Tracing the threads: How five moral concerns (especially Purity) help explain culture war attitudes

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ABSTRACT

Commentators have noted that the issue stands taken by each side of the American "culture war" lack conceptual consistency and can even seem contradictory. We sought to understand the psychological underpinnings of culture war attitudes using Moral Foundations Theory. In two studies involving 24,739 participants and 20 such issues (e.g. abortion, immigration, same-sex marriage), we found that endorsement of five moral foundations predicted judgments about these issues over and above ideology, age, gender, religious attendance, and interest in politics. Our results suggest that dispositional tendencies, particularly a person's moral intuitions, may underlie, motivate, and unite ideological positions across a variety of issues and offer new insights into the multiple "moral threads" connecting disparate political positions.

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1. Introduction

Imagine two Americans, Libby and Connie. Libby believes abortion should be legal and supports tight restrictions on gun purchases, while Connie believes that abortion is tantamount to murder and that any restrictions on gun purchases violate the Second Amendment of the US Constitution. Which one of these two people is more likely to favor capital punishment?

Most Americans know intuitively that the answer is Connie, because of her conservative stance on abortion and gun control. But what makes these positions hang together? Why is Connie for the death penalty if she is pro-life? Why does Libby believe in individual freedom in the case of abortion, but not in the case of gun purchases?

One possibility is that there is no unifying principle, other than the fact that the two major political parties in the US have staked out opposing positions on these issues. Perhaps people simply know what position the political "team" they support has taken, and they adopt a menu of such positions even when some of them entail internal contradictions (Converse, 1964). Cohen (2003), for example, found that people were more favorably disposed to a policy position if they believed it was proposed by their own political party than by the opposing one, even when the policy content was kept identical.

However, many political scientists and psychologists have argued against the notion that individuals' issue positions passively track their liberal–conservative "team" preference. Instead, these researchers suggest that individuals are psychologically prepared (by their genes, childhood experiences, personality characteristics, positions in society, etc.) to adopt some policy positions more easily than others (see, for example, Carney, Jost, Gosling, & Potter, 2008; Duckitt, 2001). Such scholars search for coherence among the issues that divide liberals and conservatives by examining their fit with a variety of cognitive structures (e.g., Lakoff, 1996), epistemological orientations (Hunter, 1991), or personality traits, existential needs, and motivated cognitions (Jost, Glaser, Kruglanski, & Sulloway, 2003). We agree with the thrust of this work and suggest that moral intuitions are one powerful and largely unexplored psychological mechanism that underlies ideology in general and issue positions in particular. In this article we present a promising method for conceptualizing and measuring the moral factors that predispose each individual to accept some political positions more readily than others. We describe five moral foundations and show that endorsement of these foundations predicts individuals' attitudes on a wide range of culture war issues, above and beyond their demographic characteristics – including, importantly, ideological self-placement. We argue that these findings add depth and richness to our understanding by revealing the multiple (and often unexpected) moral concerns that are activated by each issue, while also offering a relatively comprehensive approach to the study of a broad range of political attitudes.

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2. Previous conceptualizations of the liberal–conservative divide

In *Culture Wars*, Hunter (1991) noted a realignment occurring in American politics (particularly on issues related to sex, gender, and family life) and proposed that these divisions are driven by a fundamental disagreement over the nature of moral authority. On one side of this "culture war" were the "orthodox," who believed that moral truths existed independently of human preferences, and were grounded in "an external, definable, and transcendent authority" (Hunter, 1991, p. 44). On the other side were "progressives," who saw moral truths not as fixed but as works in progress, which had to be reinterpreted by each generation for its own time. Once an individual took a position on the nature of moral authority, that person would be "prepared" to adopt one side or the other on most of the culture war issues. Issues that pitted a traditional, Bible-based, or standard-affirming position versus a modern, secular, or relativist position were especially prone to becoming battlegrounds in the culture war.

A second way to explain the coherence among partisan positions was proposed by Lakoff (1996) in *Moral Politics*. Lakoff argued that Americans generally construe the nation as a family, with government as a parent, but they disagree on the cognitive model of the family that they prefer. Conservatives are those who think of the ideal family as being headed by a "strict father," and liberals are those more prone to idealize families headed by a "nurturant parent." When applied to politics, conservative positions cohere because they tend to be those that impose strict discipline and "tough love" for the children's own good in a world full of danger and competition. Liberal positions cohere because they often attempt to provide individuals with the resources and freedom to develop their talents in a world that is relatively safe and cooperative.

More recently, Jost and colleagues have argued that basic personality traits prepare some individuals to become conservative, others to become liberal. In a comprehensive meta-analysis of the psychological correlates of conservatism, Jost et al. (2003) found that conservatives (compared to liberals) have higher needs for order, structure, and closure; they are lower on tolerance of ambiguity, integrative complexity, and openness to experience, and they score higher on measures of death anxiety and fear of threats to the stability of the social system.

Jost et al. (2003) propose that logic or coherence is to be found not in the issues themselves, but in two overarching habits of minds predisposed to conservatism: first and foremost, a resistance to or dislike of change, and secondly, a tendency to accept (or even prefer) social inequality. These are the two psychological "threads" that tie together seemingly unrelated political stances.

3. Beyond change and inequality: Moral Foundations Theory

Hunter (1991), Lakoff (1996), and Jost et al. (2003) begin from different points, yet converge on the idea that coherence in culture war attitudes can be traced largely to disparate affinities toward change versus stability, and to the related tension between hierarchy (which generally supports stability) and equality (which often mandates change). Differential comfort with change and the desire to adhere to tradition and traditional authority certainly captures one central aspect of the liberal–conservative dynamic, but recent research suggests that the psychological divide between liberals and conservatives is even more multi-dimensional. The present studies examined whether Moral Foundations Theory (MFT, Haidt & Graham, 2007; Haidt & Joseph, 2004) might reveal the influence of moral motives beyond those related to change and inequality.

Moral Foundations Theory argues that human groups construct moral virtues, meanings, and institutions in variable ways by relying, to varying degrees, on five innate psychological systems. Each system produces fast, automatic gut-reactions of like and dislike when certain patterns are perceived in the social world, which in turn guide judgments of right and wrong.

Briefly, the five moral foundations are harm/care, fairness/reciprocity, ingroup/loyalty, authority/respect, and purity/sanctity. The harm/care foundation leads us to disapprove of individuals that cause pain and suffering and to approve of those who prevent or alleviate harm. The fairness/reciprocity foundation makes us sensitive to issues of equality and justice and leads us to frown upon people that violate these principles. The ingroup/loyalty foundation is based on our attachment to groups (e.g. our family, church, or country), leading us to approve of those who contribute to the group's well-being and cohesion. The authority/respect foundation is based on our tendency to create hierarchically structured societies of dominance and subordination. This foundation includes approval of individuals who fulfill the duties associated with their position on the social ladder, for example by showing good leadership, or obedience. Lastly, the purity/sanctity foundation is based on the emotion of disgust in response to biological contaminants (e.g. feces or rotten food), *and* to various social contaminants like spiritual corruption, or the inability to control one's base impulses (see Rozin, Haidt, & McCauley, 2008, on disgust). In the context of previous research on ideology, fairness/reciprocity relates to a concern for inequality and authority/respect to a preference for stability versus change (Graham, Haidt, & Nosek, 2009).

These moral foundations are posited to be universally present (see Haidt & Kesebir, 2010, on the evolutionary processes that may have shaped the five foundations), but morality is a complex and culturally variable construction. Different societies build different moralities, and they do so in part by resting their moral virtues, claims, and institutions to varying degrees on each moral foundation. Furthermore, subcultures within the same society may also elaborate and emphasize different foundations to differing degrees. Preliminary findings suggest that gender, socioeconomic status, and ethnic background are all associated with differential endorsement of moral concerns (Haidt, Koller, & Dias, 1993; Koleva, Graham, Ditto, Haidt, & Iyer, 2008).

Most importantly for our current purposes, several studies have now found that political liberals and conservatives differ in the weight they place on the various foundations (Graham et al., 2009; Haidt & Graham, 2007; McAdams et al., 2008; van Leeuwen & Park, 2009). Specifically, liberals rate considerations of harm and fairness as significantly more important moral factors than ingroup, authority, or purity. To liberals, acts are perceived as immoral primarily to the extent that they harm others or treat people unfairly. Social conservatives, in contrast, rely more evenly on all five foundations.[1] Liberals and conservatives often disagree about what is harmful and what is unfair, but the most striking political differences involve the ingroup, authority, and purity foundations.

In short, MFT represents a broader attempt to identify the moral concerns that motivate culture war positions. It captures the emphasis of past approaches on differential sensitivity to stability and change (reflected in the authority/respect foundation), and (dis)comfort with inequality (reflected in the fairness/reciprocity foundation), while also pointing to three additional moral dimensions that might be at play. For example, liberals' heightened sensitivity to issues of harm might undergird their traditionally negative attitudes toward capital punishment, as well as their more contemporary distaste for the Bush administration's use of torture on terrorist suspects. Similarly, conservatives' stronger

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[1] Preliminary findings suggest that libertarians resemble liberals more than they resemble social conservatives; they tend to care little about purity, in particular (Iyer, Koleva, Graham, Ditto, & Haidt, in preparation).

valuation of ingroup/loyalty seems likely to relate to their attitudes toward illegal immigration, and to affronts to patriotic symbols such as burning the American flag. Perhaps most clearly missing from past conceptualizations of the liberal–conservative divide, however, is the role of concerns about spiritual purity/sanctity. Although it is possible to see conservative disapproval of nontraditional sexuality (e.g. casual sex, same-sex relationships, use of pornography) as a function of reverence for traditional practices or a discomfort with change, it seems plausible that an additional and powerful dynamic underlying these attitudes is the propensity to experience disgust (Inbar, Pizarro, & Bloom, 2009).

The current research examines culture war attitudes through the lens of MFT. Specifically, we explore the role of individual differences in moral intuitions as psychological predispositions that underlie political attitudes. In two studies we use endorsement of the five moral foundations to predict moral disapproval for controversial political issues as well as specific attitude stands on such issues. Our goal was not just to improve the prediction of political attitudes, but to use MFT to help understand the psychological underpinnings of such attitudes by illuminating the "moral threads" that may underlie Americans' culture war attitudes.

4. Study 1: moral disapproval

For our first study, we began in the most direct way possible: we measured individuals' moral disapproval for thirteen controversial issues and examined the degree to which these disapproval scores were predicted by demographic factors, interest in politics, political ideology (liberal to conservative), and scores on the Moral Foundations Questionnaire (MFQ, Graham et al., 2011).

4.1. Methods

4.1.1. Participants

Participants were 10,222[2] adults residing in the US who volunteered at http://www.yourmorals.org. All participants had previously registered at the site, providing demographics including age (M = 38 years, SD = 14.26), gender (62% male), religious attendance (M = 1.37, SD = 1.73 on a scale from 0 = "never" to 5 = "one or more times each week"), interest in politics (M = 1.70, SD = .50 on a scale from 0 = "not much interested" to 3 = "very much interested"), and political orientation (M = 2.80, SD = 1.62, on scale ranging from 1 = "very liberal" to 7 = "very conservative").

Participants self-select to take one or more surveys from a list of about 15–20 surveys. The majority of site visitors complete the MFQ and many take additional surveys. Here we report results for those who completed both the MFQ and a second morality survey.

4.1.2. Materials

The MFQ is a 30-item measure of the extent to which an individual endorses each of five types of moral concerns: Harm, Fairness, Ingroup, Authority, and Purity (see Graham et al., 2011 for an extensive analysis of its psychometric properties). The scale has two parts. In the first, participants rate how relevant each of 15 concerns are to them when making moral judgments, such as "Whether or not some people were treated differently from others" for Fairness. In the second part, participants rate their agreement

with statements that embody or negate each foundation, e.g., "It is more important to be a team player than to express oneself" for Ingroup (the MFQ items can be found at www.moralfoundations.org). Six items per foundation (three from each section) were averaged to produce individuals' scores on each of the five foundations. Subscale statistics were as follows: Harm M = 3.53, SD = .80, Cronbach's α = .67; Fairness M = 3.61, SD = .72, Cronbach's α = .66; Ingroup M = 2.29, SD = .87, Cronbach's α = .71; Authority M = 2.29, SD = .92, Cronbach's α = .76; Purity M = 1.61, SD = 1.13, Cronbach's α = .85.

In the morality survey participants answered questions concerning thirteen social issues. The instructions and items for this scale were based on a Gallup poll that was conducted in May of 2007 (http://www.pollingreport.com/values.htm). The instructions read: "Here is a list of controversial issues. Regardless of whether or not you think it should be legal, for each one, please indicate whether you personally believe that in general it is morally acceptable or morally wrong." Responses were measured on a scale from "1 = Morally acceptable in most or all cases" to "5 = Morally wrong in most or all cases." Items appeared in a randomized order. The thirteen issues were abortion, the death penalty, medical testing with animals, euthanasia, same-sex marriage, homosexual relations, burning a US flag, having a baby outside of marriage, stem cell research, pornography, gambling, casual sex, and animal cloning.

4.2. Results

To answer our research question – do the moral foundations help explain moral disapproval on culture war issues beyond ideological self-identification – we used multiple regression. Disapproval ratings for each issue were regressed on all five demographic variables – age, gender (dummy coded where 0 = female and 1 = male), religious attendance, interest in politics, and political orientation – and all five moral foundation scores (Table 2). The simultaneous inclusion of all foundations in the model created a challenging test for the foundations, given that they are all intercorrelated and all correlated with political orientation, age, gender, religious attendance, and interest in politics (see Table 1). However, the interdependence among the predictors did not threaten the integrity of the regression models – tolerance values tended to be high and none were below .37, thus collinearity was not a serious concern. Because of our very large sample and resulting statistical power, our interpretations focus on effect sizes (the beta coefficients) instead of p values.

4.2.1. Demographic predictors of disapproval

Ratings on these controversial social issues were uniquely associated with one's political ideology (mean $|\beta|$ = .22, range −.02 to .38); only medical testing on animals, cloning, gambling, and using pornography had betas less than .15. This is not surprising and confirms that these issues are appropriate for the investigation of culture war opinions. Religious attendance was a moderate unique predictor (mean $|\beta|$ = .14; range .01 to .28) for most issues, particularly those related to sexuality, but typically weaker than political orientation. More frequent church attendance uniquely predicted stronger disapproval for all issues except for flag burning (no relationship) and animal testing (weak reverse relationship). Age (mean $|\beta|$ = .05; range 0–.12), gender (mean $|\beta|$ = .07; range .01–.19), and interest in politics (mean $|\beta|$ = .02; range 0–.07) were weak predictors of moral disapproval.

4.2.2. Moral foundation predictors

As seen in Table 2, Purity emerged as the foundation that best predicted disapproval on culture war issues. It was most strongly associated with disapproval for issues dealing with sexuality (casual sex and using pornography), relationships and marriage

Table 1
Correlations and demographic variables and moral foundation scores, N = 10,222.

	2	3	4	5	6	7		9	10
1. Age	−.059[**]	.059[**]	.039[**]	.097[**]	.113[**]	.047[**]	.057[**]	.122[**]	.126[**]
2. Gender (F = 0. M = 1)		−.025[*]	.147[**]	.125[**]	−.268[**]	−.092[**]	.076[**]	.054[**]	−.044[**]
3. Religious attendance			.358[**]	−.035[**]	−.006	−.162[**]	.274[**]	.341[**]	.529[**]
4. Ideology				−.088[**]	−.369[**]	−.471[**]	.476[**]	.593[**]	.579[**]
5. Political interest					.045[**]	.105[**]	−.030[**]	−.070[**]	−.071[**]
6. Harm						.540[**]	−.069[**]	−.165[**]	−.020
7. Fairness							−.160[**]	−.272[**]	−.202[**]
8. Ingroup								.677[**]	.555[**]
9. Authority									.677[**]
10. Purity									

[*] p < .05.
[**] p < .01.

Table 2
Predicting moral disapproval ratings from demographics and moral foundations, N = 10,222.

	Descriptives		Demographics					Moral foundations				
	M	SD	Age	Gender[a]	Relig.	Ideology (cons.)	Interest	Harm	Fairness	Ingroup	Authority	Purity
Same-sex relations	1.69	1.21	.01	.04[**]	.16[**]	.32[**]	.00	−.05[**]	−.03[*]	−.06[**]	−.03[*]	**.46[**]**
Same-sex marriage	1.71	1.30	.00	.04[**]	.12[**]	.38[**]	.01	−.06[**]	−.03[*]	−.04[**]	−.01	**.42[**]**
Having casual sex	1.67	1.12	−.04[**]	.02	.28[**]	.22[**]	.00	−.04[**]	−.02	−.09[**]	−.05	**.47[**]**
Stem cell research	1.74	1.18	−.10[**]	−.01	.16[**]	.37[**]	.02[*]	.02	−.05[**]	−.05[*]	−.03[*]	**.33[**]**
Baby outside marriage	2.10	1.21	.02[*]	.07[**]	.15[**]	.22[**]	.03[**]	−.04[*]	−.02	−.01	.04[**]	**.36[**]**
Abortion	2.46	1.31	−.10[**]	.09[**]	.20[**]	**.34[**]**	.03[**]	.07[**]	−.06[**]	−.01	−.03	.31[**]
Euthanasia	2.24	1.25	−.12[**]	.03[**]	.24[**]	.24[**]	.04[**]	.05[**]	−.05[**]	.01	−.03	**.29[**]**
Using pornography	2.33	1.28	.11[**]	−.19[**]	.19[**]	.12[**]	.00	.04[**]	−.01	−.07[**]	−.04[*]	**.46[**]**
Flag Burning	2.11	1.28	−.02	−.07[**]	−.01	.24[**]	−.02[*]	.00	−.04[**]	.19[**]	.10[**]	.20[**]
Animal testing	2.85	1.20	−.02	−.14[**]	−.05[**]	−.07[**]	−.02	**.34[**]**	−.04[**]	−.08[**]	−.03	.05
Cloning	2.46	1.22	.00	−.16[**]	.05	.05[*]	.04[*]	.14[**]	−.02	−.04	.03	**.25[**]**
Death penalty	3.75	1.34	−.01	.03[**]	.11[**]	−.32[**]	.07[**]	.24[**]	.02	−.06[**]	−.14[**]	−.02
Gambling	2.30	1.09	.08[**]	−.02	.14[**]	−.02	.00	.06[**]	.04[**]	−.05[**]	.00	**.29[**]**

Moral disapproval ranged 1–5 and higher numbers indicated greater moral disapproval. Values shown are standardized multiple regression coefficients. The largest coefficient for each issue is emphasized in bold. Due to missing data, the exact N for each item varied within half percent of the total sample (lower bound N = 10,185 for same-sex marriage).

[*] p < .01
[**] p < .001.
[a] Gender is dummy-coded such that 0 = female and 1 = male.

(same-sex relations, same-sex marriage, and baby outside marriage), and the sanctity of life (euthanasia and cloning). Purity was also the strongest predictor of disapproval of gambling. Lastly, unique effects of Purity were generally much higher than those for the other foundations (βs $\geqslant$ .25 for ten issues).

Harm was the strongest predictor of disapproval of medical testing on animals and the second strongest (after ideology) for disapproval of the death penalty. Lastly, although Fairness, Ingroup, and Authority were significantly associated with many issues, they were not the top predictors for any of them. Ingroup was the second strongest foundation, after Purity, in predicting disapproval of flag-burning. None of the betas for Fairness were above .06, and for Authority only one beta (for the death penalty) was above .10.

4.2.3. Moral foundations and alternative models

Because web visitors can take multiple surveys, a portions of our sample had also completed measures of Right Wing Authoritarianism (RWA, Zakrisson, 2005) and Social Dominance Orientation (SDO, Sidanius & Pratto, 2001). Because these constructs are common predictors of political attitudes (Jost et al., 2003) we analyzed this subsample to see how the addition of RWA and SDO scores to our model might affect the foundation associations.

A total of 460 participants (age M = 36 years, SD = 14.62; 57% male; religious attendance M = 1.05, SD = 1.56; interest in politics M = 1.70, SD = .50; ideology M = 1.70, SD = .50; Harm M = 3.51,

SD = .88; Fairness M = 3.64, SD = .76; Ingroup M = 2.10, SD = .92; Authority M = 2.10, SD = 1; Purity M = 1.47, SD = 1.13) completed the RWA and SDO scales. The RWA scale is a 15-item, 6-pt Likert-type measure of endorsement of traditional authority (e.g. "*The old-fashioned ways and old-fashioned values still show the best way to live*"). The SDO scale is a 16-item, 7-pt Likert-type measure of tolerance for social hierarchy (e.g. "*Some groups of people are simply inferior to other groups*"). Scale statistics were as follows: RWA M = 2.11, SD = .91, Cronbach's α = .91 and SDO M = 2.35, SD = 1.04, Cronbach's α = .91. There was little indication of problematic collinearity in the model.

Since both RWA and SDO were used as external validity criteria for the MFQ (Graham et al., 2011) we expected that the conceptual and measurement overlap in these constructs would tend to reduce the original associations. Furthermore, we expected SDO, and particularly RWA, to outperform (but not eliminate) the foundations as predictors. This is because the former constructs are closer, conceptually and item-wise, to political attitudes than is the MFQ. In fact, Duckitt and colleagues (Duckitt & Sibley, 2009; Duckitt, Wagner, du Plessis, & Birum, 2002) have argued that RWA and SDO are "more appropriately viewed as measuring social attitude or ideological belief dimensions rather than personality." In contrast, the moral foundations reflect more basic and generalized psychological tendencies and are closer to what Duckitt and colleagues refer to as "motivational goals" that may *in turn* predispose individuals to certain sociopolitical beliefs.

As expected, adding RWA and SDO to the model reduced but did not substantially change the overall patterns. For 11 out of 13 issues, the top predicting foundation remained the same – typically Purity – and statistically significant, and for 10 issues the foundation effect was comparable to or greater than that of both RWA and SDO (see Table 3). These data indicate that moral foundation concerns, esp. Purity, are distinct from authoritarianism and social dominance.

4.3. Discussion

The results of Study 1 show the utility of MFT in general – and the Purity foundation in particular – for understanding the organization of political attitudes. For 9 of the 13 culture war issues we studied, the strongest unique predictor was a subscale of the MFQ, usually Purity, rather than political orientation, interest in politics, age, gender, or religious attendance.

Interestingly, even for hotly contested issues such as same-sex marriage and abortion, Purity was better or comparable to political orientation as a unique predictor. In contrast, Fairness and Authority, the foundations associated with tolerance of inequality and resistance to change, were weak predictors, possibly because their effects are already well-captured by ideological-self placement. Additional analyses on a subsample of participants who also had scores for RWA and SDO indicated that the foundations added explanatory value well beyond these powerful sociopolitical attitudes. Given these results, we believe that the moral foundations, particularly Purity-related concerns which are largely missing from existing psychological models of political attitudes, should be included in future theorizing and research on the psychological underpinnings of ideology.

Furthermore, these results imply that there is a great deal of texture to many of these issues – sometimes the moral concern that is most visible on the surface may not be the only one at work. Jost et al. (2003) argues that resistance to change and acceptance of inequality are the two common threads underlying political attitudes, but Table 2 shows the operation of multiple moral threads, to varying degrees, across the varying issues. For example, opposition to pornography seems to be related primarily to Purity concerns; no other predictor comes close. In contrast, opposition to flag-burning is both more partisan and more complex. As one might expect, political ideology and the Ingroup foundation were solid predictors on this issue, and Authority also exerted a small effect. Yet almost equal to Ingroup was the independent contribution of the Purity foundation which suggests that individual differences in the tendency to perceive sacredness in physical objects is at work too. Individuals with low scores on this foundation may have difficulty understanding why anyone would want to amend the US Constitution to protect a piece of cloth from harm, while individuals who score high might be horrified by the profanity of desecrating a symbol of the nation.

Interestingly, in some cases the most obvious foundation was not a strong predictor of attitudes. For example, political rhetoric about the morality of abortion, cloning, euthanasia and research using stem cells is often dominated by arguments about (potential) harm. Yet moral disapproval for all four issues was far better predicted by Purity than by Harm scores. Similarly, the debate about same-sex relationships and marriage evokes concerns about fairness, equality, and the traditional institution of marriage (i.e. the Fairness and Authority foundations), yet both are by far best predicted by Purity. All this suggests that rationales given for or against a given position may sometimes be only loosely connected to the intuitions that motivated the attitude in the first place (Haidt, 2001; Nisbett & Wilson, 1977), and that attitudes on moral and political issues may have intuitive bases of which we are not aware (Wheatley & Haidt, 2005).

In sum, the results of Study 1 suggest that in the absence of information about a person's political orientation, one can make relatively textured predictions of one's opinions on culture war issues using MFT, and especially Purity scores. In addition to improved prediction, MFT gives us a fine-grained view of the multiple moral threads that stitch political opinions together.

5. Study 2: issue positions

Study 2 addressed two limitations of the Study 1 data. First, we wondered whether Purity's dominance as a predictor in Study 1 was partially due to our choice of items; many of the issues we used can be linked to sexuality and self-control, even if only

Table 3
Predicting issue opinions from moral foundation scores and sociopolitical beliefs, N = 460.

	Animal testing	Euthanasia	Flag burning	Cloning	Abortion	Same-sex relations	Same-sex marriage	Stem cells	Death penalty	Using porn	Baby no marr.	Casual sex	Gambling
Descriptives													
Mean	2.85	2.12	2.01	2.32	2.40	1.61	1.62	1.68	3.79	2.29	2.02	1.65	2.37
St. dev.	1.27	1.21	1.26	1.21	1.33	1.18	1.26	1.14	1.36	1.29	1.23	1.09	1.11
Predictors													
Age	.07	−.10*	.00	.13*	−.03	−.01	−.02	−.09*	.00	.14**	.05	−.02	.07
Gender[a]	−.21**	.09*	−.10*	−.15*	.10*	.11**	.06*	.06	−.01	−.14**	.08*	.10**	.03
Religious attend.	−.04	**.21****	−.02	.06	.14**	.15**	.08*	.14**	.13*	.14*	.12*	.20**	.19**
Ideology (cons.)	−.13	.20*	.13*	−.08	.28**	.25**	.31**	.30**	−.17*	−.03	.13*	.12*	−.22*
Interest	.07	−.02	−.01	.01	.02	.01	.05	.02	.00	−.02	.02	−.02	−.01
RWA	−.02	.19*	**.24****	**.22***	.23**	.32**	**.39****	**.32****	−.18*	.16*	.26**	.26**	.21*
SDO	−.08	−.14*	.00	.02	−.10**	−.06	−.07	−.05	−.17**	−.09	.06	−.09*	−.07
Harm	**.26****	.06	.04	.17*	.05	−.05	.08*	.04	**.22****	.01	.02	−.05	.05
Fairness	−.13**	.07	−.02	.07	−.02	.02	.04	−.03	−.02	.00	.02	.03	.03
Ingroup	−.10	.07	.22**	.00	.04	−.08	−.05	−.09	−.07	.02	.07	−.05	−.01
Authority	−.05	.02	.05	−.01	−.12**	−.07	−.03	−.07	−.11	−.14*	−.11	−.11*	−.01
Purity	.13	.19*	.14*	.13	**.32****	**.39****	.27**	.21**	.01	**.56****	**.32****	**.49****	**.26****

Moral disapproval ranged 1–5 and higher numbers indicated greater moral disapproval. Values shown are standardized multiple regression coefficients. The largest coefficient for each issue is emphasized in bold. Due to missing data, the exact N for each item varied negligibly (lower bound N = 458).
* $p < .01$.
** $p < .001$.
[a] Gender was dummy-coded such that 0 = female and 1 = male.

indirectly (e.g., same-sex marriage and abortion). In Study 2 we sought to broaden the range of culture war attitudes to include more issues unrelated to sexuality.

Second, participants in Study 1 were asked to set aside their beliefs about legality and simply rate whether they thought certain behaviors were immoral. We suspect that such ratings draw heavily on people's gut reactions, the rapid intuitions of condemnation that often arise immediately and automatically when people make moral judgments (Haidt, 2001). However, fully-elaborated stances on culture war issues likely involve more nuanced deliberations about legal considerations and consequences. Because Likert-type questions on abstract topics such as politics can seem vague and confusing to participants, large-scale polls (e.g., Pew, Gallup, American National Election Studies) often forego such questions and instead ask respondents to choose their stance on an issue from a list of concrete position statements. In Study 2 we took such an approach and examined individual judgments about specific policy positions.

5.1. Methods

5.1.1. Participants

Participants were 14,517 adult US residents who self-selected to take both the MFQ and a survey called "Political Attitudes Questionnaire" at www.yourmorals.org. As in Study 1, participants had previously provided their age (M = 39 years, SD = 15.35), gender (56% male), religious attendance (M = 1.37, SD = 1.70), interest in politics (M = 1.61, SD = .55), and political orientation (M = 2.75, SD = 1.60). Participants (N = 2,587) who selected "Libertarian," "Other," or "Don't know/not political" were excluded.

5.1.2. Materials

Age, gender, religious attendance, interest in politics, political orientation, and foundation endorsement were assessed using the measures described in Study 1. As in Study 1, the five foundations correlated with the demographics and with each other (see Table 4) but there was little indication of high collinearity. The subscale statistics were almost identical to those obtained in Study 1: Harm M = 3.53, SD = .80, Cronbach's α = .67; Fairness M = 3.64, SD = .71, Cronbach's α = .65; Ingroup M = 2.30, SD = .86, Cronbach's α = .70; Authority M = 2.30, SD = .92, Cronbach's α = .76; Purity M = 1.62, SD = 1.12, Cronbach's α = .84.

Issue positions were assessed using questions adapted from nationally representative polls by Gallup, the New York Times, Pew Research Center, and other polling organizations. Participants were asked to select from a list of specific positions the one closest to their views. For example, the item on same-sex marriage asked whether same-sex couples should be allowed to legally marry, to have a civil union but not marriage, or neither. For all items, an additional "Don't know" answer option was available in order to

avoid forcing participants into taking a position; participants who selected this option were excluded from analyses on that issue. The eleven issues were abortion, defense spending, teaching evolution, same-sex marriage, the use of torture, global warming, burning a US flag, stem cell research, combating terrorism, illegal immigration, and gun control. Items were presented individually and in a randomized order; the exact wording for each item is shown in Appendix A.

5.2. Results

Six of the 11 issues had three or more answer options that progressed from a more liberal to a more conservative stand and were therefore treated as continuous variables with higher numbers indicating greater conservatism. For each issue we entered age, gender (0 = female, 1 = male), religious attendance, interest in politics, political orientation, and the five foundations as predictors in an ordinary least square regression (Table 5a). The remaining five issues had only two answer options and were therefore analyzed with a logistic regression (0 = liberal position, 1 = conservative position). For these regressions we report the odds ratios (Table 5b).

5.2.1. Demographic predictors

As can be seen in Tables 5a and 5b, political orientation was a strong predictor of all issue positions (mean $|\beta|$ = .41, range .28–.59), and for nine issues it was the strongest of all ten predictors, confirming that these issues capture the ideological split in the culture war.

In general, age, gender, and religious attendance were not strongly associated with issue positions. However, religious attendance moderately predicted more conservative views on abortion and stem cell research, and women were 85% more likely than men to support a ban on flag burning and 42% more likely to support gun control. Interest in politics also tended to be a weak predictor; however, higher interest was as strong as ideology in predicting support for aggressive anti-terrorism measures.

5.2.2. Moral foundation predictors

Compared to Study 1, attitude items in Study 2 showed a wider set of relationships to the five foundations, confirming that we succeeded in broadening our sampling of topics. Purity, Ingroup, and Harm scores emerged as the most reliable predictors - all three were significant at $p < .001$ on 7 or more out of the 11 issues. Purity was the best foundation predictor of endorsing stricter abortion laws, favoring a ban on same-sex marriage, opposition to federal funding for embryonic stem cell research, support for the teaching of intelligent design/creationism in public schools, and also, interestingly, of more negative attitudes about illegal immigration. Ingroup was the strongest foundation predictor of support for increased defense spending, aggressive measure against terrorism,

Table 4
Correlations among demographic variables and moral foundation scores, N = 14,517.

	2	3	4	5	6	7	8	9	10
1. Age	.015	.033**	.057**	.158**	.073**	.020*	.078**	.155**	.120**
2. Gender (F = 0, M = 1)		−.022**	.132**	.120**	−.279**	−.088**	.092**	.075**	−.010
3. Religious attendance			.363**	−.029**	−.038**	−.175**	.281**	.319**	.520**
4. Ideology				−.103**	−.387**	−.474**	.493**	.595**	.616**
5. Political interest					.057**	.135**	−.018*	−.069**	−.069**
6. Harm						.524**	−.105**	−.198**	−.073**
7. Fairness							−.187**	−.294**	−.245**
8. Ingroup								.663**	.553**
9. Authority									.664**
10. Purity									

* $p < .05$.
** $p < .01$.

Table 5a
Predicting issue stands from demographics and the moral foundations, N = 14,517.

	Descriptives			Demographics					Moral foundations				
	N	M	SD	Age	Gender[a]	Relig. attend.	Ideology (cons.)	Interest	Harm	Fairness	Ingroup	Authority	Purity
Global warming	13,775	1.22	.59	.00	−.02	−.01	**.59**[**]	.09[**]	−.07[**]	−.05[**]	.01	.02	.07[**]
Using torture	14,183	1.79	.82	−.08[**]	−.02	−.06[**]	**.37**[**]	−.05[**]	−.16[**]	−.05[**]	.10[**]	.10[**]	06[**]
Defense spending	12,990	1.42	.62	.03[**]	−.05[**]	−.01	**.42**[**]	.03[**]	−.06[**]	−.02[*]	.13[**]	.09[**]	.02
Abortion	14,109	1.46	.82	−.11[**]	.06[**]	.19[**]	**.42**[**]	.02[**]	.03[**]	−.02	−.06[**]	−.03[*]	.31[**]
Teaching creationism	14,089	1.21	.43	−.05	−.06[**]	.09[**]	**.28**[**]	−.04[**]	.02	−.02	−.02	.01	.31[**]
Same-sex marriage	14,169	1.26	.53	.01	.03[**]	.09[**]	**.40**[**]	.03[**]	−.05[**]	−.02[*]	−.04[**]	−.01	.33[**]

Values shown are standardized multiple regression coefficients. The largest coefficient for each issue is emphasized in bold. The exact N across items varies because a different number of participants selected "Don't know" and were excluded. Abortion and torture had four answer options and the other issues had three.
[*] p < .01.
[**] p < .001.
[a] Gender was dummy-coded such that 0 = female, and 1 = male.

Table 5b
Logistic regression of issue stands on demographics and the moral foundations, N = 14,517.

	Descriptives		Demographics					Moral foundations				
	N	%cons[b]	Age	Gender[a]	Relig. attend.	Ideology (cons.)	Interest	Harm	Fairness	Ingroup	Authority	Purity
Gun control	13,223	29	0 99[**]	1.42[**]	0.95[**]	**2.15**[**]	1.03	0.65[**]	0.97	1.34[**]	0.85[**]	1.00
Terrorism	11,825	40	1.01[**]	1.17[*]	1.05[**]	**1.45**[**]	1.40[**]	0.75[**]	0.89[*]	1.44[**]	1.22[**]	1.01
Flag burning	13,454	10	0.98[**]	0.54[**]	0.88[**]	1.46[**]	0.60[**]	0.98	1.10	**1.85**[**]	1.65[**]	1.68[**]
Immigration	11,806	30	1.00	0.80[**]	0.83[**]	**1.77**[**]	0.83[**]	0.84[**]	0.89[*]	1.10	1.33[**]	1.38[**]
Stem cell research	13,437	13	0.99[**]	0.85	1.37[**]	**2.41**[**]	1.16	1.00	0.85	0.79[**]	0.91	2.28[**]

Values shown are Odds Ratios (ORs). An OR > 1 indicates a higher likelihood of taking the conservative position and vice versa. Effect size is evaluated with respect to 1. ORs further from 1 (in either direction) indicate a larger effect; OR = 2.00 indicates that a 1 unit increase means the conservative stand is twice as likely, and OR = .50 means that it is half as likely. The largest coefficient for each issue is emphasized in bold. The exact N across items varies because a different number of participants selected "Don't know" and were excluded.
[*] p < .01.
[**] p < .001
[a] Gender was dummy-coded such that 0 = female and 1 = male.
[b] % Cons. is the percentage of subjects who selected the conservative option for the dichotomous issues.

and (together with gender) it was the strongest predictor of favoring a ban on flag-burning. Concerns about Harm were the strongest foundation predictor of support for gun control and opposition to torture, and the second-strongest foundation predictor (after Ingroup) for attitudes about terrorism. Interestingly, Harm and Purity were equally good predictors of support for tougher measures against global warming. As in Study 1, the Fairness and Authority foundations were not strong predictors on any of the issues.

5.2.3. Moral foundations and alternative models

As in Study 1, a portion of our sample (N = 1780, mean age = 42, SD = 15.94; 56% male; religious attendance M = 1.35, SD = 1.76; interest M = 1.65, SD = .52; ideology M = 2.82, SD = 1.72; Harm M = 3.53, SD = .83; Fairness M = 3.64, SD = .74; Ingroup M = 2.27, SD = .86; Authority M = 2.28, SD = .98; Purity M = 1.63, SD = 1.17) also had scores for the RWA and SDO measures described earlier. Scale statistics were similar to those obtained in Study 1: RWA M = 2.15, SD = .96, α = .92 and SDO M = 2.29, SD = 1.06, α = .91.

As discussed earlier, RWA and SDO are more akin sociopolitical attitudes than broad personality traits, and thus are even closer to this study's DVs – specific issues positions – than they were in Study 1. As expected, adding them to the model did tend to weaken, but not dramatically alter, the original patterns. Whereas the effects for SDO were weak and not significant (SDO was notable only in predicting greater support for torture), RWA was a strong predictor, often overshadowing ideological self-placement (Table 6). Whereas the effects for the moral foundations were reduced, for all issues two or three still remained as unique predictors. For example, Purity's effect became weaker for abortion, same-sex marriage, global warming, stem cell research, and teaching creationism and it was reduced to non-significance for flag-burning and immigration. However, the Purity effect on terrorism attitudes

was actually greater with RWA and SDO in the model. In fact, for half of the issues, adding RWA and SDO to the model actually boosted the beta coefficients for several foundations (e.g. Authority for global warming, Harm for immigration, Fairness and Ingroup for stem cells).

5.3. Discussion

The results of Study 2 again demonstrate that differences in endorsement of the moral foundations predict political attitudes above and beyond demographic characteristics, interest in politics, and political orientation (as well as RWA and SDO, for a subset of participants). All eleven issues were significantly and uniquely associated (at p < .01) with two or more moral foundations, and the foundations generally predicted more unique variance than one's demographics or interest in politics. For most issues, ideology tended to explain the most variance, suggesting that specific stands on politically divisive issues tend to fall, as a first approximation, along ideological lines.

In most cases, MFQ scores reveal the motives one might expect. As in Study 1, Purity was the strongest foundation predictor on issues related to sexuality and sanctity of life. For issues related to nationalism and national security, the strongest foundation was Ingroup. But the big advantage of the moral foundations is that they suggest *multiple* and potentially conflicting motives at work, particularly when one examines the pattern across all five foundations.

For example, opposition to the use of torture in interrogation was associated at p < .001 with all five foundations, but most strongly (and positively) predicted by Harm, followed by Ingroup and Authority (in the opposite direction). This pattern suggests that attitudes about torture might engage a complex tradeoff of

Table 6
Predicting issue positions from moral foundation scores and sociopolitical beliefs, N = 1780.

	Abortion	Same-sex marriage	Torture	Global warming	Defense spending	Teaching creationism	Gun control	Fighting terrorism	Flag burning	Immigration	Stem cell research
Descriptives											
N	1745	1746	1754	1708	1610	1747	1,636	1482	1671	1487	1660
Mean/% cons.[b]	1.50	1.30	1.73	1.27	1.47	1.21	31	40	9	30	15
St. dev.	.86	.58	.85	.65	.67	.43	n/a	n/a	n/a	n/a	n/a
Predictors											
Age	−.12**	.04*	−.06**	.00	.03	−.01	.99*	1.01**	.99*	1.01*	.98*
Gender[a]	.06**	.03	−.02	−.02	−.05*	−.06*	1.39*	1.03	.49*	.71*	.66
Religious attend.	.17**	.07**	−.06*	−.05*	−.03	.04*	.93	1.12**	.80*	.80**	1.40**
Ideology (cons.)	.31**	.23**	.22**	**.47****	.36**	.17**	**2.32****	1.33**	1.17	1.45**	2.14**
Interest	.03**	.02	−.03	08**	.08**	.00	1.12	1.51**	.54*	.98	1.03
RWA	**.33****	**.44****	**.36****	.41**	.32**	**.51****	1.62**	**1.67****	3.37**	2.39**	2.53**
SDO	−.06*	.05*	.14**	.06*	.01	−.04	1.00	.98	.99	1.17	.83
Harm	.04*	−.05*	−.12**	−.04	−.09**	.04	.68**	.66**	1.30	.76*	1.17
Fairness	−.02	.01	.01	−.02	.01	−.02	1.27	.90	1.13	1.13	.64*
Ingroup	−.10**	−.02	.10**	.03	.10**	−.05*	1.44**	1.16	1.79**	1.02	.62*
Authority	−.05**	−.08*	−.01	−.11**	.03	−.06*	.76*	1.35*	1.79*	1.32*	1.02
Purity	.23**	.17**	−.06	−.06*	−.07*	.11*	.84	.76*	.95	.96	1.65*

For abortion, gay marriage, use of torture, global warning, defense spending, and teaching creationism the values shown are standardized regression coefficients. For gun control, fighting terrorism, flag-burning, immigration, and stem cell research the values shown are Odds Ratios (ORs). The largest coefficient for each issue is emphasized in bold. The exact N across items varies because a different number of participants selected "Don't know" and were excluded.
* p < .05.
** p < .001.
[b] % Cons. is the percentage of subjects who selected the conservative option for the dichotomous issues.

many different moral intuitions, including perhaps horror at the pain inflicted, the need for Americans to get tough on their enemies, and the perceived value of deferring to the authority of the president and the military in times of war.

Attitudes about illegal immigration also revealed an interesting pattern. Despite a common rhetoric that centers on concerns about the ingroup, fairness, or individual rights (the Ingroup and Fairness foundations), opposition to illegal immigration was best predicted by Purity scores, followed closely by Authority. This suggests that individuals who view illegal immigrants as weakening the US economy (the socially conservative position) might also fear that immigrants will bring in dangerous and polluting foreign elements (Purity) and subvert American traditions and order (Authority). Furthermore, pro-immigration attitudes were predicted more strongly by Harm scores than Fairness, suggesting that pro-immigration sentiment is based more on compassion for the poor than on a sense that illegal immigrants should have rights equal to those of citizens. Finally, replicating the pattern found in Study 1, opposition to flag-burning was best predicted by Ingroup (patriotism), but also by Authority (subversion) and Purity (desecration).

Lastly, subsample analyses indicated that adding RWA and SDO to the model does not eliminate the foundation effects. However, RWA was a powerful predictor for many issues and often overshadowed these effects in terms of total variance explained. We believe that, because it encompasses multiple moral concerns, MFT is most useful not for absolute prediction on a single issue, but for achieving better resolution when looking across a set of diverse and multi-determined attitudes. For example, high RWA predicts opposition to flag-burning, abortion, and immigration, but this does not tell us what it is about being authoritarian that drives a similar stance on such disparate issues. The moral foundations model, in contrast, suggests that opposition to abortion is primarily driven by moral intuitions about sanctity, opposition to flag-burning engages notions of respect for the ingroup and its symbol, whereas opposition to immigration is linked to conflicting intuitions about immigrants' vulnerability to harm and unfair treatment on the one hand, and a desire to maintain traditional social

order and ingroup purity on the other. This is an informative pattern that would not reveal itself with a single variable approach even if that single variable accounts for a lot of variance.

In short, if a researcher is interested primarily in predicting a person's positions on controversial issues and can get access to just one score then political orientation (or RWA) seems to be the best choice. However, if a researcher seeks a more in-depth understanding of the *multiple* psychological motivations that may underlie these positions, or why there is diversity even among partisans on either side, MFT can help.

6. General discussion

We examined the relationship between individuals' moral judgments and their views on a number of culture war issues. In Study 1 we examined whether five moral foundations predict moral disapproval on such issues, and in Study 2 we examined support for specific positions. Both studies show that the moral foundations model is useful in understanding issue positions, above and beyond demographics, ideology, and sociopolitical attitudes such as RWA and SDO.

So what holds opinions on controversial political issues together? One possibility is that, because politics is largely a "team sport," how one feels about a given issue is largely determined by where one's ideological team (e.g. "liberals" for a person who self-identifies as a liberal, "Democrats" for a person who self-identifies as a "Democrat") stands on that issue (Cohen, 2003; Malka & Lelkes, 2010). Our results support this idea, as evidenced by the consistent relationship between liberal–conservative self-placement and moral and political attitudes. However, this is not the whole picture; it is still unclear why a person chooses one ideological "team" over another, and psychological research is just beginning to examine the personality (Carney et al., 2008), physiological (Oxley et al., 2008) and genetic (Alford, Funk, & Hibbing, 2005) traits that may predispose individuals toward liberal or conservative ideologies. There is a psychological and moral structure to

many issues, and MFT may be useful in illuminating why some positions go together, even when on the surface they seem to contradict each other.

The current studies speak most clearly to the role of concerns about physical and spiritual purity in many social controversies. Purity scores were most strongly associated with issues related to sexuality and relationships (same-sex relations and marriage, casual sex, pornography, and having a baby outside of marriage) and the sanctity of life (abortion, cloning, euthanasia, and stem-cells research), but also with attitudes about flag-burning, illegal immigration, and global warming. The dominating importance of purity/sanctity concerns is surprising, and is not well captured by past psychological analyses of the determinants of political attitudes (e.g. Jost et al., 2003; Lakoff, 1996). Conceptually and empirically, this moral foundation is closely related to divinity and religion (Shweder, Much, Mahapatra, & Park, 1997). Still, the low church attendance reported by our participants implies relatively low levels of religiosity in our samples. Thus, it is not religious beliefs per se, but perhaps some more general moral sensitivity to issues of sanctity, self-transcendence, and self-control that may drive these results. This interpretation is supported by recent studies showing that purity-related judgments are separate from other moral domains (Horbert, Oveis, Keltner, & Cohen, 2009) and that conservatives are more susceptible to the emotion of disgust (Inbar et al., 2009), which in turn may underlie the evolutionary development of purity-based morality (Haidt & Kesebir, 2010).

The importance of purity concerns may also help distinguish issues that otherwise involve similar moral concerns. For example, in addition to the strong effect of ideology, the moral reprehensibility of the death penalty appeared to be driven not by Purity (the sanctity of life), but by Harm, suggesting that opponents of the death penalty are imagining the harm committed in the moment of execution (or the potential harm of wrongful convictions), rather than the harm committed by the convict in the first place. However, euthanasia, which also involves state-sanctioned killing (and, like the death penalty, might engender concerns over wrongful use) remains firmly linked to purity/sanctity and only very weakly to harm/care. Similarly, both medical testing and cloning involve concerns about hurting animals, yet the former was best predicted by Harm scores whereas the latter was best predicted by Purity.

Concerns about ingroup/loyalty held together views on foreign policy issues, such as defense spending, the use of forceful interrogation/torture, and confronting terrorism. It appears that these three draw on a common set of moral intuitions—about strengthening the group as it confronts its enemies—even though on the surface these issues bring up very different concerns, e.g. budgetary deficits, human rights, and foreign relations. No wonder, then, that Ingroup was also a strong predictor of opposition to flag burning, for those who think it a moral imperative to strengthen the nation would most want to honor and protect its sacred symbol.

The harm/care foundation appeared to cast a moral net over the death penalty, the use of torture, medical testing on animals, gun control, and global warming. Disapproval for the first three might be driven by an overarching concern with any group – prisoners or animals – that has no voice and is vulnerable to human error or inhumane treatment. The fact that support for stricter gun control and emissions standards also related to the harm/care foundation suggests that some individuals evaluate hurting the environment, hurting an animal, and hurting a human by a similar criterion, likely suffering. Interestingly, attitudes about global warming were also predicted by Purity, which may reflect a tendency to perceive nature as sacred.

Lastly, we were surprised that in both studies, fairness/reciprocity was the weakest foundation predictor of moral disapproval and issue positions. According to Jost and colleagues (2003), one of the central psychological dimensions that distinguish liberals and con-

servatives is opposition to versus a relative tolerance for inequality. Therefore, it is possible that variability on this dimension is already captured well by one's liberal–conservative identification or that our measurement of this foundation needs refinement to better capture the multifaceted nature of beliefs about fairness (Deutsch, 1975). Another possibility is that in its current form, this foundation fails to capture ideological variation in how fairness is interpreted. It could be that liberals tend to view fairness as equality of outcome, whereas conservatives view it as equality of opportunity. Future research should examine the nature of this foundation in more depth.

6.1. Limitations and unanswered questions

These studies had several important limitations. First, we used a convenience Internet sample. Our participants were more educated (US Census Bureau), more secular (Newport, 2010, May 21), more interested in politics (Morales, 2011, October 28), and more liberal than the average US population (Saad, 2010, June 25). However, our goal was to understand the relationships between morality and culture war opinions; we make no claims about the average American. Moreover, we believe that our Internet sample is a substantial improvement over the college student samples often used in research on political psychology (see Gosling, Vazire, Srivastava, John, & Psychologist, 2004). Like our participants, college students tend to be educated and liberal; however, they are also more homogenous in age, socio-economic and relationship status, less informed or interested in politics, and have less stable attitudes (Sears, 1986; Wattenberg, 2002).

In addition, supplementary analyses indicated that the secularity and liberalism of our sample do not necessarily threaten our conclusions. Specifically, because a portion of our Study 2 participants had provided their religious background, we were able to run our analyses separately for two subgroups with contrasting religious backgrounds – those raised as Baptist or Roman Catholic and those raised as "agnostic", "atheist", "secular (non-religious)", or "spiritual, but no organized religion." These subgroup analyses yielded patterns that were almost identical to those obtained in the full sample. Similarly, we also ran our analyses separately for self-identified liberals and conservatives. Overall, in both studies, the moral foundation pattern of prediction was similar between the two ideological groups. However, in both studies the foundation coefficients were somewhat larger among conservatives than liberals, suggesting that the sample's liberal bias may actually be suppressing our effects.

A potential methodological concern is that some of the MFQ items are worded similarly to the issues used as DVs in Study 1 (e.g. items for Purity mention God or chastity and many of the issues relate to sexuality), potentially inflating our effects. Therefore, we specifically sought to include a broader set of issues in Study 2. In addition, for a subset of our Study 1 participants, we were able to re-run our analyses using an alternative measure of foundation endorsement (the Moral Foundations Sacredness Scale, see Graham & Haidt, in press) and found that the top foundation predictor for all 13 issues was the same as when we used the MFQ.

It is also worth noting that some of the RWA scale items are even more closely related to our DV issues (e.g. "God's laws about abortion, pornography, and marriage must be strictly followed before it is too late, violations must be punished.") thus concerns with measurement overlap are not limited to the MFQ. In fact, given that several of this scale's items specifically mention several of the DV issues, its effects in the subsample analyses, particularly for Study 2, might be a result of a measurement artifact.

Finally, both studies are based on correlational data, thus we are unable to establish a causal or developmental order of influences among foundation endorsement, ideology, and issue positions. To

what extent a person's moral intuitions might predispose him/her to joining one versus another ideological team (and all the affective and attitudinal influences that follow from joining a team) and to what extent being already part of such a team might subsequently shape a person's morality? It is almost certain that these relationships are bidirectional, but experimental and developmental studies will be needed to clarify the strengths of these links. For example, would knowing a child's relative level of concern about animal suffering, unfairness, team loyalty, respect for authority, or disgust sensitivity allow us to predict her political attitudes 20 years later? Would priming the foundations subliminally – or through carefully-manipulated arguments – move judgments, and would the effects be limited to foundations that emerged as the strong predictors? Is it possible to frame culture war issues in ways that speak more directly to a particular audience's moral concerns? These questions await future research.

7. Conclusion

Returning to Connie and Libby, what can we say about their (seemingly) inconsistent or unrelated political attitudes? Libby might support abortion rights but oppose gun rights merely because she is a member of the liberal team. However, our findings suggest an additional binding thread. If Libby's feelings about abortion are primarily a function of a moral commitment to women's rights (fairness/reciprocity), whereas her position on gun control stems from a hatred of violence (harm/care), then simultaneously being pro-choice on abortion and anti-choice on gun ownership is not morally inconsistent; the frequent occurrence of this attitudinal pattern may be because Harm and Fairness are dominant concerns for liberals (Graham et al., 2009). Similarly, Connie may be more prone than Libby to perceive sacredness in biomedical issues, and is therefore sincere when she talks about the sanctity of life (purity/sanctity) in opposing abortion or euthanasia. Yet when it comes to gun purchases, such concerns do not apply; instead, her position rests on the idea that each member of a group should be able to defend that group from outside threats (ingroup/loyalty).

Clearly there is some room for play – for motivated moral reasoning (Ditto, Pizarro, & Tannenbaum, 2009) – when people and parties connect political issues to moral foundations. Nonetheless, there are constraints as well, and some issue positions will fit together better than others. The rich tapestry of an individual's political attitudes cannot be fully understood simply by looking at the surface features of culture war issues, nor by relying solely on his/her political self-placement or dispositional traits related to change and inequality. Understanding the coherence in culture war positions requires teasing apart their underlying moral-psychological threads, and MFT is a promising and relatively comprehensive approach to that end.

Acknowledgement

Appendix A

A.1. Political attitudes questionnaire (Study 2)

Instructions: The following questions address 11 controversial political issues. Individual opinions on these topics vary widely and there are no 'right' or 'wrong' answers.

[All items were prefaced by "Which statement about [issue] comes closest to your views?"]

1. Abortion: a. Abortion should be generally available to those who want it. b. Abortion should be available but under stricter limits than it is now. c. Abortion should be against the law except in cases of rape, incest and to save the woman's life. d. Abortion should not be permitted at all.
2. Defense spending: a. The federal government should increase its defense spending. b. The federal government should maintain its current defense spending. c. The federal government should decrease its defense spending.
3. Teaching intelligent design/creationism: a. Public schools should only teach the theory of evolution. b. Public schools should teach creationism/intelligent design along with evolution. c. Public schools should only teach creationism/intelligent design (instead of evolution).
4. Illegal immigration: a. Illegal immigrants do more to strengthen the US economy overall because they provide low-cost labor and they spend money. b. Illegal immigrants do more to weaken the US economy overall because they do not all pay taxes but can use public services.
5. Terrorism: a. In the long run, the US will be safer from terrorism if it confronts the countries and groups that promote terrorism in the Middle East. b. In the long run, the US will be safer from terrorism if it stays out of other countries' affairs in the Middle East.
6. Torture: a. It is OFTEN justified to use forceful interrogation techniques/torture to get information from a suspected terrorist. b. It is SOMETIMES justified to use forceful interrogation techniques/torture to get information from a suspected terrorist. c. The use of forceful interrogation techniques/torture is ALMOST NEVER justified. d. The use of forceful interrogation techniques/torture is NEVER justified.
7. Stem cell research: a. The federal government should fund research that would use newly created stem cells obtained from human embryos. b. The federal government should NOT fund research that would use newly created stem cells obtained from human embryos.
8. Flag-burning: a. I favor a constitutional amendment that would make it illegal to burn the American flag. b. I oppose a constitutional amendment that would make it illegal to burn the American flag.
9. Gun control: a. It is more important to protect the right of Americans to own guns. b. It is more important to control gun ownership.
10. Global warming: a. The government should increase restrictions on emissions from cars and industrial facilities such as power plants and factories in an attempt to reduce the effects of global warming. b. The restrictions that are currently in place are sufficient to reduce the effects of global warming. c. The government should decrease current restrictions because global warming is a theory that has not yet been proven.
11. Same-sex marriage: a. Same-sex couples should be allowed to legally marry. b. Same-sex couples should be allowed to have a civil union, but not to marry. c. Same-sex couples should NOT be allowed to marry nor have civil unions.

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