beta = .24$, $t(80) = 2.95$, $p < .01$. This response was not mediated through perceived safety threats or fear, as BDW did not predict either of these responses (i.e., the "a" paths in the mediation model), $\beta = .05$, $t(80) = 0.63$, $p = .53$ for safety threat and $\beta = .03$, $t(80) = 0.40$,

Table 1. Social distancing, perceived safety threats, and fear reported toward each group.

Variable	Americans		Europeans		Illegal immigrants		Muslims		Obese people		Bisexuals	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Social distancing	2.61	1.02	2.79	1.05	4.42	1.36	4.14	1.39	3.72	1.31	3.75	1.34
Safety threat	1.74	1.14	1.41	0.91	2.40	1.47	2.56	1.59	1.57	1.00	1.56	1.05
Fear	1.60	1.09	1.40	0.88	2.31	1.49	2.71	1.69	1.53	0.89	1.49	0.90

$p = .69$ for fear. This influence of BDW on social distancing toward Europeans could be due to overall xenophobia reflecting the link between BDW and RWA (unfortunately, our data do not allow us to test this possibility).

Multiple mediation analyses indicated that BDW did significantly predict social distancing toward illegal immigrants, $\beta = .41$, $t(81) = 3.98$, $p < .001$, as well as perceived safety threats, $\beta = .24$, $t(81) = 2.00$, $p = .05$, and fear, $\beta = .26$, $t(81) = 2.17$, $p = .03$. Safety threats likewise predicted social distancing toward illegal immigrants, $\beta = .53$, $t(81) = 3.58$, $p < .001$, though fear did not, $\beta = .06$, $t(81) = 0.40$, $p = .69$. The direct effect of BDW on prejudice toward illegal immigrants remained after controlling for perceived safety threats and fear, $\beta = .30$, $t(81) = 3.34$, $p = .001$, and was therefore only partially mediated by perceived safety threats.

BDW likewise significantly predicted social distancing toward Muslims, $\beta = .33$, $t(80) = 3.04$, $p < .01$, as well as perceived safety threats, $\beta = .29$, $t(80) = 2.22$, $p = .03$, and fear, $\beta = .33$, $t(80) = 2.45$, $p = .02$. The paths from safety threats to social distancing, $\beta = .48$, $t(80) = 5.9$, $p < .001$, and fear to social distancing, $\beta = .27$, $t(80) = 3.47$, $p < .001$, were also significant. The direct effect of BDW on social distancing was no longer significant after controlling for perceived safety threats and fear, $\beta = .11$, $t(80) = 1.74$, $p = .09$, supporting our hypothesis that the effect of BDW on prejudice toward Muslims is mediated by threat perceptions and affect.

Finally, as predicted, BDW did not significantly predict social distancing toward obese people, $\beta = .14$, $t(81) = 1.26$, $p = .21$, or bisexuals, $\beta = .15$, $t(81) = 1.35$, $p = .18$.

Taken together, the results of Study 2 found evidence that BDW predicts increased behavioral prejudice, partially or fully mediated through increased perceptions of safety threat and fear, toward groups stereotyped as posing threats to safety (illegal immigrants and Muslims), but not toward groups stereotypically perceived to pose health threats (obese people and bisexuals) or control groups (Americans). BDW unexpectedly predicted prejudice toward Europeans. However, this effect was not mediated by, nor coincided with, increased perceptions of safety threat or fear. The effect could be due to the relationship between BDW and RWA, and is potentially mediated by perceived values threats, as high-RWA people tend to endorse strict conventionalism and xenophobic attitudes (Duckitt & Sibley, 2007).

Study 3

Studies 1 and 2 explored the relationship between BDW and both general and specific prejudices toward members of groups perceived to pose safety threats and unrelated threats. Study 3 tested whether manipulating perceptions of safety threats would increase prejudices reported by those with high BDW toward groups perceived to pose threats to safety, but not toward groups perceived to pose unrelated threats.

Participants and Procedure

Ninety-five White students (49 female, 46 male) taking an Introduction to Psychology class at a university in the southwestern United States participated in the study in exchange for course credit. Participants came into the lab in small groups of three or fewer and sat at individual computer desks partitioned for privacy. The consent process and instructions informed participants that the study was measuring opinions about current events, including the state of the economy and perceptions of different groups.

Participants were randomly assigned to one of two conditions (safety threat prime and control), which each began with the following information:

> You will be reading a news article that recently appeared in a Sunday section of *USA Today*. This article was chosen because it describes accurately an important current event in our society right now, and it's relevant for students who will be graduating college in the next few years.

The safety-related article involved a fabricated news story about how the poor economy has led to, and will continue to lead to, higher rates of crime. The control condition article began with

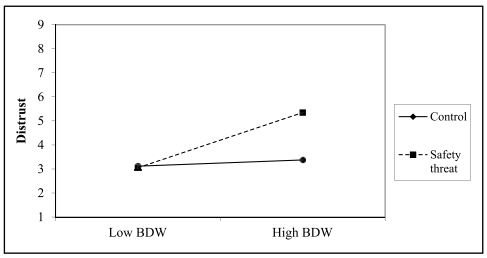

Figure 1. Relationship between distrust toward Mexican Americans and BDW across threat conditions (control vs. safety).

the same description of the poor economy, but went on to describe increasing sales of movie tickets instead of growing crime rates as a result of the economic situation. Neither story mentioned race.

Participants were then asked to report their feelings of distrust and fear in response to Mexican American men, a group often perceived to pose threats to safety (Cottrell & Neuberg, 2005), and Asian American men, a group not associated with safety threats (Cottrell & Neuberg, 2005). To measure distrust, participants indicated their agreement to two statements for each group, "People like me cannot trust Mexican American[Asian American] men, as a group" and "Mexican American[Asian American] men, as a group, cannot really be trusted by people like me" (1 = *strongly disagree*, 9 = *strongly agree*). To measure fear, participants indicated their agreement (using the same 9-point scale) to two questions for each group, "How afraid are you of Mexican American[Asian American] men, as a group?" and "How fearful are you of Mexican American[Asian American] men, as a group?" After responding to these items, participants completed the BDW scale (Altemeyer, 1988) and answered demographic questions (e.g., race and age).[5] Participants were then fully debriefed and compensated for their participation.

Results and Discussion

BDW items indicated good reliability, $\alpha = .84$, and were averaged into one total score. We averaged the two items for distrust for Mexican American men, $r = .92$, and Asian American men, $r = .91$, and tested whether the safety threat manipulation would lead people with higher BDW to perceive Mexican American men, but not Asian American men, as less trustworthy.[6] A 2 (group: Mexican American men, Asian American men; within-participant) x 2 (condition: safety prime, control; between-participant) x BDW mixed model analysis revealed a significant three-way interaction $F(1, 91) = 5.30$, $p = .02$, $\eta^2 = .06$. Analysis of lower order effects indicated that BDW significantly predicted distrust toward Mexican American men, $\beta = .58$, $t(94) = 2.24$, $p = .03$, while condition did not, $\beta = .83$, $t(94) = 1.63$, $p = .11$. These results were qualified by a significant interaction between BDW and condition on distrust toward Mexican American men, $\beta = 1.04$, $t(94) = 2.18$, $p = .03$ (Figure 1), such that BDW predicted distrust toward Mexican American men in the safety threat condition, $\beta = 1.17$, $t(91) = 3.39$, $p = .001$, but not in the control condition, $\beta = .13$, $t(91) = 0.40$, $p = .69$. Neither BDW, $\beta = .07$, $t(94) = 0.53$, $p = .60$, nor condition, $\beta = .38$, $t(94) = 1.4$, $p = .16$, predicted distrust toward Asian American men. There likewise was no interaction between BDW and condition on prejudice toward Asian American men, $\beta < .01$, $t(91) = -0.02$, $p = .98$ (see Figure 2).

We next averaged the two items for fear felt toward Mexican American men, $r = .86$, and Asian American men, $r = .82$, and tested whether the safety threat manipulation would lead people with higher BDW to be more afraid of Mexican American men, but not Asian American men. A 2 (group) x 2 (condition) x BDW mixed model analysis revealed a marginal three-way interaction $F(1, 91) = 4.72$, $p < .10$, $\eta^2 = .03$. Lower order effects indicated that BDW significantly predicted fear toward Mexican American men, $\beta = .40$, $t(94) = 2.03$, $p = .05$, as did condition, $\beta = .76$, $t(94) = 1.98$, $p = .05$. These effects were qualified by a significant interaction between BDW and condition, $\beta = .92$, $t(94) = 2.39$, $p = .02$ (see Figure 3), such that BDW predicted feelings of fear toward Mexican American men in the safety threat condition, $\beta = .88$, $t(94) = 3.17$, $p = .002$, but not in the control condition, $\beta = -.04$, $t(94) = -0.14$,

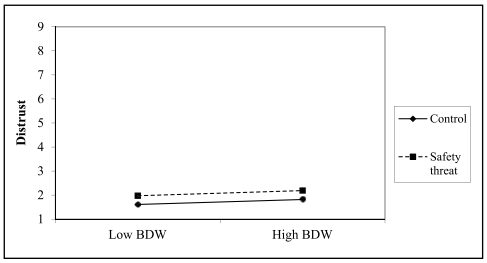

Figure 2. Relationship between distrust toward Asian Americans and BDW across threat conditions (control vs. safety).

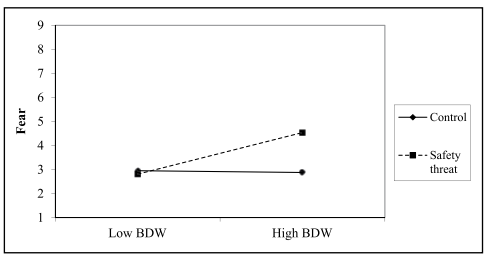

Figure 3. Relationship between fear toward Mexican Americans and BDW across threat conditions (control vs. safety).

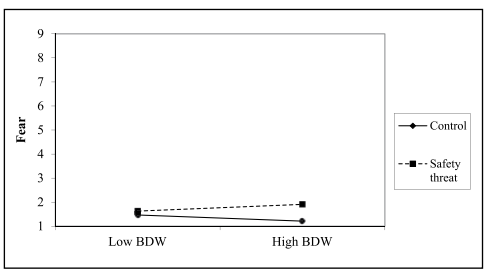

Figure 4. Relationship between fear toward Asian Americans and BDW across threat conditions (control vs. safety).

p = .88. Lower order effects indicated that BDW did not predict feelings of fear toward Asian American men, $\beta < .01$, $t(94) = 0.01$, $p = .99$, though condition did affect fear felt toward Asian American men, $\beta = .43$, $t(94) = 1.97$, $p = .05$. There was, however, no interaction between BDW and condition on fear for Asian American men $\beta = .27$, $t(94) = 1.21$, $p = .23$ (see Figure 4).

The results of Study 3 provide further support for our hypothesis that high-BDW individuals express biases specifically against groups heuristically associated with safety-related threats. Prejudiced responses are likewise heightened for high-BDW individuals when safety concerns are situationally activated. Under such circumstances BDW predicted greater distrust and fear toward Mexican American men, but not toward Asian American men.

General Discussion

Prejudice is traditionally considered a general negative attitude toward a group and its members (Cottrell & Neuberg, 2005). Recent theoretical advances, however, show that prejudices are often more nuanced than traditional accounts would suggest (Fiske, 2002). The dual-process motivational model, for example, consistently finds that ideological attitudes differentially influence perceptions of groups seen as dangerous versus those that are not (Duckitt & Sibley, 2007). Specifically, RWA is predictive of prejudices against dangerous groups while SDO explains prejudice against derogated groups (Cantal, Milfont, Wilson, & Gouveia, 2015; Duckitt & Sibley, 2007, 2010). Similarly, the sociofunctional, threat-based approach to prejudice suggests that stereotypes convey heuristic threat-related cues that prompt specific emotional and behavioral responses toward stereotyped outgroup members.

These theories indicate a greater need to examine more textured roles of threats and individual differences on emotions and attitudes toward threat-relevant and threat-irrelevant groups. We predicted that people high in chronic fear of danger would respond with pronounced negativity and elevated fear toward members of groups stereotypically perceived to threaten safety, but not those unassociated with safety threat. In Study 1, we found that BDW predicted attitudes toward groups associated with safety threats but not groups associated with unrelated threats (e.g., health threats and control groups). In Study 2, we found that BDW predicted

specific prejudices (e.g., physical safety concerns, fear, and social distancing) against groups associated with safety threats, but once again, not groups unassociated with safety threats. In Study 3, we found that priming concerns regarding safety prompted more negative evaluations of a group associated with safety threats, but not one unassociated with safety threats, and only for those participants high in BDW.

This research extends previous work on the sociofunctional approach and complements work from other perspectives, such as the dual-process theory of stereotyping. Our findings show that groups associated (vs. unassociated) with safety threat or danger are perceived differently by individuals for whom safety threat is chronically salient. Overall, we demonstrate that BDW predicts attitudes toward groups associated with safety threats. Importantly, BDW also predicts perceptions of specific threats from groups. In particular, people higher in dangerous world beliefs attribute higher levels of safety threat and subsequent fear to groups associated with safety-related threats. Finally, we demonstrated that activating threat concerns for people with dangerous world beliefs promotes higher negativity (distrust and fear) toward groups associated with safety threat. Collectively, these results suggest there are at least three distinct components that need to be considered when it comes to understanding the processes of threat-related stereotyping and prejudice: the salient or perceived environmental threat, the specific groups stereotypically associated with that threat, and individual differences that moderate threat sensitivity.

Limitations and Future Directions

Our research is not without limitations. We did not measure participants' sexual orientation or body mass index. Thus, we cannot determine whether participants viewed certain groups, such as bisexuals and obese individuals, as outgroups. The extent to which this may have affected participants' responses is unclear. Some research suggests that members of a group are aware of, and respond accordingly to, stereotypes of their own groups (Kaiser & Miller, 2001; Neel, Neufeld, & Neuberg, 2013; von Hippel et al., 2005; Vorauer, Hunter, Main, & Roy, 2000). If this is the case, there may not be significant differences in perceptions of threatening groups between members and nonmembers. It would be worthwhile for future research to explicitly examine this question.

The current studies focus primarily on ethnic and racial minorities as groups associated with safety threat. However, a number of other groups, such as people who grow up in poverty (Williams, Sng, & Neuberg, 2016) or people with mental health issues (Corrigan & Watson, 2005), are also commonly associated with safety-related concerns. It remains to be seen how individuals high in dangerous world beliefs respond to members belonging to these less visible outgroups. A related issue is that some groups may be more directly associated with threats than others. For example, safety-related stereotypes about ethnic and racial minorities are general associations, and people will vary in the extent to which they endorse such stereotypes. Results will likely be stronger for groups that are more directly and consensually associated with safety threats, such as convicted felons. Similarly, for health threats, we chose groups that are heuristically associated with disease, such as people with disabilities and gay men (Faulkner, Schaller, Park, & Duncan, 2004; Park, Schaller, & Crandall, 2007; Schaller & Park, 2011). These groups do not necessarily pose actual disease threats, and future research could investigate how attitudes toward these groups differ (if at all) from groups that do (e.g., people with contagious disease).

Finally, we encourage further research on the sociofunctional approach to stereotyping and prejudice. In the previous lines we mentioned at least three distinct components of this approach: the salient or perceived environmental threat, the specific groups stereotypically associated with that threat, and individual differences that moderate threat sensitivity. Previous research has shown that different groups elicit different emotions depending on the threat they are perceived to pose (Cottrell & Neuberg, 2005). The current

research focused on the salience of a particular threat—safety—and its corresponding individual difference measure—BDW—on perceptions of different groups. While these studies support the sociofunctional approach, future research could investigate multiple types of threat (e.g., disease and safety) and individual differences (e.g., PVD, BDW) on attitudes and stereotypes of threat-relevant and threat-irrelevant groups in the same study. This would provide further evidence that salience of specific threats, rather than a general threat psychology, drives reactions toward threat-relevant groups. We also encourage future research to examine actual behavioral outcomes. Although cognitions and emotions are integral factors in guiding behavior, it remains unknown how dangerous world beliefs affect behaviors directed toward groups associated with safety threats and groups unassociated with safety threats.

Conclusion

In conclusion, we build upon the sociofunctional approach to stereotyping (Cottrell & Neuberg, 2005) and the dual-process motivational model (Cantal et al., 2015; Duckitt & Sibley, 2007, 2010) to predict reactions toward threat-relevant groups by individuals for whom safety threat is salient. Our findings demonstrate the importance of examining both general and specific components of attitudes toward groups as well as considering the characteristics of individuals, the social context, and their interaction in determining responses to groups commonly the targets of prejudice. These findings can also help shed light on how activation of safety-related concerns via media exposure or political talking points (i.e., messages emphasizing interpersonal danger associated with different social groups) can increase prejudiced responses toward groups stereotypically regarded as violent or dangerous, and why such messages could resonate strongly with individuals who perceive the world as a dangerous place.

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Notes

1. Groups were classified as representing respective threats from a number of sources cited in text (see Cottrell & Neuberg, 2005; Cuddy, Fiske, & Glick, 2007; Schaller & Park, 2011).
2. Bisexuals were used as a target group in Study 2 in place of gay men to further establish a link between target group and perceived health threats, as bisexuals are stereotypically associated with sexual promiscuity (Spalding & Peplau, 1997) thus activating concern for HIV/AIDS and other associated disease threats (Herek & Capitanio, 1999).
3. Other measures of threat (reciprocity and health) and affect (pity and disgust) were used, but are not reported (save for disgust; see Endnote 4) for the sake of brevity and to focus on a priori predictions. For a full list of variables and results, please contact the corresponding author.
4. To test for effects on a theoretically unrelated variable, we ran parallel analyses on reported disgust. Although results did indicate differences in reported disgust, $F(5, 395) = 11.34$, $p < .001$, $\eta^2 = .13$, BDW did not interact with groups to predict disgust, $\beta = .08$, $t(482) = -0.51$, $p = .61$, as it did with social distancing, perceived safety threats, and fear. These findings further demonstrate the specificity of the hypothesized effects of BDW.
5. We chose to measure BDW after, rather than prior to the manipulation to ensure that items on the measure did not inadvertently prime concerns for safety. Additionally, because BDW is treated as an individual difference measure, and therefore assumed to be stable, we did not expect it to change significantly following the manipulation. This is a common procedure in research exploring interactions between individual differences and experimental manipulations, and has been used in previous research exploring traits such as RWA (Duckitt & Sibley, 2010) and BDW (Galperin et al., 2013). A one-way ANOVA indicated that BDW scores did not differ between experimental ($M = 3.34$, $SD = 0.96$) and control ($M = 3.31$, $SD = 1.02$) conditions, $F(1, 93) = 0.02$, $p = .88$, $\eta^2 < .01$.
6. A number of variables were collected in this study for exploratory purposes (e.g., affective reactions such as liking and disgust) that are unrelated to the ideas tested in the current paper, and were therefore not included in the analyses. For a full list of variables or full dataset, please contact the corresponding author.

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