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# The Moral Ties That Bind . . . Even to Out-Groups: The Interactive Effect of Moral Identity and the Binding Moral Foundations

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## Abstract

Throughout history, principles such as obedience, loyalty, and purity have been instrumental in binding people together and helping them thrive as groups, tribes, and nations. However, these same principles have also led to in-group favoritism, war, and even genocide. Does adhering to the binding moral foundations that underlie such principles unavoidably lead to the derogation of out-group members? We demonstrated that for people with a strong moral identity, the answer is “no,” because they are more likely than those with a weak moral identity to extend moral concern to people belonging to a perceived out-group. Across three studies, strongly endorsing the binding moral foundations indeed predicted support for the torture of out-group members (Studies 1a and 1b) and withholding of necessary help from out-group members (Study 2), but this relationship was attenuated among participants who also had a strong moral identity.

## Keywords

moral identity, moral-foundations theory, binding foundations, circle of moral regard

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Exposing the dark side of principles that many people regard as moral has a rich tradition in psychological research. Perhaps most famously, Milgram (1963) showed how obedience to authority could lead people to inflict ostensibly lethal harm on complete strangers. The vast literature on intergroup conflict has further documented how favoring one’s in-group, which is often expressed positively through principles of loyalty and patriotism, can lead to prejudice, out-group derogation, and even genocide (Allport, 1954; Brewer, 2007; Dovidio & Gaertner, 2010; Hewstone, Ruben, & Willis, 2002; McFarland, 2005). Recent studies have shown that notions of purity are linked to the stigmatization of and discrimination against various groups (e.g., Hodson et al., 2012; Inbar, Pizarro, & Bloom, 2012).

Despite the negative consequences often found to accompany strong commitments to principles such as

obedience, loyalty, and purity, some scholars argue that adhering to them also has functional value for human beings. Specifically, the value of these principles resides in uniting individuals into collectives that allow families, communities, and, ultimately, societies to thrive (e.g., Graham & Haidt, 2010; see also Norenzayan & Gervais, 2012; Norenzayan & Shariff, 2008). These two portrayals of what Graham, Haidt, and Nosek (2009) referred to as the “binding” moral foundations raise the question of whether, despite their functional benefits, a willingness to harm or devalue out-group members is an unavoidable

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side effect of incorporating the binding foundations into one's moral system.

Drawing on both moral foundations theory (MFT; Graham et al., 2013) and identity-based theories of moral cognition (e.g., Aquino & Reed, 2002), we maintain that the answer is "no." We tested this claim by examining whether having a strong moral identity could mitigate the potentially harmful effects that sometimes result when people strongly commit to the moral principles underlying the binding foundations.

## Moral Foundations Theory and the Binding Foundations

MFT posits that there are five<sup>1</sup> psychological moral foundations on which most cultures—as well as individuals—build their systems of morality. We have already mentioned the three that constitute the binding foundations: loyalty/betrayal, authority/subversion, and purity/degradation. The remaining two are care/harm and fairness/cheating, the *individualizing foundations*, which focus on the provision and protection of individual rights (Graham et al., 2011; Haidt, 2008; Haidt & Graham, 2007; Haidt & Joseph, 2004).

A key difference between the two categories of foundations is that the binding foundations encompass a group- or collective-oriented view of morality (i.e., a morality concerned with keeping individual autonomy and self-expression in check for the good of one's family, clan, or country; Graham & Haidt, 2010). The loyalty/betrayal foundation calls for complete faithfulness to one's obligations regarding group membership, authority/subversion promotes the proper display of obedience and deference as they relate to hierarchical relationships, and purity/degradation is evoked to protect against physical and spiritual contamination and contagion (Haidt, Graham, & Joseph, 2009). Together, these foundations can allow individuals to prosper and thrive as collectives. Indeed, it has been suggested that the staying power of many of the world's largest religions can be attributed to their reliance on the binding foundations (Graham & Haidt, 2010).

As noted earlier, however, there is a potential dark side to the binding foundations, especially for outsiders who come into conflict with people who treat these foundations as paramount moral concerns. For example, although subscribing to the binding foundations might increase one's commitment to helping other people, such help may be restricted to in-group members. Moreover, strongly endorsing the binding foundations may lead people to justify harming out-group members if it benefits their in-group or if a leader commands them to do so. It is thus tempting to conclude that although the binding

foundations may help groups and societies flourish, they unavoidably produce the motivation and justification necessary for people to withhold help from and even directly harm out-group members. This conclusion, however, may oversimplify the role that the binding foundations play in motivating social behavior, because behavior is often influenced by multiple cognitive mechanisms and mental structures. We argue that people may sometimes apply the binding foundations to a set of people broader than their immediate in-group. Specifically, we propose that people with a strong moral identity are motivated to expand the ambit of their moral concern, even if they also have a commitment to the binding foundations.

## Moral Identity and Circle of Moral Regard

We adopt a social-cognitive conception of moral identity (Aquino, Freeman, Reed, Lim, & Felps, 2009; Aquino & Reed, 2002; Lapsley & Narvaez, 2004) as a schema of the moral self that is composed of an associated network of moral traits, scripts, and values. This schema-based view of moral identity has been shown to reliably predict a range of moral cognitions and behaviors (Hardy & Carlo, 2011; Shao, Aquino, & Freeman, 2008). An assumption of the social-cognitive perspective is that people whose moral identities are more accessible within the working self-concept are more likely to behave in a manner consistent with their conceptions of morality (Aquino & Reed, 2002; Detert, Treviño, & Sweitzer, 2008; Reed, Aquino, & Levy, 2007; Reynolds & Ceranic, 2007).

A number of moral-identity theorists have argued that people with a strong moral identity are characterized by a high level of concern and respect for the rights and welfare of others (e.g., Blasi, 1984; Hart, Atkins, & Ford, 1998; Moshman, 2011; Younis & Yates, 1999). According to Reed and Aquino (2003), such people are likely to experience a relatively expansive *circle of moral regard*. Paralleling such concepts as the scope of justice (Opatow, 1996) or the moral circle (Singer, 1981), the circle of moral regard refers to the psychological boundaries that people draw around all those people they deem worthy of moral consideration. Note that we do not equate a circle of moral regard with a person's in-group. Whereas in-group members are likely to fall within one's circle of moral regard, Reed and Aquino (2003) showed that people with a strong moral identity can believe that out-group members are similarly deserving of moral regard.

One might suspect intuitively that for people with a strong commitment to the binding foundations, having a strong moral identity would simply amplify the moral motivation to favor in-groups and derogate out-groups,

but we predicted the opposite. On the basis of the link between moral identity and the expansiveness of the circle of moral regard, we predicted that the out-group derogation often found among people who strongly endorse the binding moral foundations can be mitigated among people who have a strong moral identity. We tested this prediction in three studies.

## Studies 1a and 1b

Data for Studies 1a and 1b were collected online (between 2007 and 2013) from volunteers who participated by visiting YourMorals.org (see Graham et al., 2011), a Web-based research site where people can learn about various psychological constructs, complete questionnaires, and compare their results with the average scores of other site visitors. A total of 687 respondents completed all of the studies' key measures. For the purpose of conducting a primary study (Study 1a) and a conceptual replication (Study 1b), we randomly divided respondents into two samples and ensured that there was no overlap of respondents across samples.

Study 1a tested the moderating effect of moral identity on the relationship between reliance on the binding foundations and the condemnation of torture as a means of getting information from a suspected terrorist (Koleva, Graham, Iyer, Ditto, & Haidt, 2012). Terrorists pose a threat to the in-group, so we expected people with high binding-foundations scores to be less condemning of torture than people with low scores. However, we hypothesized that this relationship would be attenuated among people with a strong moral identity.

In Study 1b, we conducted a conceptual replication of Study 1a by performing similar analyses using an alternative measure of moral foundations.

### Study 1a method

Respondents were adults ( $N = 344$ ; 36% female, 64% male) with an average age of 36.11 ( $SD = 15.83$ ). They accessed the Web site from the United States (88.1%), Europe (4.9%), Canada (2.9%), Australia and New Zealand (1.2%), and other world regions (2.9%). Eighty-seven percent reported their race as White, and no other race was reported by more than 3% of respondents.

Condemnation of torture was measured by asking respondents to rate the extent to which they believed that the use of torture is justifiable as a technique for interrogating suspected terrorists. The rating scale ranged from 1 (*often justified*) to 4 (*never justified*). The extent to which respondents relied on the binding foundations was measured using the Moral Foundations Sacredness Scale (Graham & Haidt, 2012), which provides a separate score for each moral foundation based on the amount of

money it would take to get respondents to engage in hypothetical behaviors (e.g., "leave the social group, club, or team that you most value" or "sign a piece of paper that says, 'I hereby sell my soul, after my death, to whoever has this piece of paper'"). Respondents selected their required payment for each behavior on an 8-point scale: 1 = \$0 (*I'd do it for free*); 2 = \$10; 3 = \$100; 4 = \$1,000; 5 = \$10,000; 6 = \$100,000; 7 = \$1 million; and 8 = *never, for any amount of money*. Each of the five moral-foundation subscales includes four such payment decisions, for a total of 20 items. We followed Van Leeuwen and Park (2009) in taking the mean of the loyalty/betrayal, authority/subversion, and purity/degradation subscale scores to form an aggregate measure of reliance on the binding moral foundations. Likewise, the mean of the care/harm and fairness/cheating subscale scores was taken to form a measure of reliance on the individualizing moral foundations, to be used as a control variable. Our measure of moral identity was the five-item Internalization subscale of Aquino and Reed's (2002) moral-identity scale; ratings on this scale ranged from 1 (*strongly disagree*) to 7 (*strongly agree*).

Age, gender (male = 1, female = 0), and race (White = 1, not White = 0) were included as control variables, as was political orientation, which has been shown to strongly correlate with reliance on the various moral foundations (Graham et al., 2009; Van Leeuwen & Park, 2009; but see Frimer, Biesanz, Walker, & MacKinlay, 2013). We categorized respondents according to their self-identification as liberal ( $n = 197$ ), moderate ( $n = 24$ ), conservative ( $n = 47$ ), or libertarian ( $n = 76$ ), and a dummy variable was created for each political orientation; the liberal dummy was used as the reference group in all analyses.

### Study 1a results and discussion

Means and standard deviations for all study variables are listed in Table 1.<sup>2</sup> Hierarchical ordinary least squares (OLS) regression analysis was conducted to test whether moral identity and reliance on the binding foundations interacted to predict condemnation of torture (see Table 2). In Step 1, we regressed condemnation of torture on moral identity, reliance on the binding foundations, and the control variables (i.e., reliance on the individualizing foundations, age, gender, race, and political dummy variables). This model explained a significant proportion of the variance in condemnation of torture,  $R^2 = .26$ ,  $F(9, 334) = 13.03$ ,  $p < .001$ . As expected, reliance on the binding foundations negatively predicted condemnation of torture. In Step 2, we added the Moral Identity  $\times$  Binding Foundations interaction term to the model, which again accounted for a significant proportion of the variance in condemnation of torture,

**Table 1.** Means and Standard Deviations for Studies 1a and 1b

Variable	Study 1a ( <i>N</i> = 344)		Study 1b ( <i>N</i> = 343)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Condemnation of torture	3.17	0.82	3.19	.85
Binding foundations (MFSS)	5.33	1.29	—	—
Individualizing foundations (MFSS)	6.55	1.32	—	—
Binding foundations (MFQ)	—	—	1.85	0.87
Individualizing foundations (MFQ)	—	—	3.39	0.84
Moral identity	5.96	1.25	6.01	1.11
Age (years)	36.11	15.83	36.26	15.69
Male (male = 1, female = 0)	.64	.48	.62	.49
White (White = 1, not White = 0)	.87	.34	.86	.35
Liberal dummy	.57	.50	.57	.50
Moderate dummy	.07	.26	.11	.31
Conservative dummy	.14	.34	.11	.31
Libertarian dummy	.22	.42	.22	.41

Note: Reliance on the binding foundations and the individualizing foundations was measured with the Moral Foundations Sacredness Scale (MFSS; Graham & Haidt, 2012) or the Moral Foundations Questionnaire (MFQ; Graham et al., 2011).

$R^2 = .27$ ,  $F(10, 333) = 12.53$ ,  $p < .001$ . As predicted, the interaction term was statistically significant,  $b = 0.06$ ,  $p = .01$ ,  $f^2 = .02$ . Moreover, the Moral Identity  $\times$  Binding Foundations interaction term remained significant,  $b = 0.05$ ,  $p = .04$ ,  $f^2 = .01$ , when we ran the same model without any control variables. This model also explained a statistically significant proportion of variance in condemnation of torture,  $R^2 = .04$ ,  $F(3, 340) = 4.43$ ,  $p = .005$ .

We probed the nature of the interaction by analyzing simple slopes (Aiken & West, 1991), as depicted in Figure 1. The pattern of interaction revealed that among people with low moral-identity scores (i.e., 1 *SD* below the mean), high binding-foundations scores (i.e., 1 *SD* above the mean) were associated with less condemnation of torture compared with low binding-foundations scores

(1 *SD* below the mean),  $b = -0.16$ ,  $t(340) = -3.56$ ,  $p < .001$ . However, the negative effect of reliance on the binding foundations on condemnation of torture was attenuated among people with high moral-identity scores (i.e., 1 *SD* above the mean),  $b = -0.03$ ,  $t(340) = -0.66$ ,  $p = .51$ . These results support our prediction that having a strong moral identity can mitigate the effect of the binding foundations, which otherwise might allow people to justify the use of torture for the sake of protecting their in-group.

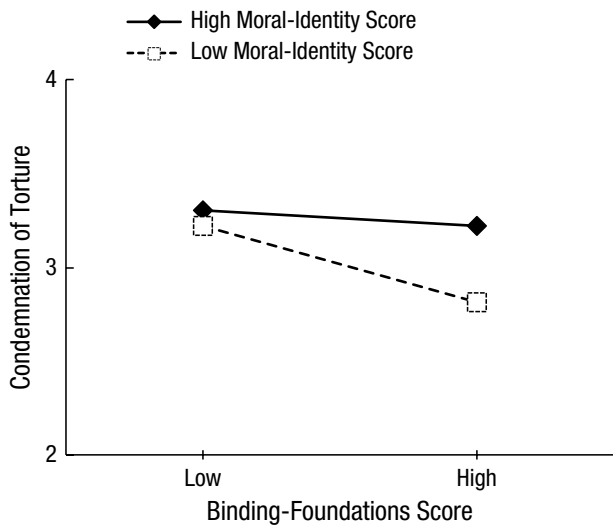
### Study 1b method

Respondents were adults ( $N = 343$ ; 38% female, 62% male) with an average age of 36.26 ( $SD = 15.69$ ). They

**Table 2.** Hierarchical Regression Analysis Predicting Condemnation of Torture in Study 1a

Variable	Step 1			Step 2		
	<i>b</i>	$\beta$	$t(332)$	<i>b</i>	$\beta$	$t(331)$
Moral identity	-0.07	-0.10	-1.78	-0.33	-0.50	-2.96**
Binding foundations	-0.17	-0.27	-4.04***	-0.50	-0.79	-3.62***
Individualizing foundations	0.23	0.38	5.21***	0.25	0.40	5.57***
Age	-0.00	-0.03	-0.62	-0.00	-0.04	-0.74
Male	-0.08	-0.05	-0.93	-0.06	-0.03	-0.67
White	0.11	0.04	0.90	0.08	0.03	0.72
Conservative dummy	-0.81	-0.34	-6.53***	-0.79	-0.33	-6.42***
Moderate dummy	-0.64	-0.20	-4.05***	-0.62	-0.19	-3.96***
Libertarian dummy	-0.24	-0.12	-2.26*	-0.23	-0.11	-2.16*
Moral Identity $\times$ Binding Foundations	—	—	—	0.06	0.74	2.50*

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .



**Fig. 1.** Results of the simple-slopes analysis in Study 1a. Estimated level of condemnation of torture is graphed as a function of reliance on the binding foundations and the strength of moral identity. High and low scores refer to scores 1 standard deviation above and below the mean, respectively, for each measure.

accessed the site from the United States (84%), Europe (7%), Canada (2.9%), Australia and New Zealand (1.7%), and other world regions (4.4%). Respondents reported their races as White (86%), Asian (5.6%), and Hispanic/Latino (5.5%); no other race was reported by more than 2% of respondents.

All study variables (i.e., condemnation of torture, moral identity, age, gender, race, and political orientation) were measured in exactly the same manner as in Study 1a, except that reliance on the moral foundations was measured using the Moral Foundations Questionnaire (MFQ; see Graham et al., 2011). The first part of the MFQ poses the following question: “When you decide whether something is right or wrong, to

what extent are the following considerations relevant to your thinking?” Respondents are asked to rate (1 = *not at all relevant*, 6 = *extremely relevant*) the moral relevance of 15 items (3 per moral foundation; e.g., “whether or not someone did something to betray his or her group”). The second part of the MFQ asks respondents to rate their level of agreement (1 = *strongly disagree*, 6 = *strongly agree*) with 15 additional items (3 per moral foundation) that reflect moral judgments (e.g., “people should be loyal to their family members, even when they have done something wrong”). Subscale scores were calculated as the combined average of responses to both parts of the MFQ. Again, we took the mean of the loyalty/betrayal, authority/subversion, and purity/degradation subscale scores to form an aggregate measure of reliance on the binding moral foundations and the mean of the care/harm and fairness/cheating subscale scores to form a measure of reliance on the individualizing moral foundations.

### Study 1b results and discussion

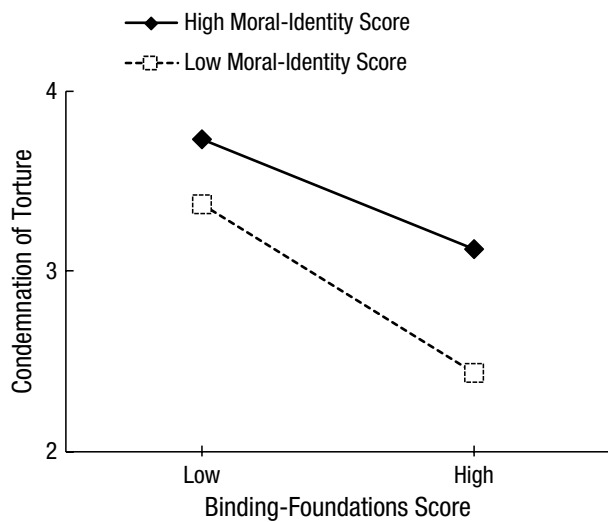
Means and standard deviations for all study variables are listed in Table 1. In Step 1 of a hierarchical OLS regression analysis, we regressed condemnation of torture on moral identity, reliance on the binding foundations, and the control variables (i.e., reliance on the individualizing foundations, age, gender, race, and political dummies). The resulting model was statistically significant,  $R^2 = .34$ ,  $F(9, 333) = 18.86$ ,  $p < .001$ . In Step 2, the interactive effect of moral identity and reliance on the binding foundations was added to the model, which was again significant,  $R^2 = .35$ ,  $F(10, 332) = 17.65$ ,  $p < .001$ . As predicted, the interaction term was statistically significant,  $b = 0.09$ ,  $p = .029$ ,  $f^2 = .01$  (see Table 3). When we ran the model without any control variables, it also accounted for a significant

**Table 3.** Results of Regression Analysis Predicting Condemnation of Torture in Study 1b

Variable	Step 1			Step 2		
	<i>b</i>	$\beta$	<i>t</i> (333)	<i>b</i>	$\beta$	<i>t</i> (332)
Moral identity	0.10	0.13	2.46*	-0.04	-0.05	-0.55
Binding foundations	-0.29	-0.29	-5.16***	-0.85	-0.88	-3.23**
Individualizing foundations	0.13	0.12	2.03*	0.12	0.12	2.00*
Age	0.01	0.13	2.80**	0.01	0.14	2.94**
Male	0.10	0.06	1.27	0.12	0.07	1.42
White	0.19	0.08	1.72	0.21	0.09	1.87
Conservative dummy	-0.70	-0.25	-4.10***	-0.68	-0.25	-4.04***
Moderate dummy	-0.31	-0.11	-2.25*	-0.29	-0.11	-2.11*
Libertarian dummy	-0.36	-0.17	-3.07**	-0.37	-0.18	-3.17**
Moral Identity $\times$ Binding Foundations	—	—	—	0.09	0.65	2.20*

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .





**Fig. 2.** Results of the simple-slopes analysis in Study 1b. Estimated level of condemnation of torture is graphed as a function of reliance on the binding foundations and the strength of moral identity. High and low scores refer to scores 1 standard deviation above and below the mean, respectively, for each measure.

amount of the variance in condemnation of torture,  $R^2 = .22$ ,  $F(3, 339) = 31.44$ ,  $p < .001$ . In this model, the Moral Identity  $\times$  Binding Foundations interaction term was marginally significant,  $b = 0.08$ ,  $p = .059$ ,  $f^2 = .01$ .

The simple-slopes analysis (Aiken & West, 1991), depicted in Figure 2, again revealed that among people with low moral-identity scores (i.e., 1  $SD$  below the mean), high binding-foundations scores (i.e., 1  $SD$  above the mean) were associated with less condemnation of torture compared with low binding-foundations scores (i.e., 1  $SD$  below the mean),  $b = -0.54$ ,  $t(339) = -7.23$ ,  $p < .001$ . This negative effect was attenuated among people with high moral-identity scores (i.e., 1  $SD$  above the mean),  $b = -0.35$ ,  $t(339) = -5.52$ ,  $p < .001$ . In Study 1b, therefore, we were successful in conceptually replicating the general pattern of results from Study 1a, although the attenuation effect of moral identity was not as strong.

## Study 2

To see if we could replicate these findings in an experimental setting, we conducted a third study. We suspected that the willingness to risk the welfare of in-group members to help out-groups might be greatly reduced when the psychological distance between participants and other in-group members was small (i.e., when the in-group was more personal than a vague conception of fellow citizens), so we tested whether the effects we found in Studies 1a and 1b generalized to such situations. In addition, we compared the effects of situational salience of moral identity and individual differences in the long-term accessibility of moral identity, as measured by Aquino and

Reed's (2002) Internalization subscale. The social-cognitive model of moral identity assumes that a person's moral identity can be both persistently accessible and also temporarily salient. Aquino et al. (2009, Study 4) showed that under certain conditions (e.g., when players in an economic game are behaving selfishly), the persistent accessibility of moral identity alone does not predict behavior in the absence of a moral prime. Accordingly, in the context of a decision involving a trade-off between helping out-group members and benefiting psychologically close in-group members, we predicted that even a strong moral identity would need a boost, via situational salience, in order to motivate helping the out-group. That is, we expected to find a three-way interaction in which the Binding Foundations  $\times$  Moral Identity interaction effect would be stronger when morality was made salient by some external cue.

## Method

Fifty-three<sup>3</sup> undergraduate students at a U.S. university (32% female, 68% male; mean age = 24.87) participated in this study for course credit. According to self-report, 17% of the participants were Asian, 4% were Black, 4% were Hispanic, 2% were Native American, 68% were White, and 5% were "other." Each participant was randomly assigned to an experimental condition (moral prime or control). In the moral-prime condition, participants were asked to write a story about themselves (under the guise of a handwriting task) using a list of words previously found to be fairly universally consistent with people's notions of morality (e.g., *fair*, *helpful*, *honest*). Participants in the control condition were asked to write a story about themselves using more neutral words (e.g., *pen*, *desk*, *book*).

After completing the writing task, all participants read a scenario in which they were asked to imagine themselves on a camping trip in the mountains with a few family members and friends. They become stranded after an avalanche, and they soon discover that another group of people (foreigners who speak a different language) is stranded as well. Each group has a young child, and children have greater risk of dying from dehydration, compared with adults, because of their smaller bodies. Both groups have run out of water. The participants' group luckily finds four full bottles of water, presumably left behind by previous campers. Should the water be shared with the foreigners? The lives of both children are potentially on the line: Sharing the water threatens the survival of the child in the participants' own group, and not sharing the water threatens the survival of the foreign child. After reading the instructions for imagining the scenario, participants answered several questions measuring their support for a group decision to share the water with the foreigners and then completed a questionnaire containing

**Table 4.** Means and Standard Deviations for Study 2 ( $N = 53$ )

Variable	<i>M</i>	<i>SD</i>
Support for sharing water	5.93	1.40
Binding foundations (MFSS)	6.48	1.13
Individualizing foundations (MFSS)	6.66	1.19
Moral identity	6.27	1.10
Age (years)	24.87	7.73
Male (male = 1, female = 0)	.68	.47
White (White = 1, not White = 0)	.68	.47
Political ideology	4.09	1.26

Note: Reliance on the binding foundations and the individualizing foundations was measured with the Moral Foundations Sacredness Scale (MFSS; Graham & Haidt, 2012).

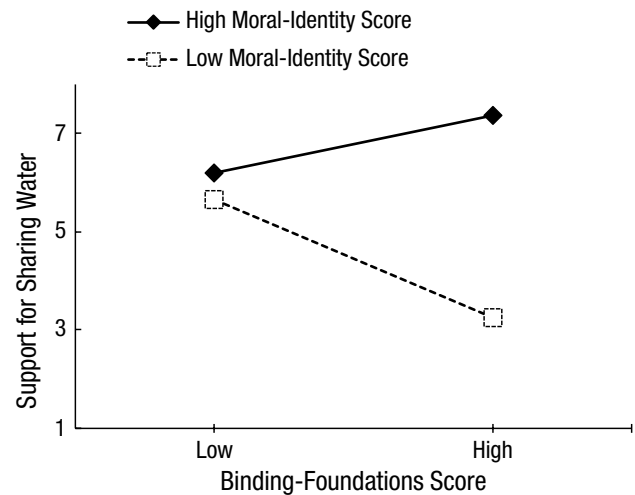
individual difference measures and basic demographic information.

A measure of participants' support for sharing the water was calculated by averaging responses to the following three items ( $\alpha = .95$ ): "How likely would you be to support your group's decision to share the water with the foreigners?" (1 = *very unlikely*, 7 = *very likely*), "How strongly would you be in favor of your group's decision to share the water with the foreigners?" (1 = *strongly against*, 7 = *strongly favor*), and "Sharing the water with the foreigners is the right thing to do" (1 = *strongly disagree*, 7 = *strongly agree*).

Moral identity was again measured using the Internalization subscale of Aquino and Reed's (2002) moral-identity scale ( $\alpha = .96$ ). Participants' reliance on moral foundations was measured using the Moral Foundations Sacredness Scale (Graham & Haidt, 2012). As in the previous studies, aggregate measures were formed for both reliance on the binding foundations ( $\alpha = .81$ ) and reliance on the individualizing foundations ( $\alpha = .80$ ). In addition, we again controlled for participants' age, gender (male = 1, female = 0), race (White = 1, not White = 0), and self-reported political ideology (1 = *strongly liberal*, 7 = *strongly conservative*).

## Results and discussion

Means and standard deviations for all the variables are reported in Table 4. Using OLS regression analysis, we regressed support for sharing on reliance on binding foundations; moral identity; a moral-prime dummy; the Moral Identity  $\times$  Binding Foundations, Moral Identity  $\times$  Moral Prime, and Moral Prime  $\times$  Binding Foundations two-way interaction terms; the Moral Identity  $\times$  Binding Foundations  $\times$  Moral Prime three-way interaction term; and the control variables (i.e., age, gender, race, and political ideology). The resulting model was significant,  $R^2 = .42$ ,  $F(12, 40) = 2.39$ ,  $p = .019$ . As predicted, the three-way interaction was statistically significant,  $b = 1.19$ ,



**Fig. 3.** Results of the simple-slopes analysis in Study 2. Estimated level of support for sharing water with foreigners is shown as a function of reliance on the binding foundations and the strength of moral identity in the moral prime condition. High and low scores refer to scores 1 standard deviation above and below the mean, respectively, for each measure.

$t(40) = 3.53$ ,  $p = .001$ ,  $f^2 = .31$ . The same model without the control variables was also significant,  $R^2 = .38$ ,  $F(7, 45) = 3.95$ ,  $p = .002$ , and the three-way interaction in this model remained significant,  $b = 1.15$ ,  $t(45) = 3.66$ ,  $p < .001$ ,  $f^2 = .30$ .

Again, we conducted simple-slopes analysis (Aiken & West, 1991) to probe the interaction. In the control condition, the simple slope of the effect of reliance on binding foundations on support for sharing was not significant for either high or low moral-identity scores (i.e., scores 1 *SD* above and below the mean, respectively).<sup>4</sup> However, as we predicted, in the moral-prime condition, high binding-foundations scores (i.e., 1 *SD* above the mean) were associated with decreased sharing compared with low binding-foundations scores (i.e., 1 *SD* below the mean), but only for participants who also had low moral-identity scores (Fig. 3),  $b = -1.07$ ,  $t(45) = -2.79$ ,  $p = .008$ . For participants with high moral-identity scores, reliance on the binding foundations did not significantly affect sharing,  $b = 0.51$ ,  $t(45) = 1.65$ ,  $p = .107$ . Thus, when morality was salient, a strong moral identity seems to have mitigated the tendency of people who strongly relied on the binding foundations to favor their in-group at the expense of the out-group.

## General Discussion

Our findings have important implications, because they show that principles such as loyalty, respect for authority, and purity do not necessarily lead to in-group favoritism and out-group derogation. Nevertheless, our findings



have some limitations. Our online data were collected primarily from people in Western, industrialized countries. These participants' apparent access to technology, indicative of relatively high economic status, limits the generalizability of our findings, as do the problems inherent in self-selection and self-reports. Future research should more carefully examine the circumstances under which our predictions hold.

The practical significance of our studies lies in the effect of moral identity in tempering some of the less desirable effects of the binding foundations. We argued that a strong moral identity has this effect because it expands the circle of moral regard. Some scholars (e.g., Pinker, 2011) have argued that, since the Enlightenment, the extension of moral concern to larger segments of humanity has become increasingly accepted as a core principle in Western notions of morality. If so, this bodes well for the continued effectiveness of moral identity as a countervailing force against other human tendencies that elevate tribal loyalties and concerns above all else. If moral identity is to hold these other tendencies in abeyance, finding ways to make people's moral identities more accessible (through socialization, acculturation, or experience), or creating environments that increase the salience of people's moral self-concepts, might greatly help individuals, groups, and societies bind together—even to out-groups.

### Author Contributions

I. H. Smith and K. Aquino developed the study concept, designed all the studies, and collected the data for Study 2. S. Koleva and J. Graham collected the data for Studies 1a and 1b. I. H. Smith analyzed and interpreted the data for all three studies, with input from all other authors. I. H. Smith drafted the manuscript, and all other authors provided critical revisions. All authors approved the final version of the manuscript for submission.

### Declaration of Conflicting Interests

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

### Supplemental Material

Additional supporting information may be found at <http://pss.sagepub.com/content/by/supplemental-data>

### Notes

1. See Haidt (2012) for a discussion of liberty/oppression as a potential sixth moral foundation.
2. Correlations for Studies 1a, 1b, and 2 are in Tables S1, S2, and S3, respectively, in the Supplemental Material available online.
3. Sixty students originally volunteered to participate, but 7 were excluded because they failed to complete all of the study's key measures. The sample size for this study was determined by availability of student volunteers.

4. Because of the small sample size, a post hoc power analysis (using G\*power 3.1.5; Faul, Erdfelder, Buchner, & Lang, 2009) of the control condition revealed that the power for finding a significant interaction (Moral Identity × Binding Foundations) was only .60, which might explain the nonsignificant results of the simple-slopes analysis.

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