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Understanding the role of dispositional and situational threat sensitivity in our moral judgments

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Previous research has identified different moral judgments in liberals and conservatives. While both care about harm/fairness ('individualizing' foundations), conservatives emphasize in-group/authority/purity ('binding' foundations) more than liberals. Thus, some argue that conservatives have a more complex morality. We suggest an alternative view—that consistent with conservatism as 'motivated social cognition', binding foundation activation satisfies psychological needs for social structure/security/certainty. Accordingly, we found that students who were dispositionally threat-sensitive showed stronger binding foundation activation, and that conservatives are more dispositionally threat-sensitive than liberals. We also found that in a heightened threat situation liberals (especially social liberals) showed increased binding foundation activation. These results support the view that the binding foundations function differently in our moral cognition than the individualizing foundations.

Keywords: moral intuitions; moral foundations theory; threat-sensitivity; motivated social cognition

Recently, Haidt and Kesebir (2010) argued that the philosophical and empirical study of morality has long been engaged in what they call the 'great narrowing'—an historical process, beginning with the Enlightenment, through which our study of morality was gradually reduced to an almost exclusive focus on considerations of justice, welfare and rights. They lamented this narrowing, arguing that it fails to adequately reflect the complex moral sensibilities that people (at least, a significant percentage of people) possess.

Expanding on Shweder's 'big three' principles of morality (Shweder, Much, Mahapatra, & Park, 1997), Moral Foundations Theory (Graham, Haidt, & Nosek, 2009; Graham et al., 2011; Haidt & Graham, 2007; Joseph, Graham, &

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Haidt, 2009) was created to capture this more complex morality, originally positing five¹ basic moral foundations expressed in the form of innate but malleable ‘moral intuitions’. Two of these foundations (*harm/care* and *fairness/reciprocity*: the ‘individualizing foundations’) correspond well with our Enlightenment conception of morality. Concerned with safeguarding the well-being of individuals, maintaining standards of care, rights and the fair distribution of resources, these foundations lie at the heart of morality defined as ‘prescriptive judgments of justice, rights, and welfare pertaining to how people ought to relate to each other’ (Turiel, 1983, p. 3). The other three foundations are *in-group/loyalty*, *authority/respect* and *purity/sanctity* (the ‘binding foundations’), whose orientation, they argue, is the maintenance and protection of an existing social/moral order, much like Schweder et al.’s (1997) ethics of ‘community’ and ‘divinity’.

To what extent are these five foundations reflected in people’s daily moral judgments? Research (Graham et al., 2009; Haidt & Graham, 2007) suggests that it depends (at least in part) on people’s political orientation. Conservatives (and people who are strongly religious) tend to place relatively equal importance on all five foundations when it comes to their moral decisions, whereas liberals (especially secular liberals) place slightly more emphasis than conservatives on the individualizing foundations and substantially less emphasis on the binding foundations (Haidt, Graham, & Joseph, 2009).

One suggested explanation for this de-emphasis of the binding foundations is that socialization and education (especially a secular liberal arts education) results in the ‘demoralization’ of the binding foundations. In other words, we become socialized/educated in such a way that our binding foundation responses, considered illegitimate, become cognitively overridden—just as underlying implicit racial prejudices can be overridden by explicitly endorsed egalitarian values (Devine, Plant, Amodio, Harmon-Jones, & Vance, 2002). If this view is correct, then we should expect that techniques used to interfere with such cognitive overriding processes (thereby exposing people’s underlying implicit responses) would reveal within the liberal population a more conservative implicit moral framework. As Joseph et al. (2009, pp. 174–175) suggest, ‘the implicit or automatic moral reactions of liberals could be similar to those of conservatives—at least, more similar than the ideological differences we’ve found in explicitly endorsed moral values’.

There is some indirect evidence to support this contention. When subjected to time pressure conditions, people’s voting choices become more conservative (Hansson, Keating, & Terry, 1974) and, under the influence of alcohol (or other impediments), people endorse more conservative opinions (Eidelman, Crandall, Goodman, & Blanchar, 2012). And under cognitive load, liberals have been found to withhold free medical care for AIDS patients whom they would otherwise have helped, behaving more like their conservative counterparts—but, importantly, this is only when the patients were described as highly personally at fault for their illness (Skitka, Mullen, Griffin, Hutchinson, & Chamberlain, 2002, Study 5).

Yet, as suggestive as these findings are, the extent to which they reveal actual changes in people's reliance on the binding foundations in their moral judgments is not at all clear. In an attempt to examine the effect of cognitive load techniques on people's reliance on the binding foundations *directly*, Wright and Baril (2011) had people respond to moral foundation questions while engaging in (or having just engaged in) different cognitively taxing activities. Rather than finding that liberals emphasized the binding foundations more under cognitively taxing conditions (as the view proposed would have us expect), they found that conservatives emphasized the binding foundations *less*, while liberals' responses did not change. This suggests that under cognitively normal conditions, rather than liberals overriding their binding foundation responses, conservatives are actually unconsciously motivated to *enhance* their binding foundation responses—thus, as soon as the motivational resources necessary for that enhancement are interfered with, the heightened binding foundation activation declines. Conservatives' morality becomes more liberal—not the other way around.

These findings fit nicely with the view of political conservatism as a form of 'motivated social cognition' (Jost, Glaser, Kruglanski, & Sulloway, 2003; Jost, Nosek, & Gosling, 2008), according to which people are unconsciously motivated to adopt a conservative ideology to satisfy psychological needs related to managing threat-sensitivity (e.g. providing order, structure and stability; reducing fear/anxiety generated by change, ambiguity and uncertainty). There is a wealth of research suggesting that conservatives are more dispositionally threat-sensitive than liberals: they are less open to experience, less tolerant of ambiguity and uncertainty, more vulnerable to death anxiety, more in need of structure and cognitive closure (see Jost et al., 2003, 2008 for reviews)—and, therefore, more inclined to maintain 'status quo' (Jost, Fitzsimons, & Kay, 2004). They also display reduced neurological capacities for conflict monitoring and self-regulation (Amodio, Jost, Master, & Yee, 2007), a lower tolerance for uncertainty and a greater sensitivity to fear and disgust (Kanai, Feilden, Firth, & Rees, 2011).

Wright and Baril (2011) hypothesized that the binding foundations are normally more active in conservatives than liberals for the same reason—insofar as they are dispositionally more threat-sensitive, they experience a stronger unconscious need to *reinforce existing moral boundaries* (created by traditions, rituals, hierarchies and social structures), *protect against moral corruption* and *conserve moral resources*. The binding foundations reinforce their socio-moral structure, thereby reducing uncertainty about what counts as a moral transgression and who/what falls within (vs outside) their scope of moral concern. Consistent with this, Van Leeuwen and Park (2009) found that people who perceived the world to be a dangerous place put more emphasis on the binding foundations than those who did not. Also, emphasis on the binding foundations mediated the relationship between threat perception and political orientation, with conservatives viewing the world to be a more dangerous place than liberals. Van Leeuwen, Park, Koenig, and Graham (2012) also found that people living under greater threat of pathogen-transmitted disease displayed stronger binding foundation activation, even after controlling for

the significant effect of political orientation, which indicates that the potential threat can come in a variety of forms.

If this hypothesis is correct—if threat-sensitivity, broadly construed, is related to people’s binding foundation activation—then we should expect that under circumstances of heightened threat salience, the binding foundations should become more strongly activated, even for people who are not already dispositionally threat-sensitive (i.e. liberals). And, once again, there is some indirect evidence to support this. When threatened, liberals have been found to display elevated levels of in-group favoritism (Nail, McGregor, Drinkwater, Steele, & Thompson, 2009) and express more support for conservative political leaders (such as George W. Bush during his presidency; Landau et al., 2004), along with other conservative leaders and opinions (Cohen, Ogilvie, Solomon, Greenberg, & Pyszczynski, 2005; Jost et al., 2004). To date, however, this hypothesis has not been directly tested; it is as yet unknown whether heightened threat salience will result in elevated binding foundation activation in people’s moral judgments. The study reported here is the first to directly test whether liberals will display elevated binding foundation activation under situations of heightened threat salience.

Methods

Participants

One hundred and thirty-seven students from the College of Charleston (34% male; 83% Caucasian, 7% African-American, 1% Asian-American, 1% Latin-American; 52% freshmen, 27% sophomore, 12% juniors, 9% seniors) participated in this study for class research credit. Twenty-eight participants were disqualified: 16 for failing MFQ manipulation checks and 12 for failing the writing prompt check (described below). Analyses below were run on the remaining 109 participants. There were 11 additional participants who, due to computer failure, did not fill out the BDW scale.

Surveys

All participants completed an online version of the Moral Foundations Questionnaire (MFQ) developed by Graham et al. (2009). The questionnaire is composed of two 15-item subscales with 6-point response ranges, the first asking questions of ‘moral relevance’ (e.g. a Harm/Care item is ‘Whether or not someone was cruel’) and the second asking questions of ‘moral agreement’ (e.g. a Fairness item is ‘Justice is the most important requirement for a society’). As in Wright and Baril (2011), the survey included two manipulation check questions for each subscale (e.g. ‘Whether or not someone was good at math’ for the relevance subscale). Participants who incorrectly answered two (1 per subscale) or more of the four were removed from further analysis.

Participants also provided demographics, including three political orientation questions (general, economic and social; 1 = strongly liberal to 7 = strongly conservative) used in previous research (Choma & Hafter, 2009; Wright & Baril,

2011). And as a measure of threat-sensitivity, we also had participants complete the Belief in a Dangerous World (BDW) scale (Altemeyer, 1988): a 12-item questionnaire (e.g. 'There are many dangerous people in our society') with responses on a 7-point scale.

Study conditions

All participants were assigned to one of two conditions:

Control. Participants were given 6 minutes to complete a writing exercise in which they answered the following two questions: (1) Please briefly describe the emotions that the thought of eating a good meal arouse in you; and (2) Jot down as specifically as you can what happens when you eat a good meal and once you've experienced eating a good meal. This manipulation was used in the place of the more standard control writing prompts (e.g. writing about 'dental pain') because we wanted to avoid anything that might induce even mild threat-related anxiety for participants. Accordingly, participants' writing prompts were reviewed and any containing evidence of anxiety-induction (e.g. high degree of body-image anxiety related to food consumption) were removed from analysis—5 prompts were so identified.

Threat-induction. Participants were given 6 minutes to complete a writing exercise in which they answered the following two questions: (1) Please briefly describe the emotions that the thought of terrorist attacks on September 11th, 2001 arouses in you; and (2) Jot down as specifically as you can what happened during the terrorist attacks on September 11th, 2001. Previous research (Landau et al., 2004) found the 11 September 2001 prompt to be as effective for threat-induction as the standard mortality salience prompts used in terror management research (Solomon, Greenberg, & Pyszczynski, 1991). Participants' writing prompts were reviewed and those indicating a failure of the threat-induction (e.g. participants reported not knowing anything about 11 September or having grown up outside the US) were removed from analysis—7 were so identified.

All participants then completed a self-report mood scale (PANAS-X; Watson & Clark, 1991) to assess the affective consequences of the control versus the threat induction and filled out a 2-minute unrelated word search (containing a hidden list of 'back to school' items) that served as a delay because previous research (Greenberg, Pyszczynski, Solomon, Simon, & Breus, 1994) found that mortality salience generates the most consistent defensive responses when there is a delay between the induction and assessment. After the 2 minutes, participants filled out the MFQ online and provided their demographics and the BDW scale.

Results

Political orientation

Participants reported their political orientation across three scales (general, economic, social) that were strongly correlated ($\alpha = .80$), so we created a composite political orientation score by averaging them together, consistent with previous research (Choma & Hafter, 2009). The composite mean, based on a 1.00 to 7.00 scale, was 3.81 with a mode of 4.00 (also the exact center of the scale), a standard deviation of 1.29 and a range of 1.00 to 6.67, which was very representative of the political orientation dimension. Finally, political orientation was not significantly related to the validity check measures discussed above.

Positive and negative affect

There was no effect for affect, as measured by the PANAS (described above) in any of the analyses discussed below and so it was dropped from the analyses reported below.

Effect of threat salience on foundation responses for liberals versus conservatives

Following Haidt's factor analytic justification (e.g. Graham et al., 2011), we averaged the two individualizing (harm/fairness, $\alpha = .66$) and three binding foundations (in-group/authority/purity, $\alpha = .71$) for ease and clarity of analysis. First, we examined the distribution of moral foundations in our control condition to verify that it was similar to the distribution found in other studies (Graham et al., 2011; Haidt et al., 2009; Wright & Baril, 2011), which it was. Also, we found that the binding and individualizing scores were not significantly related to the MFQ validity checks. Surprisingly however, the binding and individualizing scores were significantly related to the manipulation validity check ($ps = .042$ and $.026$ respectively) but only weakly ($rs < .20$).

Whether examined as a continuous or discrete variable (divided at the mean), conservatives placed slightly less emphasis on the individualizing foundations ($r = -.41$, $p = .003$; Ms : conservatives = 3.3, liberals = 3.8, $SEs = .10-.13$, $t(50) = 3.7$, $p = .007$) and significantly more emphasis on the binding foundations ($r = .52$, $p < .001$; Ms : conservatives = 3.0, liberals = 1.4, $SEs = .11-.14$, $t(50) = 5.9$, $p < .001$) than did the liberals.

Next, we used a mixed-factor Analysis of Covariance (ANCOVA) to measure the effect of condition (control/threat) on liberals' versus conservatives' reliance on individualizing and binding foundations. Their foundation scores (individualizing/binding averages) were entered as the dependent variables, assigned condition was entered as a fixed factor, and their composite political orientation was centered and entered as a covariate.² This revealed a significant three-way interaction between foundations, political orientation and condition, $F(1,105) = 4.3$, $p = .042$, $\eta^2 = .04$.

While conservatives' moral judgments were not affected by the threat condition, liberals' judgments were. Relative to the control condition, the degree to which they emphasized the individualizing foundations over the binding foundations decreased—they emphasized the binding foundations more and the individualizing foundations less (Figure 1).

Economic versus social policy scales. Even though the three political orientation scales were closely related, only about half ($n = 56$) of the participants reported the same orientation (liberal or conservative) for all three questions—the remainder gave mixed responses, classifying themselves as liberal in some areas and conservative in others. Therefore, we decided to examine the scales individually.

First, we wanted to examine the difference between the three scales in the absence of manipulation (i.e. the control condition). For these participants only, we ran three separate mixed-factor ANCOVAs for each scale with the individualizing and binding foundations as the dependent variables and the individual political orientation scale (centered) as the covariates. This revealed an interesting difference between the three scales: while participants' general political orientation was predictive of participants' scores on both the individualizing and binding foundations (B_s : individualizing = $-.15$, $p = .014$; binding = $.20$, $p < .001$), participants' orientation towards economic policy was only predictive of their individualizing foundation scores, with liberals placing more emphasis on harm/fairness than conservatives (B_s : individualizing = $-.26$, $p < .001$; binding = ns), and their orientation towards social policy was only predictive of their binding foundation scores, with conservatives placing more emphasis on in-group/authority/purity than liberals (B_s : individualizing = ns ; binding = $.32$, $p < .001$; see Figure 2).

Given that it appears to be people's political position on social (rather than economic) policy that best predicted their use of the binding foundations in their moral judgments, we should expect heightened threat salience to have the strongest effect on those participants who reported being *socially* liberal. And this was confirmed by two separate mixed-factor ANCOVAs, both with the individualizing and binding foundations as dependent variables, assigned condition as a fixed

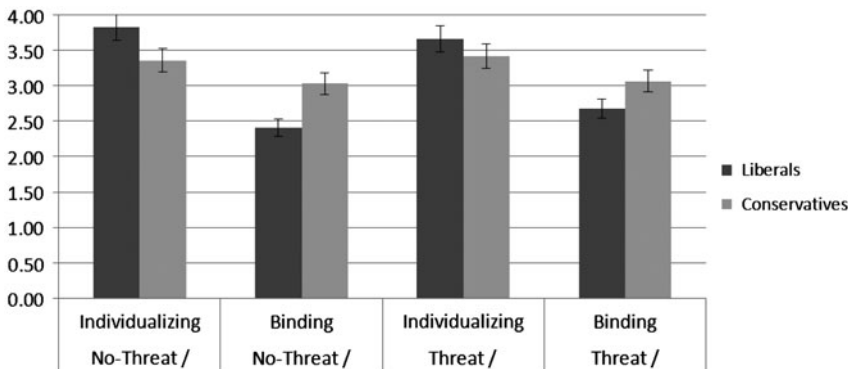


Figure 1. Difference between No-Threat (Control) and Threat Conditions

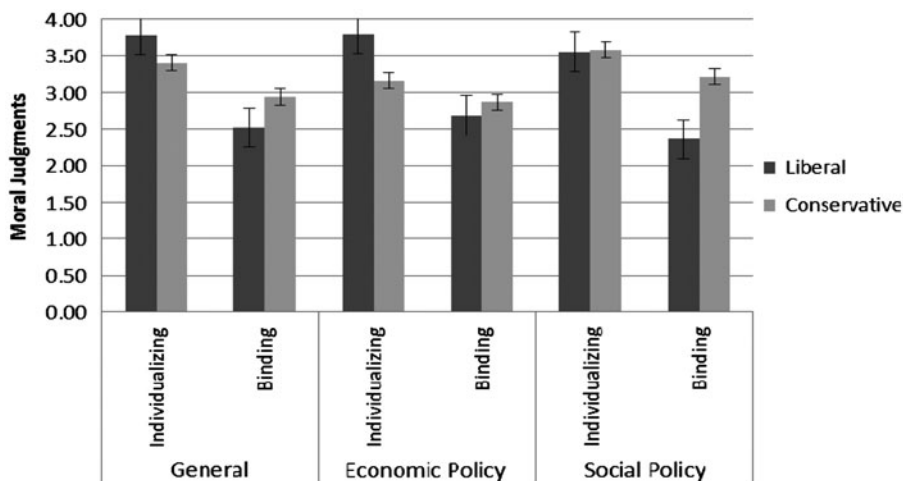


Figure 2. Differences between Political Orientation Scales

factor, and a (centered) policy scale as a covariate—once again, there was a significant three-way interaction for the analysis with the social, $F(1,105) = 6.7$, $p = .011$, $\eta^2 = .06$, but not for the economic, $F(1,105) = 1.3$, *ns*, policy orientations. What is more, the parameter estimates revealed that the threat condition resulted in changes in the binding ($B = -.24$, $p < .001$) but not the individualizing foundations ($B = -.04$, *ns*). The socially liberal participants' binding foundations activation increased—while the socially conservative participants' slightly decreased—when in a heightened threat-salient situation (Figure 3).³

Effect of dispositional versus situational threat-sensitivity

Participants' dispositional threat-sensitivity (as measured by the BDW scale) was correlated with their political orientation—but only (once again) for their social

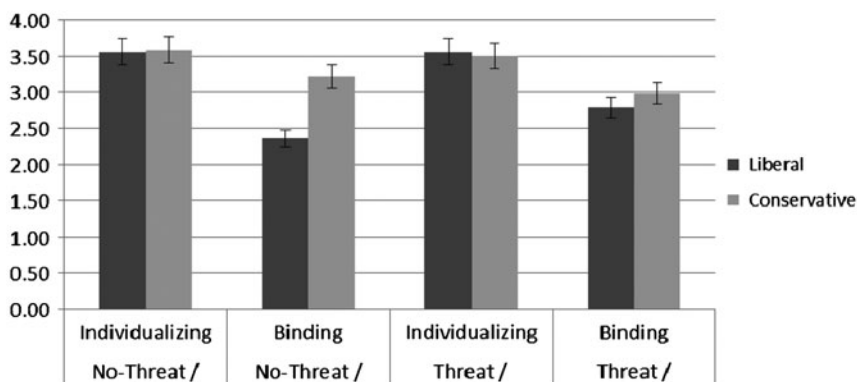


Figure 3. Differences between No-Threat (Control) and Threat Conditions - Social Policy

policy orientation. The more dangerous participants viewed the world to be, the more socially conservative they were, $r(98) = .32, p = .031$. Said in another way, participants who were socially conservative were higher in dispositional threat-sensitivity than social liberals (57% vs 37%: $\chi^2(98) = 4.1, p = .04$). Additionally, participants' level of threat-sensitivity was related to their binding (but not their individualizing) foundation activation, $r(98) = .26, p = .011$ ($r = .09, ns$) and continued (marginally) to be so when participants' social policy orientation was controlled for, $r(95) = .18, p = .07$.

To examine the interaction between political orientation, dispositional threat-sensitivity and situational threat-salience, we ran an ANCOVA with participants' binding foundation scores entered as the dependent variable, assigned condition as a fixed factor and (centered) BDW score and social policy scores as covariates. This revealed a three-way interaction between condition, participants' social policy orientation and their dispositional threat-sensitivity, $F(2,95) = 12.8, p < .001, \eta^2 = .21$. Dispositional threat-sensitivity interacted with the presence of a threatening situation differently for liberals and conservatives. Liberals both low and high in dispositional threat-sensitivity experienced higher binding foundation activation in the threat condition (for those high in dispositional threat sensitivity the increase was slightly greater). On the other hand, conservatives low in dispositional threat-sensitivity actually experienced the opposite—a reduction in binding foundation activation in the threat condition, while there was no difference in binding foundation activation for conservatives who were high in dispositional threat sensitivity (Figure 4).

Interestingly, we did not find the mediational relationship discovered by Van Leeuwen and Park (2009) —specifically, we did not find that binding foundation activation mediated the relationship between dispositional threat-sensitivity and

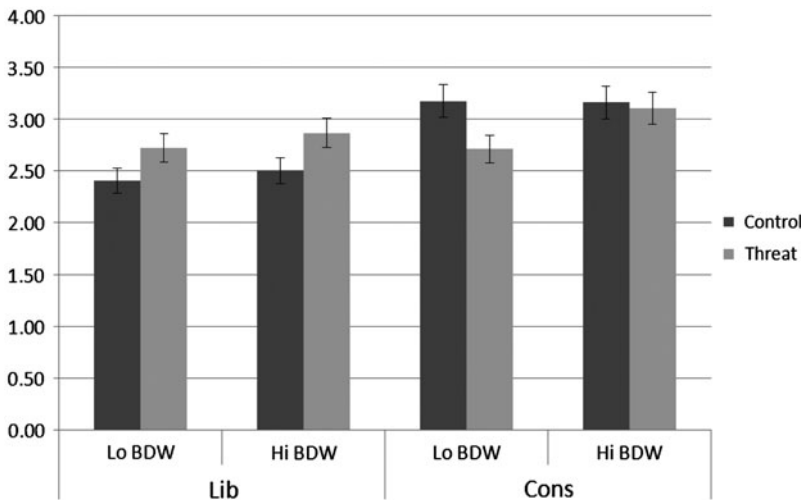


Figure 4. Difference in Binding Foundation Activation for low and high BDW

political orientation. Indeed, in the control condition, we found no direct relationship between dispositional threat-sensitivity and binding foundation activation ($B = .09$, *ns*). Instead, dispositional threat-sensitivity was related to participants' political (social) orientation ($B = .49$, $p = .031$), which was, in turn, related to their binding foundation activation ($B = 1.7$, $p < .001$). It was only in the presence of heightened threat-salience that participants' political orientation dropped out as a predictor (of either threat-sensitivity, $B = .14$, *ns*, or binding foundation activation, $B = .18$, *ns*) and a relationship between dispositional threat-sensitivity and binding foundation activation emerged ($B = .35$, $p = .012$).

Discussion

Consistent with our hypothesis, when put in a heightened threat-salience situation, liberals' (especially those already higher in dispositional threat-sensitivity) emphasis of the binding foundations in their moral judgments increased. That is, their morality became more conservative when primed with a threat-salient situation (i.e. 9/11). Conservatives, on the other hand, showed no change.

When separated out into *sub-types* of political orientation—economic versus social—we discovered that shifts in people's orientation with respect to economic policy were related to differences in the individualizing foundations, with economic liberals placing more emphasis on issues of harm/fairness than economic conservatives. Differences in people's orientation with respect to social policy, on the other hand, were related primarily to differences in the binding foundations—that is, considerations of in-group, authority and purity mattered less for social liberals than they did for social conservatives. People's general political orientation (not surprisingly, as it represents an implicit combination of the two) was related to differences in both.

Given the different relationships of each of the orientation sub-types to the moral foundations, it is not surprising that thoughts of 9/11 (of one's country being attacked by hostile 'outsiders') had its most powerful effect on social liberals, heightening their sensitivity to issues of authority, in-group and purity and generating greater binding foundation activation in their moral judgments.

Why do we see this shift in binding foundation activation in liberals and not conservatives? Our hypothesis was that this is best explained by a relationship between threat-sensitivity and political orientation—namely that, (1) as Van Leeuwen and Park (2009) found, people high in dispositional threat-sensitivity have stronger binding foundation activation, which in turn leads to the adoption of a more conservative political orientation; and (2) amplification of threat-sensitivity at least momentarily enhances binding foundation activation, making liberals look more like conservatives.

What we found, however, was something slightly different—namely, we found that under normal (control) conditions, participants dispositional threat-sensitivity and their binding foundation activation are related to their political orientation *separately*. That is, conservatives were both more dispositionally threat-sensitive

and had higher levels of binding foundation activation than liberals, but not because the one generated the other (at least not directly). It was not until put in a situation of heightened threat-salience that people's dispositional threat-sensitivity and their binding foundation activation became linked. In the threat condition, people's dispositional threat-sensitivity (and *not* their political orientation) became predictive of what effect heightened situational threat-salience had on their binding foundation activation—the more dispositionally threat-sensitive people experienced greater binding foundation activation than those that were less threat-sensitive, regardless of political orientation.

While binding foundation activation in liberals increased across the board in the threat condition, those with higher dispositional threat sensitivity displayed a slightly greater increase, so that the liberals who were higher in dispositional threat sensitivity displayed greater binding foundation activation than those who were lower. Interestingly, the same was true for the conservatives—even though their binding foundation activation did *not* increase in the threat condition, nonetheless the conservatives who were higher in dispositional threat sensitivity displayed greater binding foundation activation than those who were lower (see Figure 4).

In summary, the results of this study support the hypothesis that the binding foundations become more strongly activated in a threat-salient situation and that the strength of this activation is influenced, in part, by how dispositionally inclined people already are to perceive the world as threatening.

Further thoughts

Though there is much more work yet to be done, these findings (alongside Wright & Baril, 2011 and others)⁴ hint at an alternative way of thinking about the moral foundations—one that has the potential to reduce the distance between the neo-Kohlbergian (Killen & Smentana, 2006; Kohlberg, 1994; Lapsley, 1996; Turiel, 1983) and the MFT (Graham et al., 2009, 2011) theoretical positions. While both approaches recognize issues of harm and fairness—concern for the care, welfare, protection and fair treatment of others—as being key ingredients in our moral cognition, they disagree about the moral status of the binding foundations. We want to suggest that perhaps the binding foundations are best understood, not as distinct *forms* of moral concern (separate from harm/fairness), but rather as indicators of the appropriate *boundaries* of that concern.

In other words, our position is that the binding foundations' function is the enforcement and protection of socio-moral structures (i.e. social traditions, hierarchies, rituals, institutions, etc.) from internal and foreign 'threats'—i.e. agents/events that might damage, contaminate or corrupt the system—as well as the conservation of our moral resources. Thus, while harm and fairness represent the 'core' of our moral concern,⁵ the binding foundations represent the socio-moral framework from within which those core concerns are generated, evaluated and expressed.

Consider: to whom should we extend our moral concern? And which behaviors, practices and values count as *appropriate* expressions of that concern? These questions cannot be answered without taking into consideration the framework (generated, in part, by the binding foundations) from within which these questions are being asked.⁶ And our suggestion is that people's answers to these questions may *change* as a function of changes in their binding foundation activation.

Importantly, one of the implications of this is that in communities and situations where threat-salience (and, relatedly, binding foundation activation) is lower, there may be an increased opportunity for 'moral expansion'—for our circle of moral concern to become more inclusive, encompassing previous 'enemies', 'aliens' or 'unknown' others. Group boundaries could become more transparent, the socio-cultural structures generated by hierarchy and ritual, more flexible—and our moral norms, more receptive to change. At times of high threat-salience, on the other hand, our circle of moral concern is likely to contract, elevating the importance of group boundaries (and group membership), reinforcing existing structures of authority—and the importance of our obedience to them—and protecting/conserving our moral resources for 'our own' (Nesdale, Durkin, Maass, & Griffiths, 2005; Rutland, Killen, & Abrams, 2010).

In closing, we think it is important to recognize that both of these scenarios can be legitimate responses to an ever changing world. There are times when expansion and revision is certainly appropriate—but, there are others when an individual's (and a society's) wellbeing requires the reinforcement and defense of existing moral boundaries, even a retraction of our individual and collective scope of moral concern. And it is the determining of when the former is appropriate, and when the latter, that lies at the heart of much of our current (and historical) sociopolitical debate.

There are many (e.g. liberals) who, being less threat-sensitive, tend to more frequently (though not always) push for the former, while others (e.g. conservatives) tend to more frequently (though not always) stand in defense of the latter (Jost et al., 2004, 2008). And we would argue that the tension generated by this difference can be productive; that one important aspect of a healthy functioning society is the maintaining of a balance between these two impulses (the one, to expand and change, to break down socio-moral boundaries; the other, to contract or maintain the status quo, to reinforce social-moral boundaries). The upshot of this is that, contrary to what many seem to currently believe, both liberals and conservatives occupy legitimate positions in the socio-moral spectrum—but only insofar as *both* coexist as end points along a continuum. Both have a vital (and mutually constructive) role to play.

Another way of thinking about this is that the different types of moral foundations have different functions that are mutually protective and reinforcing. In other words, while (according to our view) the role of the binding foundations is to provide the necessary structure for the expressions of our moral concern—generated by our sensitivity to issues of harm and fairness—at the same time, that core of moral concern stands as a protection against abuses of that structure. Our social

traditions, hierarchies, rituals and institutions are legitimate only insofar as they *genuinely* protect/reinforce/channel the expression of our moral concern. The moment they begin to interfere with, undermine or warp our attempts to minimize harm, to express compassion, to insure justice—or themselves begin to do more harm than good; to create or facilitate injustice—they lose their legitimacy.

Thus, to recognize the moral significance of the binding foundations is not necessarily to automatically legitimize any *particular* set of socio-moral structures, or to reduce moral cognition to a ‘conventional’ (DIT; Rest, 1993) level of reasoning. The underlying motivation for our moral judgments can remain a sensitivity to issues of harm/fairness, not a desire to ‘maintain law/order’.⁷ Rather, it is to acknowledge the fact that our moral judgments do not occur within a vacuum of abstraction, but rather within a living, breathing, fleshy world—a world whose socio-moral structures have legitimate bearing on our expressions of moral concern.

Notes

1. Haidt (2012) now proposes six moral foundations, three ‘individualizing’ and three ‘binding’ (the sixth being *liberty/oppression*), but these data were collected before that change was made, so we have measured only the original five.
2. This technique is the equivalent of a multiple regression with interaction terms. Using a mixed-factor ANCOVA allowed us to simultaneously examine the effect of the condition on the individualizing and binding foundations, as well as the within subjects difference between the two (see discussion by DeCoster & Claypool, 2004).
3. A repeated measures ANOVA conducted with all five of the individual foundations (instead of the individualizing and binding foundation averages) revealed that the effects of the threat condition were present for all three of the binding ($B_s = -.20-.28$, $p_s = .011-.006$) but neither of the individualizing ($B_s = -.01-.07$, ns) foundations.
4. We take the research conducted with criminal offenders displaying psychopathic tendencies as further evidence that the individualizing and binding foundations function differently. Glenn, Iyer, Graham, Koleva, and Haidt (2009) found that self-reported psychopathy scores were strongly related to lower endorsement of the individualizing foundations, while only weakly related to scores on the binding foundations. Controlling for impression management, Aharoni, Antonenko, and Kiehl (2011) likewise found that the greater criminal offenders’ level of psychopathic symptoms, the less importance they placed on the individualizing foundations—whereas their scores on the binding foundations remained stable. In short, individuals whose sensitivity to issues of harm/fairness has been damaged still display binding foundation activation, suggesting different functions.
5. By ‘core’ we do not mean to imply that the binding foundations are *derived* from the individualizing foundations—rather that they serve to modulate, inform, structure at times, and restrict them. While this part of the discussion is certainly, to a large degree, theoretically driven, we nonetheless think our reference to the individualizing foundations as ‘core’ is also empirically justified, given that they seem relatively impervious to experimental manipulation, not just here but in other studies (e.g. Wright & Baril, 2011) as well. They are both more stable and more universally embraced/expressed. This seems justification enough to label them ‘core’.
6. Recent work on the development of prejudice (e.g. Rutland et al., 2010) suggests that even children must learn to negotiate between considerations of harm/fairness and considerations of group membership and social status when determining whom they should express

concern for and when, as well as what counts as an appropriate treatment of others. Sometimes differences in group membership and social status legitimize differential treatment; sometimes not.

7. This said, elsewhere (Baril & Wright, 2012) we have found a stable positive correlation between binding foundation activation and conventional (most strongly, Stage 4) moral reasoning.

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