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WHEN MORAL FOUNDATIONS COLLIDE: AN EXAMINATION OF LIBERALS'  
AND CONSERVATIVES' REACTIONS TO CROSS-FOUNDATIONAL MORAL  
TRADE-OFFS

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AND CONSERVATIVES' REACTIONS TO CROSS-FOUNDATIONAL MORAL  
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## Dedication

This dissertation is dedicated to my mother, Pamela Lynn Tamborski, who was always there to encourage me in all of my academic endeavors from before Kindergarten to applying to graduate school. It is because of her unconditional support of my early interest in the sciences that I have progressed as far as I have as a scientist and a scholar. She may be gone, but she will never be forgotten.

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## Abstract

Two studies extended previous research on Moral Foundations Theory (MFT; Graham, Haidt, & Nosek, 2009) by examining the extent to which political ideology moderates the psychological reactions to various types of moral dilemmas. In Study 1, participants responded to moral dilemmas that asked them to trade-off between moral foundations related to individual rights (individualizing) and/or foundations related to social order and the restriction of behavior (binding). For trade-offs crossing individualizing with binding foundations, conservatives were more likely than liberals to experience negative affect, arousal, and difficulty making a decision while contemplating these trade-offs. Also, liberals were more likely than conservatives to clearly prefer the individualizing option. Study 2 tested whether affirming one's endorsement of individualizing or binding foundations could alleviate the threat induced by contemplating trade-offs between two moral values. Some participants were given the opportunity to credential themselves on either individualizing or binding foundations and then responded to individualizing versus binding trade-offs. The manipulation had no consistent effect of any of the dependent variables. Although the hypotheses for Study 2 were not supported, both studies suggest that association between political ideology and moral foundations extend to complex and realistic dilemmas and might be driven by cultural conservatism or authoritarianism in particular.

## When Moral Foundations Collide: An Examination of Liberals' and Conservatives' Reactions to Cross-Foundational Moral Trade-offs

If asked, few people would be likely to disagree that it is morally wrong to deny treatment to people who are gravely ill, yet a substantial proportion of Americans were opposed to a health care reform package passed by the U.S. congress in March of 2010. One of the more common objections to the legislation was the concern that it would cover illegal immigrants, which was memorably expressed by Congressman Joe Wilson (R-SC) by shouting, "You lie!" in the middle of a presidential address to Congress in 2009. Likewise, many people would concur that equal rights for American citizens is a moral imperative. However, a proposition to amend the California state constitution to restrict marriage to heterosexual unions passed with a slight majority in 2008.

Although these two events are not directly related to each other, they both demonstrate the importance morality plays in political discourse and the strong emotions that often accompany disagreements. For supporters of health care reform and same-sex marriage, opponents were seen as selfish, bigoted individuals who are antithetical to America's egalitarian ideals, whereas those same opponents saw supporters as godless, socialist liberals who want to subvert American values by redistributing wealth from honest, hard-working individuals to the lazy and shiftless and destroying the sacred institution of marriage. Each side sees itself on the right side of the moral equation, while simultaneously demonizing the opposition.

Of course, the more rancorous reactions are relegated to those on the extremes of the political spectrum. However, the underlying lack of understanding of the other side of the isle is somewhat more pervasive. In an effort to explain why some individuals who differ in political ideology seem incapable of understanding the other's

viewpoint to the point where the opposition is viewed as lacking in morals, Haidt and colleagues (Graham, Haidt, & Nosek, 2009; Haidt & Graham, 2007; Haidt, Graham, & Joseph, 2009; Haidt & Joseph, 2008; Joseph, Graham, & Haidt, 2009) theorized that this is a result of very different definitions of what morality actually is between persons of different political persuasions. Specifically, research on Moral Foundations Theory (MFT) suggests that there are at least five basic foundations from which people can define their morality, and the relative weights given to the five foundations can roughly correspond to value differences across the political spectrum. The purpose of the following studies was to test several motivational and affective implications of MFT by exploring how both liberals and conservatives react when considering trade-offs across moral foundations instead of the foundations in isolation. Before I describe MFT in more detail, however, I will first briefly review the literature on the broader psychological differences between liberals and conservatives.

### **The Psychology of Political Ideology**

Perhaps because of the tendency for academicians to be on the liberal side of the political spectrum, most psychological research on ideology has focused on conservatism, with liberalism only examined as relative to conservatism. Early research on political ideology considered ideology as attitudinal clusters or belief systems (Eysenck, 1954; Rokeach, 1960). More recent models of conservatism generally concur that a conservative ideology is a product of various individual traits, personal experiences, and/or cognitive-motivational goals (e.g., Duckitt, 2001; Jost, Glaser, Kruglanski, & Sulloway, 2003a; Tetlock, 1986). Although the specifics of the different models may differ, they are similar in their recognition of right-wing authoritarianism

(RWA) and social dominance orientation (SDO) as major components of conservative ideology. Before I describe these general models more specifically, I will first briefly review the relevance of both RWA and SDO to conservative ideology.

**Authoritarianism.** Like many lines of research in social psychology, the study of political ideology arose from the desire to explain how an entire nation can be culpable for the genocide of over six million individuals during World War II. In their landmark publication, Adorno, Frenkel-Brunswik, Levinson, and Sanford (1950) proposed a personality trait they labeled *authoritarianism* to explain how some individuals seem predisposed towards prejudice. They defined authoritarianism as “a general disposition to glorify, to be subservient to and to remain uncritical toward authoritative figures of the ingroup and to take an attitude of punishing outgroup figures in the name of some moral authority” (p. 228). Adorno et al. also identified nine separate components of authoritarianism: conventionalism, authoritarian aggression, authoritarian submission, anti-intraception (i.e., disdainful of the notion of subjectivity), superstition and stereotypy, power, destructiveness and cynicism, projectivity, and a concern with the sexual matters of others.

Partly because of its presumption that authoritarianism was solely a phenomenon of the right wing of politics (the scale that measured it, after all, was called the F, or Fascism, Scale, with fascism being a right-wing ideology), Adorno et al.’s (1950) early conceptualization of authoritarianism encountered some early criticism. Rather than viewing political ideology as unidimensional with authoritarianism on the right, Eysenck (1954, 1956) asserted two dimensions: tough-mindedness versus tender-mindedness and conservatism versus radicalism. Consistent with the classic definition

of authoritarianism, tough-mindedness is associated with aggression, dominance, intolerance of ambiguity, and rigidity (Eysenck, 1954). Thus, authoritarianism was not a defining feature of the right, but a feature of any ideological belief system that is typified by tough-mindedness (e.g., Fascism on the right and Communism on the left). A similar criticism was levied by Rokeach (1960), who believed that authoritarianism was a symptom of a dogmatic, or closed, ideological belief system. Like Eysenck (1954, 1956), Rokeach (1960) argued that political ideology was a function of both content (left or right) and structure (open or closed). Any closed belief system, whether it is leftist or rightist, would fall under the definition of “general authoritarianism.” Despite these claims, however, authentic left-wing authoritarians have proven difficult to find empirically (Altemeyer, 1996, 1998; Stone, 1980; but see McClosky & Chong, 1985; van Hiel, Duriez, & Kossowska, 2006, for evidence of left-wing authoritarianism in extreme groups).

Despite these objections, the F scale was still commonly used as a measure of authoritarianism for most of the latter half of the 20<sup>th</sup> Century. It was not until over three decades later that Adorno et al.’s (1950) model of authoritarianism was revisited and revised with respect to both measurement and conceptualization. Altemeyer’s (1981, 1988, 1996, 1998) Right-Wing Authoritarianism (RWA) both distanced the authoritarian construct from the Freudian theoretical origins of the Adorno et al. (1950) model and narrowed the definition of authoritarian to include only three components: authoritarian submission, authoritarian aggression, and conventionalism. Thus, right-wing authoritarians are individuals who are deferent and submissive to authorities (at least authorities they perceive to be legitimate), hostility towards individuals and groups

who violate social norms or are disapproved of by authorities, and a strong commitment to maintaining social norms and values. Although certainly not synonymous with conservatism, RWA is consistently predictive of identification with conservative political parties and policies (particularly social policies), with correlations ranging from .20 to .70 (Altemeyer, 1988, Crowson, Thoma, & Hestevold, 2005; Duriez & van Hiel, 2002; Peterson, Doty, & Winter, 1993; Tarr & Lorr, 1991; van Hiel & Mervielde, 2002; van Hiel, Pandelaere, & Duriez, 2004).

**Social Dominance Orientation.** Another construct often associated with conservatism is Social Dominance Orientation (SDO; Pratto, Sidanius, Stallworth, & Malle, 1994; Sidanius, Pratto, van Laar, & Levin, 2004). SDO can be defined as “the desire that one’s in-group dominate and be superior” (Pratto et al., 1994, p. 742). Individuals high in SDO are likely to use various “legitimizing myths,” such as the belief that the world is just and people get what they deserve, in order to justify attitudes and policies aimed at maintaining the current social hierarchy (Pratto et al., 1994; Pratto et al., 2000; Sidanius, Devereaux, & Pratto, 1992). Furthermore, individuals high in SDO tend to be more nationalistic, patriotic, supportive of the military and traditional gender roles, and less supportive of social programs and policies designed to protect the rights of groups with lower status (Pratto et al., 1994; Pratto et al., 2000).

Like RWA, SDO does not appear to simply reduce to conservatism (i.e., it is a distinct construct). SDO is reliably positively correlated with conservative beliefs, conservative party preferences, and self-reported conservatism, particularly with respect to economic conservatism (Pratto et al., 1994; Duriez & van Hiel, 2002; van Hiel &



Mervielde, 2002; van Hiel et al., 2004), but no correlations are high enough to suggest redundancy.

**Conservatism as motivated cognition.** As I stated earlier, two of the more prominent, current models of political ideology view conservatism as an interaction between traits, experiences, and motivational goals. Duckitt's (2001; Duckitt & Sibley, 2009) dual-process model of ideology and prejudice (DPM) and Jost et al.'s (2003a; Jost, Glaser, Kruglanski, & Sulloway, 2003b; Jost et al., 2007) conservatism as motivated social cognition model (MSC) both view not just conservatism, but political ideology in general, as a product of motivations and experiences revolving around threats to stability and security (personal as well as national). Responses to these threats take the form of the justification of inequality, resistance to change, nationalism, and other attitudes associated with conservatism. In support of this view, previous research has found that after experiencing a mortality salience threat, individuals give harsher punishment to social norm violators (Florian, Mikulincer, & Hirschberger, 2001; Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989), are more likely to endorse the status quo (Ullrich & Cohrs, 2007), and hold more conservative positions about homosexuality, abortion, and capital punishment (Nail, McGregor, Drinkwater, Steele, & Thompson, 2009). Furthermore, other researchers have found evidence for a tendency for individuals exposed to terrorist attacks to shift toward conservative beliefs and values (Bonanno & Jost, 2006; Ecchebarria-Echabe & Fernández-Guede, 2006).

Despite this similarity, both the DPM and the MSC differ on key aspects. The primary disagreement between models is the dimensionality of conservatism. Whereas the MSC assumes conservatism is unidimensional, (Jost, 2009; Jost et al., 2003a), the

DPM, as its name suggests, assumes that RWA and SDO constitute two relatively independent dimensions of conservatism (Duckitt, 2001). According to the DPM, an RWA orientation develops as a result of a perception that the world is a dangerous place and a motivation to protect the self from these potential threats. Likewise, an SDO orientation develops from the perception of the world as competitive and a motivation to “survive as the fittest” and ensure the well-being and livelihood of the self or the in-group. Thus, RWA’s focus on maintaining social norms, conformity, etc., to reduce the threat of a dangerous world makes it roughly analogous to cultural or social conservatism, whereas SDO is analogous to economic conservatism. Indeed, studies that have examined this supposition have found that the strongest ideological correlates of RWA and SDO are cultural and economic conservatism, respectively (Duriez & van Hiel, 2002; Duriez, van Hiel, & Kossowska, 2005; van Hiel et al., 2004). Even in studies that do not make this distinction, RWA and SDO consistently remain associated with conservatism and conservative beliefs even after controlling for one another (e.g., Altemeyer, 1998; Duckitt, 2001; Pratto et al., 1994; van Hiel & Mervielde, 2002). Thus, it appears that both RWA and SDO do indeed reflect different, and somewhat independent, aspects of conservative ideology (i.e., cultural and economic, respectively).

These models help provide a foundation for understanding differences in beliefs and policies between liberals and conservatives. Before addressing MFT and its relationship to a motivated cognition account of ideology, I will first give a brief overview of the psychological study of morality in general.

## **From Reason to Intuition – A Brief History of Moral Psychology**

For the majority of the latter half of the 20<sup>th</sup> Century, moral psychology was dominated by reasoning based theories of moral judgment. The most popular of these theories was Kohlberg's (1963, 1969) cognitive-developmental theory of moral judgment. According to Kohlberg, individuals progress through a series of six stages of moral development, starting with an egocentric, consequentialist approach to moral judgment as a small child (e.g., "I get punished for doing X", "I get rewarded for doing Y") and eventually culminating in judgment based on internalized principles and values rather than rules or social contracts. Essentially, the stages differ in the particular rules and logic used to arrive at a solution to moral dilemmas. For example, reasoning in stages one and two (the pre-conventional level) concerns the avoidance of punishment and satisfaction of personal needs; reasoning in stages three and four (the conventional level) concerns pleasing others by conforming to social norms and respecting authority; and reasoning in stages five and six (the post-conventional level) concerns respecting the rights and will of individuals and the recognition of morality as abstract, internalized principles or conscience.

Individual differences in Kohlbergian moral development are most commonly assessed using the Defining Issues Test (DIT; Rest, Cooper, Coder, Masanz, & Anderson, 1974). In the DIT, individuals are asked to consider a series of moral dilemmas (e.g., should Heinz steal an expensive drug to save his wife's life) and then rate the importance of 12 issues concerning the dilemma that either correspond to each of Kohlberg's six stages or are distracter items. Individuals also rank the four most important issues for each dilemma. These ranks are then examined to determine the

extent to which each individual considers principled morality issues (stages five and six) in resolving these dilemmas. The DIT was the *de facto* measure of Kohlbergian moral development until it was replaced by an updated version of itself, which included several revisions, such as a new scoring system that accounts for not only the endorsement of stage five and six reasoning but also discrimination between the lower and higher stages and an update of the item content itself (Rest, Narvaez, Thoma, & Bebeau, 1999; Rest, Thoma, Narvaez, & Bebeau, 1997).

Despite the popularity of Kohlberg's approach, it has not been without criticism. Although he agreed with Kohlberg on the cognitive structural nature of moral judgments, Turiel (1983) argued that moral judgments are completely separate from social conventions and norms and that even young children can show evidence of principled moral reasoning. Others have argued that the DIT and Kohlberg's theory in general confounds moral judgment with political ideology (Emler, 2002; Emler, Renwick, & Malone; 1983; Shweder, 1982; but see also Crowson & DeBacker, 2008, for evidence that the revised DIT is uniquely predictive of attitudes toward civil rights even after controlling for ideology). Kohlberg's theories have also been criticized for focusing primarily on principles of justice while ignoring other values that could be considered moral, such as care (Gilligan & Wiggins, 1987; Haidt & Joseph, 2008). Nonetheless, moral psychology has been heavily influenced by the cognitive, rationalistic theories of Kohlberg and Turiel (Darley, 1993; Haidt, 2001; Shweder & Haidt, 1993).

In contrast to the once dominant, rationalistic perspective of morality, other researchers recently have emphasized the emotional aspects of moral judgment. In

contrast with the Kohlbergian/neo-Kohlbergian view of moral judgment as the development of an increasing sophistication of reasoning about justice and harm toward other individuals, Haidt (2001) argued that most moral judgments are rarely arrived at through overt reasoning processes. In his social intuitionist model of moral judgment, Haidt argued that moral judgments are arrived at through affect and intuition rather than reason, and any reasoning that does occur is a post-hoc rationalization to justify the judgment to either the self or others. In support of the role of affect in moral judgment, research has shown that violations of moral codes are associated with the experience of strong negative affective reactions, particularly disgust (Inbar, Pizarro, & Bloom, 2008; Rozin, Lowery, Imada, Haidt, 1999; Schnall, Haidt, Clore, & Jordan, 2008; Wheatley & Haidt, 2005). Furthermore, Valdesolo and DeSteno (2006) found that participants were more willing to select the utilitarian response in the footbridge dilemma, in which participants are asked whether or not they should push a large man off a footbridge onto the path of a runaway trolley to save the lives of five other individuals, after positive affect was induced by viewing a brief comedy clip. Additionally, areas of the brain associated with emotion (e.g., posterior cingulate gyrus) become more active while contemplating personal moral dilemmas such as the footbridge dilemma, whereas areas associated with working memory (e.g., middle frontal gyrus, right) are less active (Greene, Sommerville, Nystrom, Darley, & Cohen, 2001).

In keeping with the perspective of morality as susceptible to “hot” processes, other research has explored the role of motivated reasoning in influencing morality (Kunda, 1990; Tsang, 2002). For example, when attributions for a given behavior are ambiguous or self-serving, individuals are more likely to cheat (Brown, Budzek, &

Tamborski, 2009, Study 3; Brown et al., 2011; Vohs & Schooler, 2008; von Hippel, Lakin, & Sakarchi, 2005), engage in covert prejudice or endorse stereotypes (Monin & Miller, 2001; Norton, Vandello, & Darley, 2004; Snyder, Kleck, Strenta, & Mentzer, 1979), and interpret the moral transgressions of others who had previously acted morally in a more favorable manner (Effron & Monin, 2010). Like political ideology, morality appears to be driven, at least in part, by affective and motivational processes. Thus, just as ideological beliefs can serve to satisfy various epistemic, existential, and ideological goals (Jost et al., 2003), moral values also should be able to serve this purpose. In the following section, I will describe research examining this proposition.

### **The Role of Moral Values in Political Ideology**

Morality and political psychology have been intertwined since Adorno et al.'s (1950) study of the relationship between authoritarianism, fascism, and anti-Semitism. Indeed, RWA and SDO are examined as predictors of racial prejudice almost as much, if not more, than they are examined in the context of political ideology (e.g., Altemeyer, 1988, 1998; Duckitt, 2001; McFarland, 2010; Pratto & Shih, 2000; Sidanius, Devereux, & Pratto, 2001; Sidanius, Pratto, & Bobo, 1996). However, just as some have investigated how ideological beliefs and motivations may lead to the expression of (im)moral behavior, others have taken the perspective of how moral values inform political beliefs and behavior.

Several studies by Skitka and colleagues (Skitka & Bauman, 2008; Skitka, Bauman, & Lytle, 2009; Wisneski, Lytle, & Skitka, 2009) have explored how the strength of moral attitudes is associated with various types of political engagement. For example, Skitka and Bauman (2008) found that the extent to which people felt their

preferred candidate reflected their personal moral values was uniquely predictive of voting in the 2000 U.S. Presidential election, even after controlling for party identification, strength of party identification, etc. Likewise, having attitudes about abortion, same-sex marriage, and the Iraq war that were highly tied to central moral values predicted intentions to vote in the 2004 U.S. Presidential election beyond that predicted by the extremity of the attitude or support for a particular candidate. Furthermore, with the exception of attitudes toward same-sex marriage, the relationship between moral convictions and voting did not differ as a function of preferred candidate. Thus, morality mattered for those who preferred Al Gore and John Kerry (generally Democratic and liberal) just as much as for those who preferred George W. Bush (generally Republican and conservative).

Other studies have suggested that moral convictions also play a role in perceptions towards government authority. Individuals with strong moral convictions about physician-assisted suicide were less trusting of the U.S. Supreme Court to make a decision regarding the issue (Wisneski et al., 2009). Furthermore, after an actual court decision regarding physician-assisted suicide, individuals with strong moral convictions perceived the outcome as more fair or unfair (depending on their position) and viewed the Supreme Court itself as more or less legitimate than individuals with weaker conviction about the issue (Skitka et al., 2009).

Clearly, morality is a prominent influence in political discourse for both liberals and conservatives. Both groups draw upon their moral values in either support or defense of controversial issues such as abortion or same-sex marriage. This assertion carries with it the rather obvious implication that in order for liberals and conservatives

to use moral values to arrive at differing conclusions, they must either be interpreting the issues differently, be drawing upon different moral values altogether, or both. I have already discussed how political beliefs might evolve out of differing motivations.

Namely, conservative positions are related to a motivational need to reduce external threats, uncertainty, etc. (Duckitt, 2001; Jost et al., 2003). I will now review research relevant to the second possibility: liberals and conservative differ in the actual content of their moral values.

### **Moral Foundations Theory**

Although traditional morality researchers have typically taken an approach to morality that can be applied universally (e.g., Kohlberg, 1963; Turiel, 1983), more recent research on morality has acknowledged the role of culture in determining the actual content of morality (Haidt, Koller, & Diaz, 1993; Jensen, 1997; Shweder & Haidt, 1993; Shweder, Much, Mahapatara, & Park, 1997). Thus, what may be considered a moral issue for one particular group of people, culture, or religion (e.g., the taboo against the consumption of pork for Judaism and Islam) may not necessarily be considered moral for other groups, cultures, or religions.

Culture is not the only determinant of moral values. Research on Moral Foundations Theory (MFT; Graham, Haidt, & Nosek, 2009; Haidt & Graham, 2007; Haidt & Joseph, 2008) illuminates how moral values differ across the ideological spectrum in American politics. According to MFT, there are five basic foundations from which people can draw their moral values. The first two foundations, harm/care and fairness/reciprocity, roughly correspond to issues involving compassion, empathy, justice, and reciprocal altruism. Graham et al. (2009) refer to these foundations



collectively as *individualizing* foundations because they emphasize protecting the rights and welfare of individuals. The remaining three foundations, ingroup/loyalty, authority/respect, and purity/sanctity, collectively referred to as *binding* foundations, emphasize maintaining structure and order within society and regulating the expression of hedonistic impulses (e.g., sexual desire).

Research on MFT has shown that the extent to which individuals differentially endorse the various foundations is strongly associated with self-reports of political ideology. Graham et al. (2009) asked participants to rate the relevance of various considerations pertaining to each of the five foundations in making moral judgments. For example, participants were asked “whether or not someone was harmed” (harm/care) or “whether or not someone did something to betray his or her group” (ingroup/loyalty) were important to think about when determining whether or not a given behavior is immoral. Furthermore, participants were asked to state whether they agreed or disagreed with various statements reflecting more concrete moral judgments (e.g., “justice, fairness, and equality are the most important requirements for a society” [fairness/reciprocity] and “respect for authority is something all children need to learn” [authority/respect]). Whereas people who identified as conservatives considered concerns related to all five foundations as relevant to relatively the same extent, liberals considered the individualizing foundations much more relevant to moral judgment than the binding foundations. This pattern was consistent for the concrete moral judgments (e.g., “If I saw a mother slapping her child, I would be outraged”) as well.

This differential importance has been corroborated in similar studies. For example, McAdams et al. (2008; Study 2) interviewed participants to determine both

the content and development of their personal moral values. The interviews were then coded for the amount of concern expressed for each of MFT's five foundations.

Whereas concerns related to individualizing foundations were negatively correlated with a self-report of conservatism (i.e., liberals expressed greater concern than conservatives) binding foundations were positively correlated with conservatism (i.e., conservatives expressed greater concern than liberals). Similarly, van Leeuwen and Park (2009) found that a greater emphasis on binding over individualizing foundations partially mediated the relationship between beliefs in a dangerous world and both explicit and implicit measures of political conservatism.

Thus, it appears that the question posed at the beginning of this manuscript may have an answer in MFT. Why do people on opposite ends of the political spectrum so often view their opponents as selfish and immoral rather than simply having a difference of opinion? MFT research suggests that one reason this occurs is because of an ideological difference in the value placed on the primary foundations of morality. Liberals consider values such as obedience, purity, etc. to be less morally relevant than values related to the protection of rights, and are thus mind-boggled when conservatives, for example, oppose same-sex marriage because it "violates the sanctity of marriage." Likewise, conservatives are often aghast that liberals are so ready to disregard these very same values.

However, many issues on which there are political divides do not draw upon only a single foundation. For example, the argument for and against same-sex marriage draws upon fairness foundations and purity foundations, respectively. According to previous research on MFT, conservatives should value both foundations relatively

equally, but yet, according to a recent survey, same-sex marriage is opposed by 77% of Republicans, which is traditionally the more conservative party in the United States, as opposed to 41% of Democrats and 55% of Independents (Pew Research Center, 2009). When foundations collide, how do people who strongly hold both values sacred make a decision? In the next section, I will describe a theoretical model that seeks to explain how people deal with such trade-offs.

### **The Sacred Value Protection Model**

Because most people generally have a positive self-concept, the violation of personal moral standards is associated with the experience of dissonance and negative emotions such as shame and guilt (Aronson, E., 1969; Bandura, 1990; Higgins, 1987; Tangney, Steuwig, & Mashek, 2007). Previous research on self-affirmation has demonstrated that when values important to the self are violated, individuals can alleviate the resulting negative affect evoked by re-affirming either the violated value itself or an unrelated but core aspect of the self (Aronson, J., Blanton, & Cooper, 1995; Koole, Smeets, van Knippenberg, & Dijksterhuis, 1999; Spencer, Fein, & Lomore, 2001; Steele, 1988; Steele & Liu, 1983). However, research by Tetlock and colleagues (Tetlock, 2002, 2003; Tetlock, Kristel, Elson, Green, & Lerner, 2000) suggests that the mere contemplation of violating moral values is sufficient to motivate the need to re-affirm one's moral identity. In other words, no actual violation needs to occur for individuals to feel as if their moral identity has been compromised.

The Sacred Value Protection Model (SVPM; Tetlock, 2002, 2003; Tetlock et al., 2000) describes how individuals are motivated to guard against the violation of sacred values (which include most moral values) in favor of non-sacred or self-serving values.

They do this primarily via two mechanisms, moral outrage and moral cleansing. *Moral outrage* can be expressed through a variety of cognitive, affective, and behavioral mechanisms. More specifically, negative characteristics are attributed to both those who violate moral values and those who fail to explicitly condemn the violation; the violation of moral values elicits strong negative emotions, such as anger and contempt; and targets of moral outrage are often ostracized and punished. *Moral cleansing* refers to the affirmation of moral identity after it has been threatened, whether the threat is due to a personal violation of moral values or due to merely being exposed to a possible violation.

An important aspect of the SVPM is that it does not require an actual violation to occur to activate either moral outrage or moral cleansing. For example, Tetlock et al. (2000) examined the extent to which moral outrage and moral cleansing are affected by the mere exposure to taboo trade-offs. Taboo trade-offs can be broadly defined as any comparison or transaction that brings moral values (or any other deeply held cultural value, for that matter) into conflict with routine or secular values (e.g., the value of money; Fiske & Tetlock, 1997; McGraw & Tetlock, 2005). These types of trade-offs can be contrasted with both routine trade-offs (i.e., the conflict of two routine values) and tragic trade-offs (e.g., the conflict of two sacred values). Tetlock et al., (2000; Study 1) found that simply judging the permissibility of a variety of taboo trade-offs (e.g., the buying and selling of human organs) led to greater amounts of both moral outrage and moral cleansing than the judgment of routine trade-offs. Furthermore, Tetlock et al. (2000; Study 2) had participants read a scenario in which a hospital director had to choose between using limited hospital funds to either save the life of only one of two

children (i.e., a tragic trade-off) or to chose between saving the life of a young boy or using the money to purchase hospital equipment and recruit better doctors (e.g., a taboo trade-off). These scenarios further varied as to the actual decision of the director (the boy or the hospital in taboo trade-off and boy A or boy B in the tragic trade-off) and whether the decision was framed as difficult or easy. Participants expressed greater moral outrage when the hospital director in the taboo trade-off scenario chose to use the money for purchasing hospital equipment than any other decision, regardless of whether it was easy or hard. Overall, participants were also more likely to engage in moral cleansing after being exposed to the taboo trade-off compared to the tragic trade-off, regardless of the actual decision or decision difficulty.

Tetlock et al.'s (2000) research describes how individuals react to others engaging in taboo or tragic trade-offs, but how do people behave when they become the decision-makers in a tragic or taboo trade-off scenario? When confronted with taboo trade-offs, individuals may reinterpret the trade-offs in terms of routine values, or they may even procrastinate or outright refuse to make a decision (McGraw & Tetlock, 2005; Tetlock, 2000). Hanselmann and Tanner (2008) had participants consider hypothetical scenarios in which they were asked to make routine, taboo, and tragic trade-offs and then assessed participants' reports of both decision difficulty and negative affect for each decision. Whereas participants rated the taboo trade-off as the easiest decision to make, tragic trade-offs were the most difficult. However, negative affect following the decision was greater after a taboo trade-off than a routine trade-off and greater still after a tragic trade-off.

That is not to say that people avoid making value trade-offs at all costs, or when they do, they do so only by reinterpreting the issues to ones that are more mundane. Tetlock (1986) asked participants to write their thoughts and decide on policy issues that contained conflicting values (e.g., “Should the C.I.A. have the authority to open the mail of American citizens as part of its efforts against foreign spies?”). When the conflicting values were both similar to each other and high in importance, they were less confident in their eventual choice, but they did engage in more integrative and complex reasoning (i.e., the recognition of the conflicts with issues and developed connections between these issues) in making their decision. There is also evidence that the extent to which individuals will engage in complex reasoning is moderated by political ideology. Tetlock (Tetlock, 1983, 1984; Tetlock, Bernzweig, & Gallant, 1985) found that the speeches and opinions of liberals and moderates regarding various value conflicts were typically higher in integrative reasoning than conservatives for U.S. Senators, British Parliamentarians, and Supreme Court justices. Additionally, Critcher, Huber, Ho, and Koleva (2009) found that when asking participants to justify their seemingly inconsistent attitudes toward abortion and capital punishment (for one and against the other), liberals were more likely to admit the presence of a value trade-off, whereas conservatives were more likely to deny the comparison.

In summary, the SVPM asserts that people generally find trade-offs of sacred and moral values to be aversive. Engaging in taboo trade-offs often evokes moral outrage among observers, and even the consideration of such trade-offs is sufficient for actors and observers alike to feel “morally contaminated” and thus engage in moral cleansing. Additionally, people are generally reluctant to make taboo and tragic trade-

offs themselves, but will do so if necessary by reinterpreting the trade-off as a less severe conflict or by engaging in integratively complex reasoning. Consistent with a model of conservative ideology as, at least in part, a mechanism for reducing ambiguity and uncertainty (Jost et al., 2003), liberals (at least those in Western, industrialized countries) tend to be more willing than conservatives to engage in the latter rather than the former.

### **Overview of the Current Studies**

As suggested by the examples proffered at the beginning of this manuscript, differences between liberals and conservatives appear to be anything but mere disagreements about proper course and policy. Instead, many issues beholden to both liberals and conservatives are subject to and often framed in terms of moral values. To make matters more complicated, whereas the moral values of conservatives encompass issues relating to care, justice, obedience, loyalty, and purity, liberals typically are much more concerned with issues pertaining to the former two (i.e., care and justice) rather than the latter three (Graham et al., 2009). Thus, conservatives are dismayed by the relatively high tolerance liberals seem to have for illegal immigration, as turning a blind eye to such behavior violates the moral imperative of being loyal to your own. Likewise, liberals do not understand the conservative opposition of same-sex marriage. Whereas conservatives see the potential violation of purity/sanctity virtues, liberals focus more on the fairness of allowing two consensual adults the same rights as heterosexual couples (Haidt & Joseph, 2007).

Many moral issues, however, do not invoke, to use the terminology of MFT, only individualizing or only binding foundations. For example, moral opinions about

same-sex marriage can draw upon both sanctity (“marriage is a holy institution that has always been between a man and a woman”) and fairness (“same-sex couples should be allowed to marry for love just like any other couple”). Thus, the type of trade-off involved in these issues is dependent on one’s political leanings. Because of the greater moral relevance liberals place on individualizing foundations, forming an opinion on same-sex marriage should be akin to a taboo trade-off for them (the sacred value of fairness versus the ironically non-sacred value of sanctity). For conservatives, however, the same conflict of values should be more similar to a tragic trade-off (as fairness and sanctity are both sacred values).

Graham et al. (2009; Study 3) examined the relationship of political ideology with taboo trade-offs across the five foundations specified by MFT. Specifically, participants were asked to specify (on an 8-point Likert scale) how much money it would require to convince them to violate a particular foundation. Individualizing foundations were equally taboo for both liberals and conservatives (i.e., they required, on average, between \$100,000 and \$1,000,000 to perform the violation). When it came to binding foundations, however, conservatives required more money to violate the foundation than liberals. However, Graham et al. (2009) did not examine whether or not liberals and conservative would differ on tragic trade-offs similar to the example described above (individualizing versus binding foundations), yet predictions can be derived from MFT and subsequent research on how individuals would react to such trade-offs. In the current studies, I tested these predictions regarding tragic trade-offs. Specifically, in Study 1, I tested whether liberals and conservatives differed in their affective reactions and choices regarding trade-offs between individualizing and



binding foundations. In Study 2, I examined whether allowing participants to credential themselves on a particular moral foundation (Monin & Miller, 2001) both reduced the impact of a tragic trade-off on negative affect and also facilitated making a decision in trade-off scenarios.

### **Study 1**

Study 1 provided an additional test for MFT by determining whether liberals and conservatives differ when asked to make trade-offs between individualizing and binding foundations. Based on previous research in MFT, liberals predominately consider individualizing foundations relevant to their moral judgments, whereas conservatives consider both individualizing and binding foundations relevant (Graham et al., 2009; Haidt & Joseph, 2007). Therefore, when these foundations are pitted against each other, liberals should be more likely to view such conflicts as a taboo trade-off (where the individualizing foundation is the sacred value and the binding foundation is the secular or routine value). Because conservatives view both individualizing and binding foundations as sacred, they should view the same conflicts as tragic trade-offs.

Hanselmann and Tanner (2008) demonstrated that although negative affect followed the pondering of both taboo and tragic trade-offs, negativity was greatest after tragic trade-offs, and tragic trade-offs were rated as considerably more difficult to make. Furthermore, because moral trade-offs, especially tragic trade-offs, are a source of dissonance (i.e., a threat to the perception of the self as moral; Aronson, E., 1968; Tetlock et al., 2000), moral trade-offs should also be associated with an increase in arousal. Thus, if the perception of trade-offs between individualizing and binding foundations varies as a function of political ideology, so too should the experience of

negative affect, arousal, and decision difficulty. Specifically, because both liberals and conservatives value individualizing foundations, individualizing versus individualizing trade-offs should be interpreted as tragic regardless of ideology and should therefore not differ in negative affect, arousal, or decision difficulty for both liberals and conservatives.

*Hypothesis 1a:* Political ideology will not predict negative affect, arousal, or decision difficulty for individualizing versus individualizing trade-offs.

Because conservatives are more likely than liberals to endorse binding foundations as morally relevant, however, trade-offs between individualizing and binding foundations should be viewed as tragic trade-offs for conservatives but as taboo trade-offs for liberals. Thus, conservatives should experience greater negative affect and arousal and report greater decision difficulty than liberals on these types of trade-offs.

*Hypothesis 1b:* Political ideology will be predictive of negative affect, arousal, and decision difficulty for individualizing versus binding trade-offs, such that conservatives will experience greater levels of these variables than liberals will.

Finally, binding versus binding foundations should be interpreted as tragic trade-offs for conservatives but routine trade-offs for liberals. Again, conservatives should report greater negative affect, arousal, and greater decision difficulty than liberals for these trade-offs.

*Hypothesis 1c:* Political ideology will be predictive of negative affect, arousal, and decision difficulty for binding versus binding trade-offs, such that conservatives will experience greater levels of these variables than liberals will.

The perception of moral trade-offs as tragic, taboo, or routine should also influence how one chooses to resolve the trade-off. For conservatives, both individualizing versus individualizing and binding versus binding trade-offs involve a tragic conflict between two moral values. As such, conservatives should show relatively no preference for either option in these types of dilemmas. Although liberals endorse binding foundations to a lesser extent than do conservatives, trade-offs involving only binding foundations should lack a clear preferred option for them as well (both options involve relatively routine or secular values). Therefore, liberals should show relatively no preference within these trade-offs as well.

*Hypothesis 2a:* Political ideology will not predict decision preference for both individualizing versus individualizing and binding versus binding trade-offs.

Furthermore, both liberals and conservatives will show no preference for either option.

Because liberals should view individualizing versus binding trade-offs as taboo, they should predominately choose to uphold the individualizing value. Because conservatives should view the same trade-off as tragic, they should show relatively no preference for either option (i.e., both choices reflect important moral values). However, it could be argued that conservatives who are strongly committed to their beliefs would have greater access to the motivational goals of security, uncertainty avoidance, and group dominance associated with conservatism (Duckitt, 2001; Jost et al., 2003) and would thus be more likely to choose the option that was more aligned with these goals (Critcher et al., 2009; Studies 2 and 3; Fazio, Williams, & Herr, 1983). Therefore, whereas individuals who are moderate or slightly conservative might be more inclined

to show no preference, participants who are strongly conservative might be more inclined to uphold binding foundations over individualizing foundations.

*Hypothesis 2b:* Political ideology will predict decision preference for individualizing versus binding trade-offs. Specifically, liberals will be more likely to favor the individualizing option for individualizing versus binding trade-offs than conservatives will. Conservatives either will be more likely to show no preference for either option or will be more likely to favor the binding option.

In addition to these primary hypotheses, this study also explored whether moral trade-offs may play a role in predicting positions on contemporary social issues. As argued earlier, ideological differences between various political issues may be due, at least in part, to differential endorsement of individualizing and binding foundations. In particular, opinions about issues such as same-sex marriage, abortion, and the Iraq war appear to have a strong moral component (Skitka & Bauman, 2008). Another contemporary issue that appears to have divided support among liberals and conservatives is the passage of a major health care reform bill in 2010. Each of these issues can be interpreted in terms of conflicting moral foundations. For example, same-sex marriage can be construed as a trade-off between the sanctity or purity of marriage versus the fairness of equal rights for homosexuals and heterosexuals. If positions on these issues are indeed related to differential endorsement of moral foundations, then the affective reactions and decisions on the moral trade-off scenarios, individualizing versus binding trade-offs in particular, should mediate the relationship between political ideology and position. In other words, liberals, for example, should be more likely than

conservatives to endorse the individualizing over the binding foundation in an individualizing versus binding trade-off, and the degree of this preference should itself be predictive of support for same-sex marriage.

*Hypothesis 3:* The responses to individualizing versus binding moral trade-offs, but not individualizing versus individualizing or binding versus binding trade-offs, will at least partially mediate the association between political ideology and attitudes toward contemporary social issues.

Finally, previous research has suggested an empirical distinction between economic and cultural conservatism (e.g., Altemeyer, 1998; Crowson, 2009; Duckitt, 2001; Duckitt & Sibley, 2009; Duriez & van Hiel, 2002). Therefore, the current study included single item measures assessing participant's identification as either an economic conservative or a cultural conservative. RWA (Altemeyer, 1998) and SDO (Pratto et al., 1994) were also assessed. There were no specific hypotheses regarding these measures, however, as they were strictly exploratory.

## **Method**

### **Participants**

Participants were 346 individuals recruited using Amazon.com's Mechanical Turk (MTurk), a crowd-sourcing website that allows individuals to post requests for work to be performed ("HITS"). Other individuals who sign up for this site as workers can then complete HITS of their choosing for monetary compensation. Although MTurk is a global website, participation in this study was restricted to those with an IP address from within the United States. Thirty-six participants were excluded from all analyses because they completed all questionnaires in less than five minutes, and an additional

17 were excluded because they were not United States citizens. Of the remaining 293 participants, 94 were male (199 female) with an average age of 35.31 years ( $SD = 13.41$  years;  $Min = 18$  years;  $Max = 83$  years). The majority of participants were White (80.2%; Black, 5.5%; Asian, 3.4%; Hispanic, 2.7%; Other, 8.2%), and Christian (62.1%; Atheist/Agnostic, 24.2%; Jewish, 2.0%; Buddhist, 1.4%; Muslim, 1.0%; Other, 9.3%). Finally, participants were also diverse concerning their highest level of education (Did not finish High School, 0.7%; High School Diploma/GED, 33.8%; Associate's Degree, 20.8%; Bachelor's Degree, 29.0%; Graduate Degree, 15.0%; non-response, 0.7%) and yearly income (under \$20,000, 32.4%; \$20,000 - \$39,000, 27.6%; \$40,000 - \$59,000, 20.8%; \$60,000 - \$79,000, 6.8%; \$80,000 - \$99,000, 6.8%; \$100,000 - \$999,999, 5.1%; over \$1,000,000, 0.3%). All participants were compensated \$.25 for their participation in this study.

## Measures

**Reactions to moral trade-offs.** Negative affect, arousal, decision difficulty, and the actual decision were assessed in a 16 item scale (five items for affect, arousal, and difficulty plus one item for the actual decision) in which participants responded on a 7-point Likert scale (Appendix A). Example items included "I feel good about making this decision" (negative affect), "I am very nervous about making the wrong decision" (arousal), and "For this decision, I feel certain which option to choose" (decision difficulty). The decision difficulty measure was taken directly from Hanselmann and Tanner (2008). The decision preference item asked participants to choose which option within the dilemma they preferred using a 7-point Likert scale anchored by -3 ("Definitely Option 1") and +3 ("Definitely Option 2"). The order of the items for

affect, arousal, and difficulty were given in a random order for each participant. The item assessing the actual decision preference, however, was always presented last.

Cronbach's alphas were calculated for negative affect, arousal, and decision difficulty for each scenario and then averaged to estimate internal reliability. The average reliability for negative affect was good ( $\alpha = .84$ ). However, the reliabilities for arousal and difficulty were not optimal ( $\alpha = .56$  and  $\alpha = .72$ , respectively). Analyses of item-total correlations revealed that the items "I feel excited about making this decision" (for arousal) and "I feel very ambivalent about this decision" (for decision difficulty) did not correlate with the rest of their respective scales. Removing the two items substantially improved the reliabilities ( $\alpha = .81$  for arousal and  $\alpha = .80$  for decision difficulty). Responses for each variable were aggregated across scenarios to create a single score.

**Political ideology.** Participants' political ideology was assessed with a single item ("To what extent do you identify as liberal versus conservative?"). Participants responded with a 7-point Likert scale anchored by 1 ("Very Liberal") and 7 ("Very Conservative"). In addition to the unidimensional measure of political ideology, participants also responded to two items regarding their endorsement of cultural and economic conservatism. These items and the remaining demographic items can be found in Appendix B.

**Contemporary social issues.** Participants were asked about their support of four contemporary issues (Appendix C). For each of these issues (same-sex marriage, military action in Iraq, abortion, and public health insurance), participants were asked to

state their support for each issue (or lack of support in the case of abortion) using a 7-point Likert scale anchored with 1 (“Strongly Disagree”) and 7 (“Strongly Agree”).

**RWA and SDO.** Right-Wing Authoritarianism (RWA) and Social Dominance Orientation (SDO) were assessed using abbreviated versions of both the 22-item version of Altemeyer’s (2006) RWA scale and Pratto et al.’s (1994) 16-item SDO scale (Appendix D). The measure of RWA used in the current study consisted of three items selected from the longer 22-item version. Items were selected based on the results of a confirmatory factor analysis performed on previous data containing the full-length RWA. The three items with the highest factor loadings were used in the current study ( $\alpha = .74$ ). The SDO measure also consisted of three items selected from the original 16-item version. The items were selected in the same manner as with RWA ( $\alpha = .83$ ).

### **Procedure**

After finding a brief description of the study listed on MTurk, participants followed a link to the actual study, which was hosted by Qualtrics (<http://www.qualtrics.com>), a survey-hosting website, where they first gave consent to participate in the study. Participants were then randomly assigned to complete either individualizing versus individualizing trade-offs (INDV vs. INDV), binding versus binding trade-offs (BIND vs. BIND), or individualizing versus binding trade-offs (INDV vs. BIND). For each set of trade-offs, participants were asked to imagine themselves as the actor in three scenarios that described a potential moral dilemma (see Appendix E for a list of scenarios used in this study). Following the scenario, the participant was given two options from which to choose a course of action. Each option represented the endorsement of either an individualizing or binding foundation,



depending on which set of scenarios the participant received. The scenarios were designed so that the moral values represented by each option were opposed to one another. In other words, preference for one option was always relative to the other option. For example, one scenario (individualizing versus binding) asked participants to imagine they were a human resources manager at an accounting firm and that they ultimately had to choose between one of two candidates for a position. One of the candidates happened to be a member of the actor's church and was described as sharing the same values and beliefs as the actor (ingroup/loyalty). The other candidate, however, had slightly better qualifications on paper than the other candidates (fairness/reciprocity). All scenarios were pilot tested to ensure that each option tapped the appropriate foundations (individualizing or binding; see Appendix F for a brief description of the pilot study).<sup>1</sup> After each scenario, participants completed the measures of negative affect, arousal, decision difficulty, and then made their actual decision.

Next, participants completed the assessment of contemporary social issues, the measures of RWA and SDO (presented in random order), and a demographics questionnaire, which included the aforementioned assessments of political ideology. Finally, participants underwent a suspicion check to ensure, among other things, that they had not previously participated in a similar study on Mturk and were debriefed. At the conclusion of the study, participants were given a password to enter in a response box on the MTurk website. This password served to confirm that participants did indeed follow the link and complete the study and was used to award compensation.

1. Data from the pilot study suggested that, despite the face validity of the scenarios, some of the options for the individualizing versus individualizing and binding versus binding trade-offs did not indicate a preference for the targeted foundations.

## Results

Descriptive statistics and zero-order correlations for all political ideology items (general, cultural, and economic), RWA, SDO, and attitudes toward contemporary social issues can be found in Table 1.

### Omnibus analysis

Negative affect, arousal, decision difficulty, and decision preference were subjected to a MANCOVA with trade-off type (INDV vs. INDV; BIND vs. BIND; INDV vs. BIND) as a between-groups factor and political ideology as a covariate. Ideology was standardized prior to all analyses in order to facilitate interpretation of any interactions (Cohen, Cohen, West, & Aiken, 2003), and decision preferences were coded so that higher numbers reflect greater preferences for binding foundations in INDV vs. BIND trade-offs. There was no significant interaction between ideology and trade-off type (Roy's Largest Root = .03),  $F(4, 282) = 1.79, p = .13$ . In addition, there was no association between ideology and the dependent variables (Roy's Largest Root = .02),  $F(4, 282) = 1.06, p = .38$ . However, there was a main effect of trade-off type (Roy's Largest Root = .44),  $F(4, 282) = 31.05, p < .001$ . Results were similar for the other multivariate test statistics (Pillai's Trace, Wilks' Lambda, and Hotelling's Trace) as well.

Follow-up univariate analyses were performed to explore the main effect of trade-off type further. The main effect of negative affect approached significance,  $F(2, 284) = 2.89, p = .06, \eta^2 = .02$ . Post-hoc comparisons using the Bonferroni

Table 1

*Descriptive Statistics and Correlations for Political Ideology Items (General, Cultural, and Economic Conservatism), Right-Wing Authoritarianism (RWA), Social Dominance Orientation (SDO), and Attitudes toward Contemporary Social Issues (Same-Sex Marriage, the Iraq War, Abortion, and Publically Provided Health Care).*

	1	2	3	4	5	6	7	8	9	<i>M</i>	<i>SD</i>
1. general	—									3.49	1.51
2. cultural	.46	—								2.91	1.83
3. economic	.61	.30	—							4.16	1.78
4. RWA	.52	.72	.28	—						-1.95	1.76
5. SDO	.41	.32	.30	.39	—					2.37	1.28
6. same-sex	-.50	-.58	-.26	-.69	-.35	—				5.31	2.16
7. Iraq	.44	.31	.32	.28	.24	-.18	—			3.31	1.82
8. abortion	.37	.51	.20	.57	.22	-.54	.25	—		2.59	2.01
9. health-care	-.53	-.27	-.47	-.31	-.48	.35	-.32	-.24	—	5.04	1.79

*Note.* With the exception of abortion, larger scores reflect greater support of the respective social issue. All correlations were significant at  $p = .002$  or lower.

Table 2

*Mean Levels of Negative Affect, Arousal, Decision Difficulty, and Decision Preference as a Function of Trade-off Type.*

Dependent variables	Trade-off Type		
	INDV vs. INDV	BIND vs. BIND	INDV vs. BIND
1. affect	4.57 <sup>a</sup> (0.11)	4.31 <sup>ab</sup> (0.10)	4.21 <sup>b</sup> (0.10)
2. arousal	4.97 <sup>a</sup> (0.10)	4.40 <sup>b</sup> (0.09)	4.70 <sup>a</sup> (0.09)
3. difficulty	4.18 <sup>a</sup> (0.10)	3.86 <sup>ab</sup> (0.09)	3.63 <sup>b</sup> (0.09)
4. decision	1.84 <sup>a</sup> (0.06)	2.02 <sup>a</sup> (0.06)	2.21 <sup>b</sup> (0.05)

*Note.* Decision was recoded so that the range for decision = 0 – 3, with higher levels indicating more extreme preferences towards either option across scenarios as opposed to no preference (i.e., the midpoint of the original scale). Means with different subscripts within each row are significantly different from each other at  $p < .05$ .

correction to control for Type I error revealed that negative affect for INDV vs. INDV trade-offs was greater than negative affect for INDV vs. BIND trade-offs (Table 2). The main effect for arousal was significant,  $F(2, 284) = 10.99, p < .001, \eta^2 = .07$ . Both INDV vs. INDV and INDV vs. BIND trade-offs elicited more arousal than BIND vs. BIND trade-offs. The main effect for decision difficulty was also significant,  $F(2, 284) = 8.01, p < .001, \eta^2 = .05$ . INDV vs. INDV trade-offs were more difficult than INDV vs. BIND trade-offs and marginally more difficult than BIND vs. BIND trade-offs. For decision preference, determining whether there is a preference for a particular option for INDV vs. INDV and BIND vs. BIND trade-offs would not have a clear interpretation. Thus, before conducting the univariate test on decision preference, scores were transformed into absolute values to whether preference for any option compared to no preference (a value of “0” on the response scale) varied by trade-off type. The main

effect of trade-off type on decision preference was significant,  $F(2, 284) = 10.69, p < .001, \eta^2 = .07$ . Participants were more likely to have a clear preference for any particular option, as opposed to no clear preference) for INDV vs. BIND trade-offs than for INDV vs. INDV and BIND vs. BIND trade-offs.

Although the omnibus analyses did not reveal any significant interactions between political ideology and trade-off type on the four dependent variables (negative affect, arousal, decision preference), the scenarios were not constructed to be equivalent across trade-off type on other factors that might influence negative affect, arousal, etc. (e.g., dilemma severity). As a result, the following analyses were used to test each hypothesis directly.

### **Political Ideology and Negative Affect, Arousal, and Decision Difficulty**

Hypothesis 1 predicted that political ideology would not predict negative affect, arousal and decision difficulty for INDV vs. INDV trade-offs (Hypothesis 1a), but would be associated with these variables for INDV vs. BIND (Hypothesis 1b) and BIND vs. BIND (Hypothesis 1c) trade-offs, such that conservatives will experience greater levels of these variables than will liberals. To test these hypotheses, simple slopes analyses were performed for all three dependent variables to examine the association of ideology and negative affect, arousal, and decision difficulty for each trade-off type separately.

As predicted, the simple slope of ideology on negative affect for INDV vs. INDV trade-offs was not significant,  $\beta = .04, t(284) = 0.33, ns$ . The simple slope for INDV vs. BIND also conformed to predictions. Political ideology was positively associated with negative affect for INDV vs. BIND trade-offs,  $\beta = .22, t(284) = 2.23, p$

= .03,  $sr^2 = .02$ . Participants experienced more negative affect in response to these scenarios as they became more conservative as opposed to liberal. Contrary to predictions, the simple slope of ideology on negative affect for BIND vs. BIND trade-offs was not significant,  $\beta = -.03$ ,  $t(284) = -0.31$ , *ns* (Figure 1a).

The results for arousal were similar to that for negative affect. Consistent with Hypotheses 1a and 1b, the simple slope of ideology on arousal for INDV vs. INDV trade-offs was not significant,  $\beta = .05$ ,  $t(284) = 0.48$ , *ns*, but the simple slope for INDV vs. BIND trade-offs was significant,  $\beta = .19$ ,  $t(284) = 1.98$ ,  $p = .05$ ,  $sr^2 = .01$ . Participants experienced greater levels of arousal in response to INDV vs. BIND trade-offs as they became more conservative. Contrary to Hypothesis 1c, however, the simple slope for BIND vs. BIND trade-offs was not significant,  $\beta = .09$ ,  $t(284) = 0.97$ , *ns* (Figure 1b).

Finally, the results for decision difficulty were again similar to that for negative affect and arousal. The simple slope of ideology on decision difficulty for INDV vs. INDV trade-offs was not significant,  $\beta = .01$ ,  $t(284) = 0.05$ , *ns*, but the simple slope for INDV vs. BIND trade-offs was again significant,  $\beta = .21$ ,  $t(284) = 2.06$ ,  $p = .04$ ,  $sr^2 = .01$ . The simple slope for BIND vs. BIND trade-offs, however, was not significant,  $\beta = .06$ ,  $t(284) = 0.56$ , *ns* (Figure 1c). In summary, simple slopes analyses revealed support on all three variables for Hypotheses 1a (a null effect of ideology on INDV vs. INDV trade-offs) and Hypothesis 1b (a positive association between ideology and the three variables for INDV vs. BIND trade-offs). Hypothesis 1c (a positive association between ideology and the three variables for BIND vs. BIND trade-offs), however, was not supported.

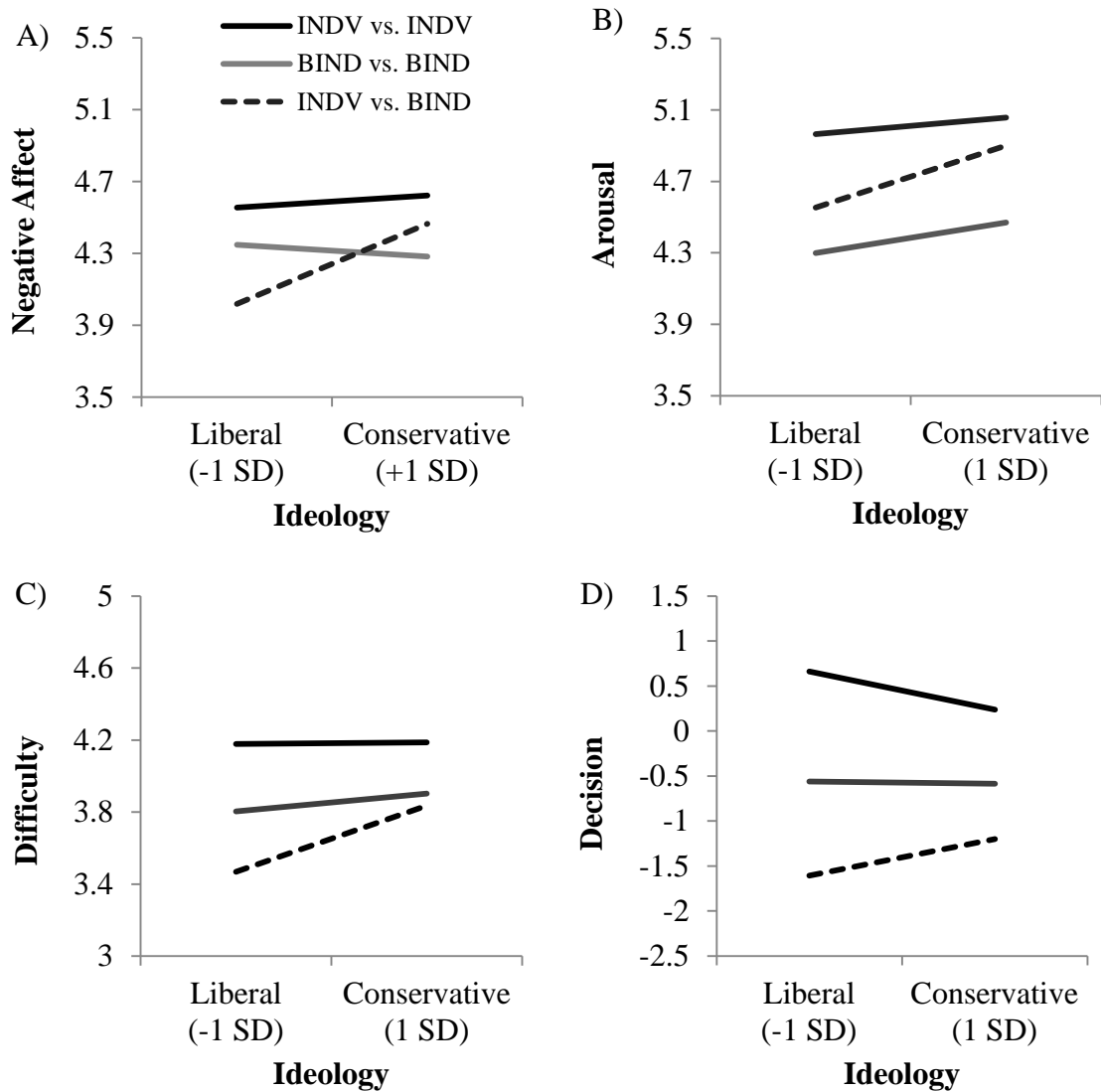


Figure 1. Negative affect (A), arousal (B), decision difficulty (C), and decision preference (D) as a function of political ideology and trade-off type. INDV = individualizing, BIND = binding. For A, B, and C, range = 1 to 7. For D, range = -3 to 3 with 0 indicating no preference. Also for D, higher values reflect a preference for binding foundations for INDV vs. BIND trade-offs only.

### Decision Preference

Hypothesis 2 predicted that political ideology would not be associated with decision preference for INDV vs. INDV and BIND vs. BIND trade-offs and that all participants would show relatively no preference for one option over the other. A simple slopes analysis of the association between political ideology and decision preference at for each type of trade-off demonstrated that ideology did not significantly predict

decision preference for either INDV vs. INDV,  $\beta = -.16$ ,  $t(284) = -1.63$ ,  $p = .11$ , or BINDV vs. BINDV trade-offs,  $\beta = -.01$ ,  $t(284) = -0.11$ , *ns* (Figure 1d). Although not significant, the simple slope for INDV vs. INDV trade-offs was larger than expected and warranted a follow-up investigation. Repeating this analysis for each of the three scenarios separately revealed that ideology predicted decision preference in INDV vs. INDV trade-offs that involved trading-off between the Harm/care and Fairness/reciprocity foundation (scenarios 2 and 3). For both scenarios, conservatives were more likely than liberals were to prefer the option endorsing the Fairness/reciprocity foundation rather than the option endorsing the Harm/care foundation,  $\beta = .24$ ,  $t(287) = 2.45$ ,  $p = .02$ ,  $sr^2 = .02$ , for scenario 2, and  $\beta = -.20$ ,  $t(287) = -1.99$ ,  $p = .05$ ,  $sr^2 = .01$ , for scenario 3.

One-sample Kolmogorov-Smirnov tests for normality verified that decision preference within both INDV vs. INDV and BIND vs. BIND trade-offs were normally distributed and not bimodal (i.e., clear preferences for both options with few participants indicating no preference), both  $ps > .20$ . Thus, decision preference was subjected to a one-sample *t*-test with a null hypothesis of no preference (i.e., “0”) for both INDV vs. INDV and BIND vs. BIND trade-offs in order to examine whether participants preferred any option as opposed to no option at all. Decision preference for INDV vs. INDV trade-offs ( $M = 0.46$ ;  $SD = 1.10$ ) was significantly different from zero,  $t(83) = 3.87$ ,  $p < .001$ ,  $d = 0.42$ , as was BIND vs. BIND trade-offs ( $M = -0.57$ ;  $SD = 1.24$ ),  $t(96) = -4.55$ ,  $p < .001$ ,  $d = 0.46$ . Examination of the individual scenarios for INDV vs. INDV and BIND vs. BIND trade-offs revealed that out of five scenarios that differed significantly from zero, four had a preference toward the option that was



presented second, regardless of what foundation that option endorsed. As this was the only pattern that seemed to emerge from the analysis of the individual scenarios, any further interpretation should be treated with caution.

Finally, Hypothesis 2 also predicted that ideology would predict decision preference within INDV vs. BIND trade-offs. Prior to testing this simple slope, decision preference was coded such that higher scores reflect greater preference toward the binding foundation. The simple slope of ideology on decision preference for INDV vs. BIND trade-offs was consistent with this prediction,  $\beta = .15$ ,  $t(284) = 1.82$ ,  $p = .07$ ,  $sr^2 = .01$ . Although all participants generally preferred the option that endorsed individualizing foundations, this preference decreased as participants became more conservative.

In summary, Hypothesis 2 received only partial support. As predicted, political ideology was significantly associated with decision preference for INDV vs. BIND trade-offs but not for INDV vs. INDV or BIND vs. BIND trade-offs. Although the aggregate decision preference score for INDV vs. INDV trade-offs was not statistically significant, closer examination of the individual scenarios suggested that conservative participants were more likely to prefer the Fairness/reciprocity foundation when traded-off against the Harm/care foundation. Finally, contrary to predictions, there was a preference for a particular option (as opposed to no preference) for INDV vs. INDV and BIND vs. BIND trade-offs, although the meaning of this preference is unclear, as it appears to be driven by the serial position of the response options rather than a content-based preference. Furthermore, even though endorsement of the option corresponding to the individualizing foundation was less strong as participants became more

conservative, all participants preferred the individualizing option to some extent regardless of ideology.

### **Mediation Analyses**

Hypothesis 3 predicted that the responses to INDV vs. BIND trade-offs, but not INDV vs. INDV or BIND vs. BIND trade-offs, will at least partially mediate any association between political ideology and attitudes toward several contemporary social issues (same-sex marriage, the Iraq war, abortion, and health care reform). Because the attitudes toward social issues were only weakly correlated with one another (Table 1), each issue was tested in a separate model using the PROCESS macro for SPSS version 17.0 (Hayes, 2012). In addition to calculating the confidence intervals of conditional indirect effects using bias-corrected bootstrap re-sampling techniques (which is recommended over traditional Sobel tests of indirect effects; Preacher, Rucker, & Hayes, 2007), PROCESS also allows for multiple mediators operating in parallel. However, one limitation of PROCESS is that moderators may be continuous or dichotomous, but not categorical with more than two groups. Therefore, INDV vs. INDV and BIND vs. BIND trade-offs were collapsed to create a dichotomous trade-off type variable comparing INDV vs. BIND trade-offs to the non-INDV vs. BIND trade-offs. Trade-off type was then recoded using weighted effects codes (INDV vs. BIND trade-offs = “1”; non-INDV vs. BIND trade-offs = “-0.5”). Ninety-five percent confidence intervals for all indirect effects were calculated using 10,000 bootstrap samples. All continuous variables were standardized prior to the analyses. The moderated mediation models tested were similar, but not identical, to the fifth model discussed by Preacher et al. (2007). In addition to the direct effects of ideology

and trade-off type on attitudes toward each contemporary social issue (same-sex marriage, the Iraq war, abortion, and health care reform), paths were estimated for indirect effects through each of four potential mediators (negative affect, arousal, decision difficulty, and decision preference). Trade-off type was allowed to moderate both the paths from ideology to the mediators, and from the mediators to the social issue. As trade-off type was not expected to moderate the direct effect from ideology to social issue, this interaction was not included in the analysis. Figure 3 displays an example of this model along with standardized path coefficients for same-sex marriage. The conditional indirect effects for all mediators along with their associated confidence intervals are summarized in Table 3. The direct effects of ideology were significant for support for same-sex marriage,  $\beta = -.51$ ,  $t(279) = -9.86$ ,  $p < .001$ ,  $sr^2 = .25$ , support for the Iraq war,  $\beta = .42$ ,  $t(278) = 7.90$ ,  $p < .001$ ,  $sr^2 = .17$ , opposition to abortion,  $\beta = .38$ ,  $t(278) = 6.77$ ,  $p < .001$ ,  $sr^2 = .13$ , and support for universal health care reform,  $\beta = -.53$ ,  $t(278) = -10.29$ ,  $p < .001$ ,  $sr^2 = .26$ . These regression coefficients are nearly identically to the zero-sum correlations between general political ideology and attitudes toward contemporary social issues presented in Table 1. Thus, any significant conditional indirect effects would likely explain only a small portion of the association between ideology and attitudes or be a Type I error. Nonetheless, several significant effects were detected and are discussed below.

For same-sex marriage, there were no significant indirect effects for non-INDV vs. BIND trade-offs, as predicted. For INDV vs. BIND trade-offs, there were also no significant indirect effects, although the indirect effect for arousal was nearly significant (the upper limit of the confidence interval for the indirect effect was exactly 0).

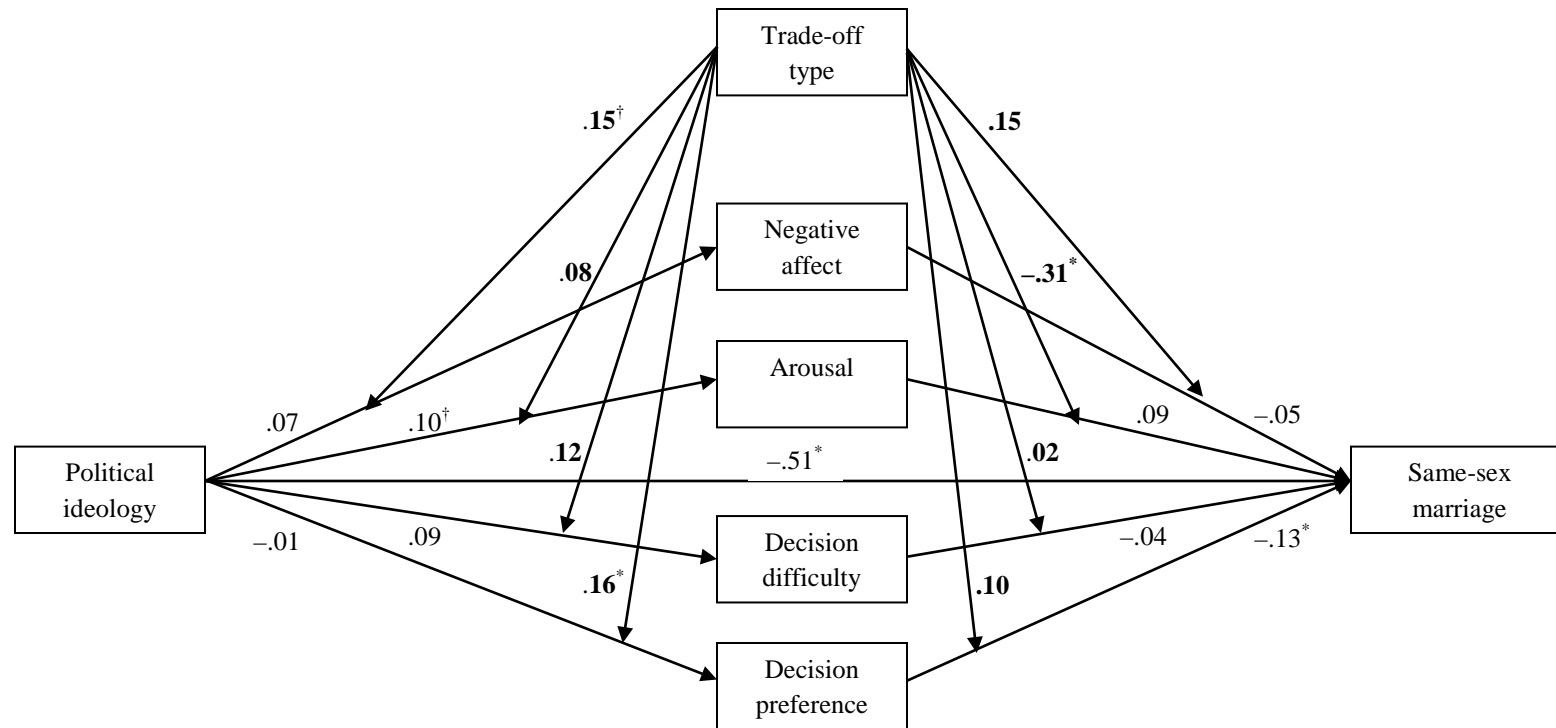


Figure 2. Moderated mediation model of the effect of ideology on attitudes toward same-sex marriage through negative affect, arousal, decision difficulty, and decision preference and moderated by trade-off type. Error terms and main effects of trade-off type on both the mediators and attitudes toward social issues are omitted for clarity. All path coefficients are standardized. Bold font indicates interaction coefficients. Regular font indicates main effects of ideology on mediators and attitudes toward same-sex marriage and the main effects of the mediators on attitude toward same-sex marriage. Coefficients marked with † are marginally significant ( $p < .10$ ). Coefficients marked with \* are significant ( $p < .05$ ).

Table 3

*Conditional Indirect Effects of Mediators on Contemporary Social Issues.*

Mediator	INDV vs. BIND			Other trade-offs		
	Effect	LL	UL	Effect	LL	UL
<b>1. Same-sex</b>						
Affect	.02 (.03)	-.0162	.0997	.00 (.01)	-.0217	.0264
Arousal	-.04 (.03)	-.1224	.0000	.01 (.02)	-.0204	.0684
Difficulty	.01 (.02)	-.0280	.0524	.00 (.01)	-.0082	.0268
Preference	.00 (.02)	-.0476	.0233	.01 (.01)	-.0048	.0583
<b>2. Iraq</b>						
Affect	<b>-.06</b> (.04)	-.1615	-.0026	.00 (.01)	-.0387	.0206
Arousal	.02 (.03)	-.0155	.0939	.01 (.01)	-.0527	.0052
Difficulty	.03 (.03)	-.0105	.1103	.01 (.01)	-.0099	.0478
Preference	.05 (.04)	.0000	.1444	.00 (.01)	-.0322	.0090
<b>3. Abortion</b>						
Affect	.03 (.03)	-.1174	.0180	.00 (.01)	-.0352	.0210
Arousal	.04 (.03)	-.0087	.1222	-.02 (.03)	-.0842	.0280
Difficulty	.01 (.02)	-.0181	.0800	.01 (.02)	-.0191	.0521
Preference	.00 (.02)	-.0408	.0626	-.01 (.01)	-.0528	.0043
<b>4. Health Care</b>						
Affect	-.03 (.03)	-.0986	.0071	.00 (.01)	-.0099	.0227
Arousal	.03 (.03)	-.0005	.1093	.01 (.01)	-.0081	.0509
Difficulty	.01 (.02)	-.0248	.0566	.00 (.01)	-.0083	.0247
Preference	<b>-.03</b> (.02)	-.1008	-.0005	.01 (.01)	-.0045	.0473

*Note.* All indirect effect path coefficients are standardized. Numbers in parentheses are bootstrap estimated standard errors. INDV vs. BIND = conditional indirect effects for INDV vs. BIND trade-offs; Other trade-offs = conditional indirect effects for combined INDV vs. INDV and BIND vs. BIND trade-offs; Effect = path coefficient for the indirect effect; LL = lower limit of the bootstrapped 95% confidence interval; UL = upper limit of the bootstrapped 95% confidence interval; Indirect effects in bold are significant at  $p < .05$ . Bootstrap samples = 10,000.

Follow-up analyses revealed that participants experienced more arousal as they became more conservative regardless of the type of trade-off to which they were exposed,  $\beta = .10$ ,  $t(286) = 1.73$ ,  $p = .09$ ,  $sr^2 = .01$ . Greater levels of arousal were then associated with

less support for same-sex marriage, but only for INDV vs. BIND trade-offs,  $\beta = -.22$ ,  $t(279) = -1.85$ ,  $p = .07$ ,  $sr^2 = .01$ .

For the Iraq war, there were again no indirect effects for non-INDV vs. BIND trade-offs. For INDV vs. BIND trade-offs the indirect effect through negative affect was significant. However, neither the interaction between ideology and trade-off type for negative affect or the interaction between negative affect and trade-off type for attitude toward the Iraq war, a prerequisite for testing conditional indirect effects, was significant,  $p = .11$  and  $p = .53$ , respectively. The indirect effect for decision preference was nearly significant (the lower limit of the confidence interval was exactly 0). As participants became more conservative, they were more likely to endorse the option endorsing binding foundations, but only for INDV vs. BIND trade-offs,  $\beta = .15$ ,  $t(285) = 1.71$ ,  $p = .09$ ,  $sr^2 = .01$ . Preference for the binding foundations was then positively associated for support for the Iraq war, but again only for INDV vs. BIND trade-offs,  $\beta = .37$ ,  $t(278) = 3.15$ ,  $p < .01$ ,  $sr^2 = .03$ .

For opposition to abortion, there were no significant indirect effects for any type of trade-off. Finally, for health care reform, there were once again no significant indirect effects for non-INDV vs. BIND trade-offs. For INDV vs. BIND trade-offs, there was only an indirect effect of decision preference. Conservatives were more likely to prefer the option endorsing the binding foundation, but only for INDV vs. BIND trade-offs,  $\beta = .15$ ,  $t(285) = 1.71$ ,  $p = .09$ ,  $sr^2 = .01$ . Endorsing the binding foundation on these trade-offs was then associated with less support for health care reform,  $\beta = -.22$ ,  $t(278) = -1.98$ ,  $p = .05$ ,  $sr^2 = .01$ .

In summary, support for the hypothesis that responses to INDV vs. BIND trade-offs, but not non-INDV vs. BIND trade-offs, would mediate associations between political ideology and several contemporary social issues was limited. As predicted, there were no conditional indirect effects for non-INDV vs. BIND trade-offs. However, of the sixteen possible conditional indirect effects for INDV vs. BIND trade-offs (four issues with four potential mediators each), only two were significant (four including the two mediators with confidence intervals ending exactly at 0), and in all cases, the direct effect of ideology on each social issue remained essentially unchanged from the zero-sum correlation. Because of this, there is a strong probability that at least one of these significant effects is due to a Type I error and should be interpreted with caution.

### **Exploratory Analyses**

As several researchers have argued that political ideology is best operationalized as a two dimensional construct consisting of economic and cultural conservatism (e.g., Duckitt & Sibley, 2009), analyses testing Hypotheses 1 and 2 were re-run substituting economic and cultural conservatism (and the related constructs RWA and SDO) in place of general ideology. Rather than describing the results of these exploratory analyses in full, I will limit my discussion to instances of agreement with the uni-dimensional ideology and notable differences.

Cultural conservatism displayed similar associations with responses to INDV vs. BIND trade-offs as general political ideology (Table 4). Cultural conservatism was positively associated with arousal, decision difficulty, and preference for binding foundations. However, cultural conservatism was not associated with negative affect. Similarly, RWA was positively associated with negative affect, arousal, decision

Table 4

*Simple Slope Regression Coefficients for Cultural Conservatism, Economic**Conservatism, RWA, and SDO within INDV vs. BIND Trade-offs.*

	$\beta$	$t$	$p$	$sr^2$
<b>1. Cultural</b>				
affect	.08	0.67	.50	—
arousal	<b>.21</b>	1.96	.05	.01
difficulty	<b>.22</b>	1.96	.05	.01
preference	.17	1.87	.06	.01
<b>2. Economic</b>				
affect	<b>.21</b>	2.14	.03	.02
arousal	.08	0.84	.40	—
difficulty	.14	1.43	.15	—
preference	.11	1.34	.18	—
<b>3. RWA</b>				
affect	<b>.26</b>	2.74	.01	.03
arousal	<b>.30</b>	3.34	.001	.03
difficulty	<b>.26</b>	2.66	.01	.02
preference	<b>.15</b>	1.95	.05	.01
<b>4. SDO</b>				
affect	.16	1.45	.15	—
Arousal	-.01	-0.11	.91	—
difficulty	.21	1.86	.06	.01
preference	<b>.32</b>	3.56	< .001	.03

*Note.*  $df = 287$ . Standardized regression coefficients in bold are significant at  $p < .05$ . Squared semipartial correlation coefficients were calculated only for regression coefficients with a  $p < .10$ .

difficulty, and preference for binding foundations. In fact, unlike general ideology and cultural conservatism, the interaction between trade-off type and RWA in the omnibus MANOVA was significant (Roy's Largest Root = .04),  $F(4, 285) = 2.90$ ,  $p = .02$ .

Univariate tests revealed a marginally significant interaction for negative affect,



$F(2,287) = 2.47, p = .09, \eta^2 = .02$ , and a significant interaction for arousal,  $F(2, 287) = 5.49, p < .01, \eta^2 = .03$ .

Whereas cultural conservatism was positively associated with all responses to INDV vs. BIND trade-offs except negative affect, economic conservatism was positively associated with negative affect only. Interestingly, economic conservatism was positively associated with negative affect,  $\beta = .17, t(289) = 2.91, p < .01, sr^2 = .03$ , and arousal,  $\beta = .13, t(289) = 2.38, p = .02, sr^2 = .02$ , regardless of trade-off type. SDO fared slightly better, as it was positively associated with both decision difficulty and preference for binding foundations in INDV vs. BIND trade-offs.

### **Discussion**

Study 1 tested three general hypotheses. First, it was predicted that because of their greater endorsement of binding foundations, participants who are more conservative would be more likely than participants who are more liberal to view INDV vs. BIND or BIND vs. BIND trade-offs as tragic trade-offs between two moral values and thus experience greater levels of negative affect, arousal, and decision difficulty when contemplating these trade-offs. As both liberals and conservatives endorse individualizing foundations, no associations were predicted for INDV vs. INDV trade-offs. Second, ideology should not be associated with preference for a particular option in INDV vs. INDV and BIND vs. BIND trade-offs, and there should be no overall preference for any particular option. For INDV vs. BIND trade-offs, however, participants who are more liberal were predicted to prefer the option endorsing individualizing foundations, whereas conservatives were predicted to either show no preference or prefer the option endorsing binding foundations. Finally, responses to

INDV vs. BIND trade-offs, but not the remaining trade-off types, were predicted to at least partially mediate any association between ideology and attitudes toward various contemporary social issues (same-sex marriage, the war in Iraq, abortion, and public health care reform).

The first hypothesis was supported for INDV vs. INDV and INDV vs. BIND trade-offs. Despite the lack of an interaction between ideology and trade-off type in the omnibus analysis, planned simple slopes analyses revealed that all participants experienced similar levels of negative affect, arousal, or decision difficulty for INDV vs. INDV trade-offs regardless of political ideology. Furthermore, all participants experienced relatively higher levels of these variables for INDV vs. INDV trade-offs, suggesting that all participants did indeed view these trade-offs as tragic. For INDV vs. BIND trade-offs, however, participants experienced greater levels of all three variables as they became more conservative. In other words, these trade-offs were more akin to tragic trade-offs of two sacred values for conservatives and more akin to taboo trade-offs for liberals. However, results for BIND vs. BIND trade-offs did not support the first hypothesis. Political ideology was not associated with negative affect, arousal, or decision difficulty for these trade-offs. Thus, liberals and conservatives did not differ in the way they perceived BIND vs. BIND trade-offs.

The second hypothesis also received partial support. Ideological differences in decision preference were observed only for INDV vs. BIND trade-offs. Even though all participants generally preferred the individualizing option, more conservative participants were less definite in their support than participants who were more liberal. Ideology was also not associated with decision preference for INDV vs. INDV and

BIND vs. BIND trade-offs, although exploratory follow-up analyses suggested that conservatives were more likely to display a preference for endorsing the Fairness/reciprocity foundation when it was traded-off against the Harm/care foundation. However, the second hypothesis also predicted that there would be no preference for any particular option in INDV vs. INDV and BIND vs. BIND trade-offs and no preference (or a preference towards binding foundations) for conservatives in INDV vs. BIND trade-offs. This prediction was not supported. As stated earlier, even conservatives preferred the individualizing foundations in INDV vs. BIND trade-offs (albeit to a lesser extent than liberals). Both liberals and conservatives also displayed a decision preference for INDV vs. INDV and BIND vs. BIND trade-offs. However, with the exception of the aforementioned preference for the Fairness/reciprocity foundation, there was no clear interpretation of these preferences other than a bias for the second option.

Finally, the third hypothesis received little support. Political ideology was indeed associated with attitudes toward contemporary social issues (conservatives had more favorable attitudes toward the war in Iraq and less favorable attitudes toward same-sex marriage, abortion, and health care reform), and these associations were not mediated by responses to non-INDV vs. BIND trade-offs. There was also little evidence of mediation by responses to INDV vs. BIND trade-offs. Relative to more liberal participants, more conservative participants were indeed more likely to prefer the option endorsing binding foundations in INDV vs. BIND trade-offs, and in turn, preference for this option was associated with less support for same-sex marriage and health care reform and greater support for the war in Iraq. In addition, greater conservatism led to

greater arousal for INDV vs. BIND trade-offs, which led to less support for same-sex marriage). However, even in these instances, the indirect effects remained extremely small and did not reduce the magnitude of the direct effects.

Although political ideology (i.e., liberal versus conservative) is commonly measured as a uni-dimensional construct, several researchers have argued that ideology is best conceptualized as a bi-dimensional construct comprising two distinct but related types of conservatism: economic and cultural (e.g., Crowson, 2009; Duckitt & Sibley, 2009; Eysecnk, 1954; Kossowska & van Hiel, 2003). Thus, all analyses were re-run using both measures of economic and cultural conservatism and abbreviated measures of Social Dominance Orientation (SDO) and Right-Wing Authoritarianism (RWA), which are not identical to, but conceptually similar to economic and cultural conservatism, respectively (Jost, 2003; van Hiel & Mervielde, 2002; van Hiel, et al., 2004). Thus, several exploratory analyses were also performed using measures of cultural conservatism, economic conservatism, RWA, and SDO instead of the unidimensional measure of political ideology. Economic conservatism and SDO only predicted differences in negative affect (economic conservatism) and preference for binding foundations (SDO) with respect to INDV vs. BIND trade-offs. Cultural conservatism and RWA fared better, with cultural conservatism predicting all response variables except negative affect, and RWA predicting all four responses variables.

There were several reasons that might help explain why the hypotheses were not supported for BIND vs. BIND trade-offs specifically and for the third hypothesis more generally. First, political ideology was somewhat positively skewed (i.e., there was a liberal bias). In other words, only 21% of the sample identified as a conservative (i.e.,

“5” or greater on a 7-point scale). The reduced power from this selection bias could partly explain why the associations between ideology and the dependent variable were not stronger for INDV vs. BIND trade-offs and non-existent for BIND vs. BIND trade-offs.

Pilot testing of the trade-off scenarios suggests another possible reason why the hypotheses were not supported for BIND vs. BIND trade-offs and for the mediation analyses. Within the BIND vs. BIND scenarios, only one option within each scenario was reported as endorsing binding foundations to a greater extent than individualizing foundations. The remaining options were reported as having no difference in endorsement between individualizing and binding foundations or actually endorsing individualizing foundations to a greater extent than binding foundations. Furthermore the average discrepancy between individualizing and binding foundations within each option was not as large (0.70 points on a 7 point scale) for BIND vs. BIND trade-offs as it was for IND vs. BIND trade-offs (1.84 points). Thus, not only did several of the options not endorse the appropriate foundations, but also the foundations were not as clearly distinguished within each option as they were for INDV vs. BIND trade-offs. If these scenarios did indeed include elements of individualizing foundations, then it would not be surprising that no ideological differences were found.

Additionally, all of these scenarios were complex and relatively realistic. Thus, it is extremely likely that other factors besides the moral foundations were embedded in the scenario. For example, in the scenarios involving making a hiring decision, a participant could also consider consequences to the self (e.g., “will a certain decision entail greater self-benefit?”). Because these factors, which have nothing to do with

moral foundations, could also have influenced negative affect, arousal, etc., they could have in turn diluted the associations between ideology and the dependent variables, and between the dependent variables and the attitudes toward same-sex marriage, etc.

Follow-up research could address this issue by simplifying the measurement of foundation preference. Instead of asking participants to make judgments about complex scenarios, they could instead be asked more directly to choose which foundations are more important to them (e.g., Graham, 2010, Study 2). Although it is unlikely that such a decision would be involving enough to induce differences in negative affect or arousal, differences in decision difficulty or preference at least should be more precise.

For Study 2, however, the design was instead simplified by dropping INDV vs. INDV and BIND vs. BIND trade-offs, as the INDV vs. BIND trade-offs were of the most interest within the context of the current investigation of cross-foundational moral trade-offs. The attitudes toward contemporary social issues and subsequent mediation analyses were also excluded.

## **Study 2**

Study 1 provided support to the hypotheses that political ideology is associated with the perception of trade-offs between individualizing and binding moral foundations. As predicted, a preference for upholding values pertaining to individualizing foundations at the expense of values pertaining to binding foundations became less definite as participants became more conservative. Furthermore, as predicted by the SVPM, participants who were more conservative viewed these trade-offs as eliciting more negative affect and arousal and being more difficult than participants who were more liberal. In other words, these trade-offs were more

characteristic of tragic trade-offs for more conservative participants than for more liberal participants. Study 2 differed from and extended Study 1 in two primary ways. First, only INDV vs. BIND trade-offs were examined. Second, some participants were given the opportunity to credential themselves on different moral foundations prior to considering the trade-offs.

Moral credentialing refers to establishing one's qualities as a moral or virtuous person, which can then act as a rationalization tool for future misdeeds. Monin and Miller (2001) first demonstrated moral credentialing by asking male participants to consider potential applicants for a stereotypically male job after giving them the opportunity to disagree with overtly sexist statements. Men who had this opportunity to demonstrate their commitment to egalitarianism then became more likely to rate a male as better suited to this particular job than a female. Additionally, White males were more likely to prefer other White males over other candidates for a hypothetical job opening after first having the opportunity to hire a highly-qualified female or African-American applicant.

Previous research has suggested that moral credentialing can facilitate a variety of selfish or unethical behaviors, such as purchasing luxury items (Khan & Dhar, 2006), cheating in ambiguous circumstances (Brown et al., 2011), and covert racism (Effron, Cameron, & Monin, 2009; Monin & Miller, 2001). In all of these studies, the specific values participants credentialed themselves on corresponded primarily with individualizing foundations. Because conservatives value binding foundations to a greater extent than liberals do, it should be possible for conservatives to also credential themselves on obedience, ingroup loyalty, and purity. In other words, if participants are

given the opportunity to establish their adherence to a foundation they personally value beforehand, they should be less likely to experience negative affect, arousal, and decision difficulty when contemplating a trade-off involving that foundation, as they had already demonstrated their commitment to it.

Therefore, as in Study 1, when participants do not have the opportunity to engage in moral credentialing, conservatives should experience greater negative affect and report greater decision difficulty than liberals should when contemplating individualizing versus binding trade-offs, suggesting that liberals perceive these trade-offs as relatively taboo, and conservatives perceive these trade-offs as relatively tragic. The effects of the moral credentialing manipulation, on the other hand, should depend on which foundations participants credential themselves. When participants credential themselves on individualizing foundations, the effect of credentialing on negative affect, arousal, and decision difficulty should be moderated by political ideology. Although both tragic and taboo-trade-offs elicit some degree of negative affect and arousal, tragic trade-offs do so to a greater degree than do taboo trade-offs (Tetlock et al., 2000), and decisions in taboo trade-offs are viewed as not any more difficult, or even less difficult, than routine trade-offs (Hanselmann & Tanner, 2008). Thus, whereas both liberals and conservatives might experience an overall reduction for negative affect and arousal, conservatives will experience greater reductions than liberals will. Furthermore, decision difficulty following credentialing should only decrease for conservatives.

*Hypothesis 4:* Relative to control participants, participants who credential themselves on *individualizing* foundations should experience a reduction in



negative affect and arousal when they are forced to make individualizing versus binding trade-offs, and this effect should be moderated by political ideology, such that greater reductions are associated with increasing conservatism.

Decision difficulty should decrease for conservatives only.

As opposed to individualizing foundations, allowing participants to credential themselves on binding foundations should only affect conservatives' reactions to individualizing versus binding trade-offs. Because liberals view binding foundations as relatively less important to their moral belief system than do conservatives, affirming binding foundations should likely be insufficient as a form of moral credentialing for liberals (e.g., Steele, 1988) and thus not influence their levels of negative affect, arousal, and decision difficulty. However, because conservatives place greater value on binding foundations, negative affect, arousal, and decision difficulty should decrease for conservatives when they are able to credential themselves on binding foundations.

*Hypothesis 5:* Relative to control participants, participants who credential themselves on *binding* foundations should experience a reduction in negative affect, arousal, and decision difficulty for individualizing versus binding trade-offs. This effect should be moderated by political ideology, such that greater reductions in negative affect, arousal, and decision difficulty are associated with higher levels of conservatism.

For decision preference, the effect of moral credentialing should again differ with respect to political ideology. As conservatives are more likely to have no clear preference between the options (for this represents a tragic trade-off), credentialing themselves on individualizing foundations should shift their preference to the option

corresponding to the binding foundations, as the moral credentialing manipulation gave them the opportunity to demonstrate their commitment to individualizing foundations. Likewise, giving conservative participants the opportunity to credential themselves on binding foundations should shift their preference to the option corresponding to the individualizing foundations. For liberals, however, credentialing themselves on either individualizing foundations or binding foundations should make them unlikely to shift their preference to the binding option, as not choosing the binding option is unlikely to be perceived as a threat to their moral self.

*Hypothesis 6a:* The effect on decision preference of credentialing participants on *individualizing* foundations will be moderated by political ideology for individualizing versus binding trade-offs. Conservatives will be more likely to shift from no preference to a preference for the binding option, whereas liberals will not shift their preference (i.e., they will still prefer the individualizing option).

*Hypothesis 6b:* The effect on decision preference of credentialing participants on *binding* foundations will be moderated by political ideology for individualizing versus binding trade-offs. Conservatives will be more likely to shift from no preference to a preference for the individualizing option, whereas liberals will not shift their preference (i.e., they will prefer the individualizing option).

As in Study 1, participants will also complete measures of economic conservatism, cultural conservatism, RWA, and SDO. Again, these measures were exploratory, and no specific predict hypotheses regarding these variables were generated.

## Method

### Participants

Participants were 461 individuals recruited using Amazon.com's Mechanical Turk (Mturk). As in Study 1, participation in this study was restricted to those with an IP address from within the United States. Twenty-eight participants were excluded from all analyses because they completed all questionnaires in less than five minutes, and an additional 15 were excluded because they were not United States citizens. Finally, 38 participants were excluded for failing the manipulation check.<sup>2</sup> Of the remaining 380 participants, 152 were male (225 female; 3 did not specify) with an average age of 33.71 years ( $SD = 12.45$  years;  $Min = 18$  years;  $Max = 74$  years). The majority of participants were White (76.3%; Black, 7.6%; Asian, 6.1%; Hispanic, 2.9%; Other, 7.1%), and Christian (63.3%; Atheist/Agnostic, 27.6%; Jewish, 2.4%; Buddhist, 1.3%; Muslim, 1.1%; Other, 4.3%). Finally, participants were also diverse concerning their highest level of education (Did not finish High School, 0.8%; High School Diploma/GED, 34.5%; Associate's Degree, 19.2%; Bachelor's Degree, 32.6%; Graduate Degree, 12.9%) and yearly income (under \$20,000, 33.3%; \$20,000 - \$39,000, 29.4%; \$40,000 - \$59,000, 16.1%; \$60,000 - \$79,000, 9.5%; \$80,000 - \$99,000, 5.8%; \$100,000 - \$999,999, 5.0%; over \$1,000,000, 0.8%; 0.5% did not respond). All participants were compensated \$.25 for their participation in this study.

2. Participants in the control conditions were asked to list all of the nouns and verbs for phrases representing violations of either individualizing or binding foundations. Twenty-two individuals were excluded for not following instructions (i.e., failing to identify at least one noun and verb for each phrase). Participants in the experimental conditions were asked to rate the likelihood they would violate behaviors associated with either foundation for \$100. As moral credentialing depends on participants stating they would *not* perform the behavior, 16 participants were excluded if they had a mean greater than or equal to 4.0 ("Not Sure").

### Measures

Reactions to moral trade-offs, political ideology, RWA, and SDO were identical to those used in Study 1. The average reliability of the negative affect measure was again good ( $\alpha = .83$ ). As with Study 1, one item was excluded from both the measures of arousal and decision difficulty to produce four-item measures of each (average  $\alpha = .74$  for arousal and  $\alpha = .83$  for decision difficulty). The reliabilities for RWA and SDO were also acceptable ( $\alpha = .77$  and  $\alpha = .75$ , respectively). The measure of attitudes toward contemporary social issues was not included in this study.

### **Procedure**

Participants followed the same basic procedure as in Study 1 with two exceptions. After following the MTurk link to the study hosted on Qualtrics and providing their consent for participation, participants were randomly assigned to one of four conditions of the moral credentialing manipulation (Appendix G): individualizing experimental, binding experimental, individualizing control, and binding control.

In both experimental conditions, participants completed a modified version of the measure of taboo trade-offs used in Graham et al. (2009, Study 3). Participants were asked to imagine they were anonymously and secretly offered \$100 to perform several behaviors that violated either individualizing or binding foundations. For each behavior, they indicated how likely they would be to perform the behavior using a Likert scale anchored by 1 (“very unlikely”) and 7 (“very likely”). For the individualizing experimental condition, participant rated the likelihood of performing six behaviors that represented violations of the individualizing foundations (e.g., “kick a dog in the head, hard” and “steal money from a poor person to buy a gift from a rich person”). For the binding experimental condition, participants rated the likelihood of performing six

behaviors that represented violations of the binding foundations (e.g., “curse your parents to their face” and “cook and eat your dog after it dies of natural causes”). The value of \$100 was chosen because although this equates to a non-trivial sum of money for most individuals, it was lower than the mean minimum amount required for any group to violate any foundation reported in Graham et al. (2009). Thus, the vast majority of participants should report being relatively unlikely to perform the given behaviors, despite at least a modest temptation to do so, allowing them to credential themselves on the corresponding foundations.

In the control conditions, participants read the same behaviors given in the experimental conditions (i.e., six individualizing violations or six binding violations). However, instead of being asked if they would perform the behaviors for \$100, they were merely asked to read each phrase and separately report each word that can be classified as either a noun or a verb.

After completing the moral credentialing manipulation, participants then responded to three scenarios representing trade-offs between individualizing and binding foundations. The trade-offs and subsequent measures of negative affect, arousal, and decision difficulty were identical to those used in Study 1. Participants then completed the brief measures of RWA and SDO (a measure of attitudes toward contemporary social issues was not included in this study), which were presented in random order. The remainder of the procedure was identical to Study 1.

## Results

### Moral Credentialing

Before conducting the primary analyses, I tested whether the extent to which participants credentialed themselves was dependent on which foundation they credentialed and their ideology. Overall, participants were relatively unwilling to violate any of the foundations for \$100 ( $M = 1.82$ ;  $SD = 0.85$ ). However, participants were generally more unwilling to violate individualizing ( $M = 1.69$ ;  $SD = 0.82$ ) than binding foundations ( $M = 1.97$ ;  $SD = 0.86$ ),  $F(1, 208) = 4.61, p = .03, \mu^2 = 0.02$ . More importantly, political ideology was not associated with moral credentialing,  $F(1, 208) < 1, ns$ , nor did it interact with foundation type,  $F(1, 208) = 1.36, p = .25$ .

### Omnibus Analysis

Descriptive statistics and zero-order correlations for all political ideology items (general, cultural, and economic), RWA, and SDO can be found in Table 5. As in Study 1, the dependent variables (negative affect, arousal, decision difficulty, and decision preference) were first subjected to an omnibus one-way MANOVA with moral credentialing as a fixed factor (INDV credentialing vs. BIND credentialing vs. INDV control vs. BIND control) and political ideology as a covariate that also was allowed to interact with the credentialing variable. There was no significant interaction between ideology and moral credentialing (Roy's Largest Root = .01),  $F(4, 384) < 1, ns$ . In addition, there was no main effect of moral credentialing (Roy's Largest Root = .01),  $F(4, 384) = 1.18, p = .32$ . However, ideology was associated with the dependent variables (Roy's Largest Root = .03),  $F(4, 382) = 2.47, p = .04$ . Results were similar for the other multivariate test statistics (Pillai's Trace, Wilks' Lambda, and Hotelling's

Table 5

*Descriptive Statistics and Correlations for Political Ideology Items (General, Cultural, and Economic Conservatism), Right-Wing Authoritarianism (RWA), Social Dominance Orientation (SDO).*

	1	2	3	4	5	<i>M</i>	<i>SD</i>
1. general	—					3.28	1.74
2. cultural	.59	—				2.97	1.90
3. economic	.65	.40	—			3.89	1.79
4. RWA	.59	.67	.40	—		-1.82	1.93
5. SDO	.43	.35	.41	.40	—	2.42	1.19

*Note.* All correlations were significant at  $p < .001$ .

Trace) as well. Follow-up regression analyses with each dependent variable on ideology, moral credentialing, and their interaction revealed that this association was driven by an increased preference for binding foundations for more conservative participants,  $\beta = .24$ ,  $t(371) = 2.34$ ,  $p = .02$ ,  $sr^2 = .02$ . Ideology did not predict any of the other dependent variables (all other  $\beta$ s  $< .07$ , *ns*).

As in Study 1, because the omnibus MANOVA found no interaction between ideology and moral credentialing, further analyses were planned contrasts specifically testing hypotheses four through six. In order to test these hypotheses, the moral credentialing variable was recoded using a matrix of three orthogonal contrasts. The first contrast compared the INDV credentialing condition to the two control conditions. The second contrast compared the BIND condition to the two control conditions. Finally, the third contrast compared the control conditions to each other. Each dependent variable was then regressed on ideology, each contrast, and the

interaction between ideology and each contrast. All continuous variables were standardized prior to the analysis.

### **Negative Affect, Arousal, and Decision Difficulty**

The contrast testing the equality of participants' psychological responses to INDV vs. BIND trade-offs across both control conditions was not significant for negative affect, arousal, and decision difficulty, all  $t_s < 1.02$ , *ns*. Thus, the contrasts testing either INDV credentialing or BIND credentialing against *both* control conditions was justified.

Hypothesis four predicted that after participants credential themselves on individualizing foundations, negative affect and arousal would decrease compared to the control conditions, and that the decrease would be greater for conservatives. However, none of the interaction terms between ideology and the first moral credentialing contrast were significant for any of the dependent variables, all  $t_s < |1|$ , *ns*. Furthermore, regardless of ideology, negative affect, arousal, and decision difficulty were no different when participants credentialed themselves on individualizing foundations compared to the control conditions,  $\beta = -.11$ ,  $t_{\text{affect}}(371) = -1.29$ ,  $p = .20$ , all other  $t_s < |1|$ , *ns*. (Table 6). Thus, credentialing participants on individualizing foundations appeared to have no effect on the psychological experience of INDV vs. BIND trade-offs and provided no support for hypothesis four.

Hypothesis five predicted that after participants credential themselves on binding foundations, negative affect, arousal, and decision difficulty would decrease compared to the control conditions for conservatives only and not for liberals. As with the first contrast, none of the interaction terms between ideology and the second



Table 6

*Means and Standard Deviations of Negative Affect, Arousal, Decision Difficulty, and Decision Preference as a Function of the Moral Credentialing of Individualizing (INDV) or Binding (BIND) Foundations.*

	INDV		BIND		Controls	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Negative Affect	4.09	0.98	4.18	0.97	4.27	0.98
Arousal	4.45	0.94	4.59	0.85	4.53	0.88
Decision Difficulty	3.56	1.01	3.77	1.08	3.55	0.97
Decision Preference	-1.12	1.38	-1.28	1.19	-1.31	1.22

*Note.* Means and standard deviations for controls are collapsed across individualizing and binding control conditions.

contrast variable were significant, all  $t_s < |1|$ , *ns*. Furthermore, participants in the BIND credentialing condition did not significantly differ in their levels of negative affect and arousal compared to the control conditions,  $t_s < |1|$ , *ns*. The difference for decision difficulty, however, approached significance,  $\beta = .17$ ,  $t(371) = 1.86$ ,  $p = .07$ ,  $\eta^2 = .21$ .  $sr^2 = .01$ . However, the direction of this effect was the opposite of what was predicted, as both liberals and conservatives reported *greater* decision difficulty after credentialing themselves on binding foundations compared to the control conditions.<sup>3</sup>

### **Decision Preference**

Hypothesis six stated that conservatives should shift their decision preference towards whichever foundation type they did not credential themselves on as opposed to having no overall decision preference in the control condition. Liberals, on the other

3. Analyses were also run testing the individualizing conditions (experimental and control) against each other and the binding conditions against each other. The basic pattern of results were similar to the primary analysis.

hand, should not shift their decision preference regardless of condition, as they already prefer individualizing over binding foundations. The interaction term between ideology and the first contrast comparing the INDV credentialing condition versus the control conditions was not significant,  $\beta = -.11$ ,  $t(371) = -1.37$ ,  $p = .17$ . The same was true for the interaction term between ideology and the second contrast comparing the BIND credentialing condition versus the two control conditions,  $\beta = -.11$ ,  $t(371) = 1.24$ ,  $p = .22$ . In addition, neither the INDV nor BIND condition had any overall effect on decision preference compared to the two control conditions,  $\beta = .11$ ,  $t_{\text{INDV}}(371) = 1.35$ ,  $p = .17$ , and  $\beta = -.01$ ,  $t_{\text{BIND}}(371) < 1$ , *ns*.

### **Exploratory Analyses**

Just as in Study 1, the primary analyses were re-run using measures of cultural conservatism, economic conservatism, RWA, and SDO instead over general political ideology to explore the pattern of results if ideology is conceptualized as a two-dimensional construct. Like the analysis for general political ideology, cultural conservatism did not significantly interact with any of the interaction terms for any of the dependent variables. However, RWA did significantly interact with the first contrast statement (INDV credentialing vs. controls) for decision preference,  $\beta = .18$ ,  $t(372) = 2.24$ ,  $p = .03$ ,  $sr^2 = .01$ . Two follow-up analyses were performed by re-running the regression analyses after transforming RWA scores twice: once so that a score of zero represented 1 *SD* above and then again so that a score of zero represented 1 *SD* below the mean. Thus, each contrast main effect became an estimate of the effect of INDV credentialing compared to the controls and 1 *SD* above and 1 *SD* below the mean of RWA (Cohen et al., 2003). Participants relatively low in RWA (1 *SD* below the mean)

did not shift their decision preference after credentialing themselves on individualizing foundations compared to control conditions,  $\beta = -.08$ ,  $t(372) < 1$ , *ns* (Figure 3).

Participants relatively high in RWA (1 *SD* above then mean) were more likely to shift their preference towards the option endorsing the binding foundation after credentialing themselves on individualizing foundations compared to the control conditions,  $\beta = .28$ ,  $t(372) = 2.42$ ,  $p = .02$ ,  $sr^2 = .01$ , although all participants still overwhelmingly preferred the option endorsing individualizing foundations.

Whereas RWA interacted with the first contrast statement, economic conservatism and SDO interacted with second contrast statement (BIND credentialing

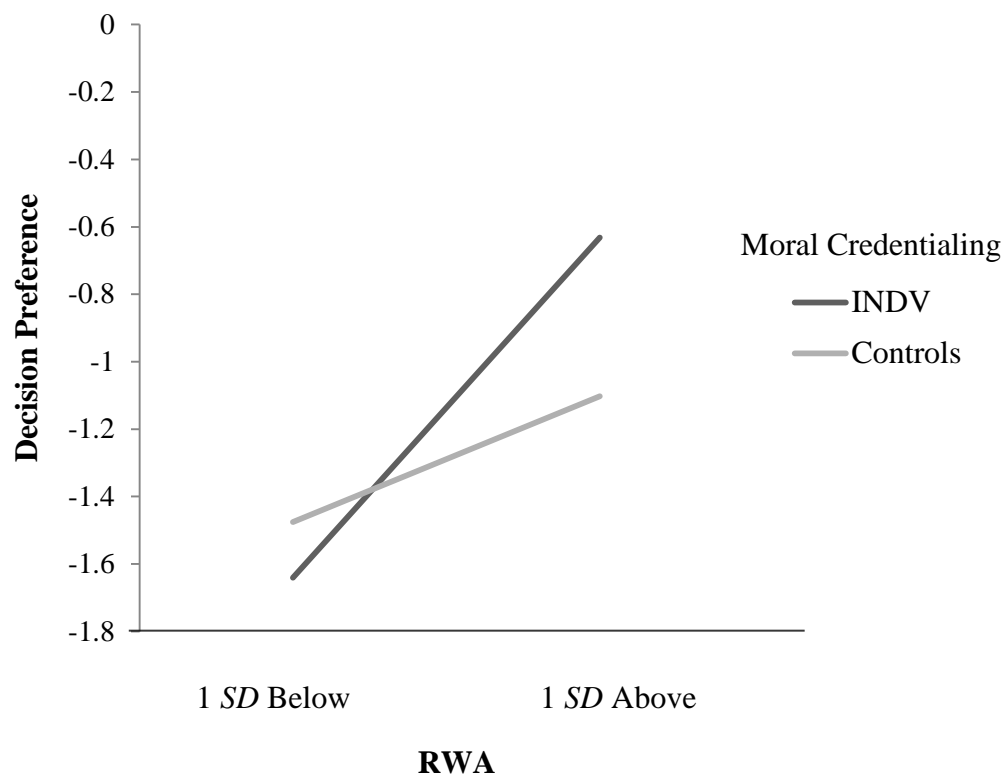


Figure 3. Decision preference as a function of Right-Wing Authoritarianism (RWA) and moral credentialing. INDV = Individualizing credentialing condition. Controls = both individualizing and binding control conditions. Higher numbers reflect a greater preference towards binding foundations (0 = no preference).

vs. both controls) on several of the dependent variables. Specifically, economic conservatism interacted with the second contrast statement to predict negative affect,  $\beta = -.19$ ,  $t(371) = -2.16$ ,  $p = .03$ ,  $sr^2 = .01$ . SDO not only interacted with the second contrast statement to again predict negative affect,  $\beta = -.20$ ,  $t(372) = -2.18$ ,  $p = .03$ ,  $sr^2 = .01$ , but also predicted decision difficulty,  $\beta = -.17$ ,  $t(372) = -1.92$ ,  $p = .06$ ,  $sr^2 = .01$ . Follow-up analyses revealed that participants who scored relatively low on the measures of economic conservatism and SDO did not differ in their levels of negative affect after credentialing themselves on binding foundations compared to the control conditions,  $\beta = .16$ ,  $t(371) = -1.35$ ,  $p = .18$ , for economic conservatism and  $\beta = .17$ ,  $t(372) = -1.39$ ,  $p = .17$ , for SDO (Figure 4). Participants who scored relatively high on economic conservatism and SDO displayed lower levels of negative affect when they credentialled themselves on binding foundations compared to control conditions,  $\beta = -.22$ ,  $t(371) = -1.71$ ,  $p = .09$ ,  $sr^2 = .01$ , for economic conservatism and  $\beta = -.22$ ,  $t(372) = -1.71$ ,  $p = .09$ ,  $sr^2 = .01$ , for SDO. The interaction for decision difficulty, however, was counterintuitive considering the positive association SDO typically has with conservatism. Participants low in SDO experienced lower decision difficulty after credentialing themselves on binding foundations compared to controls,  $\beta = .32$ ,  $t(372) = 2.64$ ,  $p = .01$ ,  $sr^2 = .02$ . Participants high in SDO did not differ in their reported levels of decision difficulty,  $\beta = -.02$ ,  $t(372) < |1|$ , *ns*.

### **Replication of Study 1**

The last analysis was an attempt to replicate the results of Study 1. Because moral credentialing only seemed to have sporadic effects, scores on all dependent variables were collapsed across credentialing condition and regressed on general

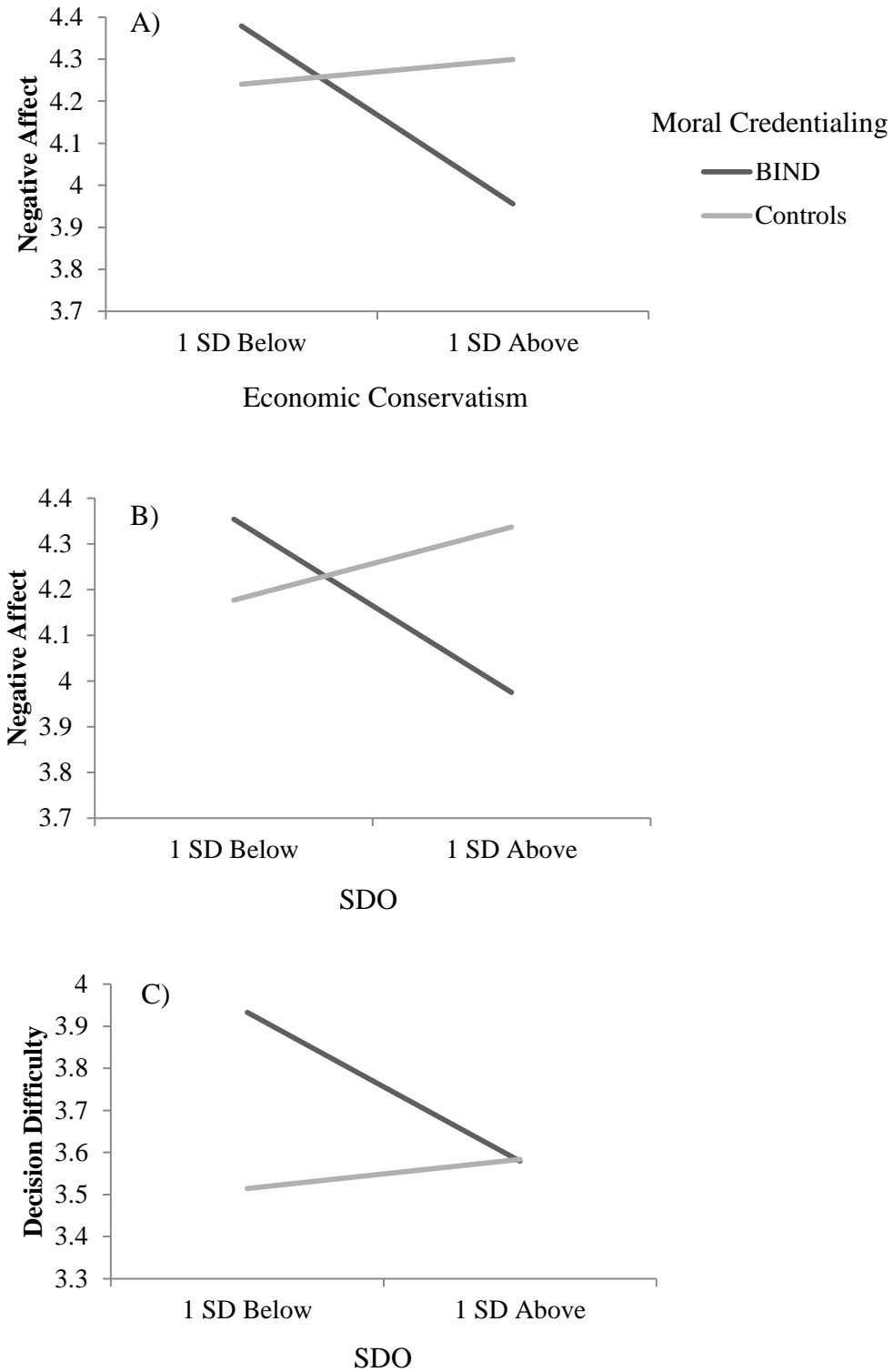


Figure 4. Negative affect as a function of economic conservatism and moral credentialing (A) and of SDO and the moral credentialing of binding (BIND) foundations (B). Decision difficulty as a function of Social Dominance Orientation (SDO) and the moral credentialing of BIND foundations (C).

political ideology. Ideology was not significantly associated with negative affect, arousal, or decision difficulty, all  $t$ s  $< |1.1|$ , *ns*. However, the positive association between ideology and decision preference (i.e., greater conservatism predicted a greater preference for binding over individualizing foundations) did replicate,  $\beta = .13$ ,  $t(377) = 2.49$ ,  $p = .01$ ,  $sr^2 = .02$ . Because the associations between RWA and the dependent variables were the same but stronger than with ideology in Study 1, the regression analyses were run again using RWA as a predictor. RWA was not associated with negative affect,  $\beta = .07$ ,  $t(378) = 1.44$ ,  $p = .15$ . However, RWA was positively associated with arousal,  $\beta = .10$ ,  $t(378) = 2.03$ ,  $p = .04$ ,  $sr^2 = .01$ , decision difficulty,  $\beta = .19$ ,  $t(377) = 3.82$ ,  $p < .001$ ,  $sr^2 = .04$ , and decision preference,  $\beta = .24$ ,  $t(377) = 4.80$ ,  $p < .001$ ,  $sr^2 = .06$ .

## Discussion

Based on the results of Study 1, Study 2 predicted that the opportunity to demonstrate participants' commitment to either individualizing or binding foundations (i.e., moral credentialing) should differentially affect liberals' and conservatives' reactions to trade-offs between individualizing and binding foundations. Because liberals consider individualizing foundations to be relatively more morally important than binding foundations, credentialing themselves on individualizing foundations, but not binding foundations, should reduce any negative affect or arousal they experience while contemplating individualizing versus binding trade-offs. Decision difficulty and decision preference should not be affected, as liberals should already heavily favor the option endorsing individualizing foundations. Because conservatives value both individualizing and binding foundations, credentialing themselves on either should be

sufficient to reduce negative affect, arousal, *and* decision difficulty. Furthermore, because conservatives should be relatively ambivalent in their decision preference, those who engaged in moral credentialing should shift their preference towards whichever foundation they did not credential themselves. For example, conservatives who credentialed themselves on binding foundations should shift their preference towards the option endorsing individualizing foundations.

Overall, these hypotheses were not supported. Compared to control conditions, participants did not show any reduction in negative affect, arousal, or decision difficulty after credentialing themselves on individualizing foundations regardless of whether they were liberal or conservative. Furthermore, although liberals did not show a reduction in negative affect, arousal, or difficulty after credentialing themselves on binding foundations as predicted, conservatives did not show reductions in these variables either. The only effect that approached significance was the effect of the contrast comparing the decision difficulty of participants who credentialed themselves on binding foundations to both control conditions. Participants who credentialed themselves reported greater decision difficulty than did those in the control condition. However, because this effect was unexpected and not consistent with the other dependent variables (e.g., negative affect and arousal), it should be interpreted with caution. The decision preference of liberals was again not affected by the moral credentialing manipulation as predicted, but neither was the decision preference of conservatives.

As in Study 1, all primary analyses were re-run using measures of cultural and economic conservatism, RWA, and SDO instead of general political ideology. Although

the measures of cultural and economic conservatism did not interact with moral credentialing, RWA and SDO did so inconsistently. After stating they would not perform various behaviors that violated this foundations for 100 dollars (i.e., credentialing), participants who were relatively high in RWA (i.e., more conservative) were less likely to prefer the option endorsing individualizing foundations in individualizing versus binding trade-offs than control participants who simply read the behaviors and reported all the nouns and verbs in the phrase. Participants relatively low in RWA (i.e., more liberal), however, did not shift their preference, as they always preferred the option endorsing individualizing foundations. This finding is consistent with hypothesis six, as when participants who were relatively more conservative credentialed themselves on individualizing foundations, this should free them to endorse the option endorsing the binding foundations, as they had already established their commitment to individualizing foundations. More liberal participants, on the other hand, did not shift their preference after credentialing themselves on the same foundations, as they presumably do not value binding foundations as much as individualizing foundations.

Participants who credentialed themselves on binding foundations, on the other hand, experienced differential effects on their levels of negative affect and decision difficulty compared to control conditions that was dependent on their level of SDO. Participants relatively high in SDO (and also economic conservatism) experienced a decrease in negative affect after credentialing themselves on binding foundations. Participants relatively low in SDO (and economic conservatism) did not differ in their levels of negative affect. To the extent that SDO is associated with conservatism, this



finding is consistent with hypothesis five. As binding foundations are relatively more valued by more conservative participants, affirming a commitment to binding foundations should reduce any discomfort elicited by the trade-off for these participants only. However, the effects on decision difficulty were not consistent with any hypothesis. Difficulty was no different for participants relatively high in SDO. For participants relatively low in SDO, participants actually reported *greater* levels of decision difficulty after credentialing themselves on binding foundations. Because this interaction was not predicted *a priori* and was not consistent across the dependent variables (i.e., it only occurred for decision difficulty and not for negative affect or arousal), these results should be interpreted with caution.

There are several possible reasons why the main hypotheses were not supported. First, the distribution of political ideology was once again positively skewed. As in Study 1, only 20% of participants identified as conservative (i.e., “5” or greater on a 7-point scale). The majority of the effects were predicted to occur among conservatives, and the primary hypotheses involved interactions between ideology and moral credentialing. Thus, the lack of conservatives in this study substantially reduced the power to detect any significant effects of moral credentialing.

Second, participants might have engaged in some moral credentialing even in the control conditions. Participants were exposed to the same behaviors as in the credentialing conditions, but were asked to list all of the nouns and verbs in the phrase rather than report on how likely they would be to perform the behavior. This was done to control for the effects of exposure to binding and individualizing foundations and isolate the act of credentialing itself. However, because participants in the control

conditions still had to process the behaviors semantically, it is possible that these participants could have spontaneously credentialed themselves on the respective foundations, particularly on some of the more egregious violations (“That is so wrong. I would never do something like that!”), negating any effects of moral credentialing.

In the same vein, it is possible that the credentialing conditions did not successfully elicit moral credentialing. Although the vast majority of participants stated they would not perform violations of individualizing or binding foundations for \$100, this may have not been a sufficient amount to make participants feel that they had successfully resisted temptation and affirmed their moral identity. Previous research has shown that acting against self-interest is not a necessary component of moral credentialing (Efron et al., 2009; Monin & Miller, 2001), and merely imagining behaving morally is sufficient to induce credentialing (Brown et al., 2011; Sachdeva, Iliev, & Medin, 2009). Together, this suggests that stating that violating a moral foundation for \$100 would be very unlikely should be sufficient to enable the credentialing of that foundation.

Finally, the success of the manipulations was dependent on the participants’ ability and willingness to engage themselves in the survey. Participants were recruited via Mturk rather than an undergraduate psychology pool because the ideological orientation of college freshmen and sophomores is likely not as stable as an older, national sample (Sears, 1986). However, Mturk participants, as with participants in any online study, are likely less motivated than undergraduates to take the study seriously. For example, participants in the control conditions were instructed to list *all* of the nouns and verbs in each phrase. Unfortunately, only a minority of participants

successfully identified each noun and each verb, and many only listed only one of each. Assuming that participants were equally unengaged in the experimental condition, this would explain the lack of credentialing effects. As stated earlier, imagining oneself behaving morally is enough to induce moral credentialing. However, if there is no imagination in the first place, then credentialing is unlikely to occur.

Follow-up studies can address these issues in several ways. First, alternative methods of sampling can be considered to reduce the skew for political ideology. For example, participants can be pre-selected based on their previously reported political ideology (or party identification). Additionally, the moral credentialing manipulation should be modified to make both the control conditions less likely to spontaneously induce moral credentialing and all conditions more engaging. With respect to the control conditions, participants could be exposed to more abstract representations of individualizing and binding foundations rather than the concrete violations in this study. The issue of engagement may partly be due to sampling and compensation issues. However, the credentialing manipulation may itself be made more engaging by making it more self-relevant. For example, participants could imagine a detailed scenario in which they can refuse to violate one of the foundations (Brown et al., 2011), or they could write about a past life event where they demonstrated their commitment to individualizing or binding foundations (Jordan, Mullen, & Murnighan, 2011).

### **General Discussion**

A common characteristic of many ideological differences on contemporary social and cultural issues in the United States of America (e.g., same-sex marriage) is that proponents of each side of the issue seem incapable of understanding each other's

position (Haidt & Graham, 2007). MFT attempts to explain this “culture clash” through the lens of moral relativism (Graham et al., 2009). All individuals value individualizing foundations (Harm/care and Fairness/reciprocity). However, conservatives, unlike liberals, place a relatively higher moral importance on binding foundations (ingroup/loyalty, Authority/respect, and Purity/sanctity). Therefore, when conservatives argue for upholding binding foundations, liberals may view conservatives as immoral because they are seemingly ignoring individualizing foundations, the only values that “really matter.” Likewise, conservatives may view liberals who argue solely on individualizing foundations immoral because they seemingly lack a concern for binding foundations.

Although many real-life decisions, such as deciding whether to support same-sex marriage, draw on multiple foundations (e.g., Fairness/reciprocity or Purity/sanctity), much of the previous research on MFT has examined the foundations independently of one another. The current studies expanded research on MFT by examining the responses of individuals to complex and realistic dilemmas that asked participants to trade off between individualizing and/or binding foundations. According to the Sacred Value Protection Model (SVPM; e.g., Tetlock et al., 2000), people find trade-offs between sacred (e.g., moral) values uncomfortable and difficult, while trade-offs between a sacred and a routine (e.g., non-moral) value are not as difficult to make but taboo to consider.

Thus, if ideology is associated with perceiving certain foundations as morally relevant (i.e., sacred), then how an individual perceives a trade-off between individualizing and/or binding foundations should be associated with ideology. Study 1

provided some support for this hypothesis. Although ideology was not associated with levels of negative affect, arousal, and difficulty making a decision for trade-offs involving only individualizing foundations (consistent with hypotheses) and for trade-offs involving only binding foundations (inconsistent with hypotheses), ideology was associated with these variables for trade-offs involving individualizing and binding foundations. Specifically, relatively conservative participants were more likely than relatively liberal participants to perceive these trade-offs as tragic (two sacred values) rather than taboo (one sacred and one routine value). As such, conservative participants experienced higher levels of negative affect, arousal, and decision difficulty than did more liberal participants. More conservative participants were also less likely to clearly prefer the option endorsing individualizing foundations over the option endorsing binding foundations, which is consistent with the idea that conservatives value both sets of foundations relatively equally, at least more so than liberals.

Study 2 attempted to extend MFT further by exploring the motivational aspects of moral trade-offs. At least part of the discomfort experienced by participants is presumably due to their desire to behave consistently with their moral values (rendered impossible in a tragic trade-off; Aronson, E., 1968; Tetlock et al., 2000). Therefore, allowing participants to credential themselves on the foundations they value (individualizing foundations for liberals and both individualizing and binding foundations for conservatives) should alleviate this discomfort and facilitate decision-making by buffering the moral self-concept (Sachdeva et al., 2009). However, this is not what occurred, as moral credentialing had no effect on either the psychological

experience of individualizing versus binding trade-offs or the actual decision for these trade-offs.

### **Implications**

When it comes to social policy issues such as same-sex marriage or health care reform, it is not uncommon for supporters of these issues (who are generally liberal) to characterize opponents (who are generally conservative) as uncaring, selfish, or even bigoted. For example, political commentator Keith Olbermann once described an Elder of the Mormon Church as one of the “Worst Persons in the World” for defending the involvement of the Mormon Church in the California proposition that sought to ban same-sex marriage and advised him to “shut the hell up” (Olbermann, 2009). In a more extreme example, in a response to comments made by then U.S. Senator Rick Santorum (R-OH) regarding non-traditional sexual acts (e.g., homosexuality), sex advice columnist Dan Savage started a campaign to redefine the word “santorum” as an obscenity (Savage, 2003).

The associations between ideology and attitudes toward various contemporary social issues such as same-sex marriage were not mediated by participants’ responses to individualizing versus binding trade-offs. However, recent research has suggested that the endorsement of binding foundations (especially purity) is associated with disapproval of same-sex marriage and abortion (Koleva, Graham, Iyer, Ditto, & Haidt, 2012). Furthermore, the positive associations between ideology and the dependent variables in Study 1 (negative affect, arousal, decision difficulty, and decision preference) suggest that when liberals and conservatives disagree on morally charged dilemmas, accusations by liberals that conservatives are lacking in empathy or cold-

hearted are mistaken. In fact, it might be argued that conservatives even care about dilemmas involving individualizing foundations more than liberals do, as their broader moral belief system can make a dilemma involving both individualizing and binding foundations an arduous task, whereas for a liberal the same dilemma would not be given as much careful consideration.

These studies also have important theoretical implications. First, Study 1 extends MFT by demonstrating that ideological differences persist when individualizing and binding foundations are brought into direct conflict with one another. Furthermore, these differences are not just with respect to relative preferences for individualizing or binding foundations. Rather, political ideology is associated with the psychological experience of these types of dilemmas. The greater levels of negative affect, arousal, and decision difficulty that conservatives experience while contemplating these types of trade-offs suggest that binding foundations are indeed “sacred” for conservatives, but not as much so for liberals.

These studies examined the intrapersonal aspects of cross-foundational trade-offs with respect to political ideology. However, the SVPM also makes predictions regarding how an individual would respond to another person engaging in a moral trade-off. Specifically, merely contemplating a taboo trade-off (sacrificing a sacred value for a routine value) is sufficient to elicit outrage and condemnation of the (potential) actor and encourage a reaffirmation of one’s own moral identity (Tetlock et al., 2000). Because individualizing versus binding trade-offs are tragic for conservatives but relatively taboo for liberals, a careful consideration of such a dilemma by a

conservative will appear to a liberal to be a rationalized disregard for individualizing foundations, warranting outrage and sanctioning.

These two studies also have implications for models of conservatism as a form of motivated social cognition (e.g., Jost et al., 2003). These models posit that conservative ideology develops as a protective response to threats to security, social order, stability, etc. (Duckitt, 2001; Jost et al., 2003). Because conservatives have a broader scope of sacred moral values, it is quite possible that conservatives encounter tragic trade-offs more often than do liberals and thus actually do see more events as threatening not only to their well-being but to their moral belief system. Furthermore, the endorsement of binding foundations could also serve as a mechanism to manage those same threats. Indeed, van Leeuwen and Park (2009) found that the tendency to place greater emphasis on binding foundations relative to individualizing foundations partially mediated the association between political ideology and the belief in a dangerous world. Additionally, experimentally induced threats have led to more favorable attitudes related to the binding foundations, such as authoritarian control, in-group favoritism, and religiosity (Duckitt & Fisher, 2003; Vail et al., 2010; Voci, 2006). This suggests that the endorsement of binding foundations could simultaneously act as a source of threat in some contexts and as a mechanism to reduce threat in other contexts. There is already some research on the latter (e.g., van Leeuwen & Park, 2009), and Study 1 provides is consistent with the former. Future research should test more directly the conditions, if any, in which endorsing binding foundations is associated with perceived threat.



Finally, in both studies, cultural conservatism and especially RWA were generally as good or better predictors of both the psychological reaction to individualizing versus binding trade-offs (negative affect, arousal, and decision difficulty) and a preference for the binding option over the individualizing option. Economic conservatism and SDO, on the other hand, were less consistently able to predict these variables. Political ideology is commonly measured by either asking participants their self-reported liberalism or conservatism on one or two items, as it was in the current studies, or by an aggregate of self-reported ideology and political party identification. However, research on economic and cultural conservatism (or on SDO and RWA) has shown that these two types of conservatism are relatively independent of one another and have unique psychological correlates (Crowson, 2009; Duckitt, 2001; Duckitt & Sibley, 2009; Kossowska & van Hiel, 2003; van Hiel et al., 2004).

The relation between political ideology and binding foundations appears to follow a similar distinction. Even though RWA and SDO were quite modestly correlated in both studies ( $r = .30$  in Study 1 and  $r = .40$  in Study 2), and both were correlated with general political ideology ( $r$ s ranging from .41 to .59), only RWA was significantly predictive of all four possible responses to individualizing versus binding trade-offs in Study 1 and of all of the responses except negative affect in Study 2. Thus, it appears that the conservative preference for binding foundations is especially driven by cultural conservatism or RWA. Like the research cited earlier, these findings call into question the utility of measuring political ideology as a single dimension (especially with a single item). Although measuring ideology in this manner is sufficient when examining constructs that both economic and cultural conservatives

might share (e.g., ingroup favoritism; Duckitt, 2011), future research should take into consideration both economic and cultural conservatism when measuring political ideology.

### **Limitations**

Unlike many studies that use a convenience sample of psychology undergraduates, the current studies made use of a crowd-sourcing website (Mturk) powered by Amazon.com, Inc. Whereas college undergraduates are unlikely to have fully developed belief structures at their current stage of development (Sears, 1986), Mturk users are more representative of the general population than college samples in terms of demographic variables such as age and ethnicity (Buhrmester, Kwang, & Gosling, 2011). However, this apparent strength may also be a limitation. In both studies, the samples overwhelmingly consisted of participants who identified as either liberal or moderate. Thus, the regression models were based on distributions where 1 *SD* above the mean of political ideology represents an individual who is only “slightly conservative” and 1 *SD* below the mean represents an individual who is between “moderately” and “strongly liberal.” As such, these findings may not necessarily generalize to individuals who strongly identify as conservative. However, studies that did not suffer from this issue show that endorsement of binding foundations increases linearly with increasing levels of conservatism (Graham et al., 2009).

Although part of the reason for this “liberal bias” could be due to the method in which ideology was measured (i.e., a single-item), it is likely not the only reason. Across both studies, 229 potential respondents started but did not complete the survey. Although this type of attrition is not uncommon for internet studies, because responses

were anonymous, it is impossible to determine whether the ideological orientation of those who completed the study differed from those who did not. Furthermore, participants were not recruited but rather selected themselves into the study, although it is not immediately clear why ideology would be associated with willingness to participate in the current studies. A third possibility is that although the MTurk population might be relatively representative of the general population with respect to certain demographic variables, it could be that political ideology is not one of them. Regardless of the specific reason for this sampling bias, follow-up research should explore other possible sampling methods that strike a balance between both pragmatism and representativeness.

Another limitation of these studies is that moral trade-offs were assessed via hypothetical scenarios. Participants were asked to imagine themselves as the actors in the scenario instead of trying to solve an actual dilemma with real consequences. However, with some exceptions (e.g., Batson, Thompson, Seufferling, Whitney, & Strongman, 1999), hypothetical scenarios, such as the Defining Issues Test and the footbridge/trolley dilemmas, are used in the vast majority of research in moral psychology (Rest et al., 1974; Thompson, 1986). Furthermore, in the current studies, participants were not asked how they believed they would feel if they were to be faced with such a dilemma, but how the consideration of such a dilemma made them feel *at that moment*. A key aspect of sacred value trade-offs is that simply contemplating the trade-off is sufficient to induce strong negative affect (Tetlock et al, 2000). Thus, it seems plausible that ideological differences in at least negative affect, arousal, and decision difficulty would carry over to real-life dilemmas. Nonetheless, future research

should verify the generalizability of these results to actual moral behavior and judgment.

### **Conclusions and Future Directions**

Together, these two studies address several important questions about the nature of the association between political ideology and moral decision-making. First, do self-reported differences in the extent to which liberals and conservatives endorse binding foundations extend to complex and realistic moral dilemmas? Second, do binding foundations rise to the level of “sacred” values for conservatives but not for liberals? Finally, can reducing the motivation of conservatives to uphold binding or individualizing foundations alter their responses to cross-foundational moral trade-offs, including their actual decision preference?

The results of Study 1 suggest that the answers to the first two questions are “yes.” When participants were asked to make decisions between whether to uphold either individualizing or binding foundations, conservatives, unlike liberals, did not clearly prefer the individualizing foundations. Instead, they were reluctant to make a decision, signifying the relatively equal importance they place on both types of foundations. Furthermore, conservatives were more likely than liberals to experience heightened levels of negative affect, arousal, and decision difficulty while contemplating these dilemmas, which are characteristic of tragic trade-offs between two values an individual holds sacred. Nonetheless, attempts to reduce the motivation of conservatives to endorse either individualizing or binding foundations were not successful. Despite giving them the opportunity to establish their valuation of

individualizing or binding foundations, their responses to cross-foundation moral trade-offs remained unchanged.

The political process is highly intertwined with moral judgment and decision-making. The policies and candidates people support are driven in part by congruency with the voters' moral values on both the left and the right (Skitka & Bauman, 2008). Despite this commonality, the left and the right seem to be unable to agree on many pressing social and economic issues. MFT provides some insight into why these disagreements occur in that while everyone injects moral values into their political decision-making, conservatives include values that liberals do not moralize. The current studies extend MFT by demonstrating that these differences translate to psychological reactions to more complex and realistic moral dilemmas. Although no effects of moral credentialing or mediation between ideology and contemporary social issues were found, future research with revised measures or simplified dilemmas might be more successful in detecting any possible effects.

Conservatives experience greater levels of negative affect, arousal, and decision difficulty when contemplating individualizing versus binding trade-offs than do liberals. This presumably arises from a motivation to protect both types of values in such a trade-off, whereas liberals are motivated to protect only one type (i.e., individualizing values). Thus, the necessity of sacrificing one value to solve a dilemma should be perceived as threatening to conservatives and not to liberals. As the management of various threats is a major component of theories describing conservatism as motivated social cognition (Jost et al., 2003), future research should focus on examining any association the differential preference of binding foundations between liberals and

conservatives might have with either the generation or mollification of the threats generally associated with motivated conservatism.

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## Appendix A: Reactions to Moral Trade-offs

### Negative Affect

1. I feel glad about making this decision (reverse coded).

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree nor Disagree			Strongly Agree

2. I find having to make this decision to be frustrating.

3. I feel good about making this decision (reverse coded).

4. Having to make this decision is annoying.

5. Making this decision puts me in a negative mood.

### Arousal

1. I am very nervous about making the wrong decision.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree nor Disagree			Strongly Agree

2. I feel excited about making this decision.

3. I feel anxious about making the decision.

4. It isn't a big deal if I make the wrong decision (reverse coded).

5. I find the possibility of making a wrong decision to be alarming.

### Decision Difficulty

1. For me, this decision is...

1	2	3	4	5	6	7
Very Easy			Moderate			Very Difficult

2. I would need more time make a decision.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree nor Disagree			Strongly Agree

3. I would not ponder for a long time on this decision (reverse coded).

4. I feel very ambivalent about this decision (reverse coded).

5. For this decision, I feel certain which option to choose (reverse coded).

### **Decision Preference**

What is your decision?

-3	-2	-1	0	1	2	3
Definitely Option 1	Probably Option 1	Maybe Option 1	Impossible to choose	Maybe Option 2	Probably Option 2	Definitely Option 2

Appendix B: Demographics

1. What is your age (in years)?
2. What is your sex?  
 Male       Female
3. What is your ethnicity?  
 Black / African American       Native American  
 White / Caucasian       Asian / Pacific Islander  
 Hispanic / Latino       Middle Eastern  
 Bi-cultural / Mixed       Other
4. If you answered other to the previous question, please indicate your ethnicity here.
5. What is your relationship status?  
 Single       Married  
 Widowed       Divorced / Separated
6. Are you a U.S. citizen?  
 Yes       No
7. If you are not a citizen, how long (in years) have you lived in the U.S.?
8. What is your religious identification?  
 Catholic       Protestant  
 Mormon       Christian / Other  
 Muslim       Jewish  
 Hindu       Buddhist  
 Sikh       Atheist / Agnostic  
 Other

9. If you answered other to the above question, please state your religious identification here.

10. What is your approximate level of yearly income (please include only your own income and not any other members of your household)?

- \$0 - \$19,999       \$20,000 - \$39,999  
 \$40,000 - \$59,999       \$60,000 - \$79,999  
 \$80,000 - \$99,999       \$100,000 - \$999,999  
 over \$1,000,000

11. What is your highest level of education?

- Did not finish High School       High School / GED  
 Associate's Degree       Bachelor's Degree  
 Graduate Degree

12. To what extent do you identify as liberal versus conservative?

- |              |                    |                  |          |                       |                         |                   |
|--------------|--------------------|------------------|----------|-----------------------|-------------------------|-------------------|
| 1            | 2                  | 3                | 4        | 5                     | 6                       | 7                 |
| Very liberal | Moderately liberal | Slightly liberal | Moderate | Slightly conservative | Moderately conservative | Very conservative |

13. To what extent do you identify with either the Democratic or the Republican Party?

- |                 |          |                 |                       |                   |            |                   |
|-----------------|----------|-----------------|-----------------------|-------------------|------------|-------------------|
| 1               | 2        | 3               | 4                     | 5                 | 6          | 7                 |
| Strong Democrat | Democrat | Slight Democrat | Neither / Independent | Slight Republican | Republican | Strong Republican |

14. To what extent do you agree with economic conservative policies (economic

conservatism means a belief in less government spending on social programs, lower taxes, deregulation of the economy, free trade, etc.)?

- |                   |          |                   |                            |                |       |                |
|-------------------|----------|-------------------|----------------------------|----------------|-------|----------------|
| 1                 | 2        | 3                 | 4                          | 5              | 6     | 7              |
| Strongly disagree | Disagree | Somewhat disagree | Neither agree nor disagree | Somewhat agree | Agree | Strongly agree |

15. To what extent do you agree with cultural conservative policies (cultural conservatism means a belief that the government should encourage or enforce traditional cultural and moral values, such as supporting traditional marriage, and prohibiting drugs, pornography, euthanasia, etc.)?

1  
Strongly  
disagree

2  
Disagree

3  
Somewhat  
disagree

4  
Neither  
agree nor  
disagree

5  
Somewhat  
agree

6  
Agree

7  
Strongly  
agree

## Appendix C: Contemporary Social Issues

Now we would like to ask you about your attitudes and opinions toward various social issues. Please answer as honestly as you can. There are no right or wrong answers.

1. Same-sex couples (i.e., two men or two women) should be allowed to marry.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

2. The United States was completely justified in invading Iraq.
3. Abortion should be made illegal in the United States.
4. The United States should have health care reform that includes a public option, where people can purchase health insurance through the government.

Appendix D: Right-Wing Authoritarianism (RWA) and Social Dominance Orientation  
(SDO)

**RWA**

This short survey is part of an investigation of general public opinion concerning a variety of social issues. You will probably find that you agree with some of the statements, and disagree with others, to varying extents. Please indicate your reaction to each statement with the provided scale.

You may find that you sometimes have different reactions to different parts of a statement. For example, you might very strongly disagree (-4) with one idea in a statement, but slightly agree (+ 1) with another idea in the same item. When this happens, please combine your reactions, and write down how you feel "on balance" (i.e., a -3 in this case).

1. Gays and lesbians are just as healthy and moral as anybody else (reverse coded).

-4	-3	-2	-1	0	1	2	3	4
Very Strongly Disagree	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree	Very Strongly Agree

2. Our country will be destroyed someday if we do not smash the perversions eating away at our moral fiber and traditional beliefs.
3. God's laws about abortion, pornography, and marriage must be strictly followed before it is too late, and those who break them must be strongly punished.

**SDO**

Which of the following objects or statements do you have a positive or negative feeling towards? For each of the following objects or statements, select a response below each item which represents the degree of your positive or negative feeling.

1. It's probably a good thing that certain groups are at the top and other groups are at the bottom.

1	2	3	4	5	6	7
Very Negative	Negative	Slightly Negative	Neither Positive nor Negative	Slightly Positive	Positive	Very Positive

2. Group equality should be our ideal (reverse coded).

3. Increased social equality (reverse coded).

.

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## Appendix E: Moral Trade-off Scenarios

### **General Directions**

You will now be asked to respond to several social dilemmas. Imagine that you are in the position described by each scenario. For each scenario, you will have two possible options to resolve the dilemma. After reading the scenario and your options, you will first be asked several questions regarding how you feel about the dilemma. After answering these questions, you will then be asked to choose which option you prefer. Please answer as honestly as you can. There are no right or wrong answers, and we are only interested in your thoughts and feelings about these dilemmas. When you are ready, please click ">>" to begin.

### **Individualizing versus Individualizing Trade-offs**

1. You are the director of health care management at a large hospital. Not only is it your job to ensure that the hospital's finances are in order, but you also are required to occasionally make difficult decisions regarding the allocation of care to patients. One day, you are asked to make a decision regarding the allocation of a donated liver for a transplant operation. One of the patients is a five-year-old boy, who has a hereditary liver disease. The other patient is an equally sick six-year-old boy with severe liver damage due to an infection. Both children have been on the waiting list for some time, but because of the shortage of local organ donors, only one liver is available. You will only be able to save the life of one child. The other one will almost certainly not survive. Who should receive the donor liver?
  - 1) The five-year-old boy
  - 2) The six-year-old boy

2. You are the human resources manager for a large accounting firm. The firm is currently looking for a new certified public accountant (CPA), and you have already interviewed several applicants for the position. There are four applicants vying for the position, and you discover that one of the applicants is currently unemployed and struggling to take care of his family of four. Additionally, his unemployment benefits are about to expire. However, one of the other applicants has slightly better credentials and more experience than the unemployed applicant does. You are concerned about the welfare of the unemployed applicant and his family if you don't hire him, but you also feel like you might be cheating the other applicants out of a job that he was legitimately qualified for, and perhaps even *more* qualified for. What should you do?

- 1) Hire the unemployed applicant.
- 2) Hire the applicant with the better qualifications.

3. You are the supervisor overseeing the construction of a large office building designed by a famous post-modern architect. Because of the building's design, one area of the construction site is particularly dangerous, and there is a high potential for injury. Because no one volunteered to be assigned to this area, you decided to have all of your employees draw straws to determine their assignments. However, the employee who drew the assignment for the dangerous area has a reputation for being a very skilled carpenter, but also somewhat clumsy. If he were to work in this area, you feel that there would be a high probability that he would be injured, but you also feel that redrawing the straws would be giving the clumsy employee special treatment and would not be fair to everyone else. What should you do?

- 1) Keep the assignments as they are.
- 2) Redraw the straws.

### **Individualizing versus Binding Trade-offs**

1. You are in charge of admitting new members into an exclusive club at your university. Being a member of this club carries with it several benefits, such as increased scholarship opportunities and an increased likelihood of getting into graduate school. This club has very strict requirements for membership, and it is your job to screen out applicants who don't qualify. For example, applicants must have a high GPA and must have participated in a variety of extracurricular activities in high school. One day you come across an otherwise strong applicant who is just lacking in extracurriculars. You notice that the applicant's high school is located in a poor rural community, and you surmise that the reason the applicant doesn't have many extracurriculars is that his school probably did not offer them. You feel that it wouldn't be fair to deny him membership because of the school he went to, but you also feel that it is your duty to respect the rules and values of your club. What should you do?

- 1) Admit the applicant (Individualizing).
- 2) Deny the applicant (Binding).

2. You are the human resources manager for a large accounting firm. The firm is currently looking for a new certified public accountant (CPA), and you have already interviewed several applicants for the position. There are four applicants vying for the position, and one of them happens to be a member of your church whom you

know from various church activities. However, one of the other applicants has *slightly* better credentials and a little more experience than your fellow church member does. You want to hire the candidate who belongs to your church, as you know he shares your values and beliefs and almost feels like “family,” but you also feel that you might be cheating the other applicant out of a job that he was legitimately qualified for, and perhaps even *more* qualified for. What should you do?

- 1) Hire the applicant who is a member of your church (Binding).
  - 2) Hire the applicant with the slightly better qualifications (Individualizing).
3. You are an army soldier currently on a tour in an active combat zone. While on a mission, your commanding officer reports to the platoon that he has received intelligence that important enemy operatives are hiding in a nearby building. It would be your job as an artillery specialist to volley rockets into the building to draw the enemy out. As your team approaches the site, you become certain that the intelligence was wrong, and the building in question is actually a school that is still in use. Even with this knowledge, your commanding officer gives you an order to commence firing on the building so that the other troops can advance. You feel it is your duty as a soldier to always obey your commanding officer no matter what, but you also believe that if you did, you would only be killing civilians. What should you do?
- 1) Fire on the building (your commanding officer will take full responsibility for what happens) (Binding).

- 2) Refuse to fire on the building (you can explain to your commanding officer why) (Individualizing).

### **Binding versus Binding Trade-offs**

1. Shortly after leaving your home for the first time to attend college, you begin to be unhappy with the direction your life is going. After hearing about several recent terrorist attacks in the Middle East in the news, you decide that nothing would be more meaningful than serving and protecting your country and that you should join the military. Unfortunately, both your parents are very anti-war, and when they find out, they forbid you from joining the military. Furthermore, they warn that if you do join, you would no longer be welcome in their home. You feel that you should respect your parents' wishes; they are your family, after all, but you also feel that it is your duty as a citizen to loyally serve your country. What should you do?
  - 1) Don't join the military.
  - 2) Join the military.
2. You are the human resources manager for a large accounting firm. The firm is currently looking for a new certified public accountant (CPA), and you have already interviewed several applicants for the position. There are four applicants vying for the position, and one of them happens to have been a member of your church whom you know from various church activities. However, the accounting firm's Board of Directors, who are your bosses, asks you to consider one of the other candidates that they prefer. You feel like you should hire the candidate who belongs to the same church as you, as you know he shares your values and beliefs and almost feels like

“family,” but you also feel that you should respect the preferences of your bosses as a loyal employee. What should you do?

- 1) Hire the applicant who is a member of your church.
- 2) Hire the applicant preferred by the Board.

3. You are a graduate student at a respectable research university. Your professor is very strict regarding the division of duties amongst his students and general procedures in the laboratory. For example, he requires his students to be in the lab for a specific number of hours each week and requires careful logging of all lab activities. Lately you have noticed that your colleague, who is also a close friend of yours, has been somewhat shirking his responsibilities. He has been leaving lab early the past couple of days and does not record activities he considers trivial. You have also heard him remark that your professor is “an old geezer,” and he shouldn’t have to follow his arbitrary rules. Although it is not affecting the work of anyone else, you feel your professor should be informed that your colleague is undermining his authority, but you also feel you should be loyal to colleague and friend and not tattle on him. What should you do?

- 1) Inform your professor.
- 2) Keep silent.

## Appendix F: Pilot Study

### Method

#### Participants

Participants were 65 individuals recruited using Mturk. Participation in this study was restricted to those with an IP address from within the United States. Twenty-seven participants were excluded from the analysis for either providing only partial data or for completing the entire study in less than five minutes. Of the remaining participants, fifteen were male (21 female, 2 did not report) with an average age of 37.8 years ( $SD = 14.1$ ; Min = 18; Max = 68). The majority of participants identified themselves as White (76.3%). The remaining participants identified as Black (7.9%), Asian, Hispanic, or Mixed ethnicity (5.3% each). Participants were predominantly Christian (63.2%) or Atheist / Agnostic (26.3%). A high school diploma / GED was the highest educational achievement for the majority of participants (60.5%). The remaining participants had either an undergraduate degree (36.9%) or a graduate degree (2.6%). Participants were compensated either \$.10 or \$.25 for their participation in this study.

#### Procedure

After following the link posted on Mturk to the survey and providing consent to participate, participants reviewed all nine of the moral trade-offs listed in Appendix E. After each trade-off, participants were asked to indicate whether each option represented a preference for individualizing or binding foundations. Specifically, participants were asked, “Would choosing option 1 (2) mean a preference for protecting the rights and welfare of individuals (e.g., doing no harm, being fair, etc.) over other

issues?’’ (individualizing foundations) and, ‘‘Would choosing option 1 (2) mean a preference for social order, fulfilling duties, and protecting your group or society (e.g., respecting authority, loyalty, remaining pure, etc.) over other issues?’’ (binding foundations). Participants then completed a measure of demographics and were debriefed in the same manner as in Study 1.

## Results

### Individualizing Versus Binding Trade-offs

In order to determine whether each option represented the appropriate foundations (e.g., individualizing or binding foundations), responses for items asking if the option indicates a preference for individualizing foundations were compared to those asking if the option indicates a preference for binding foundations using paired sample t-tests. For scenario 1 (admitting new members into an exclusive club), option 1 (admitting the applicant) was rated as significantly more indicative of individualizing ( $M = 5.50$ ;  $SD = 1.39$ ) than binding foundations ( $M = 3.34$ ;  $SD = 1.86$ ),  $t(37) = 5.76$ ,  $p < .001$ ,  $d = 1.32$ . Likewise, option 2 (denying the applicant), was significantly more indicative of binding ( $M = 4.74$ ;  $SD = 1.96$ ) than individualizing foundations ( $M = 2.76$ ;  $SD = 1.57$ ),  $t(37) = -5.66$ ,  $p < .001$ ,  $d = 1.12$ .

For scenario 2 (hiring decision), option 1 (hiring the church member) was significantly more indicative binding ( $M = 3.57$ ;  $SD = 1.94$ ) than individualizing foundations ( $M = 2.35$ ;  $SD = 1.23$ ),  $t(36) = -3.53$ ,  $p = .001$ ,  $d = 0.75$ . Although not significant, option 2 (hiring the better qualified applicant) was more indicative of individualizing ( $M = 5.39$ ;  $SD = 1.76$ ) than binding foundations ( $M = 4.95$ ;  $SD = 1.82$ ),  $t(37) = 1.26$ ,  $p = .22$ .



For scenario 3 (soldier in a combat zone), option 1 (firing on the building) was significantly more indicative of binding ( $M = 5.03$ ;  $SD = 2.12$ ) than individualizing foundations ( $M = 1.87$ ;  $SD = 1.53$ ),  $t(37) = -7.35$ ,  $p < .001$ ,  $d = 1.71$ . Option 2 (refusing the order), was significantly more indicative of individualizing ( $M = 5.89$ ;  $SD = 1.67$ ) than binding foundations ( $M = 3.84$ ;  $SD = 2.13$ ),  $t(37) = 4.83$ ,  $p < .001$ ,  $d = 1.07$ . In summary, five of the six options significantly indicated a preference for the target foundation. The remaining option, although not significant, was in the correct direction.

### **Individualizing Versus Individualizing Trade-offs**

For scenario 1 (hospital), option 1 (saving the five-year-old boy) did not significantly differ in ratings of individualizing ( $M = 3.42$ ;  $SD = 1.94$ ) and binding foundations ( $M = 3.58$ ;  $SD = 1.84$ ),  $t(37) < 1$ , *ns*. Option 2 (saving the six-year-old boy) was slightly more indicative of individualizing ( $M = 3.97$ ;  $SD = 2.03$ ) than binding ( $M = 3.55$ ;  $SD = 1.84$ ) foundations, although this difference was not significant,  $t(37) = 1.46$ ,  $p = .15$ .

For scenario 2 (hiring decision), option 1 (hiring the unemployed applicant) was more indicative of individualizing ( $M = 3.46$ ;  $SD = 1.61$ ) than binding foundations ( $M = 2.89$ ;  $SD = 1.70$ ), a difference that approached significance,  $t(36) = 1.71$ ,  $p = .10$ ,  $d = .34$ . Option 2 (hiring the more qualified applicant) did not differ in ratings of individualizing ( $M = 4.80$ ;  $SD = 1.68$ ) and binding foundations ( $M = 5.03$ ;  $SD = 1.71$ ),  $t(34) < 1$ , *ns*.

For scenario 3 (construction supervisor), option 1 (keeping the assignments) did not differ in ratings of individualizing ( $M = 3.89$ ;  $SD = 1.78$ ) and binding foundations ( $M = 4.29$ ;  $SD = 1.90$ ),  $t(37) = -1.21$ ,  $p = .23$ . Option 2 (redrawing the straws),

however, was more indicative of individualizing ( $M = 4.21$ ;  $SD = 1.98$ ) than binding foundations ( $M = 3.63$ ;  $SD = 1.79$ ), a difference that approached significance,  $t(37) = 1.88$ ,  $p = .07$ ,  $d = .31$ . In summary, only two of the six options indicated a preference for the target foundations that approached statistical significance. The other four options did not statistically differ in preference towards individualizing or binding foundations.

### **Binding Versus Binding Foundations**

For scenario 1 (joining the military against parental wishes), option 1 (not joining the military) was more indicative of binding ( $M = 4.24$ ;  $SD = 2.14$ ) than individualizing ( $M = 3.53$ ;  $SD = 2.12$ ) foundations, a difference that approached significance,  $t(37) = -1.91$ ,  $p = .06$ ,  $d = .33$ . Option 2 (joining the military) was actually significantly more indicative of individualizing ( $M = 4.71$ ;  $SD = 1.86$ ) than binding foundations ( $M = 4.21$ ;  $SD = 1.88$ ),  $t(37) = 2.08$ ,  $p = .05$ ,  $d = .27$ .

For scenario 2 (hiring decision), option 1 (hiring the church member) did not differ between binding ( $M = 3.30$ ;  $SD = 2.08$ ) and individualizing foundations ( $M = 2.97$ ;  $SD = 1.86$ ),  $t(36) < 1$ , *ns*. Option 2 (hiring the applicant preferred by the Board) was significantly more indicative of binding ( $M = 5.24$ ;  $SD = 1.71$ ) than individualizing foundations ( $M = 3.95$ ;  $SD = 1.83$ ),  $t(36) = -4.48$ ,  $p < .001$ ,  $d = .73$ .

For scenario 3 (graduate student), option 1 (informing the professor) was more indicative of binding ( $M = 4.74$ ;  $SD = 1.74$ ) than individualizing foundations ( $M = 4.00$ ;  $SD = 1.80$ ),  $t(37) = -2.69$ ,  $p = .01$ ,  $d = .42$ . Option 2 (keeping silent), however, was more indicative of individualizing ( $M = 3.95$ ;  $SD = 1.95$ ) than binding foundations ( $M = 3.32$ ;  $SD = 1.91$ ),  $t(37) = 2.02$ ,  $p = .05$ ,  $d = .33$ . In summary, three of the six options (one in each scenario) indicated a preference for the target foundations. One

additional option did suggest a preference for binding foundations, but this difference was not significant. The remaining two options, contrary to predictions, indicated a preference towards individualizing rather than binding foundations.

## Appendix G: Moral Credentialing Manipulation

### Directions for Experimental Conditions

Imagine that you are offered \$100 (anonymously and secretly) to perform the following behaviors. For each action, assume that nothing bad would happen to you afterwards. Also assume that you cannot use the money to make up for your action. Please rate the likelihood that you would be willing to engage in the behaviors.

### Directions for Control Conditions

For each of the following phrases, please identify each word that can be classified as a noun and each word that can be classified as a verb. Please type your answers in the space below each item.

### Items for Individualizing Foundations

1. Kick a dog in the head, hard.

1	2	3	4	5	6	7
Very Unlikely	Unlikely	Somewhat Unlikely	Not Sure	Somewhat Likely	Likely	Very Likely

2. Make cruel remarks to an overweight person about his or her appearance.
3. Stick a pin into the palm of a child you don't know.
4. Cheat in a game of cards played for money with some people you don't know well.
5. Steal from a poor person and use the money to buy a gift for a rich person.
6. Sign a secret-but-binding pledge to only hire people of your race in your company.

## **Binding foundations**

1. Break off all communications with your immediate and extended family for 1 year.
2. Burn your country's flag.
3. Curse your parents to their face.
4. Make a disrespectful hand gesture to your boss, teacher, or professor.
5. Cook and eat your dog, after it dies of natural causes.
6. Attend a performance art piece in which all participants (including you) have to act like animals for 30 minutes, including crawling around naked and urinating on the floor.