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FlashReport

The role of cognitive resources in determining our moral intuitions: Are we all liberals at heart?☆

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ABSTRACT

Recent research provides evidence that one important difference between liberals and conservatives is their basic moral intuitions. These studies suggest that while liberals and conservatives respond similarly to considerations of harm/care and fairness (what Graham and Haidt call the "individualizing" foundations), conservatives also respond strongly to considerations of in-group, authority, and purity (the "binding" foundations) while liberals do not. Our study examined two alternative hypotheses for this difference—the first being that liberals cognitively *override*, and the alternative being that conservatives cognitively *enhance*, their binding foundation intuitions. Using self-regulation depletion and cognitive load tasks to compromise people's ability to monitor and regulate their automatic moral responses, we found support for the latter hypothesis—when cognitive resources were depleted/distracted, conservatives became more like liberals (de-prioritizing the binding foundations), rather than the other way around. This provides support for the view that conservatism is a form of motivated social cognition.

Introduction

Moral Foundations Theory (Graham, Haidt, & Nosek, 2009; Graham et al., 2011; Haidt, 2008; Haidt & Graham, 2007; Joseph, Graham, & Haidt, 2009) proposes that humans come equipped with certain moral "foundations", a set of "innate but modifiable mechanisms" (Graham et al., 2009, p. 1030) that trigger automatic, emotionally-laden moral responses ("intuitions") to a range of features within our physical/psychological/social environment.

Consistent with other theoretical perspectives (Kohlberg, 1969; Turiel, 1983) two of MFT's foundations involve "harm/care" and "fairness/reciprocity" (referred to as the "individualizing" foundations), generating responses of disapprobation to instances of unjustified harm to and/or unfair treatment of others. But MFT argues that our innate moral architecture goes beyond these concerns, identifying three additional foundations (referred to as the "binding" foundations because of their orientation toward group/community structure): "in-group/loyalty", "authority/respect", and "purity/sanctity" (cf. Shweder, Much, Mahapatra, & Park, 1997).

According to MFT, though we all possess the same basic moral foundations, we don't necessarily respond to the same situations in the same way or to the same degree. Because the foundations are innate but modifiable, there is room for parental, cultural, and even temperamental influence (Haidt & Graham, 2007; Shweder et al., 1997). Take, for example, the difference in moral foundation responses displayed by liberals and conservatives (Graham et al., 2009, 2011; Haidt & Graham, 2007; Joseph et al., 2009). Graham et al. (2009) found that while liberals and conservatives were similarly responsive to considerations of harm and fairness, conservatives responded much more strongly to the binding foundations than did liberals. Specifically, liberals viewed the binding foundations as less relevant to their moral judgments, agreed with binding foundation considerations less, were more willing to engage in binding foundation transgressions (e.g., burning their country's flag), and used binding foundation language less in their religious sermons than conservatives, than did conservatives.

Proponents of MFT (Haidt & Kesebir, 2010) argue that this difference between liberals and conservatives is a byproduct of the "great narrowing"—a historical process through which Enlightenment philosophers narrowed the focus of morality down almost exclusively to considerations of harm and fairness—which has resulted in a comparable narrowing of the liberal moral repertoire. Liberals, in this view, still have their binding foundation intuitions, but override them, leading Joseph et al. (2009, pp. 174–175) to suggest that "…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. Under cognitive load, liberals withheld free medical care for AIDS patients

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they would have otherwise helped, behaving like their conservative counterparts (Skitka, Mullen, Griffin, Hutchinson, & Chamberlain, 2002, Study 5). However, this study did not test people's moral foundations directly, and they were only able to find the effect for patients described as highly at fault personally. Therefore, we agree that "studies using implicit measurement methods [to examine people's moral foundation intuitions] will be essential for understanding the ways in which liberals and conservatives make moral judgments" (Graham et al., 2009, p. 1041).

This becomes especially important when we consider that there is an alternative explanation for the liberal/conservative difference. Consistent with Jost, Glaser, Kruglanski, and Sulloway's (2003) theory of political conservatism as "motivated social cognition"—the view that there are social-psychological motives driving people's adoption of a conservative belief-system—it may be that rather than liberals unconsciously overriding their automatic binding foundation intuitions, conservatives are unconsciously *enhancing* them, increasing their value in order to satisfy certain epistemic/existential/psychological needs (see also Jost, Nosek, & Gosling, 2008).

Consistent with this hypothesis, conservatives have been shown to be less comfortable with system instability, more intolerant of ambiguity/uncertainty, more vulnerable to death anxiety, have a stronger fear of threat/loss, and display a stronger need for order/structure/closure than liberals (Jost et al., 2003, 2008). They also engage in higher levels of system-justification, have stronger desire to maintain status-quo (Jost et al., 2003, 2008) and perceive the world as a more dangerous place (Duckitt, Wagner, Du Plessis, & Birum, 2002). These are all arguably related to the binding foundations, which reinforce the importance of structure, boundaries, authority, tradition, and sanctity (Van Leeuwen & Park, 2009).

Situations that elevate threat and uncertainty have also been found to increase people's conservative responses: e.g., when threatened, liberals displayed elevated levels of in-group favoritism (Nail, McGregor, Drinkwater, Steele, & Thompson, 2009) and expressed more support for George W. Bush during his presidency (Landau et al., 2004), along with other conservative politicians and opinions (Cohen, Ogilvie, Solomon, Greenberg, & Pyszczynski, 2005; Jost, Fitzsimons, & Kay, 2004).

Current study

Do these differences between liberals and conservatives come about because of an unconscious cognitive *overriding* or an *enhancing* of our binding foundation intuitions? Since both of these alternatives would require cognitive (if not conscious) effort, techniques that deplete/limit cognitive resources should provide an answer, allowing us to get at people's underlying automatic moral responses (before they have been overridden/enhanced). Two such commonly employed techniques are self-regulation depletion (Muraven & Baumeister, 2000; Schmeichel, Vohs, & Baumeister, 2003) and cognitive load (Knowles & Condon, 1999; Skitka et al., 2002), both of which have been used to get "beneath" effortful processing to expose people's more automatic responses to stimuli.

With self-regulation depletion, people are asked to engage in activities that require a high degree of self-regulation resources (e.g., "suppress any thoughts about white bears"), thereby temporarily depleting them. Once depleted, it becomes difficult for people to continue to monitor and regulate their automatic responses in whatever task of interest immediately follows, allowing those automatic responses to "slip through". Cognitive load tasks have also been shown to result in self-regulation failure, though for a different reason—rather than depleting self-regulation resources, they split them between competing cognitive activities (e.g., the task of interest and a distractor; Ferrari, 2001). When people's attentional resources are so divided, it becomes difficult for them to monitor and regulate their automatic responses, once again allowing them to slip through.

These techniques (among others) have been used to study a wide range of phenomena—stereotypes/social processing, self-perception, motivated reasoning, and other decision making processes (Fischer, Greitemeyer, & Frey, 2008; Skitka et al., 2002), as well as eating behaviors (Ward & Mann, 2000) and procrastination (Ferrari, 2001). In the study reported below, we employed them both to investigate the nature of people's moral responses when their ability to effortfully monitor/regulate those responses has been compromised.

Methods

Participants

Two-hundred and six undergraduate students from the College of Charleston (22% male, 83% Caucasian, 12% African-American, 4% Asian-American, 1% Latin-American) participated in this study for class research credit. 19 participants were disqualified: 2 for incomplete data and 17 for failing "manipulation checks" (described below). Analyses below were run on the remaining 187 participants.

Surveys

All participants completed an online version of the Moral Foundations Questionnaire (MFQ) developed by Graham et al. (2009) and available at www.moralfoundations.org. The questionnaire is composed of two subscales, the first asking questions of "moral relevance" and the second asking questions of "moral agreement". The original survey included one manipulation check question in each subscale ("Whether or not someone is good at math"; "It is better to do good than bad"). Given the distracting nature of our experimental conditions, we embedded two additional questions for this purpose (one in each subscale): "Whether or not someone is left handed" and "Color preferences (e.g., liking red vs. blue) are good predictors of moral values". Participants who incorrectly answered two (1 per subscale) or more of the four were removed from further analysis.

In addition, all participants provided demographics, including three political orientation questions (general, economic, and social; 1 = strongly liberal to 7 = strongly conservative) that have been used in previous research (Choma & Hafer, 2009).

Study conditions

All participants were assigned to one of three MFQ conditions.

Control

Participants assigned to this condition were asked to write for six minutes about an imaginary visit to the zoo. Immediately upon finishing this exercise, they filled out the MFQ online.

Self-regulation depletion (SRD)

Using the classic white bear paradigm (Wegner, Schneider, Carter, & White, 1987), participants assigned to this condition were given the same exercise as above with the additional instructions that during this exercise they were *not* to think about white bears and, if at any point they found themselves doing so, they were to suppress these thoughts and continue writing about their visit to the zoo. Immediately upon finishing this exercise, they filled out the MFQ online.

Cognitive load (CL)

Similar to the procedure used by Knowles and Condon (1999; see also Skitka et al., 2002), participants assigned to this condition were asked to fill out the MFQ online while at the same time counting the

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Table 1
Regressions for moral foundations for each condition.

			Unstand coef				
			B	SE	Beta	t	Sig.
Fairness	Cog load	(Constant)	3.91	0.24		16.50	0.000
		Pol gen + econ	−0.08	0.05	−0.19	−1.50	0.138
	Self-reg depl	(Constant)	3.60	0.28		12.69	0.000
		Pol gen + econ	−0.03	0.06	−0.07	−0.54	0.588
	Control	(Constant)	3.41	0.24		14.43	0.000
		Pol gen + econ	0.02	0.05	0.05	0.39	0.701
Harm	Cog load	(Constant)	3.57	0.31		11.43	0.000
		Pol gen + econ	0.02	0.07	0.03	0.27	0.791
	Self-reg depl	(Constant)	3.70	0.32		11.60	0.000
		Pol gen + econ	−0.03	0.07	−0.06	−0.43	0.669
	Control	(Constant)	3.59	0.25		14.63	0.000
		Pol gen + econ	0.01	0.05	0.03	0.20	0.840
Authority	Cog load	(Constant)	2.62	0.29		9.09	0.000
		Pol gen + econ	0.10	0.07	0.19	1.48	0.143
	Self-reg depl	(Constant)	3.03	0.31		9.81	0.000
		Pol gen + econ	0.02	0.07	0.04	0.33	0.741
	Control	(Constant)	2.51	0.27		9.20	0.000
		Pol gen + econ	0.16	0.06	0.32	2.66	0.010
In-group	Cog load	(Constant)	2.77	0.27		10.06	0.000
		Pol gen + econ	0.06	0.06	0.13	1.02	0.313
	Self-reg depl	(Constant)	2.87	0.37		7.84	0.000
		Pol gen + econ	0.04	0.08	0.07	0.54	0.590
	Control	(Constant)	2.43	0.26		9.35	0.000
		Pol gen + econ	0.15	0.06	0.32	2.64	0.010
Purity	Cog load	(Constant)	2.58	0.35		7.45	0.000
		Pol gen + econ	0.01	0.08	0.02	0.14	0.890
	Self-reg depl	(Constant)	2.41	0.41		5.82	0.000
		Pol gen + econ	0.05	0.09	0.07	0.51	0.615
	Control	(Constant)	1.73	0.32		5.46	0.000
		Pol gen + econ	0.23	0.07	0.39	3.36	0.001

number of high-pitch tones (ignoring the low-pitch tones) playing on an online metronome, the ratio of high to low pitch-tones being altered so as not to generate an easily-detectable pattern. At the end of each MFQ subscale, participants were asked to report how many high-pitch tones they had counted. This served as another manipulation check—participants whose count was more than 50% higher/lower than the actual count were removed from further analysis.

Upon completing the MFQ condition, participants provided their demographics online.

Results

Though in Graham et al. (2009) the relevance/agreement subscales were reported separately, elsewhere (Graham et al., 2011; Van Leeuwen & Park, 2009) they are reported as one scale and the Cronbach alphas for each foundation were better for the total scale than for the subscales separately,[1] so the results below involve the total scale. We also ran a reliability analysis for the three political orientation scales (general/economic/social), which was highest ($\alpha = 0.88$) for only general/economic, therefore we averaged the two together to create a composite scale of political orientation used in the analyses below.

Foundation responses for each condition

We first considered the control condition separately from the experimental conditions in order to determine whether our participants showed the same distribution of moral foundation responses as was found in Graham et al.'s (2009) national sample. And indeed, regression equations for each of the foundations showed that political orientation predicted participants' response to the binding (authority/in-group/purity) foundations, but not the individualizing (harm/fairness) foundations. Specifically, the more liberal participants were, the lower the ratings they gave for the binding foundations (see Table 1 for the regression equations, also Fig. 1).[2]

In both experimental conditions, this difference disappeared. Political orientation was no longer predictive of participants' responses for any of the five foundations (Table 1; Figs. 2 and 3).

Effect of condition on individualizing vs. binding foundations

Following Van Leeuwen and Park (2009), we collapsed harm/fairness into one "individualizing" foundation scale ($\alpha = 0.66$) and authority/in-group/purity into one "binding" foundation scale ($\alpha = 0.72$). Since there were no significant differences in participants' responses between the two experimental groups to either the individualizing or binding foundations ($Bs < 0.1$, *ns*), we also created a dichotomous condition variable that collapsed across them (0 = control, 1 = experimental). Finally, we created an interaction variable by multiplying political orientation and condition. We then regressed condition, political orientation, and the interaction variable onto the individualizing foundation and the binding foundation scales.

There were neither predictive main effects nor an interaction for the individualizing foundations ($Bs < 0.2$, *ns*), but for the binding foundations we found a significant main effect for political orientation ($B = 0.32$, $p = 0.004$), along with a marginal effect for condition ($B = 0.49$, $p = 0.097$), and a significant interaction between the two ($B = -0.13$, $p = 0.039$). Liberals and conservatives responded to the individualizing foundations similarly between the control and experimental conditions, while conservatives' (but not liberals') responses to the binding foundations changed—they gave them

[1] Cronbach alphas for Relevance/Agreement/Both: authority = 0.62/0.60/0.70, fairness = 0.62/0.49/0.67, harm = 0.65/0.38/0.68, in-group = 0.57/0.54/0.64, and purity = 0.44/0.55/0.70.

[2] Though differences exist between our results and Graham et al.'s (2009), our control group looks identical to other College of Charleston students (data collected by the 2nd author, Baril et al., in preparation).

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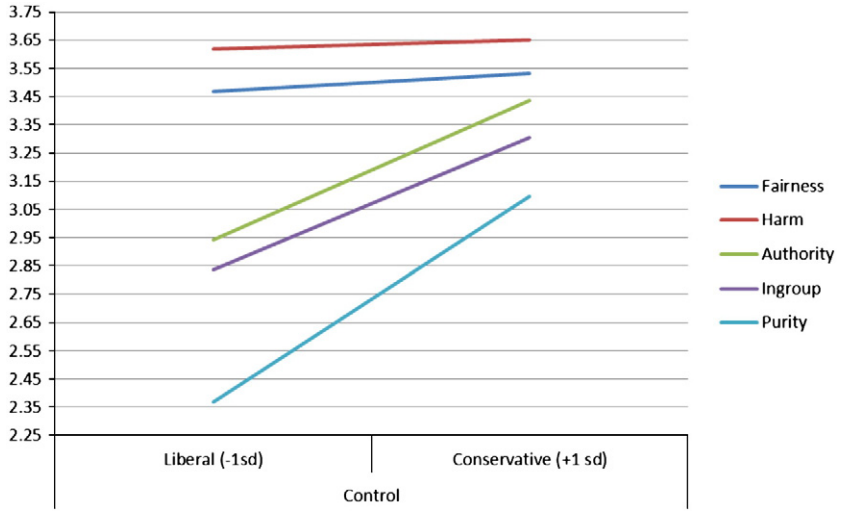

Fig. 1. Differences between liberal and conservative moral foundations in the control condition.

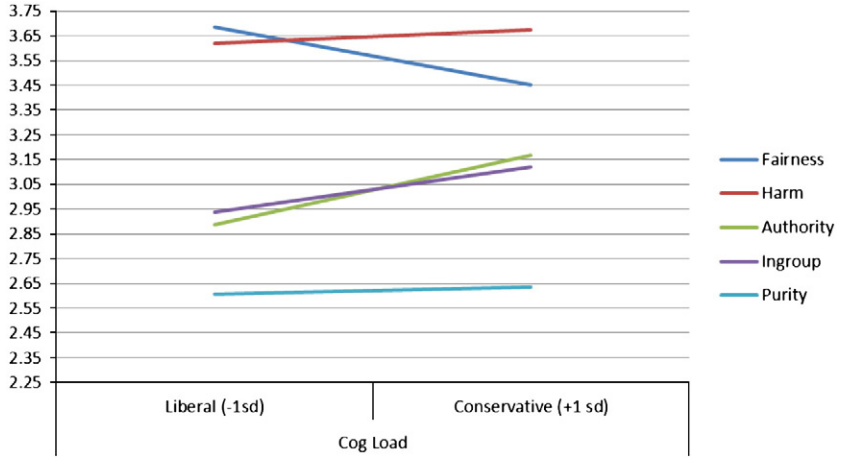

Fig. 2. Differences between liberal and conservative moral foundations in the cognitive load condition.

significantly lower ratings in the experimental condition than the control condition (Fig. 4).

In order to further explore the effect of the experimental condition on conservatives' binding foundation intuitions, political orientation was divided into three groups: liberals (1–3.99 $n = 60$), moderates (4–4.99, $n = 52$), and conservatives (5–7, $n = 72$). There was a significant difference between the control and the experimental conditions for only *one* of these groups: the conservative group ($B = -0.302$, $p = 0.05$)

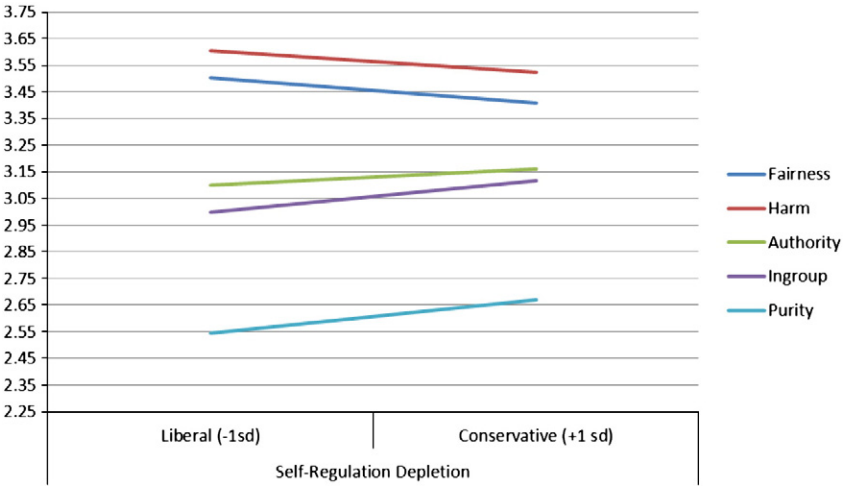

Fig. 3. Differences between liberal and conservative moral foundations in the high-regulation condition.

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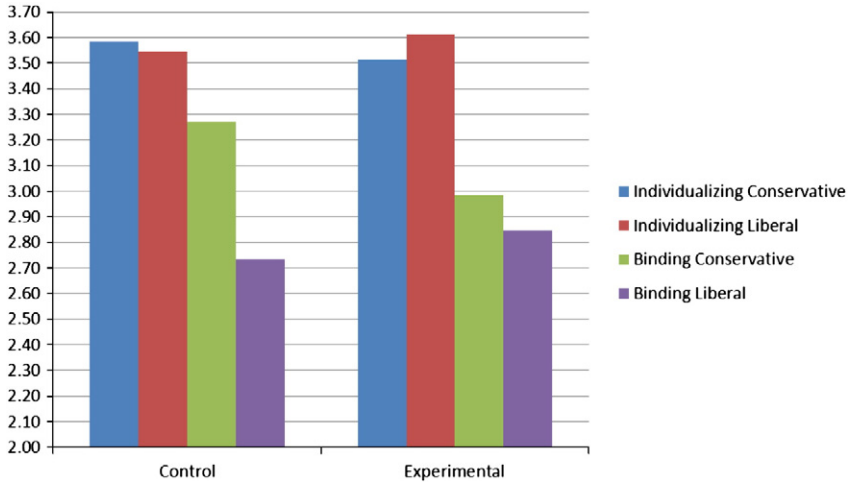

Fig. 4. Change in responses to moral foundations across the conditions.

rated the binding foundations as more important in the control condition ($M = 3.3$, $SD = 0.55$) than in the experimental condition ($M = 2.9$, $SD = 0.71$, Fig. 5).

Subtracting participants' responses to the binding foundations from their responses to the individualizing foundations generated a difference variable (Van Leeuwen & Park, 2009). Independent-sample t-tests revealed that only conservatives showed a significant change between the control and the experimental conditions, showing a greater difference between the individualizing and binding foundations in the experimental condition ($M = 0.6$, $SE = 0.10$) than in the control condition ($M = 0.3$, $SE = 0.09$), $t(71) = 1.8$, $p = 0.06$. Liberals, on the other hand, showed no change (experimental: $M = 0.8$, $SE = 0.10$; control: $M = 0.9$, $SE = 0.16$), $t(59) = 0.4$, *ns*.

Discussion

Previous research on moral intuitions (Graham et al., 2009, 2011; Haidt, 2007; Haidt & Graham, 2007; Joseph et al., 2009) has revealed that while both liberals and conservatives value the individualizing foundations, conservatives also value—while liberals discount—the binding foundations. Our control group displayed this same pattern of responses (Fig. 1).

This study examined two alternative hypotheses for this difference—the first that liberals unconsciously override and, the second, that conservatives unconsciously enhance, their binding foundation responses. We employed self-regulation depletion and cognitive load tasks, both of which have been shown to compromise people's ability to effortfully monitor and regulate automatic responses. In particular, we were interested in determining whether, when the ability to monitor/regulate their automatic moral responses was compromised (either by exhausting their cognitive resources or by distracting them), liberals would give more moral weight to the binding foundations or conservatives would give less. What we found was support for the latter: When cognitive resources were compromised, only the individualizing foundations (harm/fairness) were strongly responded to by participants, with the binding foundations (authority/in-group/purity) being de-prioritized by both liberals and conservatives. In short, contrary to Joseph et al.'s (2009) contention that the "… automatic moral reactions of liberals could be similar to those of conservatives", we found that the automatic moral reactions of conservatives turned out to be more like those of liberals.

While only preliminary, these findings suggest that considerations of harm and fairness stand (as many have argued) at the core of human morality—for liberals and conservatives alike—and that rather than starting with an innate five-foundation moral "baseline", which liberals then narrow down ("demoralize") to two, we may start with a two-foundation moral baseline, which conservatives are then motivated to broaden ("moralize") from there.

Our supposition is that certain situational and dispositional variables (e.g., the existence and/or perception of threatening conditions) activate

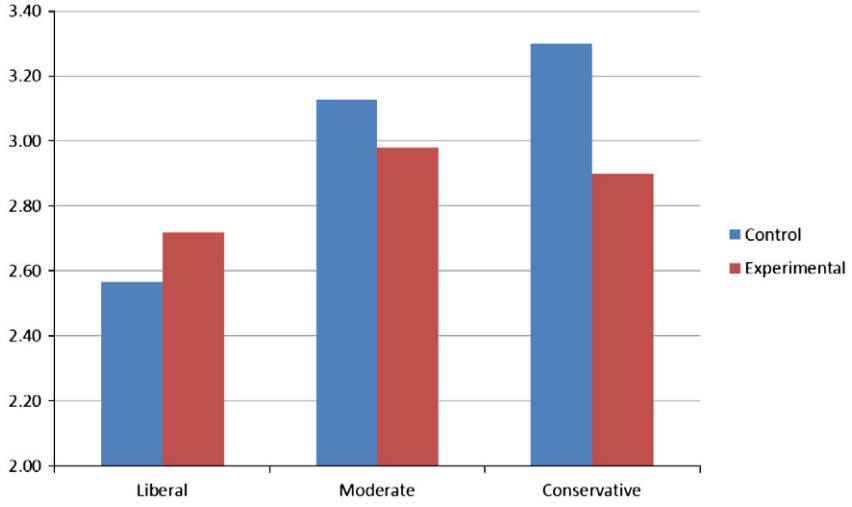

Fig. 5. Difference in binding foundations across the conditions for liberals, moderates, and conservatives.

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the binding foundations, which serve to constrain the scope of our moral considerations and reinforce the importance of existing social structure/boundaries. Because conservatives are dispositionally more "threat-sensitive" (Jost et al., 2003), the binding foundations are more likely to be active in their everyday experiences. But even liberals display a higher degree of binding activation when placed in threatening situations (Nail et al., 2009). What our data suggests is that this threat-sensitivity may not be automatic, but a matter of "motivated" cognitive (albeit unconscious) interpretation—and when the cognitive resources required for this interpretation are compromised, the binding foundations become less important, even for conservatives.

In closing, perhaps the relationship of the individualizing to the binding foundations is best conceptualized as "expansive" vs. "constraining". When activation of the binding foundations is minimal, our moral concern for fair treatment and welfare expands outward, beyond the boundaries of in-group members and existing social/political structures, and we are able to question the sanctity of existing traditions and rituals. When, on the other hand, the binding foundations are activated (as in times of real/perceived threat), they serve to delimit moral concern, conserve moral resources, and reinforce moral boundaries (created by traditions, rituals, hierarchies, and structures). While Haidt and Kesebir (2010; see also Joseph et al., 2009) argue that conservatives possess a more highly "complex" morality and liberals a narrower, more "simplified" one, our data suggest an alternative interpretation: namely, that liberals possess a more "expansive" moral orientation, and conservatives a more "constraining" one.

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