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Identifying the antecedents of moral conviction

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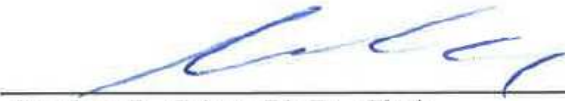
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IDENTIFYING THE ANTECEDENTS OF MORAL CONVICTION

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IDENTIFYING THE ANTECEDENTS OF MORAL CONVICTION

by

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Abstract

Our understanding of how moral attitudes influence behavior has been greatly expanded by recent research on moral conviction, but little has been done to identify factors that contribute to the formation of moral conviction. The primary purpose of the present research was therefore to identify antecedents to moral conviction. Across two studies, three potential antecedents were identified – reliance on the Harm moral foundation, personal relevance, and attitude intensity. In study 1 (N = 469), high individual reliance on the Harm moral foundation predicted stronger moral conviction. In study 2 (N = 460), high personal relevance and greater attitude intensity predicted stronger moral conviction. Study 2 also tested three separate hypotheses forwarded by the Integrated Theory of Moral Conviction (ITMC) – the universality, objectivity, and emotion hypotheses. While results offered support for the objectivity and emotion hypotheses, support for the universality hypothesis was equivocal. Future research is required to determine the mechanism by which personal relevance increases moral conviction and the directional links between emotion and moral conviction.

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General Introduction

The influence of attitudes on behavior has been a topic of interest and research for decades, with current theory suggesting that attitudes of greater extremity, certainty, and importance exercise greater influence over corresponding behaviors than attitudes of weaker extremity, certainty, and importance (see Petty & Krosnick, 1995). However, few would argue that mere strong attitudes were the motivating force behind terrorist attacks like 9/11 (Skitka, Bauman, & Sargis, 2005; Skitka & Mullen, 2002). Such behaviors, Linda Skitka and colleagues argue, can be largely attributed to attitudes based on moral beliefs (Mullen & Skitka, 2006; Skitka, 2010; Skitka & Bauman, 2008; Skitka, Bauman, & Lytle, 2009; Skitka & Mullen, 2002).

Moral Mandates and Moral Conviction

Attitudes can vary with regard to whether they are rooted in subjective preference, normative conventions, or moral beliefs (e.g., Turiel, 2002). Attitudes rooted in preferences refer to positive and negative evaluations based on personal taste and are not socially regulated. For example, a preference to vacation at the beach versus in the mountains is based on individual taste. Attitudes rooted in normative conventions are based on shared notions of how things are normally done in one's group or culture and are socially regulated. People within the boundary of the group are expected to adhere to these normative conventions, whereas those outside the group are not. For attitudes rooted in moral beliefs, however, evaluations are based on whether an object or behavior adheres to one's moral principles. Unlike attitudes based on preferences or convention, people expect/believe that these attitudes should generalize and apply regardless of group membership – what is right is right and what is wrong is wrong. Just as the roots of attitudes can vary, individuals vary with regard to whether the same attitude object is viewed as preference, convention, or moral belief (Turiel, 2002). For example, some people might have a negative stance toward capital punishment because it is illegal in their state (attitude based on normative convention), but others might have the same negative stance because they believe it is

always wrong to kill another human being (attitude based on moral belief). This individual difference, and the unique consequences that characterize attitudes based on moral beliefs, has been the subject of recent research.

Linda Skitka (2010) refers to attitudes that develop out of moral beliefs as ‘moral mandates’. Moral conviction, on the other hand, refers to strong, absolute beliefs that something is right or wrong (Skitka & Mullen, 2002). When an attitude is held with moral conviction, then, this implies that the attitude is based on strong moral beliefs. It has been argued that attitudes held with moral conviction are qualitatively different from nonmoral attitudes, especially with regard to their behavioral consequences (Skitka, 2010). For example, holding a strong attitude toward a specific issue is associated with lower tolerance of attitudinally dissimilar others, but only for intimate social relationships (e.g., friends, people who marry into the family). Moral conviction is also associated with lower tolerance of attitudinally dissimilar others, but unlike strong nonmoral attitudes, this intolerance applies to both close *and* distant relationships (e.g., neighbors, store owners; Skitka et al., 2005, studies 1, 2, & 3). Other consequences of high moral conviction include increased difficulty resolving conflict (Skitka et al., 2005, study 4), increased acceptance of violent means to achieve preferred ends (Skitka & Mullen, 2002), a lower tendency to obey authorities and laws (Skitka et al., 2009), and greater motivation to vote (Skitka & Bauman, 2008). These studies have expanded our understanding of how and when moral conviction can negatively and positively influence behavior. The next step is to uncover the antecedents of moral conviction, with the end goal of weakening moral conviction when consequences may be dire (e.g., violent behavior) or strengthening moral conviction when outcomes are desirable (e.g., greater voter turnout). The present research drew upon Moral Foundations Theory (study 1) and the attitude strength literature (study 2) in an initial attempt to identify moral conviction antecedents.

Study 1 Introduction

Modern research on morality has been based primarily on the work of Lawrence Kohlberg (1969) and Carol Gilligan (1982), who emphasized the importance of justice and care, respectively, as the primary foundations of morality. However, Richard Shweder and colleagues (1997) have since argued that justice and care do not fully characterize human morality. They argue that there are in fact three different moral ‘ethics’ – the ethic of autonomy (which encompasses justice and care), the ethic of community, and the ethic of divinity. Expanding on Shweder’s work, Moral Foundations Theory (MFT) seeks to further explain the origins, development, and cultural variations of morality, and posits that there are five psychological foundations upon which cultures construct concepts of morality (Haidt & Graham, 2007; Haidt & Joseph, 2004). These foundations include Harm/Care, Fairness/Reciprocity, Ingroup/Loyalty, Authority/Respect, and Purity/Sanctity. The Harm/Care foundation is related to human concerns for caring, nurturing, and protecting the vulnerable. Fairness/Reciprocity aligns with our concern for fairness and justice. Ingroup/Loyalty addresses matters of loyalty, patriotism, and self-sacrifice for the group. The foundation of Authority/Respect includes concepts such as obedience, respect, leadership, and protection. The foundation of Purity/Sanctity encompasses concerns regarding contamination, and the taming of humanity’s carnal nature (e.g., lust). The moral foundations proposed by MFT are the primary focus of study 1.

The Moral Foundations Questionnaire (MFQ; for review see Graham et al., 2011) measures the extent to which people rely on the five moral foundations proposed by Moral Foundations Theory, and research using the MFQ demonstrates that groups can vary in the extent to which they rely on these foundations to define right and wrong. For example, Graham and colleagues (2009) discovered differential endorsement of the five foundations between liberals and conservatives; liberals tend to endorse the Harm/Care and Fairness/Reciprocity foundations to a greater extent than the other three

foundations¹, and conservatives endorse all five foundations fairly equally. But as previously noted, individuals can vary with regard to whether their attitude is rooted in preference, social convention, or moral belief. One person may have a negative attitude toward littering because it is illegal in their state (convention) and another because they believe humans have a moral obligation to protect the environment (moral belief). Thus identifying what leads one person to hold an attitude with high moral conviction and another with low moral conviction is more a question of individual differences than group differences. One way to further understand the formation of moral conviction is to identify individual differences that explain why a person's attitude becomes rooted in their moral beliefs. Two such differences may be the extent to which individuals rely on the five moral foundations and the extent to which individuals believe a specific issue is related to the five moral foundations.

Individual Differences

Jonathan Haidt and his colleagues (2009) draw an explicit link between McAdams' personality levels and the five moral foundations. McAdams (1995) pushes for a three-leveled approach to the study of personality. Level 1, according to McAdams (1995), consists of dispositional traits (e.g., the Big Five traits), which are largely stable regardless of the surrounding context or conditions. That is, they tend not to change across time, place or roles. Level 2 contains personal concerns, which refer to constructs such as motives, values, coping styles, current concerns, defense mechanisms, competencies, and domain-specific interests. These differ from traits in several ways, most notably by the fact that these constructs are contextualized by time, place, and/or role. Moreover, these constructs respond to experimental manipulations, and are thus frequently used as independent and dependent variables in research (Haidt, Graham, & Joseph, 2009). The third and last level contains what McAdams labels life stories, which are personal narratives that provide the individual with a meaningful identity regarding where they have been, how they got to where they are, and where they are going.

¹ It is important to note that liberals did not indicate that the other three foundations are never relevant. They were simply seen as less relevant than the foundations of Harm and Fairness.

According to Haidt and colleagues (2009), the moral foundations are not themselves individual-level traits, but individuals vary in the extent to which they rely on each of the moral foundations to define morality. As such, reliance on the moral foundations (as measured by the MFQ) are most likely contained in Level 2 of McAdams' (1995) characterization of personality and capture individual differences that may play a role in the formation of moral conviction. For example, if an individual considers fairness as highly important to their definition of morality (i.e., high reliance on the Fairness moral foundation), then we would expect their attitude toward cheating on an exam (which is a clear violation of Fairness) to be a reflection of their moral beliefs (i.e., high moral conviction). However, most moral issues are more complicated than cheating, frequently encompassing numerous moral considerations. Debate over the merits of embryonic stem cell research, for instance, typically draws upon arguments regarding the ability to treat serious human illnesses, the rights of the unborn, and the sanctity of human life. In these instances, simply knowing the extent to which an individual relies on the moral foundations may not necessarily inform us as to whether their attitude reflects their moral beliefs. To make such predictions we need to also consider how the individual sees the issue as related to the various moral foundations.

For many controversial issues both sides couch their arguments in moral terms. However, the framing of these arguments frequently relate more strongly to certain moral foundations than others. For example, arguments for and against the legalization of gay marriage typically cite the fair and equal administration of rights regardless of sexual orientation and the need to preserve the stability/sanctity of the institution of marriage, respectively. As a whole, the issue of legalizing gay marriage can thus be seen as most strongly related to the moral foundations of Fairness, Authority, and Purity. Which foundation predicts moral conviction, however, depends on the individual. One individual may display high moral conviction because they consider Fairness to be an important component of their moral beliefs (i.e., high reliance on the Fairness foundation) and they believe that legalizing gay marriage is a

matter of providing equal rights to all citizens (i.e., the issue is strongly related to the Fairness foundation). Another individual may display an equal level of moral conviction toward gay marriage, but this arises from their high reliance on the Purity moral foundation and their desire to preserve the sanctity of marriage between a man and a woman (i.e., the issue is strongly related to the Purity foundation). In other words, when reliance on a particular moral foundation is high and an issue is thought to be strongly related to that same foundation, high moral conviction toward that issue emerges. Study 1 was designed to test this prediction.

The Present Research

The basic prediction for the proposed research is that in order for an individual to have high moral conviction toward a particular issue, two conditions must be met. First, the individual must place high reliance on a particular moral foundation (e.g., Fairness). Second, the individual must perceive that the issue in question is highly related to that same foundation (e.g., Fairness). For example, high moral conviction toward legalizing gay marriage would be predicted only in a circumstance when an individual considers Fairness an important component of defining right from wrong AND believes that legalizing gay marriage is highly related to concepts of Fairness. If the individual does not place high reliance on the Fairness foundation, perceiving the legalization of gay marriage as related to Fairness would not lead to high moral conviction. Even if they do place high reliance on Fairness, if they do not perceive legalizing gay marriage as related to Fairness, this also would not lead to high moral conviction. In both these instances, the individuals may have strong attitudes toward legalizing gay marriage, but because their reliance on the moral foundations does not match their perception of how the issue relates to the foundations, their attitude is *not* a reflection of their moral beliefs. In this way the interaction of reliance on a moral foundation and the relation of an issue to that same foundation can be used to predict moral conviction.

The purpose of study 1 was to examine whether moral conviction can be predicted from the interaction of individual reliance on the moral foundations and perceived relatedness of an issue to these same foundations. Specifically, it was predicted that increases in the match between reliance on the moral foundations and perceived relatedness of an issue to the foundations will predict higher moral conviction toward that same issue (Hypothesis 1). This primary hypothesis was tested for two separate issues - legalizing gay marriage and using torture to obtain military intelligence. Specific hypotheses can also be forwarded for each issue.

As previously stated, arguments for and against legalizing gay marriage relate most directly to the foundations of Fairness, Authority, and Purity. It was therefore predicted that high-high matches on the Fairness, Authority, and Purity foundations would significantly predict high moral conviction toward legalizing gay marriage (Hypothesis 2). Arguments for and against using torture to obtain military intelligence cite the need to protect people from inhumane treatment, universal human rights, the need to protect one's country, and maintaining authoritative control/order. As such, using torture to obtain military intelligence can be seen as related to Harm, Fairness, Ingroup/Loyalty, and Authority. High-high matches on the Harm, Fairness, Ingroup/Loyalty, and Authority foundations were therefore expected to significantly predict high moral conviction toward the use of torture (Hypothesis 3).

Study 1 Methods

Study 1 examined whether moral conviction toward two separate issues (legalizing gay marriage and using torture to obtain military intelligence) can be reliably predicted from the interaction of individual reliance on the moral foundations (MFQ scores) and the perceived relatedness of these issues to the moral foundations.

Participants

The final sample included data from 469 (302 female, 167 male) undergraduate students at the University of Texas at El Paso. An online survey application – SurveyMonkey – was used to collect data and participants received partial credit toward a course requirement in return for their participation. Participant ages ranged from 17 to 49 with an average age of 20 years. The majority of participants were of Hispanic ethnicity (411; 87.6%).

Materials

Participants answered items concerning attitude strength (extremity, importance, certainty), and moral conviction (dependent measure) toward gay marriage and torture. Participants also rated the relatedness of these issues to the moral foundations. We also gathered data regarding political orientation, religiosity, and individual reliance on the different moral foundations (MFQ).

Attitude strength. Attitude strength is frequently measuring from attitude extremity, important, and certainty (Petty & Krosnick, 1995). These components were measured with nine items (three items per component) in an attitude strength scale we developed from items previously used by Skitka and colleagues (2005). Participants completed this scale for both gay marriage and torture and indicated their responses using a seven point scale ranging from *strongly disagree* to *strongly agree*, with *neutral or neither* as a center point.

Extremity. Attitude extremity was measured using the following three items: “I would oppose legislation to legalize this issue”, “My attitude toward this issue is positive” (reverse coded), and

“Thinking about this issue generates negative feelings in me”. Responses were coded from – 3 to +3 and extremity was assessed by calculating the absolute value of the deviation of responses from the scale midpoints and adding these together². Higher scores indicate greater attitude extremity. These items demonstrated fair reliability (α 's = .684 and .645 for gay marriage and torture, respectively).

Importance. Attitude importance was measured using the following three items: “This issue is not particularly important to me” (reverse coded), “I have considered taking personal action on this issue”, and “It bothers me when people don’t take this issue seriously”. Responses are coded on a scale from 1 to 7, with scores ranging from 3 to 21. Higher scores indicate higher importance. These items demonstrated poor to fair reliability (α 's = .738 and .593 for gay marriage and torture, respectively).

Certainty. Attitude certainty was measured using the following three items: “I am certain of my position on this issue”, “Persuasive arguments could do little to change my stance on this issue”, and “Sometimes I question my stance on this issue” (reverse coded). Responses are coded on a scale from 1 to 7, with scores ranging from 3 to 21. Higher scores indicate higher certainty. These items demonstrated somewhat poor reliability (α 's = .568 and .576 for gay marriage and torture, respectively).

Moral Foundations Questionnaire (MFQ). The Moral Foundations Questionnaire (MFQ; Graham et al., 2011) is composed of two sub-scales, each containing 15 items, for a total of 30 items (6 items per foundation; see Appendix A for full scales). Part I assesses the relevance of each moral foundation to an individual when making moral decisions. It begins with the phrase, “When you decide whether something is right or wrong, to what extent are the following considerations relevant to your thinking?”, and participants respond to items (e.g., “Whether or not someone suffered emotionally”, “Whether or not someone showed a lack of loyalty”) using a six point scale ranging from *not at all relevant* to *extremely relevant*. Part II of the questionnaire assesses the extent to which participants

² Attitude (valence) was also calculated by adding scores without a midfold.

agree or disagree with various moral judgments. Participants respond to items (e.g., “Compassion for those who are suffering is the most crucial virtue”, “Respect for authority is something all children need to learn”) using a six point scale ranging from *strongly agree* to *strongly disagree*. The foundation subscales demonstrated fair reliabilities (α 's = .705, .681, .718, .652, and .805 for Harm, Fairness, Ingroup, Authority, and Purity, respectively). Responses on each item are coded as ranging from 1 to 6. Responses on all six items for each foundation are added together, thus scores on each foundation can range from 6 to 36 with higher scores indicating greater reliance on that foundation in making right/wrong decisions.

Issue-relatedness. This scale was designed to capture the extent to which participants perceive an issue to be related to the five moral foundations. It begins with the statement, “Please indicate the extent to which you think [Issue] violates or supports the following”. There are two items for each moral foundation (e.g., “Respect for authority”, “Protecting the weak and vulnerable”) and participants indicate their responses using a nine point scale ranging from *strongly violates* to *strongly supports*, with *neither violates or supports* as a neutral center point (see Appendix for full scale). Because we are only interested in the degree of relation and not necessarily the direction, responses on the extremes of the issue-relatedness scale would be coded as 4's. This is because the responses of *strongly violates* and *strongly supports* both indicate high degrees of relation between the issue and that particular foundation. The central point would be coded as 0, and the points moving from neutral toward the outside as 1's, 2's, and 3's respectively (i.e., midfold). Using this scale, the two issues of legalizing gay marriage and torture each received a score on each of the five moral foundations – a score for relation to Harm, a score for relation to Fairness, etc. Each score on each foundation could range from 0 to 8, with higher values indicating higher perceived relation between the issue and the foundation in question.

Moral conviction. Moral conviction was measured using four items nearly identical to those used by Mullen and Skitka (2006). The only difference from the items used by Mullen and Skitka (2006)

was that the present items referred to a general social issue (“this issue”) rather than specifically to abortion. Participants completed this scale for both the gay marriage and torture issues and indicated their responses using a bipolar scale ranging from -3 (*strongly disagree*) to +3 (*strongly agree*), with 0 (*neutral or neither*) serving as a center point. The four items were: (a) “My attitude about this issue is closely related to my core moral values and convictions”, (b) “My attitude about this issue is closely tied to how I see myself as a person”, (c) “I would feel really awful about myself if I did not defend my position on this issue”, (d) “My feelings about this issue are related to how important it is to demonstrate to myself or others that I will stand up for what I think is right”. Responses were coded on a scale from 1 to 7, with scores ranging from 4 to 28. Higher scores indicate higher moral conviction. Reliabilities on this scale were acceptable (α 's = .793 and .833 for gay marriage and torture, respectively).

Political orientation. Political orientation was measured with a single item asking participants to use a seven point scale ranging from *strongly liberal* to *strongly conservative*, with *moderate* as a neutral center point.

Religiosity. Religiosity was measured with four items (see Appendix A for full scale) taken from Joseph and Diduca's (2007) Dimensions of Religiosity Scale (e.g., *I think about God all the time*, *God does not help me to make decisions*). Responses are made on a five point scale ranging from *strongly disagree* to *strongly agree* and aggregated to form a measure of religiosity. Scores could range from 4 to 20, with higher scores indicating higher religiosity. This scale demonstrated fair reliability ($\alpha = .70$).

Procedure

After a participant signed up for the experiment they gained access to a link that connected them with the online informed consent. Participants first read the informed consent form, and if they agreed to participate, they were provided with a web address to access the actual survey. The survey began by asking participants to indicate their moral conviction toward legalizing gay marriage and using torture to obtain military intelligence. This was followed by the attitude strength and issue-relatedness scales.

Next participants filled out the MFQ, followed by their gender, age, education level, ethnicity, and race. Last they completed the items measuring religiosity and were asked to indicate their political orientation.

Study 1 Results

Data Preparation

Missing data was imputed using the EM logarithm single imputation method in PRELIS (0.58% missingness). Match variables were created by multiplying each MFQ foundation variable by its corresponding issue-relatedness variable. For example, participants' scores on *Harm-MFQ* were multiplied with scores on *Harm-Issue*, scores on *Fair-MFQ* multiplied with *Fair-Issue*, etc. This was done for each issue (legalizing gay marriage and using torture to obtain military intelligence) to create a total of ten match variables (five per issue) representing the interactions between personal reliance on the moral foundations and perceived relation of the issue to the moral foundations. Variables were mean-centered to aid interpretation of the interaction terms in the hierarchical regression analyses.

Descriptives

Legalizing gay marriage. Scores on moral conviction toward legalizing gay marriage ranged from 4 to 28 with a mean of 18.73 ($SE = .253$). Scores on attitude extremity ranged from 0 to 9 with a mean of 5.10 ($SE = .118$), scores on attitude importance ranged from 3 to 21 with a mean of 11.93 ($SE = .193$), and scores on attitude certainty ranged from 5 to 21 with a mean of 15.77 ($SE = .161$). Moral conviction and the three attitude strength dimensions were all significantly intercorrelated (see Table 1).

Table 1: Correlations among moral conviction and attitude strength dimensions for the issue of legalizing gay marriage.

	Moral Conviction	Attitude Extremity	Attitude Importance	Attitude Certainty
Moral Conviction	1.0			
Attitude Extremity	.288*	1.0		
Attitude Importance	.489*	.402*	1.0	
Attitude Certainty	.349*	.474*	.374*	1.0

* correlation significant at the $p = .01$ level.

Using torture to obtain military intelligence. Scores on moral conviction toward using torture ranged from 4 to 28 with a mean of 18.52 ($SE = .264$). Scores on attitude extremity ranged from 0 to 9 with a mean of 4.15 ($SE = .123$), scores on attitude importance ranged from 3 to 21 with a mean of 12.14 ($SE = .151$), and scores on attitude certainty ranged from 5 to 21 with a mean of 13.87 ($SE = .162$). Moral conviction and the three attitude strength dimensions were all significantly intercorrelated (see Table 2).

Table 2: Correlations among moral conviction and attitude strength dimensions for the issue of using torture to obtain military intelligence.

	Moral Conviction	Attitude Extremity	Attitude Importance	Attitude Certainty
Moral Conviction	1.0			
Attitude Extremity	.204*	1.0		
Attitude Importance	.384*	.290*	1.0	
Attitude Certainty	.258*	.442*	.381*	1.0

* correlation significant at the $p = .01$ level.

Analysis

Two separate hierarchical regression analyses (one for each moral issue) were performed to test whether the moral foundations, relation of the moral issues to the five moral foundations, and the interactions between these variables explain unique variance in moral conviction. For each analysis, block 1 contained age, gender, political orientation, and religiosity. Block 2 contained the five MFQ foundation variables (e.g., *Harm-MFQ*, *Fair-MFQ*). The five issue-relatedness variables (e.g., *Harm-Issue*, *Fair-Issue*) were entered in block 3. Finally, the MFQ-issue relatedness match variables (heretofore referred to as match variables) were entered in block 4.

Legalizing gay marriage. As can be seen in Table 3, the variables in block 1 account for a significant amount of variance in moral conviction toward legalizing gay marriage, $R^2 = .051$, $F(4, 462) = 6.19$, $p < .001$. Block 2, which included the foundation scores from the MFQ, explained a significant amount of unique variance in moral conviction toward legalizing gay marriage, $\Delta R^2 = .067$, $F_{\Delta}(5, 457) = 6.91$, $p < .001$. The addition of the five issue-relatedness variables in block 3 also captured a significant amount of unique variance, $\Delta R^2 = .051$, $F_{\Delta}(5, 452) = 5.58$, $p < .001$. The last block, containing the five match variables, did not significantly increase the amount of unique variance explained, $\Delta R^2 = .014$, $F_{\Delta}(5, 447) = 1.50$, $p = .189^3$.

Table 3: Hierarchical regression analysis testing the effect of MFQ scores, issue-relatedness scores, and the foundation match interactions on moral conviction toward legalizing gay marriage (DV), holding gender, age, political orientation, and religiosity constant. Coefficients are from the final model.

	Variable	B	SE	<i>p</i>
Block 1: $R^2 = .051$, $F(4, 462) = 6.19$, $p < .001$				
	<i>Gender</i>	1.069	.547	.051
	<i>Age</i>	-.004	.058	.950
	<i>Political Orientation</i>	.046	.194	.814
	<i>Religiosity</i>	.049	.055	.377
Block 2: $\Delta R^2 = .067$, $F_{\Delta}(5, 457) = 6.91$, $p < .001$				
	<i>MFQ – Harm</i>	.138	.081	.090
	<i>MFQ – Fair</i>	.157	.087	.073
	<i>MFQ – Ingrp</i>	-.012	.066	.859
	<i>MFQ – Auth</i>	-.169	.074	.023
	<i>MFQ – Pure</i>	.082	.064	.201
Block 3: $\Delta R^2 = .051$, $F_{\Delta}(5, 452) = 5.58$, $p < .001$				
	<i>Issue – Harm</i>	.068	.123	.579
	<i>Issue – Fair</i>	.339	.121	.005
	<i>Issue – Ingrp</i>	.347	.132	.009

³ The block containing the five match interaction variables was also nonsignificant when only Fairness, Authority, and Purity variables were included in the analysis ($\Delta R^2 = .003$, $F_{\Delta}(3, 453) = .516$, $p = .617$), as well as when only Fairness and Purity variables were included ($\Delta R^2 = .002$, $F_{\Delta}(2, 456) = .514$, $p = .598$).

<i>Issue – Auth</i>	-.190	.137	.167
<i>Issue – Pure</i>	.034	.119	.775
Block 4: $\Delta R^2 = .014$, $F_{\Delta}(1, 445) = 1.50$, $p = .189$			
<i>Match – Harm</i>	.014	.021	.517
<i>Match – Fair</i>	.014	.023	.539
<i>Match – Ingrp</i>	-.050	.020	.011
<i>Match – Auth</i>	.037	.029	.197
<i>Match – Pure</i>	-.016	.025	.527

For the overall model, moral conviction was significantly predicted by reliance on the Authority foundation ($B = -.169$, $SE = .074$, $p = .023$); increasing reliance on the Authority foundation was associated with decreases in moral conviction. Perceiving the issue as increasingly related to Fairness ($B = .339$, $SE = .121$, $p = .005$) and Ingroup loyalty ($B = .347$, $SE = .132$, $p = .009$) was associated with increases in moral conviction. Moral conviction was marginally predicted by reliance on the Harm ($B = .138$, $SE = .081$, $p = .09$) and Fairness ($B = .157$, $SE = .087$, $p = .073$) moral foundations, with increasing reliance on these foundations associated with increasing moral conviction. Thus while several of the MFQ and issue-relatedness scores significantly predicted moral conviction toward legalizing gay marriage, the match (i.e., interaction) of these variables did not predict moral conviction. Hypotheses 1 and 2 were therefore not supported for the issue of legalizing gay marriage.

Using torture to obtain military intelligence. The variables in block 1 explained a significant amount of variance in moral conviction regarding the use of torture to obtain military intelligence, $R^2 = .023$, $F(4, 462) = 2.74$, $p = .028$. The MFQ foundation scores in block 2 captured a significant amount of unique variance in moral conviction, $\Delta R^2 = .049$, $F_{\Delta}(5, 457) = 4.87$, $p < .001$, as did the five issue-relatedness variables in block 3, $\Delta R^2 = .026$, $F_{\Delta}(5, 452) = 2.63$, $p = .023$. As with legalizing gay

marriage, adding the match variables in block 4 did not explain unique variance in moral conviction, $\Delta R^2 = .012$, $F_{\Delta}(5, 447) = 1.15$, $p = .33^4$.

Table 4: Hierarchical regression analysis testing the effect of MFQ scores, issue-relatedness scores, and the foundation match interactions on moral conviction toward using torture to obtain military intelligence (DV), holding gender, age, political orientation, and religiosity constant. Coefficients are from the final model.

	Variable	B	SE	<i>p</i>
Block 1: $R^2 = .023$, $F(4, 462) = 2.74$, $p = .028$				
	<i>Gender</i>	.131	.594	.825
	<i>Age</i>	.043	.062	.489
	<i>Political Orientation</i>	.331	.207	.110
	<i>Religiosity</i>	.003	.060	.960
Block 2: $\Delta R^2 = .049$, $F_{\Delta}(5, 457) = 4.87$, $p < .001$				
	<i>MFQ – Harm</i>	.185	.089	.039
	<i>MFQ – Fair</i>	.008	.092	.934
	<i>MFQ – Ingrp</i>	-.047	.072	.512
	<i>MFQ – Auth</i>	.061	.081	.449
	<i>MFQ – Pure</i>	.063	.065	.335
Block 3: $\Delta R^2 = .026$, $F_{\Delta}(5, 452) = 2.63$, $p = .023$				
	<i>Issue – Harm</i>	.043	.165	.795
	<i>Issue – Fair</i>	.167	.175	.339
	<i>Issue – Ingrp</i>	.067	.122	.585
	<i>Issue – Auth</i>	.022	.138	.876
	<i>Issue – Pure</i>	.149	.138	.278
Block 4: $\Delta R^2 = .012$, $F_{\Delta}(1, 445) = 1.15$, $p = .330$				
	<i>Match – Harm</i>	.025	.028	.378
	<i>Match – Fair</i>	-.003	.030	.928
	<i>Match – Ingrp</i>	-.021	.021	.305
	<i>Match – Auth</i>	-.011	.023	.641
	<i>Match – Pure</i>	.026	.017	.127

⁴ The block containing the five match interaction variables was also nonsignificant when only Harm, Fairness, Ingroup, and Authority variables were included in the analysis ($\Delta R^2 = .007$, $F_{\Delta}(4, 450) = .843$, $p = .498$), as well as when only Harm and Authority variables were included ($\Delta R^2 = .005$, $F_{\Delta}(2, 456) = 1.145$, $p = .319$).

In the overall model, only reliance on the Harm foundation significantly predicted moral conviction, with higher reliance on this foundation associated with increasing moral conviction ($B = .185, SE = .089, p = .039$). Thus across both moral issues, individual scores on the MFQ significantly predicted moral conviction, but the hypothesis that the match (i.e., interaction) between reliance on the foundations and perceived relation of the issue to the foundations would predict moral conviction was not supported. Hypotheses 1 and 3 were therefore not supported for the issue of using torture.

Moral Conviction and Attitude Strength

In previous research, the influence of moral conviction on various outcomes (e.g., preferred social distance) has been examined while controlling for the effects of attitude strength (e.g., Skitka et al., 2005). Skitka and her colleagues interpret the finding that moral conviction explains unique variance in these outcomes after controlling for attitude strength as evidence that moral mandates (moral attitudes) are qualitatively different from nonmoral attitudes (Skitka et al., 2005). The source of this qualitative difference, they argue, is the presence of moral conviction. But moral conviction itself correlates with indices of attitude strength, both in previous research (see Skitka, 2010) and the present (see Tables 1 & 2). Thus the qualitative difference between moral mandates and nonmoral attitudes lies in the part of moral conviction that is independent of attitude strength. Antecedents to moral conviction that wish to capture this unique variance, then, must do so when the effects of attitude strength are held constant.

While moral conviction was not predicted by the hypothesized interactions, it was significantly predicted by individual MFQ scores on the moral foundations (for both legalizing gay marriage and using torture to obtain military intelligence) and by individual perceptions of how the issue relates to the moral foundations (for legalizing gay marriage). To more stringently test whether these variables are antecedents to moral conviction the effects of attitude strength must be held constant. The preceding

analyses were therefore repeated with indices of attitude strength (attitude extremity, attitude importance, and attitude certainty) entered into block 2 of the hierarchical regression analysis.

Legalizing gay marriage. As would be expected, block 2 (containing the attitude strength indices) explained a significant amount of unique variance in moral conviction, $\Delta R^2 = .238$, $F_{\Delta}(5, 459) = 51.34$, $p < .001$. In the original analysis, the MFQ variables captured a significant amount of unique variance. In the present analysis, adding the five moral foundation variables from the MFQ in block 3 continued to capture unique variance in moral conviction above that accounted for by attitude strength, $\Delta R^2 = .030$, $F_{\Delta}(5, 454) = 3.94$, $p = .002$. Unlike before, the addition of the five issue-relatedness variables in block 4 did not significantly increase the amount of unique variance explained, $\Delta R^2 = .011$, $F_{\Delta}(5, 449) = 1.53$, $p = .177$. The match variables in block 5 still accounted for a negligible amount of unique variance, $\Delta R^2 = .006$, $F_{\Delta}(5, 444) = .797$, $p = .552$. With the addition of the attitude strength dimensions in block 2, the issue relatedness variables in block 4 no longer explained a significant amount of unique variance in moral conviction.

Table 5: Hierarchical regression analysis testing the effect of MFQ scores, issue-relatedness scores, and the foundation match interactions on moral conviction toward legalizing gay marriage (DV), holding gender, age, political orientation, religiosity, and attitude strength (extremity, importance, certainty) constant. Coefficients are from the final model.

	Variable	B	SE	<i>p</i>
Block 1: $R^2 = .051$, $F(4, 462) = 6.19$, $p < .001$				
	<i>Gender</i>	.377	.501	.452
	<i>Age</i>	-.010	.052	.850
	<i>Political Orientation</i>	.175	.176	.320
	<i>Religiosity</i>	.060	.050	.229
Block 2: $\Delta R^2 = .238$, $F_{\Delta}(3, 457) = 51.3$, $p < .001$				
	<i>Attd Extremity</i>	-.006	.106	.958
	<i>Attd Importance</i>	.447	.061	< .001
	<i>Attd Certainty</i>	.282	.072	< .001
Block 3: $\Delta R^2 = .030$, $F_{\Delta}(5, 457) = 3.94$, $p = .002$				
	<i>MFQ – Harm</i>	.143	.074	.053
	<i>MFQ – Fair</i>	.058	.080	.465
	<i>MFQ – Ingrp</i>	-.012	.060	.841
	<i>MFQ – Auth</i>	-.113	.068	.097
	<i>MFQ – Pure</i>	.072	.058	.217
Block 4: $\Delta R^2 = .011$, $F_{\Delta}(5, 452) = 1.53$, $p = .177$				
	<i>Issue – Harm</i>	.038	.111	.734
	<i>Issue – Fair</i>	.171	.113	.131
	<i>Issue – Ingrp</i>	.195	.121	.107
	<i>Issue – Auth</i>	-.089	.124	.472
	<i>Issue – Pure</i>	-.029	.108	.792
Block 5: $\Delta R^2 = .006$, $F_{\Delta}(5, 445) = .797$, $p = .552$				
	<i>Match – Harm</i>	.019	.019	.329
	<i>Match – Fair</i>	-.004	.021	.838
	<i>Match – Ingrp</i>	-.029	.018	.112
	<i>Match – Auth</i>	.026	.026	.316
	<i>Match – Pure</i>	-.017	.023	.458

In the final model, three variables significantly predicted moral conviction – attitude importance ($B = .447$, $SE = .061$, $p < .001$), attitude certainty ($B = .282$, $SE = .072$, $p < .001$), and reliance on the

Harm foundation ($B = .143$, $SE = .074$, $p = .053$). For all three variables, increasing scores were associated with increasing moral conviction. Having controlled for the effect of attitude strength, reliance on the Authority foundation and perceiving the issue as related to Fairness and Ingroup loyalty were no longer predictive of moral conviction.

The preceding analysis was repeated, including only those moral foundation variables that were part of the original predictions of Hypothesis 2 (Fairness, Authority, and Purity). Block 5 was also nonsignificant when only Fairness, Authority, and Purity variables were included in the analysis ($\Delta R^2 = .001$, $F_{\Delta}(3, 450) = .328$, $p = .805$), as well as when only Fairness and Purity variables were included ($\Delta R^2 = .000$, $F_{\Delta}(2, 453) = .127$, $p = .881$). In examining the frequency distribution of moral conviction scores for this issue, the presence of a bimodal distribution was noted, with a jump in the frequency of scores near the high end of the moral conviction scale. The preceding analysis was once again conducted, in an exploratory fashion, in which only data from participants classified as “high” in moral conviction (i.e., scores of 24 or higher on the scale) was examined. Block 5 was also nonsignificant for this analysis, $\Delta R^2 = .026$, $F_{\Delta}(5, 78) = .616$, $p = .688$. When participants were classified into two moral conviction groups (high vs. low) and a logistic regression was performed, the match interaction variables did not significantly improve model fit, $-2LL = 369.41$, $\chi^2(5) = 8.55$, $p = .129$.

Using torture to obtain military intelligence. Similar to the issue of legalizing gay marriage, the attitude strength indices in block 2 captured a significant amount of unique variance in moral conviction, $\Delta R^2 = .154$, $F_{\Delta}(3, 459) = 28.53$, $p < .001$. The five MFQ foundation variables added in block 3 explained an additional amount of unique variance in moral conviction, $\Delta R^2 = .024$, $F_{\Delta}(5, 454) = 2.68$, $p = .021$. The addition of the five issue-relatedness variables in block 4 did not significantly increase the amount of unique variance explained, $\Delta R^2 = .009$, $F_{\Delta}(5, 449) = 1.00$, $p = .417$, nor did adding the match variables in block 5, $\Delta R^2 = .007$, $F_{\Delta}(5, 444) = .745$, $p = .590$. Thus the issue

relatedness variables in block 4 no longer explained a significant amount of unique variance in moral conviction when attitude strength was held constant.

Table 6: Hierarchical regression analysis testing the effect of MFQ scores, issue-relatedness scores, and the foundation match interactions on moral conviction toward using torture to obtain military intelligence (DV), holding gender, age, political orientation, religiosity, and attitude strength (extremity, importance, certainty) constant. Coefficients are from the final model.

	Variable	B	SE	<i>p</i>
Block 1: $R^2 = .023$, $F(4, 462) = 2.74$, $p = .028$				
	<i>Gender</i>	.004	.561	.994
	<i>Age</i>	.009	.059	.872
	<i>Political Orientation</i>	.381	.195	.051
	<i>Religiosity</i>	.000	.056	.994
Block 2: $\Delta R^2 = .154$, $F_{\Delta}(3, 457) = 28.5$, $p < .001$				
	<i>Attd Extremity</i>	.023	.113	.835
	<i>Attd Importance</i>	.514	.084	< .001
	<i>Attd Certainty</i>	.169	.082	.038
Block 3: $\Delta R^2 = .024$, $F_{\Delta}(5, 457) = 2.68$, $p = .021$				
	<i>MFQ – Harm</i>	.168	.084	.048
	<i>MFQ – Fair</i>	-.050	.088	.571
	<i>MFQ – Ingrp</i>	-.037	.068	.586
	<i>MFQ – Auth</i>	.124	.077	.107
	<i>MFQ – Pure</i>	-.018	.063	.775
Block 4: $\Delta R^2 = .009$, $F_{\Delta}(5, 452) = 1.00$, $p = .417$				
	<i>Issue – Harm</i>	.036	.158	.819
	<i>Issue – Fair</i>	.165	.165	.319
	<i>Issue – Ingrp</i>	-.015	.116	.899
	<i>Issue – Auth</i>	-.031	.130	.811
	<i>Issue – Pure</i>	.098	.130	.453
Block 5: $\Delta R^2 = .007$, $F_{\Delta}(5, 445) = .745$, $p = .590$				
	<i>Match – Harm</i>	.016	.027	.546
	<i>Match – Fair</i>	-.010	.028	.727
	<i>Match – Ingrp</i>	-.018	.019	.343
	<i>Match – Auth</i>	.001	.022	.969
	<i>Match – Pure</i>	.023	.016	.161

Mirroring results from legalizing gay marriage, three variables significantly predicted moral conviction in the final model – attitude importance ($B = .514, SE = .084, p < .001$), attitude certainty ($B = .169, SE = .082, p = .038$), and reliance on the Harm foundation ($B = .168, SE = .084, p = .048$). As before, increases on these variables predicted increasing moral conviction. Thus it appears that only MFQ scores on the Harm foundation significantly predict moral conviction when the effects of attitude strength are held constant. Moreover, moral conviction is significantly and consistently predicted by both attitude importance and attitude certainty.

The preceding analysis was repeated, including only those moral foundation variables that were part of the original predictions of Hypothesis 3 (Harm, Fairness, Ingroup loyalty, and Authority). Block 5 was also nonsignificant when only these variables were included in the analysis ($\Delta R^2 = .003, F_{\Delta}(4, 447) = .413, p = .799$), as well as when only Harm and Authority variables were included ($\Delta R^2 = .002, F_{\Delta}(2, 453) = .446, p = .641$). A bimodal distribution was also noted for moral conviction toward using torture, thus the preceding analysis was repeated only on data from participants classified as “high” in moral conviction (i.e., scores of 24 or higher on the scale). Block 5 was nonsignificant for this analysis, $\Delta R^2 = .055, F_{\Delta}(5, 82) = 1.41, p = .230$. As with legalizing gay marriage, participants were classified into two moral conviction groups (high vs. low) and a logistic regression was performed; the match interaction variables again did not significantly improve model fit, $-2LL = 400.25, \chi^2(5) = 6.06, p = .300$.

Exploratory Analyses

The preceding analyses revealed that both attitude importance and attitude certainty are consistent, strong predictors of moral conviction whereas only reliance on the Harm foundation consistently predicted moral conviction. Recent research has found that reliance on the five moral foundations (as measured by the MFQ) can be used to predict attitudes toward various controversial issues, including same-sex marriage and using torture (Koleva, Graham, Iyer, Ditto, & Haidt, 2012).

Thus it is possible that scores on the MFQ in the present study also predict attitude strength regarding these issues. If so, then a more accurate representation of the relationships among these variables may be that reliance on the five moral foundations (MFQ scores) predicts attitude strength, and attitude strength then predicts moral conviction. An illustration of these relationships is provided in Figure 1.

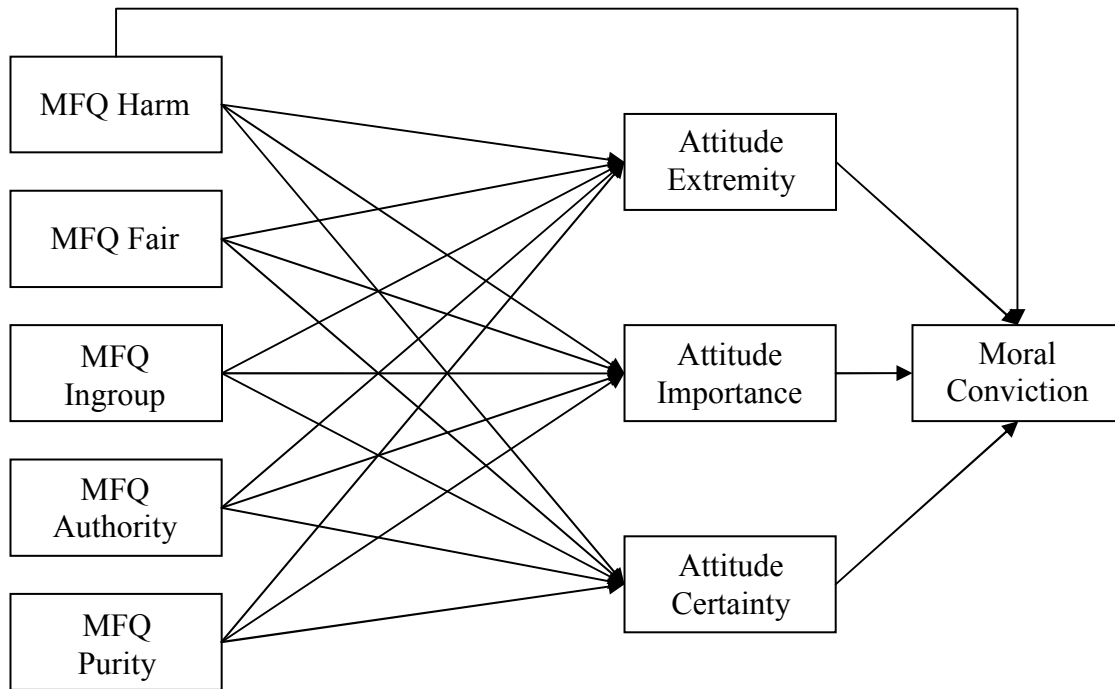


Figure 1: Proposed measured variable path analysis model in which reliance on the five moral foundations (MFQ scores) predict dimensions of attitude strength, which then predict moral conviction. A direct path from reliance on the Harm foundation to moral conviction was included given the significance of this predictor in preceding analyses (but see footnotes 3 and 4).

A measured variable path model was constructed to represent the hypothesized relationships, which included the following variables: reliance on the Harm foundation (MFQ Harm), reliance on the Fairness foundation (MFQ Fair), reliance on the Ingroup loyalty foundation (MFQ Ingroup), reliance on the Authority foundation (MFQ Authority), reliance on the Purity foundation (MFQ Purity), attitude extremity, attitude important, attitude certainty, and moral conviction.

An asymptotic variance-covariance matrix was created in PRELIS 2.20, which was required for further analyses due to significant violations of normality (Gay marriage: Skew = 5.59, Kurtosis = 106.9; Using torture: Skew = 6.47, Kurtosis = 109.23). The proposed relationships were estimated with a measured variable path analysis, one analysis per moral issue. The models were analyzed in LISREL 8.80 software (Jöreskog & Sörbom, 2006) using the maximum likelihood estimation method. Following Hu and Bentler's (1999) recommendations, model fit was assessed using a combination of fit indices – Satorra-Bentler Scaled chi-square, normed fit index (NFI), root mean square error of approximation (RMSEA), comparative fit index (CFI), and standardized root mean square residual (SRMR). Good model fit is indicated when $p > .05$ for the Satorra-Bentler chi-square, NFI is greater than 0.95, RMSEA is less than 0.06, CFI is greater than 0.90, and SRMR is less than 0.08.

Legalizing gay marriage. According to the above fit standards, the model is an excellent fit to the observed data, Satorra-Bentler $\chi^2(14) = 3.00$, $p = 1.00$, NFI = 1.00, RMSEA = 0.0 (90% CI: 0.0 ; 0.0), CFI = 1.0, SRMR = .0063⁵. Moreover, the modeled relationships among variables accounted for 8% of the observed variance in attitude extremity, 8% of the observed variance in attitude importance, 5% of the observed variance in attitude certainty, and 31% of the observed variance in moral conviction.

Higher reliance on the Harm foundation significantly predicted increased attitude extremity ($B = .09$, $SE = .04$, $p < .05$), increased attitude importance ($B = .14$, $SE = .06$, $p < .05$), and increased moral conviction ($B = .23$, $SE = .05$, $p < .05$). Higher reliance on the Fairness foundation significantly predicted increased attitude extremity ($B = .09$, $SE = .04$, $p < .05$), increased attitude importance ($B = .17$, $SE = .06$, $p < .05$), and increased attitude certainty ($B = .19$, $SE = .05$, $p < .05$). Higher reliance on the Purity foundation significantly predicted decreased attitude extremity ($B = -.11$, $SE = .03$, $p < .05$).

⁵ A competing nested model was run in which the direct path from the MFQ Harm variable to moral conviction was omitted. This model was also a good fit to the observed data, Satorra-Bentler $\chi^2(15) = 23.81$, $p = .068$, NFI = .99, RMSEA = 0.036 (90% CI: 0.0 ; 0.061), CFI = .99, SRMR = .040. However, when this model was compared to the presented model, the fit was significantly worse than the fit of the model containing the direct path from MFQ Harm to moral conviction, $\Delta RMSEA = .036$, Satorra-Bentler χ^2 scaled difference = 19.66, $p < .001$.

Higher moral conviction was also significantly predicted by increasing attitude importance ($B = .49$, $SE = .07$, $p < .05$) and increasing attitude certainty ($B = .30$, $SE = .08$, $p < .05$).

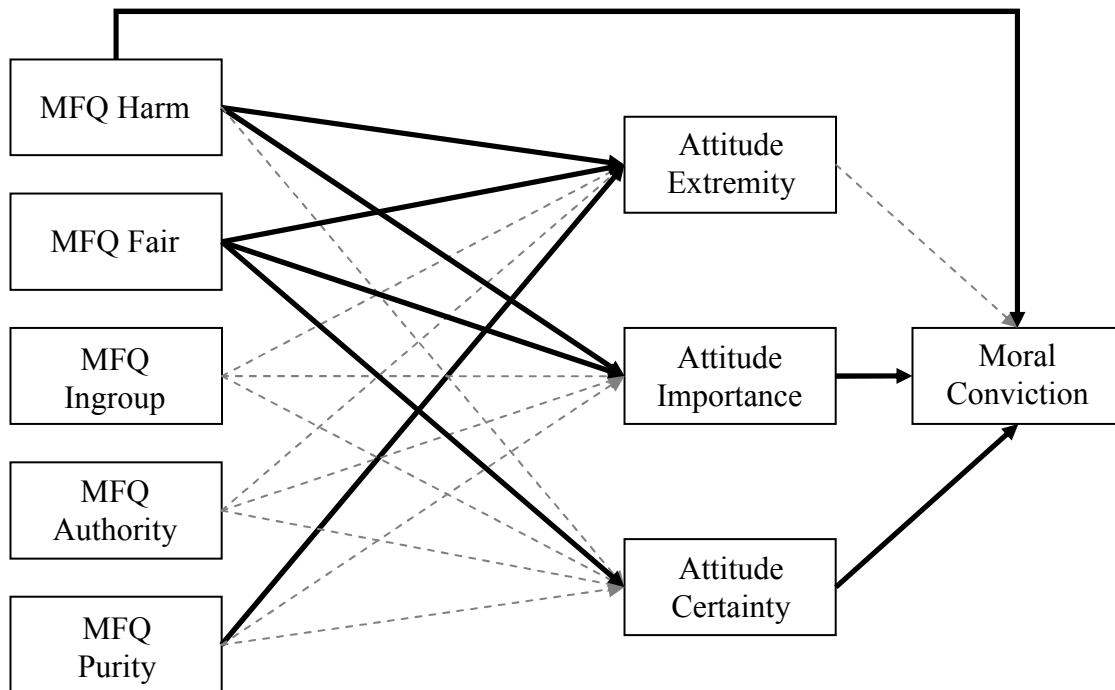


Figure 2: Results for measured variable path analysis on gay marriage data. Significant pathways are in bold while nonsignificant pathways are dashed. Satorra-Bentler $\chi^2 = 3.00$, $p = 1.0$; NFI = 1.0; RMSEA = 0.0; CFI = 1.0; SRMR = .0063; degrees of freedom = 14.

Given the significant relationships between reliance on the moral foundations and the attitude strength dimensions for this issue, it is possible that reliance on the moral foundations indirectly affects moral conviction through attitude strength. In other words, the attitude strength dimensions may be mediators between reliance on the moral foundations and moral conviction toward legalizing gay marriage. In particular, it is plausible that attitude importance and attitude certainty mediate the effects of reliance on Harm and Fairness on moral conviction. The significance of these indirect pathways were testing using Andrew Hayes' PROCESS modeling tool (Hayes, 2012) in SPSS, which generates both a point estimate and 95% bias-corrected bootstrap confidence interval for indirect effects. For each

analysis, 5000 bootstrap samples were requested and all variables not directly involved in the mediation were included as covariates to control for their influence. For example, when examining whether attitude importance mediates the relationship between MFQ Harm and moral conviction, MFQ Fair, MFQ Ingroup, MFQ Authority, MFQ Purity, attitude extremity, and attitude certainty were all included as covariates in the analysis.

The mediation analyses indicate that the relationship between reliance on the Harm foundation (MFQ Harm) and moral conviction is significantly mediated by attitude importance ($a_1b_1 = .0523$, $BootSE = .0274$, 95% bias-corrected bootstrap confidence interval = .0031 ; .1114). Increasing reliance on the Harm foundation was associated with increasing attitude importance ($a_1 = .1091$, $SE = .0555$, $p = .049$), and increasing attitude importance was associated with increasing moral conviction ($b_1 = .4794$, $SE = .058$, $p < .0001$). The relationship between reliance on the Fairness foundation (MFQ Fair) and moral conviction was significantly mediated by attitude certainty ($a_1b_1 = .0325$, $BootSE = .0163$, 95% bias-corrected bootstrap confidence interval = .0079 ; .0757). Increasing reliance on the Fairness foundation was associated with increasing attitude certainty ($a_1 = .1133$, $SE = .049$, $p = .021$) and increasing attitude certainty was associated with increasing moral conviction ($b_1 = .2868$, $SE = .0715$, $p = .0001$). No other indirect paths were significant. Thus increasing reliance on the Harm foundation is both directly and indirectly (through attitude importance) associated with increasing moral conviction toward legalizing gay marriage, and the effect of reliance on the Fairness foundation on moral conviction is mediated through attitude certainty.

Using torture to obtain military intelligence. The above measured variable path analysis was repeated for the issue of using torture to obtain military intelligence. The proposed model was also an excellent fit to the observed data for this issue, Satorra-Bentler $\chi^2(14) = 4.59$, $p = .99$, NFI = 1.00,

RMSEA = 0.0 (90% CI: 0.0 ; 0.0), CFI = 1.0, SRMR = .013⁶. The modeled relationships among variables accounted for 5% of the observed variance in attitude extremity, 8% of the observed variance in attitude importance, 3% of the observed variance in attitude certainty, and 19% of the observed variance in moral conviction.

Increasing reliance on the Harm foundation was significantly associated with increasing attitude extremity ($B = .10, SE = .04, p < .05$) as well as increasing moral conviction ($B = .18, SE = .05, p < .05$). Increasing reliance on the Purity foundation was significantly associated with increasing attitude extremity ($B = .12, SE = .03, p < .05$) and increasing attitude certainty ($B = .10, SE = .04, p < .05$). As with legalizing gay marriage, higher moral conviction was significantly predicted by increasing attitude importance ($B = .51, SE = .09, p < .05$) and attitude certainty ($B = .18, SE = .08, p < .05$).

⁶ As with legalizing gay marriage, a competing nested model was also run in which the direct path from the MFQ Harm variable to moral conviction was omitted. This model was a good fit to the observed data, Satorra-Bentler $\chi^2(15) = 15.32, p = .43$, NFI = .99, RMSEA = 0.0068 (90% CI: 0.0 ; 0.045), CFI = 1.00, SRMR = .035. However, when this model was compared to the presented model, the fit was significantly worse than the fit of the model containing the direct path from MFQ Harm to moral conviction, Satorra-Bentler χ^2 scaled difference = 13.28, $p < .001$.

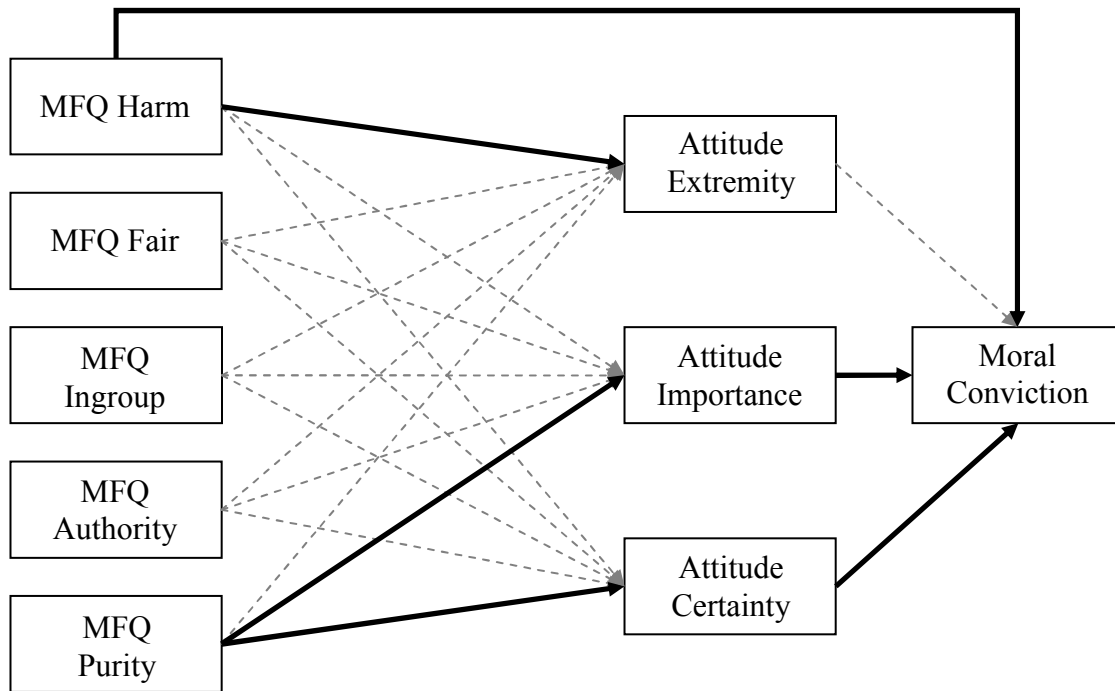


Figure 3: Results for measured variable path analysis on using torture to obtain military intelligence. Significant pathways are in bold while nonsignificant pathways are dashed. Satorra-Bentler $\chi^2 = 4.59, p = .99$; NFI = 1.0; RMSEA = 0.0; CFI = 1.0; SRMR = .013; degrees of freedom = 14.

Mediation analyses were performed to examine whether attitude strength mediates the relationship between reliance on the moral foundations and moral conviction toward the use of torture. As before, 5000 bootstrap samples were requested for each analysis and all variables not directly involved in the mediation were included as covariates to control for their influence. Only one indirect effect reached significance. Attitude importance significantly mediated the relationship between reliance on the purity foundation and moral conviction ($a_1b_1 = .0435, BootSE = .0183, 95\%$ bias-corrected bootstrap confidence interval = .0130 ; .0863); increasing reliance on the Purity foundation was associated with increasing attitude importance ($a_1 = .0837, SE = .0323, p = .0098$), and increasing attitude importance was associated with increasing moral conviction ($b_1 = .5195, SE = .083, p < .0001$). No other indirect paths were significant. For the issue of using torture to obtain military intelligence,

then, higher reliance on the Harm moral foundation directly predicts increasing moral conviction and higher reliance on the Purity foundation indirectly predicts increasing moral conviction through increased attitude importance.

Both issues. A final path analysis was conducted in which the attitude strength and moral conviction variables from both issues (legalizing gay marriage and using torture) were all included in the same model. Thus reliance on the five moral foundations predicted attitude extremity toward gay marriage and using torture, attitude importance toward gay marriage and torture, and attitude certainty toward gay marriage and torture. These six attitude strength variables then directly predicted moral conviction toward gay marriage and using torture. Direct paths from reliance on the Harm foundation to moral conviction toward gay marriage and moral conviction toward using torture were also included in the model.

An asymptotic variance-covariance matrix was created in PRELIS 2.20, which was required for further analyses due to significant violations of normality (Skew = 13.42, Kurtosis = 215.22). The proposed model was an excellent fit to the observed data, Satorra-Bentler $\chi^2(30) = 28.87, p = .52$, NFI = .99, RMSEA = 0.0 (90% CI: 0.0 ; 0.033), CFI = 1.0, SRMR = .023. The modeled relationships among variables accounted for 9% of the observed variance in attitude extremity, 7% of the observed variance in attitude importance, 5% of the observed variance in attitude certainty, and 31% of the observed variance in moral conviction toward legalizing gay marriage. The modeled relationships among variables accounted for 5% of the observed variance in attitude extremity, 9% of the observed variance in attitude importance, 3% of the observed variance in attitude certainty, and 19% of the observed variance in moral conviction toward using torture to obtain military intelligence.

Reliance on the Harm foundation directly predicted moral conviction toward both legalizing gay marriage ($B = .22, SE = .05$) and using torture ($B = .18, SE = .05$). This foundation also predicted attitude extremity ($B = .09, SE = .04$) and importance ($B = .14, SE = .06$) toward legalizing gay

marriage, and attitude extremity ($B = .10, SE = .04$) toward using torture. Reliance on the Fairness foundation significantly predicted attitude extremity ($B = .09, SE = .04$), importance ($B = .17, SE = .06$), and certainty ($B = .19, SE = .05$) toward legalizing gay marriage. Reliance on the Purity foundation significantly predicted attitude extremity ($B = -.11, SE = .03$) toward gay marriage, and both attitude importance ($B = .12, SE = .03$) and certainty ($B = .10, SE = .04$) toward using torture. Moral conviction toward legalizing gay marriage was significantly predicted by attitude importance ($B = .51, SE = .07$) and certainty ($B = .26, SE = .07$) toward gay marriage. Moral conviction toward using torture was also significantly predicted by attitude importance ($B = .50, SE = .08$) and certainty ($B = .20, SE = .08$) toward using torture.

While exploratory in nature, the preceding analyses indicate that reliance on the five moral foundations predict moral conviction both directly (reliance on the Harm foundation) and indirectly. Their indirect effect, moreover, is partly mediated through attitude importance and attitude certainty.

Study 1 Discussion

Study 1 examined whether moral conviction toward two separate issues (legalizing gay marriage and using torture to obtain military intelligence) can be reliably predicted from the interaction of individual reliance on the moral foundations (MFQ scores) and the perceived relatedness of these issues to the moral foundations. It was hypothesized that moral conviction would increase as the degree of high-high match between individual reliance on the moral foundations and perceived relation of the issues to these foundations increases. This prediction was not supported, but other interesting relationships emerged. When attitude strength dimensions were included in the analysis, stronger moral conviction was associated with increasing attitude importance, increasing attitude certainty, and increasing reliance on the Harm moral foundation. Study 1 therefore identified three potential antecedents of moral conviction – reliance on the Harm foundation (MFQ Harm scores), attitude importance, and attitude certainty.

Those who relied heavily on the Harm foundation in their definition of morality reported higher moral conviction toward both legalizing gay marriage and using torture to obtain military intelligence. This result might be expected if participants thought both issues were particularly related to the Harm foundation, but issue-relatedness scores do not support this explanation. Participants found the issue of legalizing gay marriage to be most related to the Fairness foundation ($M = 5.63$), then Purity ($M = 3.76$), and then Harm ($M = 3.61$). Participants also found the issue of using torture to be most related to Fairness ($M = 5.57$), followed by Harm ($M = 5.31$). Another possible explanation is that participants in the sample relied to a much greater extent on the Harm foundation than other foundations in their definition of morality. This too is not supported by the data. While participants did report higher reliance on Harm and Fairness foundations than the other foundations⁷, reliance on the Harm foundation

⁷ Higher endorsement of the Harm and Fairness moral foundations, relative to the other three, is a pattern observed among those of moderate to liberal political orientation (Haidt, Graham, & Joseph, 2009). The present sample consisted of 41%

($M = 28.19$, $SE = .220$) was not significantly higher than reliance on the Fairness foundation ($M = 28.10$, $SE = .194$), $t(468) = .530$, $p = .596$. If relatively high reliance on one of the moral foundations is sufficient to make it predictive of moral conviction, then reliance on the Fairness foundation should also have significantly predicted moral conviction. This was not the case. Moreover, it does not appear that reliance on the Harm foundation is more accurately or reliably captured by the MFQ scale items than reliance on the other moral foundations. While Cronbach's alpha was .705 for the items measuring reliance on Harm, two other subscales had higher reliabilities – Ingroup loyalty ($\alpha = .718$) and Purity ($\alpha = .805$). If better measurement was driving the ability of reliance on a moral foundation to predict moral conviction, these other foundations should also have been significantly predictive. Reliance on the Harm foundation, therefore, appears to represent a unique individual difference where those high in reliance have a greater overall tendency to base attitudes on their moral beliefs. The relationship between the other moral foundations and moral conviction, however, was less direct.

Exploratory path and mediation analyses indicate that reliance on the moral foundations significantly predicts attitude strength (extremity, importance, certainty) and the relationship between the moral foundations and moral conviction may be at least partly mediated through these attitude strength dimensions. That is, reliance on the moral foundations predicts attitude strength (extremity, importance, certainty), which then predicts moral conviction. Across both issues, increasing reliance on the Harm foundation directly predicted stronger moral conviction. For the issue of legalizing gay marriage, reliance on the Harm foundation indirectly predicted moral conviction through attitude importance, and reliance on the Fairness moral foundation indirectly predicted moral conviction through attitude certainty. For the issue of using torture, reliance on the Purity foundation indirectly predicted moral conviction through attitude importance.

liberal-leaning and 40% moderate participants, explaining the relatively higher reliance on the Harm and Fairness foundations.

One implication of these results is that reliance on the five moral foundations not only predicts general attitudes (Koleva et al., 2012), but also significantly predicts dimensions of attitude strength. Participants viewed the issue of legalizing gay marriage as most related to Fairness ($M = 5.63$), Purity ($M = 3.76$), and Harm ($M = 3.76$) and these were the foundations that significantly predicted attitude strength. Specifically, attitude extremity was predicted by Harm, Fairness, and Purity, attitude importance was predicted by Harm and Fairness, and attitude certainty was predicted by Fairness. Participants viewed the issue of using torture to obtain military intelligence as most related to Fairness ($M = 5.57$), Harm ($M = 5.31$), and Purity ($M = 4.64$) as well. Attitude extremity was predicted by Harm, and Purity predicted both attitude importance and attitude certainty. While previous research demonstrates that negative message framing (Bizer, Larsen, & Petty, 2011), defensive self-esteem (Haddock & Gebauer, 2011), and various personality variables (Britt, Pusilo, McKibben, Kelley, Baker, & Nielson, 2011) influence attitude strength dimensions, the current study offers evidence that individual reliance on the various moral foundations also predicts attitude strength.

With the exception of Harm, the relationship between reliance on the moral foundations and moral conviction was mediated through attitude importance and attitude certainty, which both significantly predicted moral conviction across issues. This highlights the importance of attitude strength in studying moral conviction. Skitka (2010) defines moral mandates as attitudes held with moral conviction, and thus the presence of moral conviction suggests an explicit link between a person's attitude and their moral beliefs. The results from study 1 were a poignant reminder that moral conviction is intimately and inextricably tied to attitudes; two out of the three potential antecedents identified were dimensions of attitude strength. Most research on moral conviction, however, has focused primarily on the morality literature with minimal emphasis on the attitude literature. With this in mind, study 2 continued the investigation for antecedents to moral conviction by drawing from the vast literature on attitudes.

Study 2 Introduction

Within the attitudes literature is a unique construct that bears some striking similarities to moral conviction – value-relevance. An attitude is said to have value-relevance when a person “comes to view the [attitude] object as relevant to his or her basic social and personal values” (Boninger, Krosnick, and Berent, 1995). That is, when there exists an explicit link between the attitude and personal values. Importantly, value-relevance has been measured with items that bear remarkable similarities to those used to measure moral conviction. For example, moral conviction has been measured by asking participants, “to what extent their position on a particular issue is a reflection of their core moral beliefs and convictions” or asking their level of agreement with statements such as, “my attitude about this issue is closely related to my core moral values and convictions”. For comparison, Boninger and colleagues (1995) measured value-relevance by asking participants “how much their opinions on the issue were related to their personal values, how often they considered that their attitudes on the issue were related to their values, and how much their attitudes were based on their values” (p. 73). In a more recent study, value-relevance was measured by asking participants to indicate “the degree to which their views on the issue of abortion were closely related to their *core values*...how frequently the issue of legalized abortion brought to mind important values, the extent to which their attitudes toward abortion were based on their basic values, and the degree to which their opinions on the issue were an expression of their core values” [italics in original] (Holbrook, Berent, Krosnick, Visser, & Boninger, 2005, p. 764). Core values were defined as personal beliefs about right and wrong, beliefs about good and bad ways of living, and religious beliefs. While not all values are moral in nature (e.g., achievement), some values are strongly tied to morality (e.g., benevolence) and the definition of “core values” in Holbrook and colleagues’ (2005) research clearly implies that participants were responding to the term *values* with morality in mind. This, combined with the uncanny similarities between these items and those used to measure moral conviction, suggests that value-relevance and moral conviction are very similar

constructs. If so, then any discovered antecedents to value-relevance may also be antecedents to moral conviction.

Moral Conviction and Personal Relevance

The vast majority of research on value-relevance has used this construct to predict attitudes and persuasion outcomes, with little interest in how value-relevance forms in the first place. A single exception comes from research performed by Boninger and colleagues (1995). While the primary focus of this research was to examine factors that affect attitude importance, it was also found that personal relevance can causally affect value-relevance (Boninger et al., 1995, study 5). In this study, personal relevance was defined as the involvement of one's personal rights, privileges, or lifestyle and increasing personal relevance had the effect of also increasing value-relevance. Applying these results to the current study, if value-relevance and moral conviction are similar constructs, then increasing personal relevance may also increase moral conviction. Study 2 experimentally manipulated personal relevance to examine whether this variable causally influences moral conviction, thus qualifying as a potential antecedent to moral conviction. It was specifically predicted that participants in a high personal relevance condition would exhibit higher moral conviction than those in a low personal relevance condition (Hypothesis 1). The possibility that personal relevance impacts moral conviction, however, challenges the theoretical argument that moral convictions are experienced as universally true (i.e., the universality hypothesis).

According to the universality hypothesis of the Integrated Theory of Moral Conviction (ITMC), those who hold an attitude with moral conviction perceive that their moral standards apply to all people in every culture (Skitka, 2010; Skitka et al., 2008). Thus the ITMC would likely predict that personal relevance has no significant impact on moral conviction – whether one is personally involved or not, the standard applies. Hypothesis 1 therefore serves two purposes – to examine whether personal relevance is an antecedent to moral conviction and to test the validity of the ITMC's universality hypothesis.

Beyond personal relevance, other potential antecedents to moral conviction can be identified in the attitude literature.

Moral Conviction and Attitude Strength Dimensions

There are nearly a dozen different dimensions of attitude strength that are commonly grouped into four different categories – features of the attitude itself (e.g., extremity and latitudes), elements of attitude structure (e.g., accessibility, attitude knowledge), processes by which the attitude is formed (e.g., direct experience), and people’s subjective beliefs about their attitudes (e.g., certainty, intensity) (Krosnick, Boninger, Chuang, Berent, & Carnot, 1993). Of particular interest are the dimensions in the last category –certainty and intensity – which may be antecedents to moral conviction and also relate to specific hypotheses of the Integrated Theory of Moral Conviction (ITMC).

Study 1 revealed a relationship between moral conviction and attitude certainty, with higher attitude certainty predicting higher moral conviction. It has been argued that attitude certainty is actually composed of two distinct constructs – attitude clarity (the sense that you know your true stance on a topic) and attitude correctness (confidence that your attitude is correct, valid, or justified) (Petrocelli, Tormala, & Rucker, 2007). According to the objectivity hypothesis of the ITMC, those with high moral conviction experience their moral beliefs as objective, self-justifying facts about the world (Skitka, 2010). There would therefore be a clear, right or wrong belief and/or attitude on that particular topic or issue. In support of this prediction, moral attitudes/beliefs have been found to rival scientific facts with regard to perceived objectivity (Goodwin & Darley, 2008). Based on the predictions of the ITMC and findings from Goodwin & Darley (2008), it is reasonable to expect that moral conviction will be strongly related to attitude correctness, with higher attitude correctness predicting higher moral conviction (Hypothesis 2). Hypothesis 2 therefore examines whether attitude correctness is a potential antecedent to moral conviction and also tests the ITMC’s objectivity hypothesis.

Another dimension of attitude strength is attitude intensity, defined as “the strength of the emotional reaction provoked by the attitude object in an individual” (Krosnick et al., 1993, p. 1132). Early research on moral psychology adopted a rationalist approach, claiming that we reach moral judgments and knowledge via reasoning and reflection (e.g., Kohlberg, 1969; Turiel, 1983). More recent theorizing, however, asserts that emotions play prominent roles in moral judgment (Greene, Nystrom, Engell, Darley, & Cohen, 2004; Greene, Sommerville, Nystrom, Darley, & Cohen, 2001; Haidt, 2001; 2003).

Building upon this development in the literature, the emotion hypothesis of the Integrated Theory of Moral Conviction (ITMC; Skitka et al., 2008) argues that moral mandates are associated with stronger emotions than nonmoral attitudes. There is evidence to support this. Skitka and Mullen (2006) found that challenging a person’s moral convictions elicits strong anger, which then predicts perceived injustice. Additionally, both positive and negative emotions are strongly connected with moral conviction toward the Iraq war and physician assisted suicide (PAS), with emotions partially mediating the impact of moral conviction on activist intentions for PAS (Skitka & Wisneski, 2011). Thus it appears that emotions strongly influence moral (fairness) judgments and behavioral intentions when attitudes reflect one’s moral beliefs (high moral conviction). But it has also been proposed that emotion plays a role in the initial moralization of issues (see Horberg, Oveis, & Keltner, 2011; Rozin, 1999) and induced disgust has led some participants to condemn the seemingly innocuous behavior of others as morally wrong (Wheatley & Haidt, 2005). This suggests that moral conviction may also be predicted by the strength of one’s emotional reaction to a situation or experience. This emotional reaction can be measured via attitude intensity. It is hypothesized that attitude intensity will predict moral conviction, with higher attitude intensity predicting higher moral conviction (Hypothesis 3), testing both whether attitude intensity may be a potential antecedent to moral conviction and the validity of the ITMC’s emotion hypothesis.

Altogether then, Hypotheses 1, 2 and 3 identify three potential antecedents to moral conviction – personal relevance, attitude correctness, and attitude intensity – while testing three separate hypotheses forwarded by the ITMC – universality, objectivity, and emotion. Of the three hypotheses, the universality hypothesis has received the most research attention.

Moral Conviction and Universality

Skitka and colleagues (2005) demonstrated support for the universality hypothesis by examining the relationship between moral conviction and preferred social distance. In this research, participants indicated whether they would be happy to have someone who did not share their views on a particular issue (e.g., abortion) as their neighbor, personal physician, someone they would date, etc. It was found that those high in moral conviction (i.e., those with strong moral attitudes) preferred greater social distance from those with opposite attitudes even when the potential relationship was distant (e.g., neighbor). In contrast, those low in moral conviction did not demonstrate this preference. This was interpreted as evidence that attitudes held with moral conviction are perceived as universal, applying to all persons in all contexts (Skitka et al., 2005). The present study sought to replicate this effect and expected high moral conviction to predict greater preferred social distance from those with opposite attitudes (Hypothesis 4). The relationship between moral conviction and preferred social distance, however, is an indirect test of the universality hypothesis, and there is no direct evidence that those high in moral conviction explicitly endorse the belief that their moral standards are universally applicable. Although the impact of personal relevance on moral conviction (Hypothesis 1) is another indirect test of the universality hypothesis, a direct test is more desirable.

Skitka (2010) argues that attitudes rooted in moral conviction are perceived as universal, meaning that the person's attitude applies to all persons and all contexts, regardless of the culture or circumstances. Alternatively stated, that person's attitude would not change depending on the person or the situation. The opposite, then, of universality is moral relativism, which refers to the extent to which

an individual rejects formulating or relying on universal moral rules (i.e., absolutes) when making moral decisions (Schlenker and Forsyth, 1977). Those scoring high on moral relativism believe that what is ethical varies from situation to situation and person to person. Thus moral absolutes cannot be forwarded and pronouncements of good and bad cannot be indiscriminately applied to all situations. Extending the ITMC's universality hypothesis to moral relativism, high moral conviction should predict low moral relativism.

While an established measure of moral universalism does not currently exist, a measure of moral relativism – the opposite side of the coin – does (Forsyth, 1980). Examining the relationship between moral conviction and moral relativism provides a more direct test of the universality hypothesis that has been missing from the literature. Toward this end, study 2 included a measure of moral relativism (with items tailored to the specific issues) and predicted that high moral conviction would predict low moral relativism (Hypothesis 5). Low moral relativism (i.e., high universalism) was also expected to predict greater preferred social distance (Hypothesis 6), and to mediate the relationship between moral conviction and preferred social distance (Hypothesis 7).

Finally, it was predicted that high personal relevance would indirectly increase preferred social distance through moral conviction and moral relativism (Hypothesis 8). More specifically, high personal relevance would increase moral conviction, increased moral conviction would lower moral relativism, and lower moral relativism would lead to greater preferred social distance.

The Present Study

Study 2's primary objectives were to, 1) identify potential antecedents to moral conviction, and 2) test the universality, objectivity, and emotion hypotheses from the Integrated Theory of Moral Conviction (ITMC). Participants read and responded to questions regarding scenarios related to abortion and building nuclear power plants. Participants encountered both scenarios during their

participation, but personal relevance was manipulated between subjects for each issue. The following hypotheses were proposed and tested:

Hypothesis 1: Personal relevance will have a direct effect on moral conviction, such that high personal relevance will increase moral conviction.

Hypothesis 2: Attitude correctness will significantly predict moral conviction, such that high attitude correctness will predict high moral conviction.

Hypothesis 3: Attitude intensity will significantly predict moral conviction, such that high attitude intensity will predict high moral conviction.

Hypothesis 4: Moral conviction will significantly predict preferred social distance, such that high moral conviction will predict greater preferred social distance.

Hypothesis 5: Moral conviction will significantly predict moral relativism, such that high moral conviction will predict low moral relativism (i.e., high moral universality).

Hypothesis 6: Moral relativism will significantly predict preferred social distance, with low moral relativism predicting greater preferred social distance.

Hypothesis 7: Moral relativism will mediate the effect of moral conviction on preferred social distance. Specifically, high moral conviction will predict low moral relativism, which will predict greater preferred social distance.

Hypothesis 8: High personal relevance will indirectly increase preferred social distance through moral conviction and moral relativism. High personal relevance will increase moral conviction, which lowers moral relativism, which increases preferred social distance.

Study 2 Methods

Participants

The final sample included data from 460 (296 female, 163 male, 1 no response) undergraduate students at the University of Texas at El Paso (N=322) and Lock Haven University of Pennsylvania (N=138). An online survey application – SurveyMonkey – was used to collect data and participants received partial credit toward a course requirement in return for their participation. Participant ages ranged from 17 to 56 with an average age of 21.7 years. Two hundred sixty nine participants self-identified as of Hispanic ethnicity (58.5%) with the remaining participants identifying as non-Hispanic (190; 41.3%).

Materials⁸

In the survey, participants read two different scenarios and responded to items concerning decisions made in the scenarios. Specifically, the scenarios related the decision to get an abortion (made by either the participant's romantic partner or by an unknown individual) and the decision to build a new nuclear power plant (made by the federal government). Personal relevance was manipulated using these scenarios. Order of issue presentation (abortion – nuclear power; nuclear power – abortion) was counterbalanced across participants. Participants then indicated their agreement with the decision reached, ranked factors that may have influenced their agreement, rated the personal relevance of the scenario, and answered items measuring moral conviction, relativism/idealism (issue specific), attitude strength (extremity, importance, certainty, intensity), and preferred social distance.

⁸ A small proportion of participants (40; 8.7%) completed a pretest survey in which they answered items concerning attitude strength (extremity, importance, certainty, and intensity), and moral conviction toward abortion and building nuclear power plants, and asked participants to rate the relatedness of these issues to the moral foundations. Participants also completed items designed to measure moral idealism and relativism regarding these two specific issues. They then completed the Moral Foundations Questionnaire (MFQ; Graham et al., 2011), the Ethics Position Questionnaire (EPQ; Forsyth, 1980), indicated their political orientation, the extent to which they perceived abortion and building nuclear power plants to be “moral” issues, and finally their religious participation. Due to an error in data collection, this data is not included in any analyses and thus will not be further discussed.

Scenarios. To manipulate personal relevance we created scenarios of high or low personal relevance for both the abortion and building nuclear power plants issues.

Abortion. Three scenarios (two high personal relevance, one low) were created to describe a situation in which a couple had to decide whether to seek an abortion. The low personal relevance scenario described the situation as involving a pair of strangers, named Seth and Julie. The high personal relevance scenario described the situation as involving the participant's significant other, and participants in this condition were asked their gender immediately prior to ensure receipt of a gender appropriate version (thus there were two high personal relevance scenarios). Below is the high personal relevance (HPR) scenario for a male participant (for all three complete scenarios, see Appendix B):

“You and your girlfriend have been dating for 10 months when you discover that she is 6 weeks pregnant. You both work and attend school, but if you decide to have the baby one or both of you will need to quit school to make financial ends meet. On top of that, the pregnancy is accompanied by a medical condition that may complicate pregnancy and/or birth. You sit down together one evening and your girlfriend suggests that it would be best to get an abortion.”

Building nuclear power plants. Two scenarios were created in which a decision was made to build a new nuclear power plant in the vicinity of a moderately sized city. In the low personal relevance condition, a decision was made to build a nuclear power plant near Yakima Firing Range in Washington state. In the high personal relevance condition, a decision was made to build a nuclear power plant near

White Sands Missile Range (50 miles outside the El Paso city limits)⁹. Below is the low personal relevance scenario (for both complete scenarios, see Appendix B):

“In an effort to meet growing energy demands, the United States government plans to build several new nuclear power plants on U.S. soil. One of these plants will be built near Yakima Firing Range in Washington state, less than 50 miles outside the Ellensburg city limits. While the new plant would provide a new energy source and job opportunities, there is a growing concern regarding safety for the surrounding region. Nuclear waste products can cause tremendous harm to both people and the environment, and there is potential that the plant might be targeted in future terrorist attacks, flooding the entire region with deadly nuclear radiation. Despite intense protest from locals in Ellensburg and Yakima, the government has decided to build the nuclear power plant within the next year.”

Agreement. After reading the scenario regarding the decision to get an abortion [build a nuclear power plant], participants indicated their agreement with this decision using a 7-point bipolar scale ranging from *strongly disagree* to *strongly agree* with *neither agree or disagree* as a neutral center point.

Influences on agreement. This variable was included to gather exploratory data for the design of future studies and will not be discussed further. Participants were asked to rank the extent to which a variety of different factors may have influenced their agreement with the decision to get an abortion [build a nuclear power plant] in the scenario they read. The listed factors included “Commandments

⁹ The high personal relevance scenario for building nuclear power plants was created for participants currently residing in the El Paso metro area. As a result, both the high and low personal relevance scenarios qualify as low personal relevance for participants recruited from Lock Haven University. Thus all participants from Lock Haven were coded as low personal relevance for the nuclear power plants issue.

from a supreme being (e.g., God)", "It is simply how any good person would respond", "It is the most practical and reasonable response", "My culture's beliefs and/or laws", and "My own personal preferences and opinions". It was also an option to select "other" and specify in a separate text box. Participants ranked these factors from *strongest influence* to *weakest influence* and could also select *not applicable* if one of the factors had no influence on their agreement. The same scale was also presented after reading the scenario regarding the decision to build a nuclear power plant on U.S. soil.

Personal relevance manipulation check. Several items were included to determine whether the personal relevance manipulation had the desired effect. Participants used a 7-point scale with options ranging from *not at all* to *extremely* with *moderately* as a center point to answer the following three items: "How much do you think the decision to [have or not have an abortion/ build or not build the nuclear power plant] in the scenario affects you?", "How much does the decision to [have or not have an abortion/ build or not build the nuclear power plant] in the scenario apply or relate to your life?", "How much does the decision to [have or not have an abortion/ build or not build the nuclear power plant] in the scenario affect you personally?". Participants were also asked to briefly state the reasons they thought the decision in the scenario did or did not affect them. Participants responded to this item by directly typing into a provided text box.

Moral conviction. An updated scale was used to measure moral conviction, obtained from Linda Skitka's personal/lab webpage (Skitka, 2011). The scale began with the stem, "To what extent is your position on [abortion/building nuclear power plants]" and was followed by four stem completions: "...a reflection of your core moral beliefs and convictions?", "...connected to your beliefs about fundamental right and wrong?", "...based on moral principle?", and "...a moral stance?" Participants completed this scale for both the abortion and building nuclear plants issues and responses were made on a 5-point scale ranging from *not at all* to *very much*. Responses were coded from 1 to 5, with scores

ranging from 4 to 20. Higher scores indicate higher moral conviction. The scale demonstrated good reliability for both the abortion and nuclear power plant issues (α 's = .917 and .899, respectively).

Moral relativism and idealism. Moral relativism for each issue was measured using the following three items: “The acceptability of [abortion/building nuclear power plants] varies from one situation and society to another”, “No rule concerning [abortion/building nuclear power plants] can be formulated; whether it is permissible or not permissible totally depends on the situation”, and “Whether [abortion/building nuclear power plants] is judged to be moral or immoral depends upon the circumstances surrounding the action.” Participants indicated their responses using a 9-point scale ranging from *completely disagree* to *completely agree*, with *neither agree or disagree* as a center point. Responses were coded from 1 to 9, with scores ranging from 3 to 27 and higher scores indicating great moral universalism (i.e., lower moral relativism). This scale demonstrated fair reliability for both the abortion and nuclear power plant issues (α 's = .798 and .719, respectively).

Moral idealism for each issue was also measured using the following four items: “[Abortion/Building nuclear power plants] should never be tolerated, irrespective of how small the risks might be”, “[Abortion/Building nuclear power plants] is always wrong, irrespective of the benefits to be gained”, “It is never necessary to [get an abortion/build nuclear power plants]”, and “Deciding whether or not to [get an abortion/build nuclear power plants] by balancing the positive consequences against the negative consequences is immoral.” Participants indicated their responses using a 9-point scale ranging from *completely disagree* to *completely agree*, with *neither agree or disagree* as a center point. Responses were coded from 1 to 9, with scores ranging from 3 to 27 and higher scores indicating great idealism. This scale demonstrated good reliability for both the abortion and nuclear power plant issues (α 's = .904 and .878, respectively).

Attitude strength. Attitude strength was captured using attitude extremity, important, certainty, and intensity (Petty & Krosnick, 1995). While study 1 measured extremity, importance, and certainty

with a scale previously used by Skitka and colleagues (2005), the items used in study 2 more closely mirror those used in attitude strength research (for review, see Krosnick et al., 1993) or reflect more recent developments in our understanding of these attitude strength dimensions (e.g., Petrocelli, Tormala, & Rucker, 2007). Study 2 also measured an additional attitude strength dimension, attitude intensity. Participants completed these attitude strength scales for both abortion and building nuclear power plants.

Extremity. Although attitude extremity did not significantly predict moral conviction in study 1, significant correlations between these variables in previous research (e.g., Skitka et al., 2005) led us to include it in study 2. Attitude extremity was measured using three semantic differential items. Participants rated the attitude object (abortion, building nuclear power plants) on three 7-point bipolar adjective scales: *very bad* – *very good*, *very negative* – *very positive*, *very desirable* – *very undesirable* (reverse coded). Responses were coded from – 3 to +3 and extremity was assessed by calculating the absolute value of the deviation of responses from the scale midpoints and adding these together. Thus scores could range from 0 to 9 with higher scores indicating greater attitude extremity¹⁰. This scale demonstrated good reliability for both the abortion and nuclear power plant issues (α 's = .906 and .905, respectively).

Importance. Attitude importance was measured using the following three items: “How important is the issue of [abortion/building nuclear power plants] to you in comparison to other issues?”, “How much do you care about the issue of [abortion/building nuclear power plants]?”, and “How important is the issue of [abortion/building nuclear power plants] to you personally?”. Participants indicated their responses using a 7-point scale ranging from *not at all* to *extremely* with *moderately* as the scale center point. Responses were coded from 1 to 7, with scores ranging from 3 to 21. Higher scores indicate

¹⁰ It should be noted that participants made minimal use of responses at the “positive” end of these particular items. Even the strongest pro-choice advocates may not be willing to endorse the view that abortion itself is good or very good. It is therefore likely that pro-choice participants indicated much more neutral (neither bad nor good) attitudes toward this particular issue than if the issue had been framed as *legalizing* abortion. Variability on this scale ($SE = .155$), however, was comparable to that observed for the issue of building nuclear power plants ($SE = .120$).

higher importance. This scale demonstrated good reliability for both the abortion and nuclear power plant issues (α 's = .919 and .877, respectively).

Certainty. Petrocelli and colleagues (2007) argue that attitude certainty is composed of two distinct factors – attitude clarity and attitude correctness. Study 2 adopted the items used by Petrocelli and colleagues (2007) to measure attitude clarity and correctness.

Attitude clarity was measured using the following four items: “To what extent is your true attitude toward the issue of [abortion/building nuclear power plants] clear in your mind?”, “How certain are you that the attitude you just expressed toward [abortion/building nuclear power plants] is really the attitude you have?”, “How certain are you that the attitude you expressed toward [abortion/building nuclear power plants] really reflects your true thoughts and feelings?”, and “How certain are you that you know what your true attitude on [abortion/building nuclear power plants] really is?” Participants indicated their responses using a 7-point scale ranging from *not at all* to *extremely* with *moderately* as the scale center point. Responses were coded from 1 to 7, with scores on this scale ranging from 4 to 28. Higher scores indicate higher attitude clarity. This scale demonstrated good reliability for both the abortion and nuclear power plant issues (α 's = .941 and .904, respectively).

Attitude correctness was measured using the following three items: “How certain are you that of all the possible attitudes one might have toward [abortion/building nuclear power plants], your attitude reflects the right way to think and feel about the issue?”, “To what extent do you think other people should have the same attitude as you on this issue?”, and “How certain are you that your attitude toward [abortion/building nuclear power plants] is the correct attitude to have?” Participants indicated their responses using a 7-point scale ranging from *not at all* to *extremely* with *moderately* as the scale center point. Responses were coded from 1 to 7, with scores on this scale ranging from 3 to 21. Higher scores indicate higher perceived attitude correctness. This scale demonstrated good reliability for both the abortion and nuclear power plant issues (α 's = .87 and .833, respectively).

Attitude intensity. Attitude intensity was measured using the following three items: “How strong are your emotions when you think about the issue of [abortion/building nuclear power plants]?”, “What is the intensity of your emotional reaction to [abortion/building nuclear power plants] compared with other public issues?”, and “How intense do you think your emotional reaction to [abortion/building nuclear power plants] is compared with how most other people might react? Participants indicated their responses using a 7-point scale ranging from *not at all* to *extremely* with *moderately* as the scale center point. Responses were coded from 1 to 7, with scores ranging from 3 to 21. Higher scores indicate higher attitude intensity. This scale demonstrated good reliability for both the abortion and nuclear power plant issues (α 's = .873 and .884, respectively).

Preferred social distance. Skitka and colleagues (2005) presented indirect evidence for the universality of moral attitudes by measuring the influence of moral conviction on preferred social distance. Results indicated that those high in moral conviction preferred greater social distance from *both* socially distant (e.g., owner of store I frequent) and socially intimate (e.g., person I would date) individuals with a different attitude, whereas this preference for greater social distance was only observed for socially intimate relationships in those with strong nonmoral attitudes. The present study sought to test the universality hypothesis of the Integrated Theory of Moral Conviction (ITMC) directly (by measuring moral relativism) and indirectly (by measuring preferred social distance). Preferred social distance was measured using the same scale used by Skitka and colleagues (2005). The scale begins with the statement stem, “I would be happy to have someone who does not share my views on [abortion/building nuclear power plants]...”, followed by ten stem completions representing socially distant (e.g., “...as President of the United States.”) and socially intimate (e.g., “...to marry into my family.”) relationships (see Appendix B for complete scale). Participants indicated their agreement on these items using a 7-point bipolar scale ranging from *very much disagree* to *very much agree* with

neither disagree or agree as a neutral center point. This scale demonstrated good reliability for both the abortion and nuclear power plant issues (α 's = .931 and .932, respectively).

Given that the primary difference on this variable between those high and low on moral conviction was for distant relationships (Skitka et al., 2005), only items pertaining to distant relationships were aggregated for analyses. This included the following five relationships: President of the United States, neighbor, spiritual advisor, owner of a store or restaurant frequented, and personal physician. Scores on this variable could thus range from 5 to 35, **lower** scores indicating **greater** desired social distance.

Procedure

After a participant signed up for the experiment they were provided with a link to the online informed consent form. Having signed the form they emailed the researcher to request an access code, were randomly assigned to one of the four versions of the survey, and were emailed a link to their assigned survey version. Having completed the online survey, participants were instructed to email a completion code to a research assistant, who then confirmed receipt of their completion code and provided the participant with a debriefing document.

A small portion (40; 8.7%) of participants completed an initial pretest survey prior to completing the above described survey (see footnote 3). This difference among participants was explicitly coded (0 = no pretest, 1 = took pretest) but had no effect on moral conviction for either moral issue (both p 's > .30). This variable was dropped from analyses and is not further discussed.

Study 2 Results

Data Preparation

Data were prepared for analysis by imputing missing data (0.66% missingness) with a single imputation using the multiple imputation option in PRELIS 2.20 (Jöreskog & Sörbom, 2006). For each issue, aggregate variables were created for the personal relevance manipulation check, attitude strength dimensions (extremity, importance, clarity, correctness, intensity), moral conviction, moral relativism, and preferred social distance (distant relationships).

Internal Consistency

Measure reliabilities were assessed using Cronbach's alpha. The moral conviction measures demonstrated good reliability (α 's = .917 and .899, for abortion and nuclear power plants, respectively), as did the preferred social distance measure (α 's = .931 and .932, for abortion and nuclear power plants, respectively). Reliability for the moral relativism measure was a bit less favorable, although still acceptable (α 's = .798 and .719, for abortion and nuclear power plants, respectively). As a whole, the attitude strength measures demonstrated good reliability for both the issue of abortion (α 's = .906, .919, .941, .870, and .873 for extremity, importance, clarity, correctness, and intensity, respectively) and building nuclear power plants (α 's = .905, .877, .904, .833, and .884 for extremity, importance, clarity, correctness, and intensity, respectively).

Attitude Strength Structure

Analyses revealed particularly strong correlations among several of the attitude strength measures (see Table 7). In particular, attitude importance and attitude intensity were strongly correlated (r 's = .879 and .846 for abortion and nuclear power plants, respectively), as well as attitude clarity and correctness (r 's = .708 and .711 for abortion and nuclear power plants, respectively).

Table 7: Intercorrelations among attitude strength dimensions.

Abortion					
	<i>Attitude extremity</i>	<i>Attitude importance</i>	<i>Attitude clarity</i>	<i>Attitude correctness</i>	<i>Attitude intensity</i>
<i>Attitude extremity</i>	1.0				
<i>Attitude importance</i>	.410	1.0			
<i>Attitude clarity</i>	.170	.597	1.0		
<i>Attitude correctness</i>	.331	.627	.708	1.0	
<i>Attitude intensity</i>	.439	.879	.589	.646	1.0
Nuclear power plants					
	<i>Attitude extremity</i>	<i>Attitude importance</i>	<i>Attitude clarity</i>	<i>Attitude correctness</i>	<i>Attitude intensity</i>
<i>Attitude extremity</i>	1.0				
<i>Attitude importance</i>	.431	1.0			
<i>Attitude clarity</i>	.256	.515	1.0		
<i>Attitude correctness</i>	.384	.632	.711	1.0	
<i>Attitude intensity</i>	.440	.846	.507	.692	1.0

All intercorrelations are significant at the $p = .01$ level.

Due to the presence of these strong intercorrelations, an exploratory factor analysis was conducted for each issue, using a direct oblimin rotation. A three factor solution resulted from both analyses in which attitude importance and intensity items loaded onto Factor 1, the attitude extremity items loaded negatively onto Factor 2 (attitude neutrality), and the attitude clarity and correctness items loaded onto Factor 3. Factors 1 and 3 correlated positively (r 's = .671 and .591 for abortion and nuclear power, respectively), while Factor 2 correlated negatively with both Factor 1 (r 's = -.480 and -.488 for

abortion and nuclear power, respectively) and Factor 3 (r 's = -.246 and -.300 for abortion and nuclear power, respectively).

These results raised concerns regarding multicollinearity in the originally planned analyses. While attitude clarity and correctness have distinct antecedents and play independent roles in persuasion (Petrocelli et al., 2007), these constructs remain significantly correlated and may pose a threat to the validity of results should they both be included in the present study's analyses. Given that a specific hypothesis was forwarded for attitude correctness – but not clarity – it was decided that attitude clarity would be dropped from all further analyses. The strong correlation between attitude importance and attitude intensity posed another dilemma given that both would be expected to predict moral conviction – increases in attitude intensity (importance) should predict increases in moral conviction¹¹. To include both measures in analyses, however, could introduce multicollinearity. A decision was made to focus primarily on attitude intensity due to its greater theoretical interest, but results from analyses using attitude importance were included for comparison, where appropriate.

Manipulation Check

Two one-way ANOVAs were run on the personal relevance manipulation check variables to test the efficacy of the personal relevance manipulation. For the abortion scenario, a total of 232 participants were assigned to the low personal relevance condition and 228 assigned to the high personal relevance condition. Participants in the high personal relevance condition rated the decision in the scenario as more personally relevant ($M_{\text{high}} = 14.86$, $SE = .379$) than participants in the low personal relevance condition ($M_{\text{low}} = 8.70$, $SE = .353$), $F(1, 458) = 141.99$, $p < .001$. All Lock Haven participants received low personal relevance scenarios for the issue of nuclear power (see footnote 4). Thus the low personal relevance condition contained a total of 299 participants and the high personal relevance condition

¹¹ Although an explicit hypothesis was not forwarded for attitude importance, study 1 indicated that moral conviction was consistently predicted by this attitude dimension. It was therefore expected that importance would predict moral conviction in study 2.

contained 161 participants. Participants in the high personal relevance condition rated the decision to build a nuclear power plant in the scenario as more personally relevant ($M_{\text{high}} = 13.91$, $SE = .381$) than participants in the low personal relevance condition ($M_{\text{low}} = 10.01$, $SE = .278$), $F(1, 457) = 34.64$, $p < .001$. The scenarios presented therefore appear to have successfully manipulated perceived personal relevance for both the abortion and nuclear power plants issues.

Personal Relevance and Moral Conviction

Hypothesis 1 predicted that high personal relevance would increase moral conviction for both issues. Simple one-way ANOVAs supported this prediction for abortion but not for building nuclear power plants. Participants in the high personal relevance condition expressed higher moral conviction toward the issue of abortion ($M_{\text{high}} = 15.37$, $SE = .285$) than participants in the low personal relevance condition ($M_{\text{low}} = 13.55$, $SE = .314$), $F(1, 458) = 18.31$, $p < .001$. However, there was no difference in moral conviction toward building nuclear power plants between participants in the high ($M_{\text{high}} = 11.17$, $SE = .241$) and low ($M_{\text{low}} = 11.72$, $SE = .367$) personal relevance conditions, $F(1, 458) = .875$, $p = .418$ ¹².

To more stringently test the impact of personal relevance on moral conviction, analyses were conducted holding the effects of attitude strength variables constant. Two hierarchical regression analyses were run (one per issue) in which participant age and gender were entered in block 1, attitude extremity, correctness, and intensity entered in block 2, and personal relevance (high vs. low) entered in block 3 (see Table 8). After controlling for the effects of age, gender, and attitude strength¹³, personal relevance accounted for a significant amount of unique variance in moral conviction toward abortion, $\Delta R^2 = .013$, $F_{\Delta}(1, 445) = 8.98$, $p = .003$. Consistent with the main analysis, personal relevance did not account for a significant amount of unique variance in moral conviction toward building nuclear power plants after controlling for age, gender, and attitude strength, $\Delta R^2 = .005$, $F_{\Delta}(1, 445) = 2.43$, $p = .12$. It

¹² This difference was also not significant when the analysis was performed on UTEP students only (i.e., Lock Haven participants omitted from the analysis), $F(1, 319) = 2.37$, $p = .095$.

¹³ Personal relevance remains a significant predictor of moral conviction toward abortion when attitude importance is also included in block 2 of the analysis.

therefore appears that high personal relevance increases moral conviction toward the issue of abortion, but has no discernable effect on moral conviction toward building nuclear power plants (Hypothesis 1 partially supported).

Table 8: Hierarchical regression analyses testing the effect of personal relevance on moral conviction (DV), holding gender, age, and attitude strength (extremity, correctness, intensity) constant. Coefficients are from the final model.

Abortion				
	Variable	B	SE	<i>p</i>
Block 1: $R^2 = .004$, $F(2, 449) = .901$, $p = .407$				
	<i>Gender</i>	.010	.364	.969
	<i>Age</i>	.021	.037	.562
Block 2: $\Delta R^2 = .364$, $F_{\Delta}(3, 446) = 85.5$, $p < .001$				
	<i>Attitude extremity</i>	.459	.058	< .001
	<i>Attitude correctness</i>	.066	.036	.065
	<i>Attitude intensity</i>	.225	.040	< .001
Block 3: $\Delta R^2 = .013$, $F_{\Delta}(1, 445) = 8.98$, $p = .003$				
	<i>Personal relevance</i>	1.03	.344	.003
Nuclear power plants				
	Variable	B	SE	<i>p</i>
Block 1: $R^2 = .037$, $F(2, 449) = 8.65$, $p < .001$				
	<i>Gender</i>	-1.435	.406	< .001
	<i>Age</i>	-.021	.041	.604
Block 2: $\Delta R^2 = .115$, $F_{\Delta}(3, 446) = 20.2$, $p < .001$				
	<i>Attitude extremity</i>	.145	.083	.081
	<i>Attitude correctness</i>	.055	.048	.255
	<i>Attitude intensity</i>	.186	.049	< .001
Block 3: $\Delta R^2 = .005$, $F_{\Delta}(1, 445) = 2.43$, $p = .120$				
	<i>Personal relevance</i>	-.614	.394	.120

Attitude Strength and Moral Conviction

High attitude correctness was expected to predict high moral conviction (Hypothesis 2) and high attitude intensity was expected to predict high moral conviction (Hypothesis 3). Hierarchical regressions were run on each issue in which gender and age were entered in block 1 and attitude extremity, correctness, and intensity were entered in block 2¹⁴. In this analysis, Hypothesis 2 was not supported – attitude correctness only marginally predicted moral conviction toward abortion ($B = .067$, $SE = .036$, $p = .062$) and did not significantly predict moral conviction toward building nuclear power plants ($B = .061$, $SE = .048$, $p = .202$). Hypothesis 3, however, was fully supported. Participants who reported high attitude intensity also reported high moral conviction toward both abortion ($B = .230$, $SE = .040$, $p < .001$) and building nuclear power plants ($B = .180$, $SE = .049$, $p < .001$).

A slightly different picture emerges when attitude intensity is replaced by attitude importance in block 2 of the preceding analysis. Similar to attitude intensity, high attitude importance predicts high moral conviction toward abortion ($B = .202$, $SE = .038$, $p < .001$) and building nuclear power plants ($B = .141$, $SE = .045$, $p = .002$). Unlike before, however, attitude correctness becomes a significant predictor of moral conviction; high attitude correctness predicts high moral conviction toward abortion ($B = .078$, $SE = .036$, $p = .029$) and building nuclear power plants ($B = .095$, $SE = .045$, $p = .035$).

Finally, when *both* attitude importance and intensity are included in block 2, attitude importance no longer significantly predicts moral conviction (p 's = .151 and .410 for abortion and nuclear power plants, respectively), nor does attitude correctness (p 's = .116 and .235 for abortion and nuclear power plants, respectively). But high attitude intensity continues to significantly predict high moral conviction

¹⁴ Suspicions of multicollinearity were confirmed when all five attitude strength dimensions were entered in block 2. Tolerance scores of .40 or lower indicate that multicollinearity may be a problem. For the issue of abortion, tolerance scores for attitude intensity and importance were .207 and .212, respectively. Tolerance scores for attitude correctness and clarity were .402 and .427, respectively. Tolerance values increased to .511 for attitude intensity and .574 for attitude correctness when importance and clarity were omitted. For the issue of building nuclear power plants, tolerance scores for attitude intensity and importance were .231 and .268, respectively. Tolerance scores for attitude correctness and clarity were .328 and .466, respectively. Tolerance values increased to .464 for attitude intensity and .486 for attitude correctness when importance and clarity were omitted.

toward abortion ($B = .160$, $SE = .063$, $p = .011$) and building nuclear power plants ($B = .140$, $SE = .069$, $p = .043$). The disparity between these sets of results is most likely due to multicollinearity. As previously stated, there is a high correlation between attitude importance and intensity (r 's = .879 and .846 for abortion and nuclear power plants, respectively), but there is also a relatively high correlation between attitude intensity and correctness (r 's = .646 and .692 for abortion and nuclear power plants, respectively). The inclusion of attitude intensity therefore negates the predictive ability of attitude importance as well as that of attitude correctness.

Additional analyses were run to determine whether personal relevance significantly interacts with attitude extremity, correctness, and intensity to predict moral conviction. Two hierarchical regression analyses (one per issue) were run in which block 1 contained age and gender, block 2 contained the attitude strength variables, block 3 contained the personal relevance variable (high vs. low), and block 4 contained three interaction variable – an attitude extremity by personal relevance interaction, an attitude correctness by personal relevance interaction, and an attitude intensity by personal relevance interaction. These interactions did not account for significant observed variance in moral conviction for both the issue of abortion ($\Delta R^2 = .002$, $F_{\Delta}(3, 442) = .405$, $p = .749$) and building nuclear power plants ($\Delta R^2 = .004$, $F_{\Delta}(3, 442) = .701$, $p = .552$). Thus personal relevance did not significantly interact with attitude strength in the prediction of moral conviction.

Moral Conviction and Social Distance

In previous research, high moral conviction significantly predicted a preference for greater social distance from (distant) relations holding different attitudes (Skitka et al., 2005, study 2). In the present study moral conviction was expected to significantly predict preferred social distance (Hypothesis 4), replicating Skitka's and colleagues' (2005) results. Controlling for the effects of age and gender, high moral conviction was found to significantly predict greater preferred social distance (i.e., lower scores on the social distance measure) from those holding a different view on abortion ($B = -.211$, $SE = .064$, p

= .001). This effect was not replicated, however, for the issue of building nuclear power plants ($B = -.094$, $SE = .063$, $p = .138$). Moreover, when the effects of attitude strength (extremity, correctness, and intensity) were also held constant, moral conviction no longer predicted preferred social distance for either issue (See Table 9)¹⁵. The effect of moral conviction on preferred social distance was therefore only partly replicated. That is, moral conviction significantly predicted preferred social distance only when covariates (attitude strength dimensions) were omitted from the analysis¹⁶ and the issue was related to abortion.

¹⁵ When attitude importance replaced attitude intensity in this same analysis the effect of moral conviction on preferred social distance remained nonsignificant ($p = .27$ and $.68$ for abortion and nuclear power plants, respectively).

¹⁶ For these analyses only items referring to “distant” social relations were included in social distance scores (see Materials). The pattern of results is identical when all social distance items are included in the analysis.

Table 9: Hierarchical regression analyses testing the effect of moral conviction on preferred social distance (DV), holding gender, age, and attitude strength (extremity, correctness, intensity) constant. Coefficients are from the final model.

Abortion				
	Variable	B	SE	<i>p</i>
Block 1: $R^2 = .005$, $F(2, 449) = 1.05$, $p = .350$				
	<i>Gender</i>	.683	.598	.254
	<i>Age</i>	.004	.061	.948
Block 2: $\Delta R^2 = .098$, $F_{\Delta}(3, 446) = 16.2$, $p < .001$				
	<i>Attitude extremity</i>	-.454	.101	< .001
	<i>Attitude correctness</i>	-.169	.059	.004
	<i>Attitude intensity</i>	.023	.077	.623
Block 3: $\Delta R^2 = .000$, $F_{\Delta}(1, 445) = .242$, $p = .623$				
	<i>Moral conviction</i>	.038	.077	.623
Nuclear power plants				
	Variable	B	SE	<i>p</i>
Block 1: $R^2 = .013$, $F(2, 449) = 2.97$, $p = .052$				
	<i>Gender</i>	1.13	.579	.051
	<i>Age</i>	-.004	.058	.949
Block 2: $\Delta R^2 = .036$, $F_{\Delta}(3, 446) = 5.66$, $p = .001$				
	<i>Attitude extremity</i>	-.363	.117	.002
	<i>Attitude correctness</i>	-.012	.067	.854
	<i>Attitude intensity</i>	-.034	.070	.630
Block 3: $\Delta R^2 = .000$, $F_{\Delta}(1, 445) = .166$, $p = .684$				
	<i>Moral conviction</i>	-.027	.067	.684

Two hierarchical regression analyses (one per issue) were run in which personal relevance was entered in block 4 and the interaction between personal relevance and moral conviction was entered in block 5. Personal relevance did not significantly predict preferred social distance from those with

different views on abortion ($B = 4.55, p = .254$) or building nuclear power plants ($B = .268, p = .930$). The interaction between personal relevance and moral conviction also failed to significantly predict preferred social distance for both abortion ($B = -.260, p = .319$) and building nuclear power plants ($B = .046, p = .856$).

Next the direct effect of moral conviction on moral relativism was tested (Hypothesis 5). Controlling for age and gender, high moral conviction significantly predicted low moral relativism toward abortion ($B = -.184, SE = .068, p = .007$), but this effect was only marginally significant for the issue of building nuclear power plants ($B = -.099, SE = .057, p = .081$). When attitude extremity, correctness, and intensity were also held constant (see Table 10), however, high moral conviction significantly predicted *higher* moral relativism toward abortion ($B = .190, SE = .079, p = .016$). This opposite effect may also be the result of multicollinearity, given that moral conviction toward abortion correlates significantly with attitude extremity ($r = .502, p = .01$), attitude correctness ($r = .410, p = .01$), and attitude intensity ($r = .527, p = .01$). Moral conviction did not significantly predict moral relativism toward building nuclear power plants when attitude strength dimensions were held constant ($B = .014, SE = .056, p = .804$). Hypothesis 5 was therefore partially supported for the issue of abortion – moral conviction predicted moral relativism in the expected direction only when attitude strength measures were omitted as covariates – but was not supported for the issue of building nuclear power plants.

Table 10: Hierarchical regression analyses testing the effect of moral conviction on moral relativism (DV), holding gender, age, and attitude strength (extremity, correctness, intensity) constant. Coefficients are from the final model.

Abortion				
	Variable	B	SE	<i>p</i>
Block 1: $R^2 = .005$, $F(2, 449) = 1.05$, $p = .350$				
	<i>Gender</i>	-1.46	.610	.017
	<i>Age</i>	-.126	.062	.042
Block 2: $\Delta R^2 = .098$, $F_{\Delta}(3, 446) = 16.2$, $p < .001$				
	<i>Attitude extremity</i>	-.914	.104	< .001
	<i>Attitude correctness</i>	-.016	.06	.788
	<i>Attitude intensity</i>	-.037	.07	.599
Block 3: $\Delta R^2 = .000$, $F_{\Delta}(1, 445) = .242$, $p = .623$				
	<i>Moral conviction</i>	.190	.079	.016
Nuclear power plants				
	Variable	B	SE	<i>p</i>
Block 1: $R^2 = .013$, $F(2, 449) = 2.97$, $p = .052$				
	<i>Gender</i>	.491	.489	.315
	<i>Age</i>	-.032	.049	.509
Block 2: $\Delta R^2 = .036$, $F_{\Delta}(3, 446) = 5.66$, $p = .001$				
	<i>Attitude extremity</i>	-.635	.098	< .001
	<i>Attitude correctness</i>	.177	.057	.002
	<i>Attitude intensity</i>	-.217	.059	< .001
Block 3: $\Delta R^2 = .000$, $F_{\Delta}(1, 445) = .166$, $p = .684$				
	<i>Moral conviction</i>	.014	.056	.804

Two additional hierarchical regression analyses (one per issue) were run in which personal relevance was included in block 4 and the interaction between personal relevance and moral conviction was entered in block 5. Personal relevance did not significantly predict moral relativism for abortion (B

= -.428, $p = .829$) or building nuclear power plants ($B = -.327, p = .801$). The interaction between personal relevance and moral conviction also failed to significantly predict moral relativism for abortion ($B = .074, p = .565$) and building nuclear power plants ($B = .063, p = .555$).

A similar set of hierarchical regression analyses were also run to test whether moral relativism predicts preferred social distance (Hypothesis 6). Controlling for age and gender, low moral relativism significantly predicted greater preferred social distance (i.e., lower scores on this measure) for both abortion ($B = .457, SE = .089, p < .001$) and building nuclear power plants ($B = .471, p < .001$). These effects remained significant for both abortion ($B = .268, SE = .094, p = .005$) and building nuclear power plants ($B = .374, SE = .111, p = .001$), even after controlling for the effect of attitude extremity, attitude correctness, and attitude intensity on preferred social distance in block 2. Hypothesis 6 was therefore fully supported; low moral relativism significantly predicted greater preferred social distance.

Moral relativism was expected to mediate the effect of moral conviction on social distance (Hypothesis 7). This mediated relationship was tested for both issues using Andrew Hayes' PROCESS modeling tool (Hayes, 2012) in SPSS, which generates both a point estimate and 95% bias-corrected bootstrap confidence interval for indirect effects. Two analyses were run on each issue, for a total of four separate mediation analyses. In the first analysis, age and gender were entered as covariates to control for their influence. In the second analysis, age, gender, and attitude extremity, correctness, and intensity were all entered as covariates. For each analysis, 5000 bootstrap samples were requested. Entering age and gender as covariates, moral relativism was found to significantly mediate the effect of moral conviction on preferred social distance for the abortion issue ($a_1b_1 = -.0374, BootSE = .0174, 95\%$ bias-corrected bootstrap confidence interval = $-.0794 ; -.0091$). Specifically, high moral conviction predicted low moral relativism ($a_1 = -.1841, SE = .068, p = .007$), and low moral relativism predicted greater preferred social distance from those with different views on abortion ($b_1 = .2033, SE = .043, p < .0001$). Moral relativism did not, however, mediate the effect of moral conviction on preferred social

distance for the issue of building nuclear power plants ($a_1b_1 = -.0245$, $BootSE = .0165$, 95% bias-corrected bootstrap confidence interval = $-.0650 ; .0022$).

These analyses were repeated on each issue, adding the attitude strength measures as additional covariates. For the issue of abortion, moral relativism again significantly mediated the effect of moral conviction on preferred social distance ($a_1b_1 = .0252$, $BootSE = .0164$, 95% bias-corrected bootstrap confidence interval = $.0027 ; .0686$), but in the opposite direction from before. That is, high moral conviction predicted *higher* moral relativism ($a_1 = .1898$, $SE = .079$, $p = .016$), which then predicted less preferred social distance ($b_1 = .1327$, $SE = .046$, $p = .004$), suggesting that increased moral conviction predicts *less* preferred social distance. The potential influence of multicollinearity among the attitude strength variables, however, should once again be kept in mind. For the issue of building nuclear power plants, moral relativism did not significantly mediate the relationship between moral conviction and preferred social distance in the second analysis ($a_1b_1 = .0029$, $BootSE = .0129$, 95% bias-corrected bootstrap confidence interval = $-.0218 ; .0309$). Hypothesis 7 was therefore partially supported for the issue of abortion – moral relativism mediated the effect of moral conviction on preferred social distance in the predicted direction only when attitude strength dimensions were omitted from the analysis – but was not supported for the issue of building nuclear power plants.

Finally, a second set of mediation analyses were performed to determine whether the personal relevance manipulation indirectly affected preferred social distance through moral conviction and moral relativism (see Figure 3).

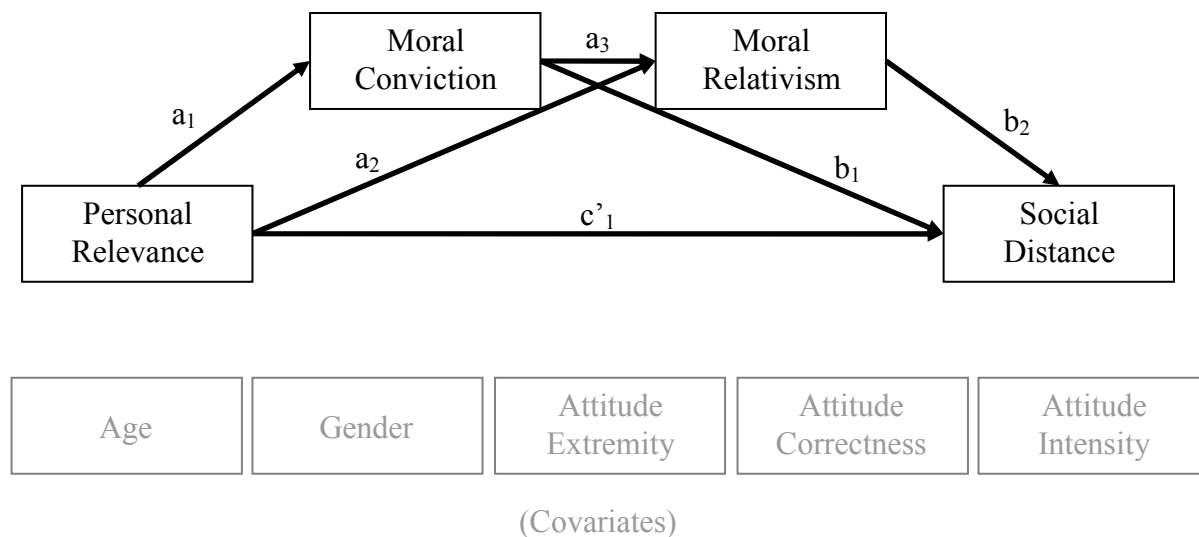


Figure 3: Multiple mediation model testing the indirect effect of personal relevance on preferred social distance.

As before, two analyses were run on each issue. In the first analysis, age and gender were entered as covariates to control for their influence. In the second analysis, age, gender, and attitude extremity, correctness, and intensity were all entered as covariates. For each analysis, 5000 bootstrap samples were requested. Controlling for the effects of age and gender, two indirect paths from personal relevance to preferred social distance reached significance for the issue of abortion (see Figure 4). First, the effect of personal relevance on preferred social distance was mediated only by moral conviction. Specifically, high personal relevance increased preferred social distance (i.e., lowered scores on this measure; $a_1b_1 = -.2931$, $BootSE = .1355$, 95% bias-corrected bootstrap confidence interval = $-.6229$; $-.0736$) by first increasing moral conviction ($a_1 = 1.68$, $SE = .424$, $p < .001$), which led to greater preferred social distance ($b_1 = -.1742$, $SE = .064$, $p = .007$). The effect of personal relevance was also significantly mediated by both moral conviction and moral relativism. That is, high personal relevance increased preferred social distance ($a_1a_3b_2 = -.0672$, $BootSE = .0347$, 95% bias-corrected bootstrap confidence interval = $-.1719$; $-.0194$) by increasing moral conviction ($a_1 = 1.68$, $SE = .424$, $p < .001$),

which decreased moral relativism ($a_3 = -.1965$, $SE = .069$, $p = .005$), which then led to greater preferred social distance ($b_2 = .2032$, $SE = .0431$, $p < .001$). Through these paths, increasing personal relevance caused participants to prefer greater social distance from those who hold different views on abortion. There were no significant indirect effects for the issue of building nuclear power plants.

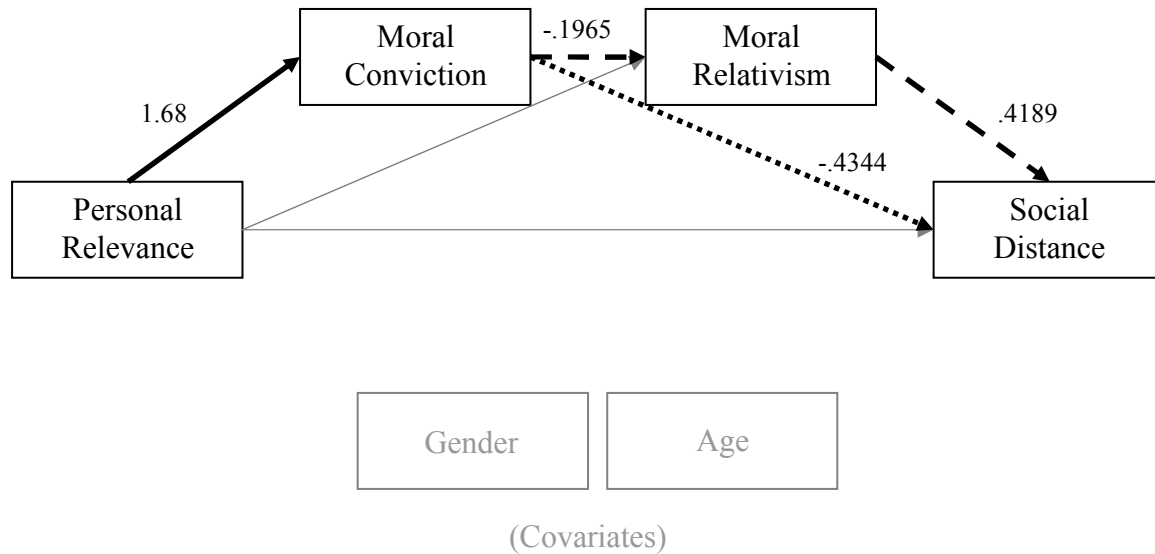


Figure 4: Multiple mediation model testing the indirect effect of personal relevance on preferred social distance for abortion, holding age and gender constant. The dotted path represents the first described indirect path. The dashed path represents the second described indirect effect. For both indirect effects the path between personal relevance and moral conviction are significant, resulting in a solid line.

Adding attitude extremity, correctness, and intensity as covariates once again altered results. For the issue of abortion, moral conviction and moral relativism still significantly mediated the effect of personal relevance on preferred social distance ($a_1a_3b_2 = .0241$, $BootSE = .0177$, 95% bias-corrected bootstrap confidence interval = .0030 ; .0802), but this effect was opposite from before (see Figure 5). High personal relevance increased moral conviction ($a_1 = 1.03$, $SE = .344$, $p = .003$), but high moral conviction increased rather than decreased moral relativism ($a_3 = .1771$, $SE = .079$, $p = .026$), which led

to less preferred social distance ($b_2 = .1323$, $SE = .0462$, $p = .004$). When attitude strength dimensions are held constant, increasing personal relevance actually decreases preferred social distance from those holding different views on abortion. However, this may once again be an artifact of multicollinearity.

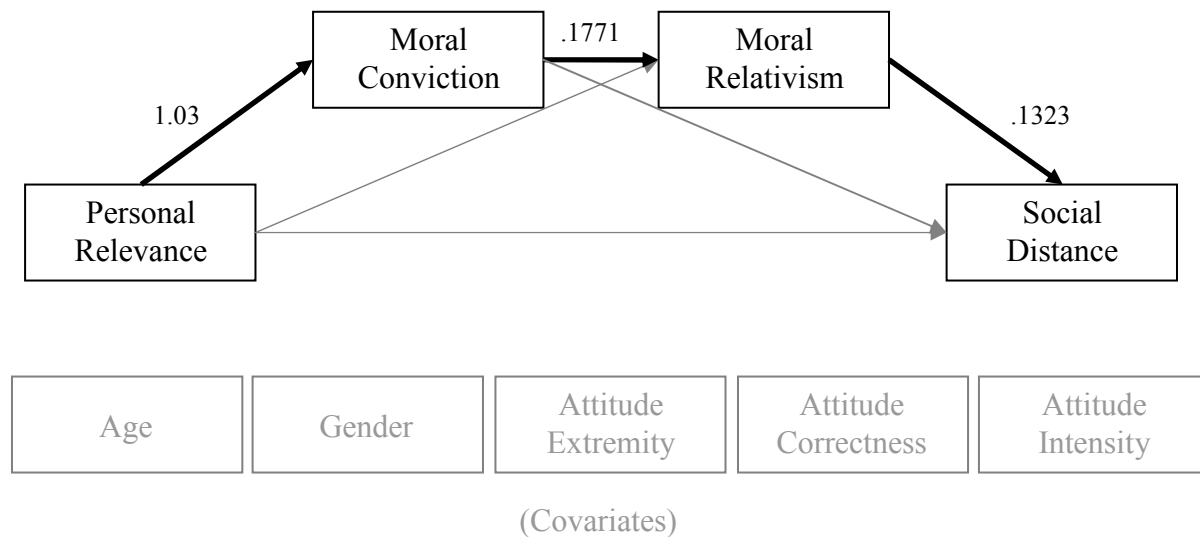


Figure 5: Multiple mediation model testing the indirect effect of personal relevance on preferred social distance for abortion, holding age, gender, and attitude strength constant. The bolded path represents the significant indirect effect of personal relevance on social distance.

As before, there were no significant indirect effects of personal relevance on preferred social distance for the issue of building nuclear power plants. Hypothesis 8 was therefore partially supported for abortion – high personal relevance indirectly increased preferred social distance when attitude strength was omitted from the analysis – but was not supported for the issue of building nuclear power plants.

Exploratory Analyses

Two consistent patterns emerged in the above analyses – 1) predictions were largely supported for the issue of abortion when measures of attitude strength were not included as covariates, and 2) predictions were not supported for the issue of nuclear power, regardless of whether attitude strength was held constant. As previously mentioned, the first pattern is likely the result of issues with

multicollinearity among the various attitude strength dimensions and moral conviction. The second pattern appears to go beyond matters of multicollinearity and may be an indication that participants simply did not perceive building nuclear power plants to be a moral issue. In support of this, moral conviction was significantly higher toward abortion ($M = 14.45$) than toward nuclear power ($M = 11.52$), $F(1, 459) = 127.78, p < .001$. Moreover, whereas 224 participants could be classified as holding their attitude toward abortion with moral conviction (scores of 16 or higher on the moral conviction scale), only 97 participants held their attitude toward building nuclear power plants with moral conviction. Given this result, additional exploratory mediation analyses were conducted, replacing moral conviction with attitude extremity in the mediation model (see Figure 6).

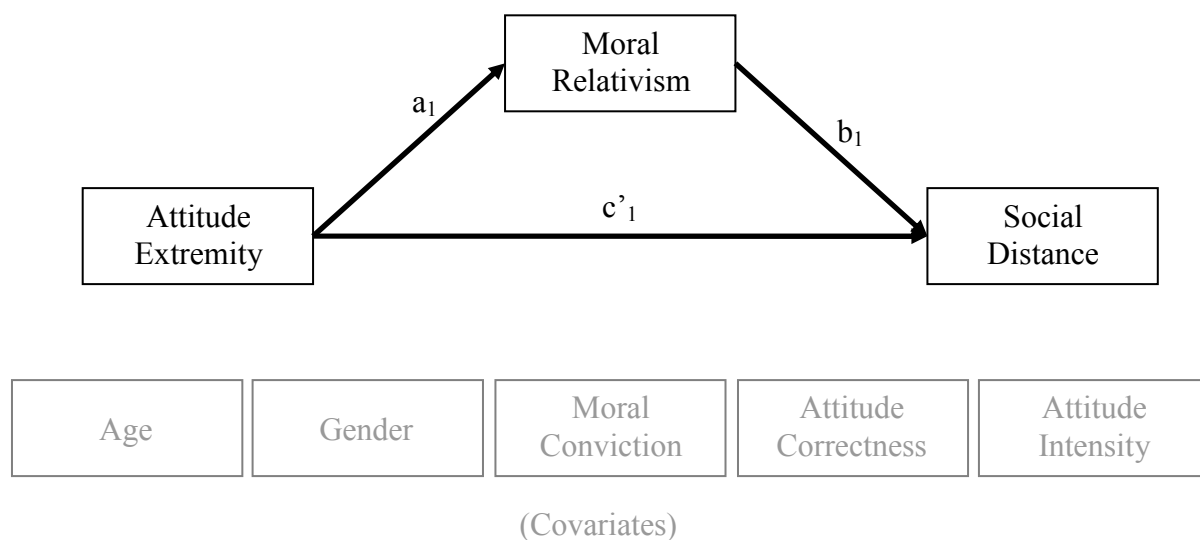


Figure 6: Exploratory mediation model, testing the indirect effect of attitude extremity on preferred social distance through moral relativism.

Controlling first for the effect of gender and age, moral relativism significantly mediated the effect of attitude extremity on preferred social distance. This was true for building nuclear power plants ($a_1b_1 = -.2579$, $BootSE = .1057$, 95% bias-corrected bootstrap confidence interval = $-.4884 ; -.0752$) and for abortion ($a_1b_1 = -.2204$, $BootSE = .0946$, 95% bias-corrected bootstrap confidence interval = $-.4165 ;$

-.0466). For both issues, increasing attitude extremity predicted lower moral relativism (a_1 's = -.6885 and -.8217 for nuclear power plants and abortion, respectively, p 's < .0001), and lower moral relativism predicted greater preferred social distance (b_1 's = .3746 and .2682, p 's = .0006 and .0049, for nuclear power plants and abortion, respectively). In addition to this significant indirect effect, increasing attitude extremity directly predicted greater preferred social distance (c_1 's = -.5609 and -.9205, p 's = .01 and .0001 for nuclear power and abortion, respectively).

When gender, age, attitude correctness and intensity, and moral conviction were all held constant, the effect of attitude extremity on preferred social distance was still significantly mediated by moral relativism. Again, this was true for the issue of building nuclear power plants (a_1b_1 = -.2380, $BootSE$ = .1022, 95% bias-corrected bootstrap confidence interval = -.4840 ; -.0685) and for abortion (a_1b_1 = -.2504, $BootSE$ = .1067, 95% bias-corrected bootstrap confidence interval = -.4173 ; -.0476). Increasing attitude extremity predicted lower moral relativism (a_1 's = -.6354 and -.9241 for nuclear power plants and abortion, respectively, p 's < .0001), and lower moral relativism predicted greater preferred social distance (b_1 's = .3746 and .2709, p 's = .0008 and .0045, for nuclear power plants and abortion, respectively). Increasing attitude extremity also directly predicted greater preferred social distance (c_1 's = -.4793 and -.7028, p 's = .047 and .0016 for nuclear power and abortion, respectively). Thus preferred social distance was significantly predicted by attitude extremity rather than moral conviction for the issue of building nuclear power plants, and this effect was mediated by moral relativism. Additionally, increasing attitude extremity predicted lower moral relativism for the abortion issue, even after controlling for the effects of other attitude strength dimensions and moral conviction.

Study 2 Discussion

The primary objectives of study 2 were to 1) identify potential antecedents to moral conviction, and 2) test the universality, objectivity, and emotion hypotheses from the Integrated Theory of Moral Conviction (ITMC). Based on results, personal relevance and attitude intensity are two potential antecedents that merit further investigation. The universality hypothesis received partial support when the relationship among moral conviction, moral relativism and social distance was examined, and the objectivity and emotion hypotheses received experimental support.

Moral Conviction and Personal Relevance

High personal relevance increased moral conviction toward abortion, even after controlling for attitude strength. This would seem counter to predictions of the ITMC, but an explanation based on ego-involvement can reconcile this finding with the ITMC. A situation is ego-involving to the extent that it helps sustain a person's status, relations with others, or self-concept (Cho & Boster, 2005; Sherif & Cantril, 1947). Encountering an ego-involving situation will thus frequently activate the self-concept and related information. Because people tend to define themselves by their social and personal values, making the self-concept intimately related to personal values and morals (Ostrom & Brock, 1968), when the self-concept is activated (e.g., in ego-involving situations), personal values and morals may also be activated. In the high personal relevance scenario for abortion, participants were asked to imagine a situation where their partner has suggested an abortion for an unplanned pregnancy. This would be considered an ego-involving situation since participants' decisions would reflect upon them personally and affect their potential status and relations. Thus this situation is likely to activate participants' self-concepts and related personal values/morals. Having activated these moral values, participants would be more likely to relate them to the matter at hand (abortion), thereby increasing moral conviction. Ego-involvement may also explain why personal relevance did not affect moral conviction for the issue of building nuclear power plants.

In the high personal relevance condition for building nuclear power plants, participants read about a governmental decision to build a new nuclear power plant near the city in which they currently resided. Participants would thus be personally affected, but they were not directly involved in the decision. That is, the decision to build the nuclear power plant did not directly reflect upon them. As such, it is possible that participants' self-concepts, and by extension their personal moral values, were not activated. The link between the issue and moral considerations would therefore be no more likely in the high personal relevance condition than the low personal relevance condition.

Based on this interpretation, the activation of self-concept and associated personal moral values mediates the effect of personal relevance (i.e., ego-involvement) on moral conviction. If this is the case, the universality hypothesis of the Integrated Theory of Moral Conviction (ITMC; Skitka et al., 2008) is not directly challenged by the finding that high personal relevance increases moral conviction toward abortion. High personal relevance increased moral conviction simply because participants were better able to recognize the link between their attitude and moral beliefs, not because they felt their moral principles were more applicable when they were personally involved. The current study is unable to directly examine this, however, and thus it is unclear whether the present results directly challenge the universality hypothesis of the ITMC.

Moral Conviction and Attitude Strength

Moral conviction was significantly predicted by attitude importance, correctness, and intensity in study 2. Attitude importance and correctness both significantly predicted moral conviction across both issues when attitude intensity was omitted from analyses. This is not surprising given that attitude importance and certainty (of which attitude correctness is a particular type) both significantly predicted moral conviction in study 1. The relationship between high attitude correctness and stronger moral conviction lends support to the objectivity hypothesis of the ITMC. This hypothesis argues that those who hold attitudes with moral conviction are more likely to see their attitudes as objective facts about

the world with clear right and wrong answers. This is supported by the finding that those who perceive their attitude as the correct attitude also report higher moral conviction. When attitude intensity is included in the analysis, however, this effect (along with the relationship between attitude importance and moral conviction) is reduced to nonsignificance.

Of these attitude strength dimensions, attitude intensity appears to be the strongest predictor of moral conviction. Attitude intensity measures the strength of one's emotional reaction to a particular attitude object and increasing attitude intensity predicted increasing moral conviction in the present study. This finding lends support to the emotion hypothesis of the ITMC, which posits that attitudes held with moral conviction are accompanied by stronger emotions than nonmoral attitudes. This also corroborates accumulating evidence that emotion plays a key role in moral judgments and morality in general (e.g., Greene et al., 2004; Haidt, 2001). While encouraging, the results of the present study are purely correlational. The next logical step is to experimentally manipulate emotions to determine whether emotions are true antecedents to moral conviction.

Moral Conviction and Social Distance

In earlier research, moral conviction was found to significantly predict preferred social distance from those holding different attitudes, even after controlling for attitude strength (Skitka et al., 2005, study 2). More specifically, when the social relationship was distant (e.g., personal physician, neighbor), those high in moral conviction were less tolerant of different attitudes (i.e., preferred greater social distance) than participants who were low in moral conviction. These findings indirectly support the universality hypothesis. The present research included a measure of moral relativism to more directly test whether those high in moral conviction perceive their attitudes as universally applicable.

Based on previous research and the universality hypothesis, it was hypothesized that high moral conviction would predict lower moral relativism, and low moral relativism would predict greater preferred social distance from those with different attitudes. This prediction was supported for abortion

when attitude strength was *not* held constant. Participants who were high in moral conviction toward abortion also exhibited lower levels of moral relativism on this issue, indicating that their stance on abortion applied regardless of the people involved and the surrounding circumstances. Lower relativism then predicted greater preferred social distance from distant relations (e.g., owner of store one frequents, neighbor) who hold different views on the topic of abortion. Moreover, relativism significantly mediated the effect of moral conviction on preferred social distance. These findings offer direct support for the universality hypothesis. However, when attitude strength is held constant by including attitude extremity, correctness, and intensity¹⁷ in the analysis, the relationship between moral conviction and moral relativism switches directions. Instead of high moral conviction predicting lower moral relativism, high moral conviction predicted *higher* moral relativism when attitude strength is controlled. This finding contradicts previous findings (Skitka et al., 2005) as well as that which would be predicted by the universality hypothesis. The presence of multicollinearity in these analyses suggests that this may be due to significant conceptual overlap between the attitude dimensions and moral conviction. However, results from the issue of building nuclear power plants and the exploratory analyses present a further challenge for the universality hypothesis.

Moral conviction does not significantly predict moral relativism or preferred social distance for building nuclear power plants. Instead, relativism and social distance are predicted by attitude extremity, and moral relativism significantly mediates the effect of attitude extremity on preferred social distance. In other words, the expected patterns were observed, only with attitude extremity in place of moral conviction. This might be due to participants simply did not perceiving building nuclear power plants as a moral issue – moral conviction was overall lower toward building nuclear power plants than toward abortion, and lower numbers of participants expressed high moral conviction toward nuclear

¹⁷ Findings were identical when attitude importance was included instead of attitude intensity.

power plants than abortion. However, the relationships among attitude extremity, moral relativism, and social distance were also observed for abortion, which received high moral conviction ratings. These results imply that when an issue is not perceived as highly related to moral considerations (e.g., building nuclear power plants), traditional attitude strength dimensions can be used to predict behavioral intentions and social preferences. This is not a surprising or novel finding. More interestingly, when an issue is perceived as related to moral considerations (e.g., abortion), the universality hypothesis of the ITMC asserts that moral conviction provides additional, unique information regarding people's behavioral intentions and preferences (Skitka et al., 2005; Skitka & Bauman, 2008). The present results, however, demonstrate that attitude strength dimensions (e.g., extremity) may be just as, if not more¹⁸, informative. The successful interchange of moral conviction with attitude extremity in these analyses, along with the presence of multicollinearity, suggests that moral conviction may be another attitude strength dimension, albeit a strength dimension with its own characteristics. Further research is warranted to fully elucidate the utility of moral conviction versus attitude strength dimensions in predicting behavioral intentions and social preferences.

¹⁸ Recall that when the effects of attitude strength were controlled, high moral conviction predicted higher moral relativism for abortion. When attitude strength (correctness and intensity) and moral conviction were held constant, however, high attitude extremity continued to predict lower moral relativism for abortion ($p < .0001$).

General Discussion

Moral conviction is high when participants perceive that their attitude reflects or is related to their moral beliefs. This suggests that antecedents to moral conviction function to create a conscious link between an attitude and existing moral beliefs. Studies 1 and 2 identified three potential antecedents to moral conviction – personal relevance, attitude intensity (emotions) and reliance on the Harm moral foundation – which may all function in this manner.

Personal Relevance

Increasing personal relevance may create a conscious link between attitudes and moral beliefs by activating one's self-concept and the moral values used to define that self-concept. It is probable, however, that creating this link requires the type of personal relevance that results in ego-involvement. That is, the situation must relate to a person's status, relations with others, or self-concept (Cho & Boster, 2005; Sherif & Cantril, 1947). In such a scenario, the self-concept is more likely to be activated, along with the important personal and social values the individual uses to define their self-concept. Once moral values are activated, an association between those values and one's attitude toward the situation is more likely to be recognized and formed. If an association between one's moral beliefs and an attitude already exists, activating the self-concept and its associated moral values when that attitude is again under consideration may further strengthen the association, boosting the perception that the attitude is related to personal moral convictions. In this manner, ego-involving personal relevance may create or increase moral conviction.

If this explanation is accurate there are interesting implications for the ITMC's autonomy versus heteronomy hypothesis. According to this hypothesis, attitudes held with moral conviction demonstrate greater independence from the concerns or expectations of authorities and other important groups (Mullen & Skitka, 2006; Skitka & Mullen, 2008). When these attitudes are activated, behaviors and decisions are more likely to follow moral ideals than concerns about being accepted/respected by others.

This hypothesis captures the manner in which preexisting moral convictions influence behaviors and perceptions. However, it is possible that concerns about acceptance and respect play a role in the initial formation of moral conviction. As previously stated, one element of ego-involving situations is that a person's status, relations, or self-concept becomes involved (Sherif & Cantril, 1947). We have argued that ego-involvement activates personal moral values, leading a person to connect their attitude with those moral values. This connection gives rise to moral conviction. But perceptions of status and relations – elements of ego-involvement – inherently involve considerations of acceptance and respect from others. The initial formation of moral conviction, then, may be less autonomous than the influence of moral conviction on behaviors once it has been already established.

Attitude Intensity (Emotions)

Another way in which the link between an attitude and moral beliefs may form is through the elicitation of emotion. In study 2, participants who reported having stronger emotional reactions to the presented issues also reported stronger moral conviction. Future research would manipulate emotions to determine whether emotion is a true antecedent of moral conviction, or simply associated with it. There is reason to believe that emotions help create a link between an attitude and moral beliefs, though. Recent work in the area of moral psychology suggests that emotional intuitions are the primary driving force behind moral judgments (Haidt, 2001; Prinz, 2006; Wheatley & Haidt, 2005). In particular, fMRI research indicates that emotional mechanisms are associated with moral judgments in which conformity to a moral rule or standard is considered more important than the consequences (i.e., deontological or non-utilitarian moral judgments) (Greene, Nystrom, Engell, Darley, & Cohen, 2004; Greene, Sommerville, Nystrom, Darley, & Cohen, 2001). While the exact mechanisms and manner in which emotion informs moral judgment is still being clarified, it is possible that the experience of emotions may facilitate forming a connection between an attitude and one's moral beliefs. If a link between the

attitude and moral beliefs already exists, the heightened experience of emotions may further strengthen this connection. It is also possible that specific emotions play distinct roles in this process.

Some emotions appear to have stronger connections to morality than others (Haidt, 2003), and the type of emotion that is elicited may depend upon the moral rule in question. For example, anger would be elicited when a person is denied a job based on their race, and disgust when one reads about siblings having sexual intercourse (Horberg, Oveis, & Keltner, 2011). Alternatively phrased, anger would be elicited when a situation negatively relates to the Fairness moral foundation and disgust would be elicited when a situation negatively relates to the Purity moral foundation. It is therefore possible that perceiving an issue as related to the moral foundations (issue-relatedness variables in study 1) elicits specific emotions (Horberg, Oveis & Keltner, 2011), which then predict moral conviction. For example, perceiving the use of torture as negatively related to the foundation of Fairness would elicit anger, and anger would then predict moral conviction. This is certainly another topic for future research.

Reliance on the Harm Foundation

The final variable identified as a potential antecedent to moral conviction is reliance on the Harm foundation, as measured by the Moral Foundations Questionnaire (MFQ; Graham et al., 2011). Scores on this particular variable indicate individual differences in how much harm factors into decisions of right and wrong. Therefore a person who scores high on this variable weighs harm considerations heavily when deciding the right or wrongness of any given situation. But why would higher reliance on this particular foundation increase recognition that one's attitude reflects one's moral beliefs?

Although research by Jonathan Haidt and colleagues (2007; 2004) has established that there are a number of moral domains other than Harm, it may be the case that the Harm moral domain is the most basic or fundamental dimension of morality. Theories such as social-domain theory assert that behaviors are classified as moral and immoral primarily on the basis of harmful (both physical and social) consequences (Turiel, 1983). For example, hitting another child would be classified as immoral

since it causes physical harm to the other child and social harm to the relationship (Tisak & Turiel, 1984). Even actions that appear fairly unrelated to harm (e.g., academic dishonesty) can be understood in terms of the social harm they may cause by breaking social rules (Usoof-Thowfeek, Janoff-Bulman, & Tavernini, 2011), and the harm/help dimension has been proposed as one of two underlying dimensions of moral emotions (Gray & Wegner, 2011). If harm captures or encompasses the overall foundation of morality, then it is possible that high reliance on the Harm foundation actually reflects reliance on moral principles in general. High reliance on moral principles could then create an overall tendency to link evaluations to one's moral beliefs (i.e., a tendency to hold attitudes with moral conviction).

Moral Attitudes

Much of the recent research on moral conviction has been based on the premise that attitudes held with moral conviction – moral mandates – are qualitatively different and distinct from nonmoral attitudes (see Skitka et al., 2005). Results from the present research identify several possible factors that help establish a link between attitudes and moral beliefs. But other results (e.g., that various attitude strength dimensions predict moral conviction) also served as a reminder that, at their core, moral mandates are attitudes. The functional approach to the study of attitudes identifies four major functions of attitudes, one of which is the value-expressive function (Katz, 1960). An attitude is serving this function when it provides a venue through which an individual can positively express their central values, which also provides an opportunity to convey the type of person they perceive themselves to be. Thus the value-expressive function is intimately tied to doctrines of self-concept and ego (Katz, 1960). Given that moral conviction may be increased by activating self-concepts and related moral values, high moral conviction may indicate that one's attitude is serving a specific value-expressive function – that of expressing moral values. In other words, moral mandates may be another term for attitudes that function to express moral values. As such, moral mandates assume their own distinct motivational state (Katz,

1960), but future research on moral mandates will likely benefit from a renewed focus on their fundamental identity as attitudes.

References

- Bizer, G.Y., Larsen, J.T., and Petty, R.E. (2011). Exploring the valence-framing effect: Negative framing enhances attitude strength. *Political Psychology*, 32(1), 59-80. doi: 10.1111/j.1467-9221.2010.00795.x
- Boninger, D.S., Krosnick, J.A., and Berent, M.K. (1995). Origins of attitude importance: self-interest, social identification, and value relevance. *Journal of Personality and Social Psychology*, 68(1), 61-80. doi: 10.1037/0022-3514.68.1.61
- Britt, T.W., Pusilo, C.L., McKibben, E.S., Kelley, C., Baker, A.N., and Nielson, K.A. (2011). Personality and strength-related attitude dimensions: Between and within-person relationships. *Journal of Research in Personality*, 45(6), 587-596. doi: 10.1016/j.jrp.2011.07.006
- Cho, H. and Boster, F.J. (2005). Development and validation of value-, outcome-, and impression-relevant involvement scales. *Communication Research*, 32(2), 235-264. doi: 10.1177/0093650204273764
- Forsyth, D.R. (1980). A taxonomy of ethical ideologies. *Journal of Personality and Social Psychology*, 39(1), 175-184. doi: 10.1037/0022-3514.39.1.175
- Gilligan, C. (1982). *In a Different Voice: Psychological Theory and Women's Development*. Cambridge, MA: Harvard University Press.
- Goodwin, G. and Darley, J.M. (2008). The psychology of meta-ethics: Exploring objectivism. *Cognition*, 106(3), 1339-1366. doi: 10.1016/j.cognition.2007.06.007
- Graham, J., Haidt, J., & Nosek, B. A. (2009). Liberals and conservatives rely on different sets of moral foundations. *Journal of Personality and Social Psychology*, 96(5), 1029–1046. doi: 10.1037/a0015141
- Graham, J., Nosek, B. A., Haidt, J., Iyer, R., Koleva, S., & Ditto, P. H. (2011). Mapping the moral domain. *Journal of Personality and Social Psychology*. doi:10.1037/a0021847

- Gray, K. and Wegner, D.M. (2011). Dimensions of moral emotions. *Emotion Review*, 3(3), 258-260.
doi: 10.1177/1754073911402388
- Greene, J.D., Nystrom, L.E., Engell, A.D., Darley, J.M., and Cohen, J.D. (2004). The neural bases of cognitive conflict and control in moral judgment. *Neuron*, 44, 389-400. doi: 10.1016/j.neuron.2004.09.027
- Greene, J.D., Sommerville, R.B., Nystrom, L.E., Darley, J.M., and Cohen, J.D. (2001). An fMRI investigation of emotional engagement in moral judgment. *Science*, 293(5537), 2105-2108. doi: 10.1126/science.1062872
- Haddock, G. and Gebauer, J.E. (2011). Defensive self-esteem impacts attention, attitude strength, and self-affirmation processes. *Journal of Experimental Social Psychology*, 47(6), 1276-1284. doi: 10.1016/j.jesp.2011.05.020
- Haidt, J. (2001). The emotional dog and its rational tail: A social intuitionist approach to moral judgment. *Psychological Review*, 108(4), 814-834. doi: 10.1037//0033-295X.108.4.814
- Haidt, J. (2003). The moral emotions. In R.J. Davidson, K.R. Scherer, and H.H. Goldsmith (Eds.), *Handbook of affective sciences* (pp. 852-870). Oxford, England: Oxford University Press.
- Haidt, J., & Graham, J. (2007). When morality opposes justice: Conservatives have moral intuitions that liberals may not recognize. *Social Justice Research*, 20(1), 98-116. doi:10.1007/s11211-007-0034-z
- Haidt, J., Graham, J., & Joseph, C. (2009). Above and Below Left-Right: Ideological Narratives and Moral Foundations. *Psychological Inquiry*, 20(2), 110-119. doi:10.1080/10478400903028573
- Haidt, J., & Joseph, C. (2004). Intuitive ethics: How innately prepared intuitions generate culturally variable virtues. *Daedalus*, 133(4), 55-66.

- Haidt, J., Koller, S. H., & Dias, M. G. (1993). Affect, culture, and morality, or is it wrong to eat your dog?. *Journal of Personality and social Psychology*, 65(4), 613. doi: 10.1037/0022-3514.65.4.613
- Hayes, A.F. (2012). *An analytical primer and computational tool for observed variable moderation, mediation, and conditional processing modeling*. Manuscript submitted for publication.
- Hess, J. A., & Rueb, J. D. (2005). Attitudes toward abortion, religion, and party affiliation among college students. *Current Psychology*, 24(1), 24–42. doi: 10.1007/s12144-005-1002-0
- Holbrook, A.L., Berent, M.K., Krosnick, J.A., Visser, P.S., and Boninger, D.S. (2005). Attitude importance and the accumulation of attitude-relevant knowledge in memory. *Journal of Personality and Social Psychology*, 88(5), 749-769. doi: 10.1037/0022-3514.88.5.749
- Horberg, E.J., Oveis, C. and Keltner, D. (2011). Emotions as moral amplifiers: An appraisal tendency approach to the influences of distinct emotions upon moral judgments. *Emotion Review*, 3(3), 237-244. doi: 10.1177/1754073911402384
- Horberg, E. J., Oveis, C., Keltner, D., & Cohen, A. B. (2009). Disgust and the moralization of purity. *Journal of personality and social psychology*, 97(6), 963. doi: 10.1037/a0017423
- Hu, L. & Bentler, P.M. (1999). Cutoff criteria for fix indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6(1), 1-55. doi:10.1080/10705519909540118
- Joreskog, K.G. and Sorbom, D. (2006). LISREL 8.8 for windows [computer software]. Lincolnwood, IL: Scientific Software International, Inc.
- Joseph, S. and DiDuca, D. (2007). The Dimensions of Religiosity Scale: 20-item self-report measure of religious preoccupation, guidance, conviction, and emotional involvement. *Mental Health, Religion, & Culture*, 6(10), 603-608. doi: 10.1080/13674670601050295

- Katz, D. (1960). The functional approach to the study of attitudes. *The Public Opinion Quarterly*, 24(2), 163-204. doi: 10.1086/266945
- Kohlberg, L. (1969). Stage and sequence: The cognitive-developmental approach to socialization. In D. A. Goslin (Ed.), *Handbook of Socialization Theory and Research*. Chicago: Rand McNally.
- Koleva, S.P., Graham, J., Iyer, R., Ditto, P.H., and Haidt, J. (2012). Tracing the threads: How five moral concerns (especially Purity) help explain culture war attitudes. *Journal of Research on Personality*, 46, 184-194. doi: 10.1016/j.jrp.2012.01.006
- Krosnick, J.A., Boninger, D.S., Chuang, Y.C., Berent, M.K., and Carnot, C.G. (1993). Attitude strength: One construct of many related constructs? *Journal of Personality and Social Psychology*, 65(6), 1132-1151. doi: 10.1037/0022-3514.65.6.1132
- Lakoff, G. (2002). *Moral politics: How liberals and conservatives think* (2nd ed.). Chicago, IL: University of Chicago Press.
- McAdams, D. P. (1995). What do we know when we know a person? *Journal of personality*, 63(3), 365–396. doi: 10.1111/j.1467-6494.1995.tb00500.x
- Mullen, E., & Skitka, L. J. (2006). Exploring the psychological underpinnings of the moral mandate effect: Motivated reasoning, group differentiation, or anger? *Journal of Personality and Social Psychology*, 90(4), 629. doi: 10.1037/0022-3514.90.4.629
- Nail, P. R., McGregor, I., Drinkwater, A. E., Steele, G. M., & Thompson, A. W. (2009). Threat causes liberals to think like conservatives. *Journal of Experimental Social Psychology*, 45(4), 901–907. doi: 10.1016/j.jesp.2009.04.013
- Ortberg, J. C., Gorsuch, R. L., & Kim, G. J. (2001). Changing attitude and moral obligation: Their independent effects on behavior. *Journal for the Scientific Study of Religion*, 40(3), 489-496. doi: 10.1111/0021-8294.00072

- Ostrom, T.M. and Brock, T.C. (1968). A cognitive model of attitudinal involvement. In R.R. Abelson, E. Aaronson, W.J. McGuire, T.M. Newcomb, M.J. Rosenberg, and P.H. Tannenbaum (Eds.), *Theories of cognitive consistency: A sourcebook* (pp. 373-383). Chicago: Rand McNally.
- Petrocelli, J.V., Tormala, Z.L., and Rucker, D.D. (2007). Unpacking attitude certainty: Attitude clarity and attitude correctness. *Journal of Personality and Social Psychology*, 92(1), 30-41. doi: 10.1037/0022-3514.92.1.30
- Petty, R., & Krosnick, J. A. (Eds.). (1995). *Attitude strength: Antecedents and consequences*. Hillsdale, NJ, England: Lawrence Erlbaum Associates, Inc.
- Prinz, J. (2006). The emotional basis of moral judgments. *Philosophical Explorations*, 9(1), 29-43. doi: 10.1080/13869790500492466
- Rozin, P. (1999). The process of moralization. *Psychological Science*, 10(3), 218-221. doi : 10.1111/1467-9280.00139
- Schlenker, B.R. and Forsyth, D.R. (1977). On the ethics of psychological research. *Journal of Experimental Social Psychology*, 13(4), 369-396. doi: 10.1016/0022-1031(77)90006-3
- Sherif, M. and Cantril, H. (1947). *The psychology of ego involvement: Social attitudes and identifications*. New York: John Wiley.
- Shweder, R. A., Much, N. C., Mahapatra, M., & Park, L. (1997). The “big three” of morality (autonomy, community, and divinity), and the “big three” explanations of suffering. In A. Brandt & P. Rozin (Eds.), *Morality and health* (pp. 119–169). New York, NY: Routledge.
- Skitka, L. J. (2010). The psychology of moral conviction. *Social and Personality Psychology Compass*, 4(4), 267-281. doi:10.1111/j.1751-9004.2010.00254.x
- Skitka, L.J. (2011). Measuring moral conviction. Retrieved from <http://web.me.com/lskitka/index.html>
- Skitka, L. J., & Bauman, C. W. (2008). Moral conviction and political engagement. *Political Psychology*, 29(1), 29–54. doi: 10.1111/j.1467-9221.2007.00611.x

- Skitka, L. J., Bauman, C. W., & Lytle, B. L. (2009). The limits of legitimacy: Moral and religious convictions as constraints on deference to authority. *Journal of personality and social psychology*, 97(4), 567–578. doi: 10.1037/a0015998
- Skitka, L. J., Bauman, C. W., & Sargis, E. G. (2005). Moral conviction: Another contributor to attitude strength or something more? *Journal of Personality and Social Psychology*, 88(6), 895. doi: 10.1037/0022-3514.88.6.895
- Skitka, L. J., & Mullen, E. (2002). The dark side of moral conviction. *Analyses of Social Issues and Public Policy*, 2(1), 35–41. doi: 10.1111/j.1530-2415.2002.00024.x
- Skitka, L.J., and Wisneski, D.C. (2011). Moral conviction and emotion. *Emotion Review*, 3(3), 328-330. doi: 10.1177/1754073911402374
- Tamney, J. B., Johnson, S. D., & Burton, R. (1992). The abortion controversy: Conflicting beliefs and values in American society. *Journal for the Scientific Study of Religion*, 31(1), 32-46. doi: 10.2307/1386830
- Tisak, M.S. and Turiel, E. (1984). Children's conceptions of moral and prudential rules. *Child Development*, 55(3), 1030-1039. doi: 10.2307/1130154
- Turiel, E. (1983). *The development of social knowledge: Morality and convention*. Cambridge, England: Cambridge University Press.
- Turiel, E. (2002). *The culture of morality: Social development, context, and conflict*. New York, NY, US: Cambridge University Press.
- Usoof-Thowfeek, R., Janoff-Bulman, R., and Tavernini, J. (2011). Moral judgments and the role of social harm: Differences in automatic versus controlled processing. *Journal of Experimental Social Psychology*, 47(1), 1-6. doi: 10.1016/j.jesp.2010.07.016
- Westen, D. (2007). *The political brain: The role of emotion in deciding the fate of the nation*. New York: PublicAffairs.

Wheatley, T. and Haidt, J. (2005). Hypnotic disgust makes moral judgments more severe.
Psychological Science, 16(10), 780-784. doi: 10.1111/j.1467-9280.2005.01614.x

Appendix A

Moral Foundations Questionnaire

When you decide whether something is right or wrong, to what extent are the following considerations important to your thinking?

	Not at all important	Not very important	Slightly important	Somewhat important	Very important	Extremely important
Whether or not someone suffered emotionally	1	2	3	4	5	6
Whether or not someone cared for someone weak or vulnerable	1	2	3	4	5	6
Whether or not someone was cruel	1	2	3	4	5	6
Whether or not some people were treated differently from others	1	2	3	4	5	6
Whether or not someone acted unfairly	1	2	3	4	5	6
Whether or not someone was denied his or her rights	1	2	3	4	5	6
Whether or not someone's actions showed love for his or her country	1	2	3	4	5	6
Whether or not someone did something to betray his or her group	1	2	3	4	5	6
Whether or not someone showed a lack of loyalty	1	2	3	4	5	6
Whether or not someone showed a lack of respect for authority	1	2	3	4	5	6
Whether or not someone conformed to the traditions of society	1	2	3	4	5	6
Whether or not an action caused chaos or disorder	1	2	3	4	5	6
Whether or not someone violated standards of purity and decency	1	2	3	4	5	6
Whether or not someone did something disgusting	1	2	3	4	5	6

Whether or not someone acted in a way that God would approve of	1	2	3	4	5	6
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Please indicate the level of your agreement with the following items:

	Strongly disagree	Moderately disagree	Slightly disagree	Slightly agree	Moderately agree	Strongly agree
Compassion for those who are suffering is the most crucial virtue	1	2	3	4	5	6
One of the worst things a person could do is hurt a defenseless animal	1	2	3	4	5	6
It can never be right to kill a human being	1	2	3	4	5	6
When the government makes laws, the number one principle should be ensuring that everyone is treated fairly	1	2	3	4	5	6
Justice is the most important requirement for a society	1	2	3	4	5	6
I think it's morally wrong that rich children inherit a lot of money while poor children inherit nothing	1	2	3	4	5	6
I am proud of my country's history	1	2	3	4	5	6
People should be loyal to their family members, even when they have done something wrong	1	2	3	4	5	6
It is more important to be a team player than to express oneself	1	2	3	4	5	6
Respect for authority is something all children need to learn	1	2	3	4	5	6
Men and women each have different roles to play in society	1	2	3	4	5	6
If I were a soldier and disagreed with my commanding officer's orders, I would obey anyway because that is my duty	1	2	3	4	5	6
People should not do things that are disgusting, even if no one is harmed	1	2	3	4	5	6
I would call some acts wrong on the grounds that they are unnatural	1	2	3	4	5	6

Chastity is an important and valuable virtue	1	2	3	4	5	6
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Issue-relatedness Scale

Please indicate the extent to which you think [Issue] violates or supports the following:

	Strongly violates	Violates	Somewhat violates	Slightly violates	Neither violates or supports	Slightly supports	Somewhat supports	Supports	Strongly supports
Fair treatment and equality for all people	1	2	3	4	5	6	7	8	9
Respect for authority	1	2	3	4	5	6	7	8	9
Protecting the weak and vulnerable	1	2	3	4	5	6	7	8	9
Loyalty to your group (e.g., family, ethnicity, etc.)	1	2	3	4	5	6	7	8	9
Standards of decency and purity	1	2	3	4	5	6	7	8	9
Basic human rights	1	2	3	4	5	6	7	8	9
Respect for traditions and order	1	2	3	4	5	6	7	8	9
Wholesomeness and virtues (e.g., Godliness)	1	2	3	4	5	6	7	8	9
Love for your country	1	2	3	4	5	6	7	8	9
Protecting people from physical or emotional harm	1	2	3	4	5	6	7	8	9

Religiosity Scale

	Disagree	Slightly Disagree	Neutral or Neither	Slightly Agree	Agree
I think about God all the time.	1	2	3	4	5
I will always believe in God.	1	2	3	4	5
I feel happy when I think of God.	1	2	3	4	5
God does not help me to make decisions.	1	2	3	4	5

Appendix B

Abortion Scenarios

Please try to imagine/visualize the following scenario with as much detail as possible.

High personal relevance

Male participants

You and your girlfriend have been dating for 10 months when you discover that she is 6 weeks pregnant. You both work and attend school, but if you decide to have the baby one or both of you will need to quit school to make financial ends meet. On top of that, the pregnancy is accompanied by a medical condition that may complicate pregnancy and/or birth. You sit down together one evening and your girlfriend suggests that it would be best to get an abortion.

Please indicate your agreement with your girlfriend's decision to get an abortion:

(7-point scale ranging from strongly disagree to strongly agree)

Female participants

You and your boyfriend have been dating for 10 months when you discover that you are 6 weeks pregnant. You both work and attend school, so your money and time are already completely used up. But if you decide to have the baby one or both of you will need to quit school to make financial ends meet. On top of that, the pregnancy is accompanied by a medical condition that may complicate pregnancy and/or birth. You sit down together one evening and your boyfriend suggests that it would be best to get an abortion.

Please indicate your agreement with your boyfriend's decision that you should get an abortion:

(7-point scale ranging from strongly disagree to strongly agree)

Low personal relevance

Seth and Julie have been dating for 10 months when they discover that she is 6 weeks pregnant. They both work and attend school, but if they decide to have the baby one or both of them will need to quit school to make financial ends meet. On top of that, the pregnancy is accompanied by a medical condition that may complicate pregnancy and/or birth. They sit down together one evening and Julie suggests that it would be best to get an abortion.

Please indicate your agreement with Julie's decision to get an abortion:

(7-point scale ranging from strongly disagree to strongly agree)

Social Distance Scales

Abortion

Please indicate the extent to which you agree with each of the below sentence completions.

“I would be happy to have someone who does not share my views on abortion...”							
	Very much disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Very much agree
...as president of the United States.	1	2	3	4	5	6	7
...as someone I would personally date.	1	2	3	4	5	6	7
...as the teacher of my children.	1	2	3	4	5	6	7
...as a neighbor.	1	2	3	4	5	6	7
...to marry into the family.	1	2	3	4	5	6	7
...as my spiritual advisor.	1	2	3	4	5	6	7
...to work in the same place I do.	1	2	3	4	5	6	7
...as a roommate.	1	2	3	4	5	6	7
...as the owner of a store or restaurant I frequent.	1	2	3	4	5	6	7
...as my personal physician.	1	2	3	4	5	6	7

Vita

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